Accounting Based Measures as Determinants of Corporate Performance Valuation

By

Qaisar Ali Malik

Ph. D.

186/FUI/Ph. D (MS) – 2009

Department of Business & Economics

2013
Accounting Based Measures as Determinants of Corporate Performance Valuation

A dissertation submitted to the
Department of Business & Economics - Foundation University Islamabad
In partial fulfillment of the requirements for the

Degree of Doctor of Philosophy

In
Management Sciences

By
Qaisar Ali Malik

2013
## List of Supervisors, Evaluators & Examiners

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<td>Prof. Dr. M. Iqbal Saif</td>
<td>Supervisor</td>
<td>Head, Department of Humanities &amp; Social Sciences, Bahria University</td>
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<td>Prof. Dr. Jawaid A. Ghani</td>
<td>Co Supervisor</td>
<td>Dean, Suleman Dawood School of Business, LUMS</td>
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<td>Prof. Dr. Ronald C. Clute</td>
<td>Foreign Evaluator</td>
<td>Director, Clute Institute, Colorado, USA</td>
</tr>
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<td>Foreign Evaluator</td>
<td>Dean, School of Business, Alabama A&amp;M University, USA</td>
</tr>
<tr>
<td>Dr. Syed H. Raza</td>
<td>External Examiner</td>
<td>Chairman, Department of Business Administration, Allama Iqbal Open University, Islamabad</td>
</tr>
<tr>
<td>Prof. Dr. Kashif Ur Rehman</td>
<td>External Examiner</td>
<td>Department of Management Sciences, Iqra University, Islamabad</td>
</tr>
<tr>
<td>Prof. Dr. Hummayoun Naeem</td>
<td>Internal Examiner</td>
<td>Head, Department of Business &amp; Economics, Foundation University Islamabad</td>
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DECLARATION

I, Qaisar Ali Malik, Ph. D. Scholar under registration number 186/FUI/Ph. D (MS)–2009, at Department of Business & Economics, Foundation University Islamabad hereby solemnly declare that the matter printed in the thesis titled “Accounting Based Measures as Determinants of Corporate Performance Valuation” is my own research work and has not been printed, published and submitted in any form in any university in Pakistan or abroad

Signature of Scholar
Dedicated
To
My Beloved Mother
&
My Loving Wife
ACKNOWLEDGEMENT

I have no words to express my gratitude to Allah Subhanahu wa’ taa’la, who enabled me with the strength and courage to learn and contribute a drop to the ocean of the knowledge.

I would like to express my sincere and special gratitude to Prof. Dr. M. Iqbal Saif and Prof. Dr. Jawaid A. Ghani; whose expertise and guidance made this research endeavor accomplished. They remained the source of motivation and encouragement for me to get interested and involved in the research work and the completion of this study. Off course without their help this study was not possible.

I would like to extend my gratitude to Prof. Dr. Hummayoun Naeem and Dr. Amir Gulzar for their assistance and moral support.

My special thanks to my family; especially my mother and my wife; for their love, support and prayers that really helped me a lot in the completion of this study.
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Abstract

In today’s competitive environment every corporate sector organization faces a challenge to generate, sustain and enhance their profits to increase the value of business in terms of increased market value, hence these organizations need to perceive clearly about how their developed strategies would affect their performance and the valuation. The study is focused on how corporate financial strategies; related to various operational, investment and financial decisions add value for the organizations. The study identified, measured and evaluated; the association among corporate financial strategies and the corporate performance valuation; and contributed to the validity, predictability and the relevance of various financial indicators and their impact on corporate performance; for a developing country like Pakistan where the internal and external environment of the firms and the industry is significantly different as against the developed and other developing countries. Based on the review of literature and the empirical findings of the earlier studies; four constructs including solvency, liquidity, profitability and activity are developed to represent the independent variable corporate financial strategies; whereas corporate performance valuation is represented by market to book value ratio.

The study considered non financial sector companies listed at Karachi Stock Exchange (KSE) as population and used purposive or judgmental sampling to achieve the objectives and to approach the target group. Hence three major economic groups were selected on the basis of number of companies listed in the groups and the market capitalization; namely Sugar & Allied; Chemical & Allied and Cement & Allied. The study took 10 years annual data from the financial statements of the selected 101 companies; covering years 2001 to 2011. Thus 1,010 firm year data is used for measuring and analyzing the relationships between the studied variables for better digging out the implications of the variables over the long run and adding to the reliability
of generalizing the results for the studied sectors. Balanced panel data is taken for the purpose of study by selecting only those companies for which consecutive annual data is available for the period of study under consideration.

The study used both descriptive and inferential statistics to analyze the data and generalize the results. For descriptive statistics analysis mean, median, standard deviation, skewness and kurtosis are used whereas for inferential statistics panel least square technique with fixed effects model is used to determine the significance of the predicting variables and to measure the impact of significant predictors on dependent variable. Panel least square fixed effect model is used to control for the heterogeneity over time and to control the effects of time invariant variables with time invariant effects after adjusting for heteroskedasticity of data, to ensure unbiased estimates for standard errors and variance coefficients. Data stationarity is checked through Levin, Lin & Chu panel unit root test for multiple series panel data structures to increase the reliability and validity of the models.

The study found that the performance of the selected corporate sectors in terms of market to book value is affected by a variety of internal firm and industry specific factors. For liquidity analysis the results indicated that sugar and allied industry is facing liquidity problems and supported that current ratio and inventory turnover are positively linked whereas quick ratio and receivable turnover are negatively linked with market to book value ratio. Chemical and allied industry is found to have satisfactory liquidity position with receivable turnover and inventory turnover ratio found to be positively linked whereas quick ratio negatively linked with market to book value ratio. Cement and allied industry is found to have liquidity problems with current ratio and inventory turnover positively linked whereas quick ratio and receivable turnover
negatively linked with market to book value ratio. For all the three sectors inferential statistics endorse the significance of liquidity management for corporate performance.

For solvency analysis results indicated that sugar and allied industry is facing solvency problems and supported that debt to equity ratio and interest coverage both are positively linked with market to book value ratio. Chemical and allied industry is also facing solvency problems with debt to equity ratio and interest coverage being positively linked with market to book value ratio. Cement and allied industry is also facing solvency problems with debt to equity ratio and interest coverage being positively linked with market to book value ratio. For all the three sectors inferential statistics endorse the significance of solvency management for corporate performance.

For profitability analysis the results indicated that sugar and allied industry is facing low profitability and supported that return on equity is positively linked, profit margin is negatively linked whereas gross margin and return on assets have no impact on the market to book value of sugar and allied industry. Chemical and allied industry is enjoying reasonable profitability with return on equity being positively linked, return on assets negatively linked whereas gross margin and profit margin have no impact on the market to book value of chemical and allied industry. Cement and allied industry is facing low profitability with return on equity being positively linked, return on assets negatively linked whereas gross margin and profit margin have no impact on the market to book value of cement and allied industry. For all the three sectors inferential statistics endorse the significance of profitability management for corporate performance.

For activity analysis the results indicated that sugar and allied industry is having good activity with sales growth negatively associated whereas asset turnover positively linked with market to book value ratio. Chemical and allied industry is having good activity with asset turnover
positively linked with market to book value ratio whereas sales growth have no effect on market to book value ratio of chemical and allied industry. Cement and allied industry is having good activity with sales growth negatively associated whereas asset turnover positively linked with market to book value ratio.

The results supported the resource based view that the firm specific capabilities along with the available resources are equally significant for creating value through the idiosyncratic resources and thus the firm specific factors are considered key determinants of firms’ performance. The findings of the study do not provide with a particular homogeneous solution for every organization; however the findings may serve as some standard guidelines that should be considered and applied to any organization for developing and implementing the strategies as per their needs and circumstances.

Findings of the study provide with the overview of the historic and the potential performance of the selected sectors to help policy makers in devising and implementing the strategies for adding value to the organizations. Moreover the findings would serve as a tool to be adopted by the industry experts to establish the link between the financial indicators and the corporate performance; to quickly and timely respond to the changes and challenges raised in their respective sectors.

**Keywords:** Liquidity, Solvency, Profitability, Activity, Quick Ratio, Current Ratio, Inventory Turnover, Receivable Turnover, Debt to Equity, Interest Coverage, Gross Margin, Profit Margin, Return on Assets, Return on Equity, Sales Growth, Asset Turnover
Chapter 1

Introduction

Economy of Pakistan

Capital Market

Corporate Sector

Corporate Strategy & Corporate Performance

Corporate Performance & Financial Statements

Financial Ratios as Predictors of Corporate Performance

Conceptual Model

Statement of the Problem

Objectives of the Study

Significance of the Study
1.1 Economy of Pakistan

The economy of Pakistan has been facing atrocious challenges to remain stable during the last few years. This stability is sought for both macro and microeconomic conditions to ensure the sustainable growth to uplift the quality of life of the masses. During the last decade, Pakistan has been facing relentless security challenges, escalating energy crisis, sheer inflation and the distress of global financial crisis. This situation has badly affected the economic conditions in general and the corporate sector of Pakistan in particular. The steep rise in oil prices and the enormous floods have even triggered the situation. Despite these confronting factors the overall economic performance has been somewhat reasonable (Pakistan Economic Survey 2011-12).

The endurance of economy, being affected by such shocks one after another, shows the flexibility and toughness of the economy. So it is highly believed that by deploying some continuous strategic efforts the economy still can be conveniently put on the track leading to the sustainable growth. To come up with the challenges the government is taking steps to sustain economic stability through focusing more on peoples and markets to make them more empowered and productive to face global economic challenges (Pakistan Economic Survey 2011-12).

1.2 Capital Market

Capital market being a significant part of the financial sector of the economy has been an imperative gauge to identify and evaluate the status of the economy. It is a platform whereby financial resources are taken from where there is a surplus and used for where it is in need. It facilitates the mobilization and allocation of funds through different modes of financial instruments. It serves as a hub for mobilizing and channelizing the funds in an efficient way for
the optimal productive uses. It provides numerous attractive opportunities to both local and foreign investors for the maximization of their wealth. In Pakistan, capital markets are considered to be highly conducive for investments, moreover equity market of Pakistan is considered among the world’s best performing equity markets for the last ten years. Despite the exigent economic and social conditions created by security and flood threats, the sturdy existence of foreign investments has enhanced the risk perception regarding potential and intensity of the capital market of Pakistan. This enhanced perception has added further to the lure of current and prospective investor community.

The Karachi Stock Exchange (KSE) has got an outstanding place among all capital markets in Pakistan. It offers highly proficient, rational and lucid system where investors can trade securities with full confidence. KSE can be compared with any other capital market in the region. It is considered as the primary indicator of the capital markets performance in Pakistan. Therefore due to its major role, the overall analysis and discussion of capital markets of Pakistan is largely and primarily based on the performance of the KSE. Due to the excellent performance of KSE during the last five years (Table 1.1) KSE has now become a significant component of global equity market (Economic Survey 2011-12).
Capital market efficiency very much depends on the level of information available to the investors who use this information to enhance their stock returns. The most common and basic source of information is using financial statements (Zeytinoglu et al, 2012). The investors may diversify their investments risks and achieve higher returns using such information. Therefore the factors affecting the stock returns become the most significant aspect of empirical research in finance.


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<tr>
<td>Total listed companies</td>
<td>652</td>
<td>651</td>
<td>652</td>
<td>639</td>
<td>591</td>
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<td>New companies listed</td>
<td>7</td>
<td>8</td>
<td>8</td>
<td>1</td>
<td>3</td>
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<td>Fund mobilized (Rs. in billion)</td>
<td>62.88</td>
<td>44.95</td>
<td>111.83</td>
<td>31.04</td>
<td>107.29</td>
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<tr>
<td>Total Listed Capital (Rs. in million)</td>
<td>706,419.98</td>
<td>781,793.81</td>
<td>909,893.67</td>
<td>943,732.85</td>
<td>1,058,455.26</td>
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<tr>
<td>Total Market Capitalization (Rs. in million)</td>
<td>3,777,704.89</td>
<td>2,120,650.87</td>
<td>2,732,373.61</td>
<td>3,288,657.32</td>
<td>3,528,143.84</td>
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<tr>
<td>Total Shares Volume (million)</td>
<td>63,316.12</td>
<td>28,332.78</td>
<td>42,959.12</td>
<td>28,018.14</td>
<td>23,633.28</td>
</tr>
<tr>
<td>Average Daily Share volume (million)</td>
<td>256.34</td>
<td>115.64</td>
<td>172.53</td>
<td>111.63</td>
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Source: Karachi Stock Exchange

Moreover in estimating the stock market value of the companies, market value ratios are widely used by investors for predicting the trends in stock returns. The stocks having more real value as against their market value are preferred by investors for attaining high return later on. Therefore these market value ratios serve as a gauge to decide about the currently held investments and the prospective investments (Zeytinoglu et al, 2012).

1.3 Corporate Sector

It has been noticed occasionally that the corporate sector of Pakistan has been showing increasing profitability trends at times; however the same is not reflected in the performance of the sector in the stock market. This shows that the capital markets were not in line with the inclining trends as shown by the financial performance of the sector. The reason for such diversity is considered to be the various economic, industrial and political factors along with the natural calamities Pakistan have been facing (Internews Report, 2010).

Analysts observing the performance of the corporate sector established that the capital market performance of various sectors has been affected by a variety of economy and industry related factors. Until recently the rise in gas prices and the production has raised considerably the oil &
gas exploration sector’s earnings. The fertilizer sector’s growth is again due to rise in fertilizer prices. Banking sector’s performance remains submissive. Oil companies faced declining trends owing to the increase in tax rates and losses in inventory. Cement sector has experiences low profitability due to the pricing issues. Automobile sector continued enjoying high margins as a result of high growth in revenues brought in by higher sales and higher prices and the lowered costs of raw materials. The power sector enjoyed growth in earnings due to the uplift in the tariff contour and the depreciation of Pakistani rupee. Telecom sector’s performance declined due to the sharp increase in marketing and business operating expenses (Internews Report, 2010).

Moreover both the private and public sector companies have been found enjoying increasing profitability trends (Shaikh, 2007). A brief overview of the corporate map of Pakistan disclose that banking sector has been showing success primarily due to the change coming from privatization. However the public sector companies like PARCO, SNGPL, OGDC, SSGPL, PSO and the National Refinery have also been showing good performance.

In the international perspectives the profitability and growth of corporate sector of Pakistan is not comparable to the growth and profitability enjoyed by the corporate sector of India. The corporate sector of India has grown tremendously and has now come up in the global scenario (Monnoo, 2009). The strategic factors behind this tremendous growth and profits should be carefully analyzed and evaluated to bring the Pakistani corporate organizations at par.

The global focus on corporate sector of India has been increasing sharply due to various international factors including strategic alliances and cross border mergers. The success of corporate India is not a one day story. The high entrepreneurial capabilities, high reinvestment rates, high diversification, timely realizing the fruits of globalization and the gearing up of
The corporate sector of Pakistan has not shown such results as the Pakistan has been ignorant on such fronts where India has been focusing into. The public and private sector both have been very much less bothered about these changing conditions and could not respond accordingly (Shaikh, 2007). This has made Pakistan realized that now the Indian sector is in a different pool as against Pakistani corporate sector. It is high time to explore and identify the success factors of India as against the factors causing poor growth and performance of Pakistani corporate organizations.

On the contrary, the stock market performance of Pakistani companies has been much better as against India (Table 1.2). This again entails a need to identify and explore the external and internal factors that have actually contributed to these diversifying results. Accordingly the corporate strategies and the capital market policies should be framed out to get the desired results.
The above international perspective highlights the role of fully skilled, trained and knowledgeable professionals looking after the corporate affairs for the better performance of corporate sector in the global dynamic and challenging environment. In this regard it is highly needed to explore and identify the knowledge gaps that need to be filled in to get the desired outcomes. This can be done through knitting the current global corporate strategies with the relative research frontiers, so as to generate practicable solutions faced by the corporate sector of Pakistan.

Moreover due to the financial distress and allied factors the corporate sector organizations of Pakistan are heavily involved in tax avoidance tactics; as a result Pakistan is facing bleak tax collection from corporate sector. It is estimated that almost 70% of the corporate sector
organizations are avoiding tax payments (Tirmazi, 2011). Again this can be controlled by improving profitability and the resultant cash flows through better corporate and government policies.

1.4 Corporate Strategy & Corporate Performance

In an interview; Professor Paul M. Healy from Harvard Business School; revealed that the severe competition and the scarcity of financial resources remain the huge problems for the corporate organizations trying to settle in after the global financial crisis. He emphasized the need of realizing how the strategy leads to the financial performance, from the cost control levels in the short run to the sound performance in the long run. He further stated that the corporate executives must fully comprehend the association among the company strategy, the financial performance, and the company value. He further added that, the corporate sector need to perceive clearly about how the developed strategies would affect the corporate performance and the valuation. He further disclosed that at HBR they have seen many such cases where the companies could use their financial information for improving their strategies to move ahead. He pointed out that to exploit those opportunities they were required to understand the significance of using their financial information that was buried somewhere in their companies. He discussed how companies across the world devise their strategies that lead to better financial performance which ultimately results in increase in company value.

This whole discussion disclosed the significance of how the corporate strategy eventually leads to corporate performance. The gearing of valuation through effective strategies thus can be portrayed as below (Fig 1.1).
In the above context, it has been a great challenge for every corporate sector organization to generate, sustain and enhance their profits to increase the value of business in terms of increased equity market value. In this regard the inter linkages between the corporate financial strategies and the outcomes of those in terms of equity market value have to be understood and accordingly optimally utilized for the increased market value of the firms. The relationship between corporate financial strategies and corporate financial performance is twofold. Corporate organizations utilize financial ratios as their performance indicators to design and develop their upcoming strategy; then again on the basis of the financial results the progress of the set strategy is evaluated (Betker, 2005).
Moreover while setting up the finance strategy there is no particular homogeneous solution for every organization; however some standard guidelines should always be developed that can be applied to any organization for developing and implementing the strategy as per their needs (TIFV, 2011). The success of corporate financial strategies highly depends on precisely knowing the current financial state, clarity of the targets and vision of how to achieve those. These three factors overall affects the strategy and the performance of an organization (Fraser, 2011). The sequential ascent from strategy to valuation (Fig 1.2) highlights how effective strategic planning, carefully set financial targets, well knit operational planning and the suitable financial measurement techniques may lead to the increased valuation.

**Figure 1.2 – Sequential Ascent – From Strategy to Valuation**

*Source: Researcher’s Processing*
Thus financial strategy and performance are mutually evolving as a dimension that will lead the firms towards achieving the competitive edge (Ammara 2012). Therefore every corporate organization is assumed to develop and implement such financial strategies which could actually help in maximizing the value for shareholders (Ammara 2012).

1.5 Corporate Performance & Financial Statements

A sound analysis of corporate sector organizations requires a careful investigation of both micro and macroeconomic factors which affect the firms. The microeconomic factors cover all the financial outcomes of the corporate finance strategies and on the other side the macroeconomic factors cover the economic outcomes of the policies of the government. Financial statements present the aftermath of all decisions that have been taken during a business cycle by the companies as per their strategies. These statements serve as a yard stick to measure how far the company is successful and growing as per plans of the company (Ejim, 2012).

Before the globalization the linkages between the financial statements indicators and the economic indicators have got relatively lesser attention in research avenues (Gray, 1995). Later the linkages between the financial indicators and their impact on the economic indicators in general and the capital markets in particular got attention of the researchers in both developed and developing countries (Bernanke and Gertler, 1995). Corporate leverage and corporate growth have been found moving in opposite directions implying that decrease in corporate financing led to the corporate growth (Kim and Stone, 1999). Companies with high debt ratios and financial distress were observed to sell off their assets and investments at relatively lower prices that led to the dip in economic conditions, which again resulted in the weak financial
statements as a result thereon. Such a vicious circle thus adversely affects the economy (Gray, 1999).

Some applied and operational techniques and methods are required to be adopted by the industry, finance and economy experts to quickly and timely respond to the changes and challenges raised in different corporate sectors and the economy. Such tools should be used as a gauge to establish the link between the financial indicators and the corporate performance. Financial ratios can well serve the purpose to establish such links and to predict on the basis thereon.

1.6 Financial Ratios as Predictors of Corporate Performance


Despite the success of above studies in predicting the stock returns on the basis of financial ratios, yet the impact of these indicators on stock performance to be explored in emerging economies (Kim, 1997). Therefore to establish sound and empirically tested linkages, much research is yet to be conducted in this area especially in developing countries, by taking variety of sectors and financial indicators under consideration to better validate and generalize the previous results.
Major internal factors affecting the corporate financial performance have been related to operational, investment and financial strategies. The outcomes of these strategies are measured and reflected in terms of book values as presented by various accounting methods. These internal factors along with the external factors like macro economic variables affect the overall market value of the company, measured in terms of stock market value. The linkage between the two values – book value and market value, is measured by Tobin’s Q (Tobin, 1969) developed by Nobel Laureate James Tobin. Tobin’s Q is an extensively used score for estimating the value of stock as against its replacement cost (Short, 2012).

A low score reflects that the cost of replacing the assets is more as against the value of the stocks, presuming the stock to be undervalued. A high score reflects that the cost of replacing the assets is less as against the value of stocks, presuming the stock to be overvalued (Short, 2012). In other words if the score is less than 1, it implies that the company is earning the lesser return on assets as against the cost of assets. On the other hand if the score is greater than 1, it implies that the company is earning the higher return on assets as against the cost of assets (Carlton & Perloff, 2000).

1.7 Conceptual Model

The above discussion allows developing following conceptual model (Fig 1.3) to be further explored and converted into a testable hypothesized model on the basis of the review of literature.
1.8 Statement of the Problem

The success of corporate organizations primarily depends on the effective strategy formulation and eventual implementation. Though the association between some of the elements of corporate finance strategy and corporate performance has been explored in isolation in finance research, yet the studies ignored the combined and interacting effects of those elements on corporate performance. This indicates that there is a gap as far as the linkages between corporate financial strategies and the corporate performance valuation are concerned, since it has been rarely researched in such holistic context. Thus it creates a need for further explorations in that context and so it would be highly logical and rational to look into the impact of corporate strategy on
firm’s performance. The primary problem is to determine how various corporate financial
strategies affect the corporate valuation, and how the market value can be increased through
those strategies.

1.9 Objectives of the Study

The primary objective of the study is to identify and evaluate the association among corporate
financial strategies and the corporate performance valuation. This study intends to contribute to
the construct validity of various financial indicators and their impact on stock performance. In
addition, the study is designed to determine whether certain financial ratios have any ability to
predict stock returns, and to what extent these ratios affect the stock returns and what
combination of these ratios may lead to improved stock returns in future.

The study is aimed to consider the impact of four main areas; including profitability, solvency,
activity and liquidity management on corporate performance. Previous studies have been
considering the impact of some of the elements of the above four factors on corporate
performance, this study has jointly addressed these factors to explore the inter linkages between
the variables and to better understand the implied relationships, so that the market value of firms
could be maximized by devising various related strategies accordingly.

1.10 Significance of the Study

The association and linkages between the corporate sector and the economic indicators of a
country have been getting amplifying considerations from the representatives of policy making
authorities and the current and prospective investors, particularly the ones having influenced by
the recent crisis. This entails the significance of getting a thorough understanding of the linkages
between the industry, economy and the financial markets. It requires checking the susceptibility
of the corporate sector in response to the financial crisis, so as to take steps to increase supervision and to frame out the strategies and policies accordingly.

The vulnerability of the corporate sector organizations is more when the capital market values are more sensitive to the changes in micro and macro factors. The strategists, analysts and investors however have limited techniques available to overcome such troubles. This study attempts to explore how the industry related factors affects the corporate performance which in turn affects the economy of a country. The study would provide with an innovative and applied model to check and evaluate the susceptibility of corporate sector’s performance in response to various industry related factors which are offshoots of various corporate finance strategies. Further it would help to assess the historic performance and the potential performance of the corporate sector in future. This will be of great use to finance, economics and industry experts.

The study will bridge the gap between the industry related factors reflected by financial ratios and the market related factors reflected by market value ratios. The model will connect the missing links between the book values and the market values of corporate sector, by describing how the changes in financial indicators affect the market value of the firm. The study is a genuine effort to bridge the gap between the effects of various corporate finance strategies translated by the industry related factors presented by certain financial ratios and the corporate financial performance represented by capital market figures.

The model will try to identify the factors that have significant impact on corporate sector performance by evaluating how the small changes in one of the factors studied would cause a major change in the performance of the corporate sector.
Chapter 2

Literature Review

Strategic Financial Management & Firms’ Performance

Overview

Corporate Finance & Corporate Strategy
Firms’ Performance - Resource Based & Structure Based View
Firms’ Performance & Value Relevance of Financial Statements
Firms’ Performance - Accounting Based Measures & Market Based Measures
Firms’ Performance - Financial Ratios Predicting Stock Returns

Firms’ Performance & Capital Structure

Overview

International Studies - A Chronological Review
Local Studies - A Chronological Review

Firms’ Performance & Liquidity

Overview

International Studies - A Chronological Review
Local Studies - A Chronological Review

Firms’ Performance, Profitability & Activity

Overview

International Studies - A Chronological Review

Identification of Knowledge Gap
2.1 Strategic Financial Management & Firms’ Performance

2.1.1 Overview

The strategic management policies of corporate organizations are formulated as per their environment and leadership skills (Schendel & Hofer, 1978; Miller, 1982; Butler & Carney, 1986; Prescott & Vankatraman, 1990). The successful corporate strategies depend on the effective integration among the environment, the resources and the leadership (Miller, 1981; Andrews, 1987; Balkin & Gomez, 1987; Khota & Orne, 1989; Rumelt, 1991). This relationship is observed for both developing and developed countries (Kiggundu et al., 1983) with some differences existing as per the organizational structure and environment. The relationship has been much observed in developed countries under different settings (Porter, 1980; Vankatraman & Grant, 1986; Prescott & Vankatraman, 1990; Rumelt, 1991; Miller, 1996). The significance of the various studied factors have been well established on firms’ performance yet there is a scarcity of studies testing the factors holistically; as is normally done under case studies; by taking large samples and especially in developing countries (Andrews, 1987; Teoh, 1997; Hoskisson & Wright, 2000; Hafsi & Farashahi, 2002). Strategy formulation has always been the most critical and significant part of strategic management. The success of corporate strategy on depends on effective strategy formulation and eventual strategy implementation (Mubashir et al., 2012).

2.1.2 Corporate Finance & Corporate Strategy

Corporate finance and corporate strategy go hand by hand and as such emerging mutually as well integrated dimensions to get the competitive edge for the corporate units (Mubashir et al., 2012). Corporate strategic decisions are not taken exclusively, these decisions have to be well integrated
and synchronized with corporate financial decisions in relation to the firms’ financial strategy, so as to avoid any possible financial distress and probable bankruptcy (Mubashir et al., 2012). This study discusses the corporate financial strategies regarding financial decisions including liquidity, activity, profitability and solvency; that are considered detrimental for adding value to the business in terms of stockholders’ wealth maximization (Kim et al., 1998; Chathoth & Olsen, 2007; Su & Vo, 2010). Corporate liquidity as a corporate finance strategy affects the firms’ profitability (Saleem & Rehman, 2011). Corporate profitability on the other hand is a crucial factor for measuring the financial performance of the companies (Chathot & Olsen, 2007). Moreover financial performance of the firms has been the key issue for the stakeholders involved with the firms. Firms with higher profits tend to have high cash flows and as such more growth potential in future owing to the successful financial strategies adopted and implemented in the firms (Majumdar & Bhattacharjee, 2010).

2.1.3 Firms’ Performance - Resource Based & Structure Based View

The strategic management literature has always been keen in exploring the determinants of firms’ performance and the differences in these determinants across the firms and also across the industry (Jibao & Kai, 2010). The competitive advantage and the financial performance of a firm depend on how corporate financial strategies are devised about holding the strategic assets and the way they are financed (Kochhar, 1997). Moreover variety of factors that affect the firms’ performance including demand, supply, supplier relations, buyer powers, competitors, product differentiation etc. have been found to be affecting intensively in developing countries as the environment there is more volatile in terms of social and political aspects (Peng & Heath, 1996; Martinez & Nab, 2000; Scott, 2001). The industry specific factors hence are considered vulnerable due to such social and political factors (Brautigam, 1997).
The resource based view supports that the firm specific capabilities along with the available resources are equally significant for creating value through the idiosyncratic resources and thus the firm specific factors are considered key determinants of firms’ performance (Wernerfelt, 1984; Cool & Schandel, 1988; Dierickx & Cool, 1989; Wernerfelt & Hansen, 1989; Rumelt, 1991; Mauri and Michaels 1998; Schulze, 1992; Amit & Schoemaker, 1993; Chi, 1994; Brush et al., 1999; McGahan and Porter, 2002; Hawawini et al., 2003; Ruefli & Wiggins, 2003; McNamara et al., 2005; Hough, 2006). The resource based view of the firm requires equal attention from the academic and industry professionals regarding firms’ investment strategies (Wernerfelt, 1984; Barney, 1991) and financing strategies. In this context there are many differences in the literature regarding the source of competitive advantage (Dierickx & Cool, 1989; Barney, 1991).

The structure based view supports the industry specific factors as key determinants of firms’ performance (Porter, 1980; Schmalensee, 1985). Hence the role of industry specific factors and firm specific factors for firms’ performance is the core issue for strategic management research. Since the inception of the literature (Schmalensee, 1985; Rumelt, 1991) many studies have been conducted to explore the role of firm specific and industry specific factors on firms’ performance (Jibao & Kai, 2010).

2.1.4 Firms’ Performance & Value Relevance of Financial Statements

Capital markets and the economy have always been relying on the high quality accounting information reflected in financial statements for their efficient and smooth working. Similarly the significance of such high quality information cannot be overlooked for the investors, companies themselves and the accounting standard setting committees (Hellstron, 2005). Value relevance of
the financial information reflected in financial statements serve the purpose by defining the association between accounting information and market values. The value relevance of financial information reflected in financial statements have been becoming popular in finance research since it is considered as the fundamental factor reflecting the quality of financial statements (Francis et al. 2004).

Moreover the research regarding the development of the value relevance and the comparison of the value relevance across countries have become popular since 1990. Most of the literature found on value relevance of financial information is based on developed and efficient capital markets including New York, Washington, London, Tokyo, Hong Kong, and Singapore. The results of these studies have been significantly different in these countries (Karunarathne & Rajapakse, 2010).

Investors of the developed and the developing countries invest in capital market by relying on accounting information. It leads to strengthening of the capital market and as such it drives the economy towards growth, hence the value relevance of financial information is a critically significant issue for both developed and developing countries. It helps in relying on accounting information while taking various investment and financial decisions, and knowing the impact on stock returns (Karunarathne & Rajapakse, 2010). The most objectionable and observed variables in financial statements for value relevance have been earnings from income statement (Dechow, 1994; Cheng et al., 1996), book values from balance sheet (Collins et al., 1997; Chen et al., 2001; Jung & Kwon, 2009) and cash flows from cash flows statement (Cheang et al., 1996; Charitou, 1997; Black, 1998; Catherine, 2004).
Accounting researchers have developed various models to explain the variations in market value as per the changes in accounting values, and to test the relevance of accounting values. Some of the studies have identified that variation in stock prices is not explained by the variation in accounting earnings (Amir & Lev, 1996; Ittner & Larcker, 1998; Francis and Schipper, 1999; Trueman et al., 2000; Kothari, 2001; Liedtka, 2002; Liang & Yao, 2005). However studies supporting the value relevance (Kormendi & Lipe, 1987; Collins & Kothari, 1989; Sloan, 1996; Baber et al., 1999) pointed out that the value relevance depends on the type of variables considered and the methodology adopted to measure the relationships. The studies supporting value relevance usually measured it through the coefficient of determination (Collins et al., 1997; Dontoh et al., 2004) among the variables.

2.1.5 Firms’ Performance - Accounting Based Measures & Market Based Measures

The concept of valuation differs across the fields and the methodologies used to measure it. Accountants are more concerned about book values whereas economists are more cautious about fair value or intrinsic value. Similarly shareholders are more careful about market values of their holdings (Abuzayed et al., 2009). The book, market and intrinsic value differences serve as an indication for the investors regarding their expectation of returns in a certain security (Kothari, 2001).

The primary objective of corporate organizations is to maximize shareholders wealth through efficient generation and utilization of resources (Rappaport, 1998; Worthington & West, 2001; Worthington & West, 2004; Maditions et al., 2006, Maditions et al., 2009). All the firms try to achieve it through strategic financial decisions resulting in improvements depicted by accounting based measures. The stakeholders frequently use the accounting based measures including return
on assets, return on equity, earning per share, return on sales and operating cash flows (Worthington & West, 2001; Worthington & West, 2004) for taking certain decisions.

In 1980s while the capital markets were becoming international (Tortella & Brusco, 2003; Maditions et al., 2009) and the accounting results were getting prone to managerial manipulations for showing enhanced performance (Jensen & Murphy, 1990; Tortella & Brusco, 2003); investors were showing more interest in knowing the financial information for strategic decisions (Maditions et al., 2009). The accounting based measures started losing their significance as performance indicators and the finance experts started realizing need of some better improved financial indicators to reflect firm performance. Certain value based measures evolved as a result in 1990s. The supporters of these value based measures (Rappaport, 1986; Stewart, 1991; Stewart, 1994; Bacidore et al., 1997; Rappaport, 1998) were also convinced that these new value based measures are better indicators as against the conventional accounting based measures (Arabsalehi & Mahmoodi, 2012).

Despite the widespread use of these value based measures for indicating firm performance (Stewart, 1991; Stewart, 1994; Stern et al., 1995; Milunovich & Tseui, 1996; Uyemura et al., 1996; O’Byrne, 1996; Makhija, 1997; Lehn & Makhija, 1997; Bao & Bao, 1998; Forker & Powell, 2004; Worthington & West, 2004; Izadinia, 2004) as against the conventional accounting based measures; various studies depicted quite a weak or even no significant relationship between these value based measures and stock returns (Biddle et al, 1997; Kramer and Pushner, 1997; Zimmerman, 1997; Turvey et al, 2000; Chen & Dodd, 2001; Worthington & West, 2001; Copeland, 2002; Sparling & Turvey, 2003; Ismail, 2006; Maditions et al, 2006, Ismail, 2006; Palliam, 2006; Kyriazis & Anastasis, 2007; Maditions et al, 2009; Lee & Kim, 2009; Arabsalehi & Mahmoodi, 2011).
Some of the studies have shown mixed results and provided the evidence that the explanatory power of these measures is different across countries and it is significantly different between developing and developed countries (Harvey, 1995; Bhattacharya et al., 2001).

The association between book values and market values has gain importance after the contribution of Ohlson (1995) who explored the book values and market values as determinants of equity valuation. The studies have attempted to explain the differences in firm specific and industry specific factors as determinants of market values and book values differences. Both investors and researchers rely more on earnings components for explaining market values (Giner & Reverte, 1999; Chen & Wang, 2004). Evidences are there that the components of earnings are significant predictors of market value (Lipe, 1986; Ohlson & Penman, 1992). However the stock returns variations are found to be different in short run for the changes in earnings components, whereas the variations remained same over the long run (Ohlson & Penman, 1992).

2.1.6 Firms’ Performance - Financial Ratios Predicting Stock Returns

Financial statements reflecting financial performance of firm through accounting information are affected by the financial activities taken by the firms and the accounting systems followed and adopted by the firms (Palepu et al., 2004). Studies investigating value relevance of financial statements information (Trigrajan, 1993) and their effect on share returns (Abarbanell & Bushee, 1998) have considered five categories of financial ratios most commonly used by the firms (Ross et al., 2006) including profitability, solvency, liquidity, activity and market values. These ratios are useful for taking investment decision and predicting future performance of the firms (Ohlson, 1980).

2.2 Firms’ Performance & Capital Structure

2.2.1 Overview

Capital structure refers to the resources generated by the firms through internal and external sources of finance. The capital structure became the focus of researchers in late 1950s (Chakraborty, 2010), coming up with significant studies including Lintner (1956), Hirshleifer (1958) and Modigliani & Miller (1958). Though Modigliani & Miller (1958) proposed that corporate financing strategies have no impact on the overall market value of the firm, in case of perfect capital markets, yet in their further studies they agreed that the capital structure changes may lead to increase in the market value of firms, owing to the tax benefits of debt financing (Modigliani & Miller, 1963).

Capital structure determination has always been the most debatable issue in finance literature. Until recently the capital structure has evolved as the most researched and interesting area in finance (Karadeniz et al., 2009; Chakraborty, 2010) yet there is a question mark on the concept of optimal capital structure. In a nut shell, capital structure studies can be divided into two schools of thoughts the relevance theory and the irrelevance theory of capital structures for corporate valuation.

The later named as pecking order theory believes that there is nothing such as optimal capital structure. The cost of financing increases with asymmetric information and so the firms generate finance through internal sources first i.e. retained earnings and then through debt and then at the last through equity. This theory assumes that there is negative relationship between capital structure and corporate performance. Major studies advocating this proposition again include but not limited to Myers (1984), Myers & Majluf (1984), Kester (1986), Friend & Lang (1988), Titman & Wessels (1988), Rajan & Zingales (1995), Wiwattanakantang (1999), Wald (1999), Booth et al. (2001), Chiang et al. (2002), Fama & French (2002), Deesomsak et al. (2004), Abor

Yet there are many studies, including Tang & Jang (2007), Mehmet & Eda (2008), Ebaid (2009), Dimitrios et al. (2009), Saaedi & Mehmoodi (2011), Darush (2012), Faruk & Ayub (2012) and Mahdi & Zinat (2012) showing a very weak or insignificant impact of capital structure on corporate performance. On the other hand, Fama & French (2002) indicated that both are applicable and acceptable, whereas Myers (2003) concluded that the impact of capital structure on corporate valuation varies from firm to firm, as all firms are performing in different settings.

Some of the studies have considered capital structure decisions as results of managers preferences (Barton & Gordon, 1987; Barton & Gordon, 1988) board of directors decisions (Stearns & Mizruchi, 1993), and institutional investors’ choices (Chaganti & Damanpour, 1991), yet there are studies supporting the capital structure decisions as a precedent of firm strategy (Chatterjee, 1990; Chatterjee & Wernerfelt, 1991). The capital structure decisions of the firms; having an impact on the firms’ competitive advantage (Hennart, 1994); aligned with corporate strategy will add value for the firm. The studies have augmented the association between corporate strategy and capital structure decisions yet these studies could not suggest that how these decisions to be integrated with corporate strategy (Gupta, 1995).
This shows that until today there has been a mired controversy in the studies conducted to advocate the acceptability and applicability of one school of thought over the other one. Owing to the mixed results, the studying of empirical relationships between capital structure and firm performance still holds logical (Ebaid, 2009). Moreover the ultimate objective of financial managers is to maximize the shareholders’ wealth, so it is highly customary to identify how changes in capital structures would lead to attain that objective. Further, though such empirical relationships have been tested in mature capital markets, yet the emerging markets have a lot of potential to be explored in such context to further generalize the earlier findings (Ebaid, 2009). Such controversy and debate arises the need to explore the variables in Pakistani context for different sectors of the industry to see how changes in capital structure affects the corporate performance in an emerging capital market of Pakistan.

2.2.2 International Studies - A Chronological Review

Nour (2012) investigated the impact of capital structure on firm performance. The study took five performance measures including return on equity, return on assets, earnings per share, M/B and Tobin’s Q as dependent variables and four capital structure measures including short term debt, long term debt, total debt to total assets and total debt to total stockholders’ equity as independent variables. Panel data procedure was used for a sample of 28 listed companies of Palestinian Stock Exchange covering the period 2006-2010. The findings of the study concluded that capital structure has positive relationship with performance measures of the firm, in both book values and market values terms.

Darush (2012) studied the relationship between capital structure and the growth of firm. The study took 12,101 Swedish micro firms for the exploration of how growth of firms may affect
the choice of finance and how the opted choice affects the growth of that firm. The data for the years 2006-2007 were analyzed by using regression technique. The results concluded that retained earnings, size, age, industry type and short term debt affect growth of firm significantly. Long term debt was found to have no significant effect. The relationship between growth and capital structure confirmed the earlier findings of agency theory.

Sebastian & Rapuluchukwu (2012) stated that the significance of capital structures for corporate financial stability and growth cannot decrease especially after the recent global financial crises and its after effects. The study took data of 10 companies from Nigeria for the years 2002-2006 to investigate the matter. Cross sectional time series data were analyzed to conclude that there is a negative and significant impact of capital structure decisions on profitability for some debt measures and positive significant impact with some of the measures considered.

Uwalomwa & Uadiale (2012) investigated the impact of capital structure on financial performance of 31 Nigerian listed firms from Nigerian Stock Exchange. Financial data for the years 2005-2009 was analyzed by using the ordinary least square method for observing the variables. The study found significant positive relationship between short term debt and performance, whereas negative relationship between long term debt and performance. The study concluded that highly financed firms in terms of long term debt are more prone to have low financial performance.

Mihai (2012) studied the linkages between capital structure and the corporate value as measured by increasing/decreasing indices of asset capitalization. They developed a profile of the efficient organizations in terms of their financing decisions. Mathematical model was developed for such classification. 80 listed companies from Bucharest Stock Exchange were selected to conduct the
study. Financial ratios, multiple correspondence factorial analysis, principal component analysis and discriminant analysis were used to generalize the results.

Amaral et al. (2012) compared the two theories by applying the tests (Sunder & Myers, 1999; Rajan & Zingales 1995). For this purpose data of non-financial listed companies of Brazil were taken for the years 2000-2010 to test the behavior of the two theories. The results preferred the existence of pecking order.

Heydar et al. (2012) investigated the impact of capital structure on firm performance. The study took return on equity, return on assets, earnings per share, market to book and Tobin’s Q as performance indicators of the firm and short term debt to total assets, long term debt to total assets, total debt to total assets and total debt to TSHE as capital structure measures. 28 companies listed from Vehicles and Parts Manufacturing sector of Tehran Stock Exchange were taken for analysis. Results showed that some of the firm performance measures are significantly and positively related to capital structure decisions, whereas some are negatively related to capital structure decisions.

Mahdi & Zinat (2012) stated that capital structure decisions involve most complications and intricacies among all financial decisions. To attain lowest cost of capital and maximize the value finance controllers must evaluate the factors affecting capital structure. The study investigated 53 listed companies from Tehran stock exchange for the period 1999-2010. The ordinary least square regression analysis showed that profitability, risk and tangibility significantly affect short term debt, long term debt and total debt. Size was found to have no relationship with debt variables.
Faruk & Ayub (2012) attempted to explore the industry specific factors as determinants of capital structure of Bangladeshi companies. The study took 39 listed companies from Dhaka Stock Exchange for the period 2003-2007. The study found that profitability, tangibility, liquidity and managerial ownership are significantly and negatively related to debt financing, whereas growth and non debt tax shield are positively and significantly related to debt financing. The study found no relationship between size, earnings volatility, and dividend payment and debt financing.

Salawu et al. (2012) investigated the impact of corporate financial policy and industry specific characteristics on corporate performance. Panel data analysis was run on the data taken form 70 listed companies covering years 1990-2006. Pooled ordinary least square, fixed effect model and generalized method of moment panel model were applied for the measuring of relationships. The results showed that long term debt, tangibility, corporate tax rate, dividend policy, financial and stock market development have positive association with corporate performance whereas growth, size and FDI have negative association with corporate performance.

Agnes et al. (2012) examined the impact of firm size on sources of entrepreneurial finance for small and medium enterprises of Thika district in Kenya. 259 firms were selected through stratified random sampling out of total 800 firms. The study used survey method by administering a questionnaire. Primary data were collected through business owners and financial managers. The study found no association between firm size and the sources of entrepreneurial finance.

Nguyen et al. (2012) investigated the existence of optimal capital structure and its impact for maximizing the firm value. The study attempted to explore the effect of capital structure on firm
value for 92 seafood processing companies from Vietnam. Financial data for years 2005-2010 were used to test the relationship between the observed variables. Return on equity was used to measure firms’ value and debt ratio was used to measure capital structure decisions. The results empirically supported the positive linkages between debt ratio and firm value for the moderately debt financed firms, whereas negative linkages between debt ratio and firm value for the heavily debt financed firms. Hence the relationship was found to be nonlinear and convex.

Mehdi et al. (2012) empirically investigated the inter industry differences in capital structures of 8 companies listed at Tehran Stock Exchange during the years 2001-2009. Using one way ANOVA the study found significant differences in the capital structures across different sectors.

Ahmad et al. (2012) investigated the impact of capital structure on firm performance of 58 Malaysian firms from two major sectors of Malaysian market. Financial statements data were taken for the ears 2005-2010. Return on assets and return on equity were studied for variations against the changes in short term debt, long term debt and total debt. Size, growth of assets, sales growth and efficiency were taken as control variables. The study found significant relationship of short term debt and total debt with return on assets, whereas return on equity was found significant for all levels of debt.

Gupta (2011) stated that financing decisions the most critical decisions for finance professionals, having direct impact on capital structure and financial performance of the firms. The study took the data of 100 listed companies from National Stock Exchange of India, covering 5 years period 2006-2010. The results supported that capital structure significantly affects the financial performance.
Faris (2011) examined the relationship between capital structure and debt financing of 15 out of total 28 companies listed at Palestine Stock Exchange over the years 2000-2004. The variables studied included profitability, leverage (total debt, short term debt and long term debt), liquidity, age and asset structure. Firm size and sales growth were taken as control variables. Panel data technique was used to test the results. The one way ANOVA showed no significant differences in debt financing, whether long term debt or short term debt, in all four sectors of industry. There have been insignificant differences among the companies in relation to growth, size, age, tangibility, liquidity. The study concluded that capital structure is positively and significantly related to tangibility, whereas no significant relationship was observed for other variables.

Pratheepkanth (2011) attempted to explore the effect of capital structure decisions on corporate financial performance. The study took five years financial data of listed companies of Sri Lanka. The results indicated negative association between the capital structure decisions and corporate financial performance.

Bistrova et al. (2011) discussed in their study that the search for optimal capital structure still persist after the extensive research on the said area for the last more than fifty years. The topic is still customary especially after the market turmoil of 2008. Researchers are still looking for the extents to which debts should be taken by different firms to maximize their value and minimize their overall cost of capital. The study investigated the impact of capital structure decisions on the performance of stocks and on the profitability of the companies listed in Baltic Stock Exchange. The study considered the data of 36 blue chip companies covering the years 2007-2010. The study found positive association between stock performance and equity capital, and a negative association between debt financing and profitability of capital, supporting the assumptions of pecking order theory.
Azhagaiah (2011) established the hypothesized relationship between capital structure, business revenues and profitability of Indian IT firms. The study categorized Indian firms on two basis, i.e. business revenues and asset size. The firms were categorized as low, medium and high revenue firms and as well as small, medium and large sized firms. 8 years data covering period 1999–00 to 2006–07 of 102 firms were taken for analysis. Multi-Stage Sampling Technique was used for selection of companies listed in Bombay Stock Exchange of India. The study concluded that there is a strong positive relationship between the capital structure and profitability variables i.e. return on equity, return on assets and return on capital employed. So the debt financing was suggested for Indian IT companies to maximize profitability.

Mojtaba & Shahoo (2011) investigated the association between accounting measures of profitability and capital structure decisions for performance evaluation of 101 listed firms from Tehran stock exchange for the period 2005-2010. Multiple regression tests were run for obtaining t and F statistics. Results indicated a significant association between capital structure and profitability measure return on assets, whereas no linkage between capital structure and return on equity.

Nor et al. (2011) identified that target capital structure exist and the determinants of the target capital varies from country to country. The study selected South East Asian countries for analysis and review. The study analyzed the impact of country specific determinants along with the industry specific determinants on the capital structure decisions across the studied countries. The study found differences in significance of industry specific determinants of capital structure decisions. The country specific determinants including the stock market development level, development of bond market, economic growth, interest rates and the support from country governance were also found to be varying across the studied countries. The study augmented the
existing literature and documented the strong evidence of companies pursuing target capital structure in the studied countries. The study concluded that the capital structure decisions are not only affected by industry specific characteristics but also influenced by the country specific factors like institutional environment and corporate governance.

Simon & Afolabi (2011) studied capital structure variations and their impact on profitability for 5 listed companies of Nigeria taking the financial data of years 1997 to 2007. Panel data was used for regression results. Debt and equity financing were analyzed for bringing changes to profitability measured through profitability index. The findings depicted positive linkages between equity financing and performance of the firms and negative association between debt financing and the performance of firms.

San & Heng (2011) investigated the linkages between capital structure decisions and corporate performance valuation of construction industry firms of Malaysia. Financial data of 49 companies listed at Bursa Malaysia for the years 2005-2008 was used for analyzing the relationship. The companies were differentiated as large sized, medium sized and small sized units on the basis of paid up capital. The results depicted significant association between the studied variables. The study concluded with significant differences in relationship of leverage and performance across the companies.

Chen & Chen (2011) empirically explored the determinants of capital structure decisions and their impact on value of the firms in a country moving towards industrialization. Firm specific factors were tested as per the earlier theories by adding the role of capital structure as mediator for creating value due to changes in the studied firm specific factors. The test was conducted on the financial statements data of 647 companies listed at Taiwan stock exchange for the years
2005-2009. The results suggested that size, profits and asset structure explained the changes in capital structures of the firms, whereas size, profits and capital structure affect the book value of the firms. Market value of the firms was found to be affected by profits and size of the firms. Capital structures were found to be significantly different across industries; moreover the explanatory variables were affecting book values and market values of the companies differently across the studied industries.

Rasiah & Kim (2011) conducted a comparative analysis of pecking order, agency cost and static theories to identify the one which better explain capital structure decisions. The study observed that all of the theories adjust for the variances in firm specific factors. Evidences were obtained for trade off theory variables supporting the financing decision under the pecking order model whereas pecking order variables were identified as used for adjustments under the trade off model. Hence it was empirically concluded that the pecking order and the static theory are not mutually exclusive.

Caglayan (2011) investigated the factors affecting capital structure decisions of Turkish firms by observing the capital structure differences of the selected firms using Quantile regression. Debt to equity financing ratio was measured through short term debt, long term debt and total debt to identify the differences empirically. The results supported the presence of pecking order theory.

Naser et al. (2011) investigated the impact of industry specific attributes on capital structure decisions of insurance sector of Bahrain, by taking financial data for the year 2005-2009. The study using multiple linear regression models concluded that tangibility, profitability, size, revenues and liquidity determine the capital structure of insurance industry.
Saaedi & Mehmoodi (2011) investigated the association between capital structure and firm performance. Return on assets, return on equity, earnings per share and Tobin’s Q were considered for evaluating firms’ performance as dependant variable. Long term debt ratio, short term debt ratio and total debt ratio were considered for measuring capital structure as independent variable. Panel data technique was used to investigate the impact of capital structure on firms’ performance of 320 companies listed on Tehran Stock Exchange for the period 2002-2009. The results concluded that the firms’ performance is significantly and positively affected by the capital structure, in terms of earnings per share and Tobin’s Q, whereas significantly and negatively affected by the capital structure, in terms of return on assets. No significant association was found between capital structure and return on equity.

Honghai (2011) studied the capital structure of firms where shareholders controlling the affairs are deciding about the debt financing in a poor legal protection environment. A dynamic model was used to analyze how such shareholders exploit the debt financing benefit in such environments. Financial data of Chinese publicly listed companies were taken for the study, covering the period 2004-2007. Ordinary least square and panel data techniques were used to generalize the results. The study concluded that the debt financing can be monitored well by bringing improvement in legal environment and reducing government interferences.

Monica & Abir (2010) isolated the factors that affect capital structure as per various explanatory theories presented in literature. The study selected 963 listed Indian companies from Bombay Stock Exchange covering the period 2004-2008. The findings suggested a negative relationship between the debt financing and growth, liquidity and the interest coverage. Size and debt financing were positively related.
Koes et al. (2010) empirically examined the determinants of corporate financial distress. For this purpose listed public non financial companies of Indonesia were taken for the years 2004-2008. Panel data regression results showed the effect of internal and external factors on corporate financial distress. Liquidity, efficiency, equity and financial condition as a dummy variable were positively and significantly related to debt service cover; proxy used for financial distress. Debt financing was negatively and significantly related to debt service cover. Profit, retained earnings, corporate governance and macroeconomic factor were found to have no significant association with corporate financial distress.

Omorogie & Erah (2010) studied capital structure decisions and their impact on corporate performance for Nigerian companies. Financial statements data for the years 1995-2009 was used for analyzing the observed relationship. The study hypothesized the existence of appropriate capital structure necessary for better corporate performance of the Nigerian companies due to their higher dependency on debt financing for expansion. On the basis of earlier literature five variables were tested to establish linkage between the studied variables. Results based on ordinary least squares indicated that the explanatory variables have statistically significant association with capital structure decisions.

Shahjahanpour et al. (2010) tried to explore the variables affecting the capital structure decisions of companies through cross sectional analysis. The study attempted to verify the applicability of the two theories of capital structures on the selected companies. Financial data for years 2007-2008 of the companies listed at Tehran stock exchange was taken for analyzing the relationships. Short term debt and long term debt ratios were used as proxy for measuring the probable relationship. Liquidity, tax rate, dividend payout and non debt tax shield were taken as
explanatory variables. Correlation and multiple regression based results depicted that capital structure decisions of Iranian companies are more oriented towards the pecking order theory.

Onaolapo & Kajola (2010) examined the impact of leverage on corporate financial performance. 30 non financial listed firms were taken from Nigerian Stock Exchange covering years 2001-2007. Panel data and Ordinary Least Squares were used to measure the results. The study concluded that leverage is significantly and negatively related to corporate performance.

Chowdhury & Chowdhury (2010) supported the conventional impact of capital structure on firm value despite the finance literature trying to explore new dimensions of the theory. The study attempted to get an empirical evidence of relevance of capital structure decisions with corporate value. The study explored how capital structure decisions affect the corporate value for the differences in size, industry and growth opportunities. For the analysis purposes, financial statements data of the Bangladeshi companies listed at Dhaka and Chittagong stock exchanges were taken. The companies were selected from four major industrial sectors including engineering, food & allied, fuel & power and chemical & pharmaceutical. Comparative analysis based results indicated strong positive relationship between the studied variables.

Tarek & Mohamed (2009) stated in his study that all the three fundamental theories of capital structure are unable to completely answer as to what are the actual factors affecting the capital structure of corporate organizations. The study uses different statistical models for long term and short term financing decisions to test the validity of existing theories. Data was taken from Egypt stock market. The results indicated that four tested models supported the trade off theory.

Pinar (2009) investigated the factors affecting capital structure decisions of 247 non financial firms. Study took listed companies from Istanbul Stock Exchange for the years 1996-2004. The
study found that profitability, tangibility, size and liquidity are significantly and negatively related to capital structure decisions. Growth and risk were found to be significantly and positively related to capital structure decisions. Market value of stock was significantly and negatively related to short term debt.

Suhaila & Wan (2009) studied and tested the factors affecting capital structure decisions of 17 Malaysian listed firms covering the period 2000-2005. Pooled ordinary least square estimations showed that size, liquidity and interest coverage have significant negative relationship with total debt, whereas growth is positively related to capital structure.

Chou & Lee (2009) explored the optimal capital structure for enhancing and optimizing the firms’ performance maintaining the risk of the firm. The study analyzed the impact of capital structure changes on return on equity for 37 selected firms from non financial sector of Taiwan. Financial statements data for the years 1987-2007 was used for testing the relationship. The study empirically evidenced the existence of an optimal capital structure for the studied companies as per trade off theory assumptions. The results supported the association between capital structure and return on equity as a nonlinear function.

Parsons & Titman (2009) reviewed the earlier literature on capital structure. The study first of all identified the factors significantly affecting the capital structure decisions by substantiating the earlier cross sectional studies. Secondly the study reviewed how changes occur in capital structure decisions and the factors that drive the companies away from the optimal or target capital structures. Moreover it was explored that what financing options may get the firms back to the optimal or target capital structures. Finally the study reviewed the literature dealing with aftermaths of leverage rather than the factors causing it.
Frank & Goyal (2009) evaluated the rejection of static trade off theory and observed that the earlier literature has misinterpreted the evidences due to using of improper methods. The study showed that firms with high profits more rely on debt and prefer repurchasing of equity, whereas the firms with low profits lesser rely on debts and prefer equity financing. Moreover it was observed that size of the firms bear a mediating role in the relationship of capital structure and firm performance. Large sized firms were found to be more aggressive debt financing whereas small sized firms were found to be more aggressive in equity financing. The study also considered the exogeneity problems in studying capital structure relationship with firm performance. Moreover the impact of market condition on capital structure decisions was also focused and it was empirically observed that small sized and low profitable firms usually get more affected due to worse market condition whereas the large sized and more profitable firms usually get less affected by such conditions.

Maurizio et al. (2009) discussed that the earlier empirical financial literature has been paying lesser attention to the impact of diversification strategies on financial decisions. The study analyzed how financial strategies of multi business firms are relevant to the diversification. The findings explained earlier contradictory results on determinants of capital structure.

Ebaid (2009) studied the effect of capital structure on corporate performance in Egypt being an emerging market. Multiple regression tests were run to measure the impact of capital structure on three performance variables namely return on equity, return on assets and GPM. Sample was taken from non-financial listed firms of Egypt, covering period from 1997 to 2005. The study concluded that the capital structure decisions have weak or no impact on corporate performance.
Karadeniz et al. (2009) investigated the factors affecting capital structure of listed companies at Istanbul Stock Exchange. Both trade off and pecking order theories were empirically tested. Panel data approach was used for five companies covering the period 1994-2006. The study found negative relationship of the variables; effective tax rates, tangibility of assets, and return on assets with the capital structure. Positive associations were observed for the variables free cash flow, non-debt tax shields, growth opportunities, net commercial credit position, and firm size in relation to capital structure. The findings partially supported both of the theories.

Dimitrios et al. (2009) found that different methodologies adopted lead to different results while testing the validity of the pecking order theory. Greek firms’ financial statements data were taken for analysis along with some primary data collected through detailed questionnaires. The study concluded that negative relationship between capital structure and corporate performance does not imply that pecking order theory holds. There is a need to further investigate the factors affecting the financing decisions.

Maran (2009) stated that the primary reason of corporate restructuring is always being enhancing the survival of firms for a long time period, through achieving more efficiency and cost effectiveness. Financial restructuring is not an exception to that since capital structure changes are always required. The study explored the companies on the basis of their life cycle, type of business and industry specific characteristics. The study, after analysis of capital structure in given settings, suggested that researchers should look into the capital structures in more details in different settings.

Zurigat (2009) stated that pecking order and trade off theories of capital have thrown light on the financing behaviors of firms however still there is lesser empirical literature on the implications
of these theories in developed and developing countries. The study took financial data of 114 non-financial listed firms from Jordan by selecting 62 industrial sector companies and 52 service sector companies. Evidence of equity not as the last option was found. The Jordanian companies were observed to be more oriented towards debt repayments and utilization of internal funds rather than increasing debt financing. The studied firms were found to be adjusting for their target leverage ratio.

Gill et al. (2009) extended the results of a study (Biger et al., 2008) by further exploring the determinants of capital structure decisions through empirically testing the effect of leverage on profitability of firms. The results supported negative relationship between capital structure and profitability of the studied firms. The study presented with some useful evidence for the studied industry to manage the capital structure decisions accordingly.

Muradoglu (2009) investigated the relevancy of capital structure for equity value by integrating the Modigliani Miller (1958) with an investment approach whereby abnormal returns of leveraged and risky stocks were estimated for a time series data. The study found that the in most risky portfolios’ abnormal returns decline while leverage increases. However abnormal returns tend to increase as there is an average increase in leverage.

Lin (2009) attempted to resolve the controversy in earlier studies to augment the capital structure literature. The study found that the expected default risk is directly proportional to the leverage of the firms in China. The effect of state and institutional ownership on debt financing was found only in highly debt financed firms. The findings supported the propositions of Fattouch et al. (2005) and Ofek (1993), whereas contradicted with those of Huang & Song (2006) and Zou & Xiao (2006).
Jasim et al (2009) studied the leverage of 53 Saudi companies for the period 2003-2007. The two theories; tradeoff and pecking order were tested to generalize propositions related to the determinants of capital structure of Saudi companies. Regression models; pooled ordinary least square and panel techniques were employed to test the hypotheses. Results suggested that capital structure is positively related to profitability, growth opportunities, size and institutional ownership, and is negatively related to liquidity, dividend payment, business risk, family ownership, government ownership and tangibility.

Mehmet & Eda (2008) studied the relevance of Pecking Order Theory for capital structures of companies listed at Istanbul Stock Exchange for the period 1993-2007. Panel data analysis was done to estimate the relationship between capital structure and profitability, liquidity, asset structure, sales size and firm growth. The results indicated that profitability, liquidity and sales are negatively related to capital structure confirming the propositions of pecking order theory. Growth has no significant relationship whereas asset structure had positive association with capital structure.

Xiaoyan (2008) stated that the selection of capital structure is related to a variety of factors. the study took into consideration the conventional literature on capital structure including trade off theory, agency theory and pecking order theory. The study concluded that capital structure choice is determined by tangibility, tax, size, profitability, growth, volatility and liquidity.

Huat (2008) pointed out that lesser studies have been conducted on capital structure theories in developing countries as against developed countries. The study tried to fill this gap by studying the capital structure decisions of 155 listed companies from ASEAN key stock exchanges. Financial data for years 2003-2007 were analyzed and the results indicated a negative association.
of leverage with profitability and growth of the companies for all ASEAN countries. Non debt tax shield was observed to be negatively affecting leverage for Malaysian companies whereas size of the firm was seen to be positively affecting leverage for Indonesian and Philippines companies.

Richard (2008) hypothesized that the use of debt financing is determined by the firm’s unused borrowing capacity. The study confirmed the findings of pecking order theory. The study confirmed the hypothesized relationship.

Coleman (2007) examined the impact of capital structure on the performance of microfinance institutions. Panel data analysis was done using fixed and random effects techniques, for the 10 years data from 1995-2004. Findings revealed that mostly microfinance institutions are highly leveraged and as a result perform better due to more clientele and economies of scale. Consequently they are better managing their risks.

Eriotis et al. (2007) studied the determinants of capital structure as per different explanatory theories. Panel data procedure was conducted on a sample of 129 Greek companies listed on the Athens Stock Exchange covering the period 1997-2001. Debt ratio, size of the firm, growth of the firm, quick ratio and interest coverage ratio were explored as determinants. Findings suggested that there is a negative relationship between the debt ratio and capital structure. Similar relationships were found for growth, quick ratio and interest coverage. Positive relationship was found between size and capital structure.

Margaritis & Psillaki (2007) investigated the two way association between leverage and the firm performance; by taking a sample of 12,240 companies of New Zealand. The study supported the propositions of agency cost model (Jensen & Meckling, 1976). Firm efficiency was found to be
positively related to leverage Data Envelopment Analysis method was used. Quantile regression analysis showed that the reverse causality effect of firm performance on capital structure decisions is positive for low and medium debt level and negative at high debt level.

Maurizio (2007) also focused the association between capital structure and corporate value. The study discussed that due to the lesser attention on capital structure linkages with corporate governance, the empirical results have always been controversial. So by incorporating corporate governance in the studies as a mediating and/or moderating variable, better results could be obtained for capital structure and the corporate performance. The study presented a theoretical and descriptive model to assist in exploring the relationship among capital structure, corporate governance and firms’ value.

Zeitun & Tian (2007) investigated the impact of leverage on corporate performance. Panel data was used from 167 listed companies of Jordan covering the period 1989-2003. The results indicated that firm’s leverage is significantly negatively associated to corporate performance in both accounting measures and market value measures. short term debt to total assets was significantly and positively related to market performance measure Tobin’s Q.

Abdussalam (2006) conducted a study to analyze the effects of structure of firm on the profitability. The study explored firm size, age, leverage and ownership structure of 48 companies listed at Amman stock exchange belonging to different industries of Jordan. Financial data for 10 years from 1995-2004 was analyzed for getting the results regarding effect of explanatory variables on return on equity and return on investment. The findings supported that firm structure is significantly affected by its profitability. Leverage was the only variable found having strong association with profitability.
Nguyen & Ramachandran (2006) studied the factors affecting the capital structure decisions of small and medium sized enterprises of Vietnam. The results of the study observed more usage of short term financing. Moreover ownership of the firm also had significant impact on financing decisions of the studied firms. Evidence of positive relationship was found between growth, business risk, size and networking and relationships of the firms with banks and the capital structure decisions of the firms. There was negative association of tangibility with capital structure decisions. Profitability was observed as insignificant factor in context of capital structure decisions of the firms.

Laura & Rodolfo (2006) explored the relationship of liquidity and leverage. The study found that increase in leverage improves liquidity and when liquidity deteriorates it increases the leverage of firms. The results augmented earlier literature to understand the complexity of association between capital structure and liquidity.

Buferna et al. (2005) empirically studied the determinants of capital structure of Libyan companies to evidence the existence of capital structure theories in a developing country and to identify the effect of secondary market lacking in Libya. The results based on cross sectional ordinary least square regression depicted the existence of trade off and agency cost theories in Libyan market, whereas lesser support of pecking order theory was found.

Frielingshaus et al. (2005) presented an argument for the relationship between capital structure and the life stage of the firms. The study on the basis of earlier theories proposed association between the life stage of the firms and their capital structures. Adizes (1996) life stage model was used to identify the life stage of the selected companies. The study observed statistically significant linkages between life stages of the firms with their capital structures. It was found that
the firms use more debt financing in the earlier and later stages of life, hence it supported the pecking order theory propositions.

Abor (2005) studied the impact of capital structure on profitability of listed companies of Ghana from the Ghana Stock Exchange for 5 years. Regression analysis was used to test the relationship and to estimate the variability in return on equity due to changes in capital structure. The results showed significant positive relationship between short term debt to total assets and return on equity. Negative relationship was found between long term debt to total assets and return on equity. Significant positive relationship was observed between total debt and return on equity. The study suggested that profitable companies should rely more on debt for further financing.

Arsiraphongphisit & Ariff (2004) augmented the earlier literature on capital structure decisions and firm value, by reporting new findings regarding how capital structure changes affect value of the firm when the relative change in capital is measured against the median of industry. The firms closer to industry median were found to be more profitable for the changes in capital structures as against the companies those are away from the median of industry. Hence it was supported that capital structure decisions across industries differently affect the firm value as per industry standards.

Allen (2003) discussed that the literature of corporate governance supports that the capital structure affects agency costs and as a result affects the firm performance. The study followed a new approach to test the convention by setting profit efficiency as a benchmark for the best performing firms in same settings. Reverse causality of firms’ performance and capital structure was also tested. Data of banking industry from US was taken for analysis, and the results were found to be significantly strong.
Sogorb & Lopez (2003) evaluated the two main theories of capital structure determination in small and medium enterprises. Panel data analysis was conducted through five years financial data from 1994 to 1998 to test the relationship empirically for the 6482 selected companies from Spain. The results supported both of the theories explaining capital structure decisions of the firms. The firms were observed to be particular about optimal capital structure but less oriented towards adjusting their debt financing as per financing requirements.

Mesquita & Lara (2003) stated that capital structure determination is one of the difficult decisions involving risk and return, and it becomes even more difficult for the companies operating in the country with high economic instability. The study attempted to identify the impact of capital structure decisions on profitability of Brazilian companies. Financial statements data of 70 companies for the 7 years period was taken for analysis. Ordinary least square method was used to establish linkages between return on equity and long term and short term financing. The results concluded that there is a positive relationship between return on equity and short term financing and negative association between return on equity and long term financing.

Eriotis & Neokosmides (2002) constituted to explore the impact of leverage on corporate performance considering the level of investment and market power of the firm. The study used panel data of different industries for the year 1995-96. The study concluded that internally financed firms are more profitable as against externally financed firms. Moreover it was observed that firms prefer to compete than to cooperate. Firms prefer to invest more in fixed assets to enhance profitability.

Pandey (2002) evaluated the capital structure decisions and their effect on firms’ performance. The study found diversified association between capital structure decisions and market value of
the company. The firms with higher and lower market value were found to be highly debt financed whereas firms with moderate market value were having lesser debt financing. Hence a convex relationship was observed between variables.

Pandey (2001) studied the factors affecting capital structure decisions of Malaysian companies. Financial data of the selected companies for years 1984-1999 was used for analyzing the relationship. The time period was divided into four segments depicting changes in capital markets of Malaysia. Capital structure was measured through classifying debt financing into short term debt, long term debt and total debt. Book and market value of debt were taken for regression run. The results indicated that all debts are significantly influenced by profit, size, growth, risk and tangibility. The results were in line with earlier such studies. Market to book value was found to have no significant relationship with any type of debt financing, in the Malaysian market. The results despite robustness were expected to change over time; however the study confirmed the propositions of pecking order theory for an emerging market.

Wald (1999) examined the determinants of capital structure in US, Japan, UK, France and Germany. Most of the factors were found to be same with some factors significantly different across countries. Risk, profitability, size, and growth were having significantly different as against long term debt to total assets of the studied countries. The reason may be due to the differences in tax rules, agency issues, bankruptcy costs, asymmetric information and conflicts between shareholders and creditors.

Dhankar & Ajit (1996) stated that optimal capital structure and its linkage with corporate performance in developed and emerging economies has always been a matter of perplexity among academic and industry professionals. The study attempted to test the existence of optimal
capital structure and its impact on value of firms in India. The study found no significant association between capital structure changes and the value of the firms, since the value was found to be affected by multiple factors along with capital structure decisions. Moreover study pointed out that certain other non measurable factors do have an impact on value of firms including industry specific, firm specific and economy factors. the study advocated that micro factors do affect the value but the overall effect of these variables become insignificant. Companies were having significantly different capital structures regardless of the type of industry, hence their determinants of capital structures are expected to be different. Cost of capital was found to be negatively associated to changes in capital structure. The study concluded that companies from developing countries like India do not observe capital structure determinants as formally as in developed western countries.
2.2.3 Local Studies - A Chronological Review

Javid & Imad (2012) investigated the determinants of debt financing of nonfinancial firms listed at KSE of Pakistan covering the period 2008–2010. The results showed that large sized firms were having more access to long term debt borrowing as against small sized firms. Similarly firms having high growth rates found to be using lesser long term debt. In addition such firms prefer debts with lesser restrictions for more financial flexibility. Firms having higher fixed assets were found to prefer debt financing by putting their assets as collateral and getting low cost financing. This supports the trade off convention. Firms with high profits were more relying on internal resources, as in pecking order theory. The study confirmed the presence of inertia effect and industry specific effect.

Khan (2012) studied the impact of capital structure decision on firms’ performance. Pooled ordinary least square regression test was run for 36 listed firms taken from engineering sector of Pakistan. Data was taken for the years 2003-2009. The findings concluded that leverage measured in terms of short term debt to total assets and total debt to total assets is significantly and negatively related to firms’ performance measured in terms of return on assets, gross margin and Tobin’s Q. Engineering sector firms of Pakistan were found to be more relying on short term debt with strapping covenants affecting the performance of such firms.

Akhtar et al. (2012) stated the significance of capital structure decisions as a critical domain of finance having its impact on cost and value for the companies. The study explored the determinants of capital structure decisions of 30 textile sector companies of Pakistan. Leverage was tested for changes due to changes in size, growth, financial expense, profits and tangibility. Results based on descriptive statistics, correlation and regression indicated the spinning units of
textile sector companies are more relying on internal financing than external due to their size and capital structure issues.

Aurangzeb & Haq (2012) studied the factors affecting capital structure decisions of textile sector companies of Pakistan. Financial data for the years 2004-2009 was used for running multiple regression to analyze the association between leverage and performance measured through size, tangibility, profitability and sales growth. The results supported significant impact of all performance variables on leverage. Size, tangibility and profitability were positively associated to leverage whereas sales growth was negatively associated to leverage.

Memon et al. (2012) attempted to explore the variables explaining capital structure decisions of textile sector firms of Pakistan and to identify their impact on financial performance. Financial statements data of 141 listed textile firms was taken for the years 2004 to 2009. Financial performance was measured through return on assets and size, tangibility, debt to equity ratio, tax expense, firm’s growth and business risk were taken as factors affecting capital structure decisions. The results showed the significance of all variables as determinants of capital structure decisions and their impact on financial performance.

Awan et al. (2011) attempted to identify the variables explaining capital structure decisions of listed sugar companies of Pakistan. The study pointed out that capital structure decisions are affecting differently as per the industry specific differences. The financial data of 33 listed sugar firms from Karachi stock exchange for the years 1999 to 2004 was taken for analysis. Firm size, tangibility, profitability and growth were tested for changes due to changes in capital structure decisions. Panel data analysis using pooled regression showed high significant relationship
between tangibility, profitability and leverage whereas no significant association was found between firm size, growth and leverage.

Ali (2011) explored the role of factors affecting capital structure decisions of non financial listed Pakistani firms selected from Karachi stock exchange for the years 2003-2008 to determine the variables explaining the capital structure decisions of selected firms. The results indicated statistically significant relationship of profit, size, tangibility, growth, dividend and inflation with leverage. The results supported the presence of pecking order theory, static trade off theory and market timing theory in capital structure decisions of Pakistani firms. Moreover the firms were observed to behave differently across industries.

Nadeem & Zongjun (2011) explored the factors affecting capital structure decisions of manufacturing firms. The study tested whether the western capital structure theories explain capital structure decisions of Pakistani companies. The study took into consideration trade off theory, agency theory, pecking order theory and free cash flows theory to develop testable hypotheses regarding capital structure determinants of manufacturing sector companies. Panel data of 160 listed companies from Karachi Stock Exchange for the period 2003-2007 was tested for analysis. The results suggested that profitability, liquidity, earnings volatility, and tangibility negatively related to leverage whereas firm size is positively related to leverage. Non debt tax shield and growth were not significantly associated to leverage. The findings confirmed the propositions of trade off theory, pecking order theory, and agency theory. The study concluded that the theories derived in West are somehow explaining the capital structure decisions of Pakistani firms.
Memon et al. (2011) attempted to identify the determinants of capital structure of 16 listed companies from Food & Personal Care sector of Pakistan. The sample was taken from KSE covering years 2001-2008. Pooled regression results showed that capital structure is determined by size, tangibility, profitability, growth, tax rate and earning volatility. Growth and size were positively associated with capital structure.

Jasir (2008) stated that while identifying the optimal capital structure a firm analyses variety of factors affecting the decision. In Pakistan mostly firms rely on equity financing since bond market is not yet that developed in the country. Moreover banks prefer to offer short term secured loans, and the companies are also mostly medium sized, so long term financing is not that much used by companies. The study found that despite increasing profitability, Pakistani companies are less oriented towards debt financing supporting the findings of Pecking Order Theory.

Rafiq et al. (2008) attempted to isolate the determinants of capital structure of 26 out of 39 listed companies from chemical sector of Pakistan. The study found that by studying the capital structure of an industry separately, one may arrive at the unique factors affecting the financing choices, rather than studying the variable for the combination of industries together. The study took sample from Karachi Stock Exchange covering years 1993-2004. Pooled regression was used for the panel data analysis. The results confirmed that capital structure decisions are affected by size, tangibility, profitability, income variation, non debt tax shield and growth.

Saeed (2007) tested the existence of capital structure theories in listed energy sector firms of Pakistan by selecting 22 companies and taking their data for years 2001-2005. The regression
results indicated that the energy sector of Pakistan is following both approaches; static trade off theory and pecking order theory, for determining their capital structure decisions.

2.3 Firms’ Performance & Liquidity

2.3.1 Overview

Working capital management has been the most imperative area of financial management (Jose et al. 1996, Deloof 2003), since the liquidity has direct impact on profitability of the firms (Gentry, 1988) and the effective working capital management leads to attain competitive edge (Mullins, 2009). It deals with managing profit, risk and the market value, so it involves trading off between the risk and profitability (Smith, 1980).

The concept of working capital management was evolved by Karl Marx somehow in a different way using the term variable capital for that (Bhattacharya, 2006). The term was initially defined as current assets minus current liabilities (Guthmann and Dougall, 1948), later on elaborated as management of current assets and liabilities (Park & Gladson, 1963). Current assets include cash and cash equivalents, marketable securities, receivables and inventory whereas current liabilities are composed of accounts payable, notes payable and accruals (Chen et al., 2009).

Firms have been adopting different working capital management strategies as per their circumstances. These strategies are generally classified as aggressive, moderate and conservative strategies (Meszek & Polweski, 2006). Empirical literature suggests that aggressive working capital management strategies enhance the performance of firms in terms of profitability (Jose et al., 1996; Shin & Soenen, 1998; Wang, 2002; Deloof, 2003). Contrary to this approach if a firm invests extensively in working capital i.e. the conservative policy, it may also lead to higher
profits due to high level of inventory that minimizes the cost of stock outs, production stoppages, supply costs and price variations (Blinder & Maccini, 1991).

Banos Caballero et al. (2010) explored eight factors that directly affect working capital management; later on Hill et al. (2010) identified five more factors affecting working capital management. To better understand the implications of working capital management and to plan the current financial resources accordingly, it is highly needed to fully recognize the operating roots of all short term financial decisions (Reilly & Reilly, 2002). It will help in better working capital management and as a result will lead to better firm performance.

The empirical literature recorded that industry standards must be followed while setting working capital management policies to get the desired results in terms of better operating performance (Hawawini et al., 1986). Similarly the studies related to small and medium sized companies have found that more of their assets are composed of current assets and also their major source of finance is short term liabilities (Petersen & Rajan, 1997) due to the financial restrictions on such organizations for borrowings (Whited, 1992; Fazzari & Petersen, 1993). Therefore the size of firm must also be considered for developing and implementing certain working capital management policies (Sen et al., 2009; Nazir & Afza, 2009; Abdul et al., 2010; Corazon, 2011; Deesomsak & Chau, 2011; Ebrahim et al., 2012).

The studies comparing working capital management practices differences across countries (Belt & Smith, 1991; Khoury et al., 1999) used survey method (Smith & Sell, 1980) to derive that working capital management differences exist because of the system and industry specific differences across those countries. For example the firms in developed countries with mature banking system have more availability of trade credit as against firms in developing countries.
Likewise some studies have identified that type of industry also matter for working capital management policies (Hawawini et al., 1986; Filbeck & Krueger, 2005; Banos Caballero et al., 2010; Salawu, 2006), however in certain cases, type of industry was found to have no effect on working capital management differences (Howorth & Westhead, 2003).

Working capital requirements are directly determined through net working capital (Chiou & Cheng, 2006). Net working capital can be positive, zero or negative (Meszek & Polweski, 2006). Most common measures that have been used in literature to measure the efficiency of working capital management include but not limited to current ratio, cash conversion cycle (Jose et al., 1996), number of days in inventories, number of days in accounts receivable and number of days in accounts payable (Planware, 2010). The narrower stance of working capital management is the overall management of current assets and current liabilities; however the broader stance includes the management of cash, inventory, receivables and payables (Deloof, 2003).

It has been observed during the review of literature concerning working capital management that relatively lesser research has been conducted on working capital management during the past decades (Etiennot et al. 2011, Viskari et al., 2011). The earlier corporate finance literature has been conventionally focusing more on studying long term finance in terms of investment and financial decisions (Pedro & Pedro, 2007) with more emphasis on analysis of long term investments, capital structure decisions and dividend policy decisions. However, apart from managing long term finances, financial managers have always been spending much of their time and efforts for managing short term investments and finances, the working capital (Wilson & Nathalie, 2012). This necessitates a lot of extensive research to explore the working capital
management and its determinants in various corporate settings (Sen et al., 2009; Nazir & Afza, 2009; Abdul et al., 2010; Etiennot et al. 2011, Hong et al., 2011; Deesomsak & Chau, 2011; Zahra & Azam, 2012). Moreover there is a need to conduct more detailed studies concerning industry specific effects (Viskari et al., 2011). Case studies and interventionist research is highly required in working capital management studies to open new arenas for further explorations (Viskari et al., 2011). Moreover most of the research conducted on working capital management during 1990-2010 does not seem to be quality work exploring the issue, hence there is a lot more to do in it (Lukkari, 2011).

Three most cited researches on working capital management (Shin & Soenen, 1998; Deloof, 2003; Jose et al. 1996) are about the impact of working capital management on profitability (Lukkari, 2011). Most of the studies are just replicating the same by taking different samples from different industries. None of these studies has explored how working capital management strategies affect the corporate performance in terms of market value measures. This research is an endeavor to look working capital management from that perspective. It will open new discussion about how effective working capital management policies may lead to enhancement of corporate performance in market value terms.

2.3.2 International Studies - A Chronological Review

Wilson & Nathalie (2012) pointed out that a lot of research has been conducted on capital structure and long term investment decisions. However the short term assets and liabilities management has not got that attention as it is significant for an organization. Financial managers have always been spending more of their time and efforts for managing working capital. The study provided with deeper insights of the factors determining the working capital management
decisions. The study was conducted on Brazilian textile sector companies by taking into consideration the company specific factors that have already been referenced in literature. The study took financial statements for the years 2001 to 2008 making 2,976 firm years data. Results provided with an evidence of how debt financing, size and growth may cause changes in working capital management of a company. Debt financing and free cash flows were found to be negatively related to working capital management, whereas positive association was noticed between working capital management and the profitability of firms.

Islam & Mili (2012) aimed to explore the linkages between the working capital management investing and financing strategies. The study took 5 years financial data of 5 listed pharmaceutical companies from stock exchange of Bangladesh. The results revealed that pharmaceutical sector companies have been following same working capital investing strategies as against the opted financing strategies. The working capital investing and financing strategies were found to be significantly different across companies.

Kaddumi & Ramadan (2012) studied the impact of working capital management on the firms’ performance. The study selected 49 companies from Jordan. The financial data of the companies listed at Amman Stock Exchange for the years 2005-2009 was taken for analysis. The study took two variables for measuring profitability and five variables for measuring working capital management. Fixed effects model and the OLS were used for estimation. The results were significantly supporting the traditional working capital approach, by concluding that working capital management policies and firms’ performance are positively related. The Jordanian firms were found to be following conservative investing policy whereas less aggressive financing policy for the management of their working capital.
Zahra & Azam (2012) stated the significance of working capital management as a strategic finance domain in corporate organizations, to enhance the corporate value through effective management. The study aimed at evaluating linkages between working capital management and corporate performance. Return on assets, return on equity, and market to book ratio was used for measuring corporate performance whereas net liquidity was used for measuring working capital management. For testing the results data of 56 companies’ financial statements were taken from companies listed at Tehran Stock Exchange. Regression results showed positive association between working capital management and corporate performance.

Ebrahim et al. (2012) discussed the significance of working capital management in financial management for deciding about the optimal mix of current assets as against current liabilities. The study aimed at investigating the linkages between working capital management and industry specific factors. Size, leverage and Tobin’s Q were studied and evaluated as determinants of liquidity. The study took financial statements data of 80 companies listed at Tehran Stock Exchange. Regression results showed that size is positively associated to working capital management, leverage is negatively associated to working capital management and no association was found between Tobin’s Q and working capital management.

Alrjoub et al. (2012) examined the current practices related to working capital management of cement sector companies of Rajasthan to analyze and evaluate the performance of the companies. The purpose of the study was to suggest corrective measures to eradicate the current problems to enhance the sector performance through effective working capital management strategies. The study attempted to identify that how reliance on banking overdrafts can be minimized through optimal allocation and funding of resources, and how credit facilities can be diversified and rationally deployed. An effort has also been attempted to see the effect of various
bank financing options on working capital. The study suggested how cement sector companies may improve their working capital management by reducing reliance on bank financing. The study analyzed the effects of shifting from bank financing to reliance on internally generated funds on the functioning of the firms. The study also suggested financing system for smooth functioning of firms by avoiding too much reliance on bank finance.

Abbasali & Milad (2012) provided with empirical evidence of linkages between working capital management on profitability and market value of companies. The study took data of listed companies covering 2006-2010 from Tehran Stock Exchange. return on assets and return on capital employed were used as proxy for profitability measure, Tobin’s Q as a proxy for market value whereas cash conversion cycle, current ratio, current assets to total assets, current liabilities to total assets and total debt to total assets ratios as a proxy for working capital management. The results indicated significant linkages between working capital management and profitability whereas no significant linkage was seen between working capital management and market value of firms. Cash conversion cycle and total debts to total assets ratio were found to have significant impact on profitability.

Michael (2012) discussed the significance of working capital management decisions for ensuring the smooth operational performance of an organization through effective day to day management of current assets and current liabilities. The study proposed that effective working capital management supports the sufficiency of cash to fulfill current obligations and the impending operational and financial expenses at minimum costs thus creating more value for corporations by more profitability. The study compared the costs and benefits of working capital of 22 listed Nigerian firms from Nigeria Stock Exchange. The results evidenced that costs of working capital finances were more than returns of working capital investments thus affecting the profitability
thereby. The study came up with suggestion that to resolve this problem and to enhance returns and profits of working capital the Nigerian companies should maintain optimal level of working capital investments and must avoid over investment in it to improve corporate performance.

Owolabi & Alu (2012) stated that the existence and ongoing potential of a firm depend on effective working capital management policies of the firm. The study analyzed this proposition through an ex post facto. The study conducted trend analysis of five selected companies through purposive sampling technique from manufacturing sector organizations. Financial data of 5 years were used for analysis. The results through multivariate analyses showed that all the components of working capital management were significantly affecting the profits though differently.

Sunday et al. (2012) examined the effect of working capital management policies on performance of Nigerian firms in context of profitability and market value of the firms. The study selected 54 listed firms from non financial sector of Nigeria Stock Exchange. Data for the study was taken from annual financial statements of the selected firms covering the years 1995 to 2009. The results indicated that working capital management measured through cash conversion cycle is negatively associated to firm performance measured through market value. Leverage was found to be positively associated to market value and negatively related to profitability. The study suggested the companies to especially emphasize on management of cash conversion cycle and its components to enhance the market value of the Nigerian firms.

Kulkanya (2012) conducted a study to identify the impact of working capital management on profitability. Panel data of 255 companies listed at Thailand Stock Exchange was taken for the years 2007-2009. The results disclosed negative association between inventory days and gross operating profit and inventory days and receivables days. There was a negative association
between profitability and cash conversion cycle, inventory days and receivables days. There was a positive association between profitability and payable days. The study also found significant impact of industry specific factors on profits.

Ghassan et al. (2012) studied working capital management of 82 companies listed at Amman Stock Exchange covering years 2005 to 2007. The study explored various financial and economic indicators as determinants of working capital management. Operating cycle, economic activity, leverage, growth, operating cash flows, firm size, return on assets and Tobin's Q were explored for as to what extent these cause changes in working capital management of an organization. Multiple regression analysis showed statistically significant association between working capital management techniques and operating cash flows, growth, return on assets, Tobin’s Q and leverage.

Mona (2012) investigated how working capital management strategies aggressive or conservative affect the performance of firms in terms of profitability and value. The study considered annual financial data of 57 companies listed at Amman Stock Exchange covering years 2001-2009. The results concluded that conservative working capital investment strategy is positively associated to performance of firm in both profit and market value perspectives, whereas the aggressive working capital financing strategies are negatively associated to performance of firm in terms of profit and value. The study found size, firm growth and GDP growth being positively associated to performance of firms in profit and value terms. Financial leverage was found to have no impact on performance of firms.

Taghizadeh (2012) discussed how the working capital management policies lead to eventual rise or fall of a business firm in terms of its profitability and liquidity management. The study
investigated the role of aggressive and conservative working capital management strategies on performance of corporate firms. The study took 28 companies from Iran listed at Tehran Stock Exchange. Financial data of the companies for the period 2005-2009 was taken for analysis. The results indicated that the firms with conservative working capital investment and aggressive working capital financing strategies bear negative effect on their financial performance in profit and value perspectives. Size and growth were found to be positively associated to financial performance whereas leverage was having negative relationship to financial performance.

Abuzayed (2012) conducted a study to identify the impact of working capital management policies on the performance of listed firms selected as a sample from a small sized developing market of Amman. The study conducted a theoretical and empirical analysis of financial data of the selected companies from Amman Stock Exchange for the years 2000-2008. The study tested the proposition whether the efficiency in management of working capital enhances the accounting profits and market value of the firms. The study used cash conversion cycle as a proxy for measuring working capital management efficiency, whereas for measuring performance both accounting and market perspectives were evaluated, being shareholders’ wealth maximization as the ultimate objective of financial management. Panel data analysis with fixed effects and random effects were used to generalize the findings and to get robust results. The findings confirmed the positive association between cash conversion cycle and profitability. It supported that profitable firms have no incentive to reduce their cash conversion cycle. Hence there is a need to motivate policy making authorities in the emerging markets to focus more on working capital issues.

Sonia et al. (2012) analyzed the relationship between working capital management policies and the firms’ profitability in small and medium enterprises. The study unlike the earlier ones placed
special emphasis for controlling the heterogeneity and the endogeneity possibilities. The studied variables were tested for non linear relationship. Results found a non monotonic or a concave relation between the variables working capital management and firms’ performance. It supported that the small and medium enterprises do have that optimal level of working capital which ensures higher profits and so it concludes that the profitability of these enterprises decreases for any deviations from that optimal level.

Ben (2012) discussed in their study that though the employment contribution to youth being high yet the revenue contribution of small sized firms to the national funds is quite low in developing country like Ghana because these firms somehow overlook the management of working capital and as such their financial viability gets affected. The study explored probable reasons for this lack of proper management and discussed that absence of formal education along with weak managerial and financial management skills of the key finance personnel in the sector has affected it drastically. The companies also did not have accounting educated staff and the accounting software that may give way to effective working capital management policies. Even the owners and managers have been creating hurdles in applications of working capital management policies.

Bhunia & Das (2012) studied the relative association between the working capital management policies and the profitability of small and medium sized steel companies of India. The relationship was explored by taking financial data of the selected companies for the years 2003 to 2010. The study indicated insignificant association between the studied variables.

Gill & Shah (2012) conducted a co relational and non experimental study to identify how corporate cash holdings of Canadian companies are determined. The study selected 166 listed
companies from Canada. Financial statements data for three years period from 2008 to 2010 was taken for analyzing the determinants for the companies listed at Toronto stock exchange. The study found that the corporate cash holdings in Canada are significantly determined by the market to book ratio, cash flows, net working capital, leverage, firm size, size of board and the time span of chief executive officer. The study augmented the earlier literature on determinants of corporate cash holdings.

Vida et al. (2011) studied the association between working capital management policies and corporate performance. The study took a sample of 101 listed companies from Tehran Stock Exchange. Financial data for the years 2004 to 2008 were used for multivariate regression and Pearson correlation analysis. The results showed that all the components of working capital including cash conversion cycle, payable days and receivable days are negatively associated to corporate performance. The inventory days were not significantly affecting the profitability. Sales growth and profitability were found to be significantly and positively associated, whereas leverage and profitability were found to be significantly and negatively associated.

Haitham et al. (2011) studied the association of cash conversion cycle with the profitability of the firm. Panel data analysis was conducted on a sample selected from Japan. Financial data of the selected companies covering years 1990-2004 was taken for analysis. The data was analyzed for industry and size differences. The analysis found cash conversion cycle to be negatively associated to profitability of the firms for all studied sectors except for the consumer goods and services companies where positive relationship was seen. The study pointed out that existing working capital management research is mostly related to US industry experiences. The study explored the association between cash conversion cycle and the profitability of the companies from Japan having absolutely different interconnected organizational structures.
Karaduman et al. (2011) studied the role of working capital management as determinant of firms’ profitability and value. The study aimed to throw light on the association between working capital management efficiency and corporate performance. The study selected listed companies from Istanbul Stock Exchange covering time period 2005 to 2009. Panel data analysis was conducted to measure and estimate the relationship. Cash conversion cycle was used to measure efficiency of working capital management policies and return on assets was used to measure corporate performance in terms of profitability. The results supported the earlier such findings that reduction in cash conversion cycle will significantly and positively enhance return on assets.

Anna & Zbigniew (2011) studied the impact of working capital management policies on profitability and efficiency of food sector companies of Poland and some selected Euro zone companies. Financial data for the selected companies were taken for the years 2005 to 2009. The working capital management was measured through inventory turnover, receivables turnover, current liabilities turnover and cash conversion cycle. Profitability was measured through return on assets. The multiple regression results supported the use of lesser working capital or aggressive working capital management to enhance the profitability.

Corazon (2011) studied the determinants of working capital management strategies and capital structure decisions on financial performance of firms. The study took 110 Philippine based companies through random selection out of the population of 1000 top companies in Philippine on the basis of the revenue. Performance of firms being measured through net income, return on equity and return on assets. Pearson correlation, ANOVA, F-statistics and multiple regression was used to generalize the findings. Results disclosed that working capital management policies, capital structure decisions and the size of firms have significant association with profitability.
However the study found no significant association between working capital management strategies and their impact on return on equity and return on assets.

Deesomsak & Chau (2011) stated the significance of working capital management decisions as a key element of financial decisions in a firm. The study highlighted the need of efficient working capital management for increasing the value of firms, hence the necessity of exploring the determinants what have major influence on working capital management decisions. The study investigated the role of industry specific and market specific factors as determinants of working capital management decisions. The study took 399 firms listed at Thailand Stock Exchange on the basis of their highly concentrated ownership structures, since working capital management for such firms is very critical. Panel data from financial statements covering the years 1992-2010 was taken for analysis purposes. The results showed that working capital management decisions are driven by various industry specific and market specific characteristics. Firms following aggressive working capital management policies were found to have large size, higher growth in sales revenues, profits, fixed tangible assets and dividend payout ratio whereas those firms were having low chances of bankruptcy. The firms with conservative policies were having high short term financing and dividend yield ratio. Working capital management decisions were also found to be significantly affected by corporate governance and ownership structure of the firm. Firms with more number of directors were found to have low working capital investments, whereas firms with higher managerial ownership were found to have higher working capital investments. Moreover results were found to be significantly different across industries. Lending interest rates and working capital levels were inversely related. The market factors were found to have been more affecting working capital management decisions in recessions, whereas those factors were found to have lesser impact on the firms with higher levels of working capital.
Hong et al. (2011) stated that in today’s competitive and complex corporate world, a few corporate organizations are optimally utilizing the working capital management strategies to attain the competitive edge for maximizing the profitability. The study investigated the differences of corporate profitability and working capital management for two groups of companies. One group covering the working capital intensive firms and the other including fixed capital intensive firms. The study sorted out the determinants of profitability by considering return on sales, return on assets and return on equity. Working capital management policies were measured through cash conversion cycle, debt ratio, working capital days, receivables days and inventory days. The sample consisted of 16 listed companies of Brazil from each group. Data was taken for the years 2005-09. Multiple linear regression analysis concluded that working capital management is significantly related to return on sales and return on assets for both groups, whereas it is significantly related to debt ratio and working capital days for fixed capital intensive firms only. ANOVA showed that inventory days are negatively associated to return on sales and return on assets and no statistical evidence was found for increase in return on equity in working capital intensive firms. However the results supported that working capital management is significantly important for profitability in both groups.

Autukaite & Molay (2011) pointed out that though companies manage their short term investment and financing decisions on daily basis yet the finance literature has put more emphasis on long term investment and finance decisions. The study selected sample from listed companies of France to explore the significance of working capital management decisions of the companies for the value of the company. The study in contrast to earlier studies proposed the hypotheses that net working capital investment of one euro carry lesser value than one. Panel data analysis was conducted to get evidence of the proposition that cash holdings and net
working capital investments are undervalued by the shareholders. The results concluded that the working capital management professionals must not overlook the significance of cash holdings and working capital management for maximizing the returns on total investments and thus thereby adding value.

Qazi et al. (2011) analyzed relationship of working capital management strategy and firms’ performance. Cash cycle management practices were analyzed. The study selected sample from automobile and oil and gas sectors for analysis. Financial statements were taken for the years 2004 to 2009. Net working capital, inventory turnover days, average account receivable and financial assets to total assets were analyzed for changes accounted for by the financial performance of the firms. The results supported the positive association of working capital management policies with firm’s performance.

Etiennot et al. (2011) highlighted the scarcity of finance research in the area of working capital management. The study identified the presence of efficient financial markets as one of the potential cause for such scarcity, since working capital management inefficiencies are usually covered through the efficient financial markets. However in case of emerging economies with less efficient financial markets working capital management remains the most critical factor for the survival of the company. This difference of financial markets might be one of the factors affecting risk and returns of firms differently in response to working capital management. The study well explained the implications of market differences in working capital management policies and their effect on firms’ performance.

Fuenzalida (2010) attempted to explore the variables that cause changes in working capital management policies of companies from Latin America. Unbalanced panel data analysis was
conducted on the financial statement figures taken from the listed companies from five capital markets of Latin America. Companies from Argentina, Brazil, Chile and Mexico were found to have lesser value because of their excess cash holding strategies. The study concluded that cash conversion cycle, marketability of the company, sales potential and country risk significantly affect the working capital management policies of Latin American companies. Moreover significant differences were found in working capital management policies across the studied countries.

Nor & Noriza (2010) attempted to bridge the gap found in previous studies regarding how working capital management strategies affect the market value and profitability of firms. The study randomly selected 175 Malaysian companies listed at Bursa Malaysia. Financial statement covering 5 years period 2003-2007 were used for analysis. The study attempted to explore the impact of working capital measured in terms of; cash conversion cycle, current ratio, current asset to total asset ratio, current liabilities to total asset ratio and debt ratio on performance of firm measured in terms of Tobin’s Q, return on asset return on invested capital. Results based on correlation and multiple regression analysis showed that firms’ performance is significantly and negatively related to working capital management of firms.

Suranga & Lakshan (2010) stated that working capital management efficiency as essential element of corporate strategy creates value for the shareholders. The study explored the linkages between working capital management, cost management and profitability. 65 listed companies from Sri Lanka listed at Colombo Stock Exchange were selected for analysis. Correlation and regression analysis was conducted on financial statements data for the years 2003 to 2007. Receivable turnover days, inventory turnover days, payable turnover days and length of working capital cycle were taken as proxy for working capital management. Selling, administrative and
finance costs were used for measuring cost management. The findings suggested that decrease in inventory turnover days and increase in payable turnover days may increase profitability by reduction in length of working capital cycle. The study suggested no more spending in selling, administration and finance costs.

Matthew et al. (2010) stated that net operating working capital management covers various elements of financial decisions of a firm. Firms generally follow aggressive working capital management strategies due to growth in sales, uncertain sales, high costs of financing and financial distress. Firms having higher internally generated funds potentials tend to follow conservative working capital management strategies. The robust results disclosed heterogeneity and industry effects across the studied companies. Hence it was suggested that while setting working capital management policies proper attention to be given to operating and financing circumstances of the company itself rather than the overall industry trend.

Faris (2010) analyzed how working capital management strategies affect the risks and returns of industrial units located at Jordan. The study considered 59 firms listed at Amman Stock exchange covering years 2004-2007. Cross sectional regression was used to test the relationship between working capital management policies measured as aggressive and conservative investment and financing policies and risk and returns of the firms. The result depicted that aggressive working capital investment and financing strategies significantly and negatively affect the profitability of the companies.

Jasmine (2010) stressed that only efficient and effective working capital management strategy may ensure the endurance of corporate firms. The two dimensional study analyzed the cash management, investment management, receivables management and payables management
policies and suggested some auditing measures for facilitating appropriate working capital management. The study was conducted on Indian Tyre Industry firms. Financial statements of 8 years from 1999 to 2007 were taken for analysis. The results disclosed that the companies are involved in trading off between risks and returns as the efficient working capital management was found to be significantly associated to profitability of the studied industry.

Banos et al. (2010) analyzed the factors affecting cash conversion cycle of small and medium sized companies. The study found that the firms under observation set target cash conversion cycle and then they try to achieve the target and then amend the cycle as per the needs. It was also concluded that the firms following conservative policies are having higher cash flows and larger cash conversion cycle, whereas the firms following aggressive policies are having more growth opportunities, high leverage, high fixed assets and high return on assets.

Dong & Su (2010) discussed that working capital management has always been crucial in successful running of a business or otherwise, due to the risk return implications attached to it. The study took financial data of firms listed at Vietnam stock exchange covering years 2006 to 2008. It was aimed to explore the association between cash conversion cycle and profitability of firms. The findings depicted strong and significant negative association of cash conversion cycle and profitability. So the companies were suggested to maintain lean balances of cash to enhance profitability.

Melita & Maria (2010) empirically investigate the impact of working capital management policies on financial performance of firms in emerging markets. The study explored how effective working capital management policies could help in enhancing performance and thus adding value for organizations. The study for this purpose took listed firms form Cyprus Stock
Exchange. Financial data was taken for the years 1998 to 2007. Results based on multivariate regression analysis, showed that cash conversion cycle, inventory days, receivable days and payable days are all significantly related to financial performance of a firm in emerging market.

Viqar (2009) discussed that inadequacy of working capital may lead to the failure of a firm, even though the firm may look profitable in financial statements. Working capital management ensures that an organization is liquid enough in cash flows to pay off short term obligations including short term debts and operating expenses. Hence a sound working capital management strategy is necessary for a successfully running business, since it will create value for shareholders through increase in profitability. The study surveyed working capital management practices of agribusiness firms to identify the determinants of their working capital management strategies. The results provided with an in depth insight of current working capital management strategies in agribusiness firms and the ways to improve the same.

Lakshan (2009) stated that better working capital management enhances profitability and eventually the value for shareholders. The study investigated the relationship for 76 manufacturing sector SMEs of Sri Lanka covering the period of 2003-04 to 2005-06. Inventory holding period, debt collection period and cash conversion cycle were taken as measures of working capital management whereas gross profit margin, operating profit margin and return on assets were taken as profitability measures. Industry specific analysis was conducted to study the relationship between variables. The results showed all negative relationships between working capital management and profitability.

Azhagaiah & Muralidharan (2009) analyzed the relationship between working capital management and earnings before interest and tax in Paper Industry of India covering the period
1997–98 to 2005–06. The study took performance index, utilization index and efficiency index to be further associated with cash conversion cycle, accounts payable days, accounts receivables days, inventory days as explanatory variables. Fixed financial assets ratio, financial debt ratio and size were assumed as control variables associated to earnings before interest and tax for the analysis. The results disclosed that working capital management is significantly affecting the profitability of paper industry of India.

Sen & Oruc (2009) identified the association and linkages between efficiency of working capital management decisions and their impact on firms’ performance in terms of return on assets. The study explored how working capital management efficiency will bring changes in return on assets of the studied firms. The study took data for the years 1993-2007 from financial statements of 55 listed companies from manufacturing sector listed at Istanbul Stock Exchange. Inventories, receivables and current liabilities management were explored for their impact on profitability. The study found significant negative association between cash conversion cycle, net working capital, current ratio, accounts receivable days, inventory days and return on assets.

Sen et al. (2009) discussed that one of the factors affecting working capital management is the efficiency of management. The study explored how changes in management efficiency will affect the working capital management across different sized companies. The study took data for the years 1993-2007 from financial statements of 55 listed companies from manufacturing sector listed at Istanbul Stock Exchange. The management of inventories, short term receivables and short term liabilities were studied to look into the linkages between management efficiency and working capital management. The study found linkages between inventory management and working capital management, similarly short term receivables and short term liabilities were found to be significantly and positively related to working capital management.
Luo et al. (2009) tested if and how management of working capital in an efficient way really affect the financial performance of firms. Panel data analysis was conducted for financial statements data of the studied companies. The study found significant impact of efficient working capital management on financial performance of firms and concluded that better working capital management enhances the future profit potential of companies. Decreases in cash conversion cycles and debt financing were found to have an increasing impact on value of the firms. The firms with better working capital management were found to be ones having stocks with more value.

Ali (2009) studied the manufacturing and trading companies to develop standards for cash conversion cycle of the two types of business organizations. The study was aimed to explore the association of length of the cash conversion cycle with the size of the firms and profitability. The study used data from the year 2007 financial statements of the companies listed at Istanbul Stock. ANOVA and Pearson correlation was used for measuring the relationships. Findings of the study indicated that retail and wholesale industry are having lowest cash conversion cycle whereas the textile sector was having highest cash conversion cycle. Firm size and profitability were found to be significantly and negatively related to cash conversion cycle.

Zariyawati et al. (2009) discussed that optimal working capital management leads to value creation for a firm. To attain that optimal level, companies must manage the tradeoff between liquidity and profitability with highest possible accuracies. The study intended to analyze the association between working capital management policies and performance of firms. Working capital management was measured through cash conversion cycle. Panel data of 1628 firm years covering the period 1996 to 2006 from 6 different industries of Malaysia from Bursa Malaysia was taken for analysis. The results supported that cash conversion cycle and profits of firms are
strongly negatively related to each other. Therefore it was suggested that cash conversion cycle of the studied countries must be reduced to increase the profitability of the companies.

Darun (2008) finding the earlier literature on working capital and its understanding to be inexplicit, explored working capital management strategies of listed companies of Malaysia. The study pointed out that earlier studies have been focusing more on survey method to explore the link of working capital management with corporate performance and the development of an optimal working capital level to enhance performance. The study argued that the failure of conventional working capital management research in context of the changes in industry specific factors reflected that there is a need for a comprehensive framework to elaborate the contemporary working capital management policies. Therefore the study attempted to create know how and the applications of the determinants of the working capital management decisions of the organizations for improving performance of Malaysian companies. The study was based on multiple case studies of the companies listed at Bursa Malaysia, data was collected through semi structured interviews and secondary data regarding working capital management.

Appuhami (2008) conducted a research to empirically investigate the effect of capital expenditures of firms on their working capital management policies. The study collected financial statements data from listed companies at Thailand Stock Exchange. The study used net liquidity balance (Shulman & Cox, 1985) and working capital requirements as a measure for working capital management. The empirical results indicated that capital expenditures of firms were significantly affecting working capital management decisions, whereas operating cash flows of firms taken as control variable were also significantly associated to working capital management decisions. The results were found consistent with earlier such studies in same settings.
Samiloglu & Demirgunes (2008) analyzed the impact of working capital management on profitability of firms. Working capital management was measured through cash conversion cycle. The study took sample from Istanbul Stock Exchange. Financial data was taken from listed companies from manufacturing sector covering the years 1998 to 2007. Multiple regression model showed the empirical evidence of how accounts receivables, inventory, sales growth and leverage affect the firms’ performance.

Pedro & Pedro (2007) conducted a research to augment the literature on impact of working capital management on profitability of firms by providing with some empirical evidence through testing small and medium sized companies’ data. The study considered 8,872 Spanish firms’ financial statements for the years 1996 to 2002. Panel data methodology was used to test the results. The findings indicated that managers may add value through efficient working capital management by reducing cash conversion cycle, size of inventory and debt collection period. The study contributed to the earlier literature by testing for the endogeneity problems to ensure that the studied relationship is free from endogenous effects, which means that working capital management is affecting profitability and not vice versa.

Anup & Muntasir (2007) stated that working capital management being vital for life of a business concern has always been the most critical issue of finance. The study critically evaluated the working capital management practices of some selected companies from Pharmaceutical industry of Bangladesh. The study thoroughly looked into the policies regarding cash management, inventory management, receivable management and payable management of the pharmaceutical companies. The study concluded that the pharmaceutical companies of Bangladesh were effectively handling with the liquidity through working capital management.
Ganesan (2007) analyzed the working capital management efficiencies of telecommunication equipment industry. Correlation regression and ANOVA were used to identify the effects of working capital management policies on profitability of the firms. The association was checked through selecting financial statements of 349 telecommunication equipment companies for the years 2001 to 2007. The study provided with an evidence of negative but insignificant impact of working capital management on profitability of the studied firms.

Salawu (2007) investigated to establish links between aggressive and conservative working capital management practices of companies belonging to fifteen different industries over a long time period. Financial data from annual reports of the selected firms from Nigeria Stock Exchange was used for analysis. Results indicated significant differences in working capital management practices across the studied companies. Moreover the companies were found to be stably using the working capital management policies, whether aggressive or conservative, over time. The current asset and liability policies were found to be significantly negative. Aggressive working capital investment policies were found to be relatively more stable as against conservative working capital financing policies. The study suggested that a firm should follow the policy as per industry norms and standards. Firms following aggressive working capital investment policies should follow conservative policies for their working capital financing policies.

Rabih et al. (2006) identified though literature that firms generally follow over investment strategy in working capital management decisions. The study analyzed this convention and found it to be true. Further they explored the factors causing such strategies and identified that industry practices, firm size, sales growth, outsider directors in board, executive compensation and CEO share in ownership are all significantly affecting the corporate working capital management
decisions. The analysis suggested that business managers quickly and effectively respond to incentives for effective working capital management.

Sayaduzzaman (2006) studied the efficiency of working capital management policies of British American Tobacco Company Bangladesh and found these to be extremely reasonable in creating value for organization, by maintaining positive cash flows and well planned elements of working capital. The study found the use of multi directional approach for selection of combination of current assets. This helped in bringing positive effect on the sustainable development and growth of the company.

Kesseven (2006) stated that well integrated working capital management policies may eventually lead to value creation for a firm. The study examined the trends of working capital management policies and their effect on financial performance of a firm, with respect to industry differences. Return on total assets used for measuring profitability was checked for changes as per variations in working capital management policies. The study considered 58 small sized companies from manufacturing sector of Mauritius. Panel data analysis was conducted on financial data of the companies covering years 1998 to 2003. The results based on regression analysis indicated that higher inventory and receivable levels may decrease the profitability of the firms. Inventory days, receivable days, payable days and cash conversion cycle were analyzed for changes in working capital management policies. There was a strong and significant impact of working capital management strategies on firms’ performance as supported by the earlier empirical studies. The results also indicated the significant differences among the studied relationships across industries.
Lazaridis & Tryfonidis (2006) investigated how corporate profitability is affected by working capital management policies. The study selected sample consisting of 131 listed companies from Athens Stock Exchange covering the years 2001 to 2004. The study attempted to provide an empirical evidence of the studied relationship. Gross margin and cash conversion cycle were tested to establish linkage between the variables.

Howorth & Westhead (2003) studied the working capital management practices of a sample selected from small sized companies of UK. The study observed on the basis of multinomial logistic regression analysis that there are significant differences in working capital management practices of the studied companies. The companies were distributed on the basis of principal components and cluster analysis into four types as per their approach to handle working capital management decisions. Three of these were focusing more on cash and receivables management whereas the fourth one was less oriented towards adopting any specific working capital management strategies. The studied companies were found to have been focusing on working capital management policies only at the times when they need to enhance returns.

Koury et al. (1998) conducted a survey being motivated to explore the working capital management policies of small sized Canadian firms. To achieve the objective of study a survey instrument based on three earlier studies on working capital management policies was used. The questionnaire comprised of 18 questions was analogous for the three countries. It helped in exploring how working capital management policies have been changing across the studied countries and over time. The comparative study provided with useful insights into the studied topic for current applications and future research potentials in working capital management policies.
Morris (1995) studied the relationship of working capital management decisions of small sized firms with the changes in the level of economic activity. The study selected financial data of 50 small sized firms for the period covering 1980 to 1991. The results indicated that working capital management decisions have a slight increasing effect on liquidity position of the companies during the periods while economy was expanding, whereas the working capital management decisions were having no impact on liquidity state during the times when the economy was slow or facing downturn. Inventory to total assets ratio and current assets to total assets ratio were used as proxy for measuring working capital management decisions. These were found to remain stable over the period of study. It was concluded that working capital management practices of the small sized firms do not respond to the economic changes as expected by the firms.

2.3.3 Local Studies - A Chronological Review

Atif et al. (2012) discussed the significance of adequacy of working capital for an organization’s profitability and liquidity, as the risk and return trade off can be better managed through optimal working capital level. The study empirically investigated the linkages between working capital management and firms’ performance. Financial data of companies listed at Karachi Stock Exchange was used for the years 2006 to 2010. Panel data analysis using correlation and fixed effects model of regression was conducted to test the association between the studied variables. Return on investment and return on equity were used to measure the firms’ performance, whereas current assets to total assets and current liabilities to total liabilities were used as proxy for aggressive investment and aggressive financing strategies respectively. Size, sales growth, leverage and GDP growth were taken as control variables. The results suggested that lower level of current assets investment and current liability financing enhances the profitability of the
studied firms. The study also indicated the significant association between size, sales growth, leverage and profitability of the firm.

Mehrunisa & Khuram (2012) discussed the significance of effective working capital management in finance as dealing with short term investments and their source of finance. The study presented with a comprehensive insight into the effects of cash management, inventory management and receivables management on profitability of firms. Textile sector companies were selected for analysis purposes. The research was carried out on primary data collected through questionnaires and detailed discussions with executive management of the firms. Regression, ANOVA and analytical hierarchical process were used to generalize the results. The findings showed that the companies though having weak cash and inventory management yet their receivables management is effective enough in uplifting profitability. Working capital management was observed to be significantly and positively associated with earning per share and earnings before interest and tax. Large sized firms were found to be better managed in terms of cash, inventory and receivables management as against the medium and small sized firms in the same context. No significant differences were found in textile units with respect to spinning, weaving and composite textile units. Receivables management of composite units was found to be better as against spinning and weaving units.

Muneeb & Kashif (2012) has discussed the significance of cash conversion cycle in effective cash management and working capital management of a firm. The study aimed to explore the linkages between cash conversion cycle and size and profitability of the firms. The study took four different industrial sectors’ firms listed at Karachi Stock Exchange including automobile, cement, chemical and food sectors. Financial data for the years 2006-2010 was collected through annual reports of 31 selected firms out of the total 143 firms in the 4 sectors. One Way ANOVA
and Pearson correlation was used to test the results. Cement industry was found to have lowest cash conversion cycle whereas automobile sector was having highest cash conversion cycle. Firm size and profitability were found to be significantly and negatively associated to cash conversion cycle. The study augmented the results of such studies related to cash management, a barely researched area in a developing country like Pakistan. The study pointed out the need of exploring further the area of liquidity management in other sectors to support the results in different settings. It will provide with some useful insights for the academicians and practitioners.

Usama (2012) extended the findings of earlier studies concerning effect of working capital management on profitability and liquidity. The study selected 18 food sector listed companies from Karachi Stock Exchange. Average collection period, average payment period, inventory turnover in days, cash conversion cycle, financial assets to total assets ratio and current ratio were used to measure working capital management and net operating profit was used for measuring profitability. The study found positive and significant effect of working capital management on profitability and liquidity of the firms.

Shahid (2011) explored the linkages between working capital management and the profitability of textile sector companies of Pakistan. The variable working capital management was measured through cash conversion cycle, length of operating cycle, and working capital days, whereas profitability was measured through return on assets, economic value added, return on equity and profit margin. Panel data of 160 companies for years 2000-05 was used for analysis using OLS and fixed effect model. The results showed mixed trends. Return on assets was negatively associated to receivable days and payable days whereas positively related to inventory days and cash conversion cycle.
Afza & Nazir (2011) stated that management of current resources requires a vigilant analysis because working capital management strategies directly affects the risk and return of the firms. The components of working capital including cash, receivables, inventory and payables need to be thoroughly and effectively managed. The study evaluated how efficient the current working capital management practices are at cement sector of Pakistan. Financial data for the years 1988 to 2008 was used for analysis. Contrary to previous literature the study measured working capital management through utilization index, performance index and total efficiency index (Bhattacharya, 1997). The study used industry standard of efficiency as a bench mark to test how speedily a company achieve the target efficiency. The results concluded that the overall performance of the cement sector in context of working capital management is satisfactory.

Abdul et al. (2011) stated that an effective working capital management policy leads to better performance of manufacturing firms since the major portion of total assets is comprised of short term assets. This reflects the need to carefully manage the working capital requirements and the determinants of working capital management. The study analyzed working capital management strategies of manufacturing sectors by taking cash conversion cycle, net trade cycle, receivable turnover in days, inventory turnover in days and payable turnover in days were used as measures of working capital management whereas return on total assets was used as a proxy for measuring profitability. The study gave ranks to the industrial sectors on the basis of better working capital management performance. It helped in identifying the sectors with good performance and the factors behind the success. The study took 10 years data covering 1998-2007 of 204 companies from 24 different manufacturing and trading sectors. Financial statements of companies listed at Karachi Stock Exchange were taken for analysis. The study found that the sectors having high overall average were also the high performance sectors throughout the study period. The studied
sectors were found to be significantly different in terms of working capital management and its impact on firms’ performance. Results showed that cash conversion cycle and net trade credit have similar impact on firms’ performance in all sectors. Similarly the sectors with low cash conversion cycle and net trade credit were found to be due to low inventory turnover and receivable turnover. Some sectors were found to be less profitable though quite efficient in working capital management.

Niaz et al. (2011) conducted a comparative study to analyze and compare the performance of different industries in multiple contexts. The study explored the association between cash conversion cycle, size, profitability and working capital management strategies of 12 different industries. The sample consisted of 157 listed companies listed from Karachi Stock Exchange. Financial statements of year 2009 were taken as data for analysis. Pearson correlation and ANOVA with post-hoc test were used to empirically investigate the relationship. The results found that cash conversion cycle is significantly different across industries and is negatively associated with sales revenue, return on equity and capital structure decisions of the firms, whereas it is positively related to total assets, return on assets and investing activities of firms.

Azam & Irfan (2011) studied and investigated how changes in working capital management decisions affect the performance of non financial firms. Panel data analysis was conducted on financial statements data of 21 listed companies, for the years 2001-2010, from Karachi Stock Exchange. The results obtained through Canonical Correlation Analysis depicted that working capital management is significantly associated to performance of firms. It was found that firms’ value can be increased through increase in return on assets, decrease in inventory size, cash conversion cycle and net trading cycle.
Abdul et al. (2010) discussed that effective working capital management leads to better performance in manufacturing sector firms of Pakistan. The study analyzed how working capital management affects the performance of Pakistani firms. The study took financial data covering the years 1998-2007. Panel data of 204 listed companies form Karachi Stock Exchange was taken for analysis. The results disclosed the significant association between profitability and cash conversion cycle, length of operating cycle and inventory turnover in days. Moreover leverage, sales growth and size of firm were also found to be significantly related to profitability of firms. The study disclosed that Pakistani companies are mostly pursuing conservative working capital management policy. The study realized the need to further identify the impact of working capital components on firms’ performance.

Umar et al. (2010) studied multinational working capital management practices and policies by considering multinational companies working in Pakistan. The study conducted survey by collecting primary information from 150 listed companies from various industries including banking, telecommunication and other services providers. Information regarding international cash management practices, international sales management policies and foreign exchange issues was collected and then discussed to conduct the analysis. The findings were compared with earlier literature in context of different industries. The study augmented the literature by providing useful insights for various stakeholders.

Nazir & Afza (2009) studied and investigated the linkages between working capital management and profitability of firms. Panel data was used covering the years 1998 to 2005 to look into the association between aggressive working capital management strategies and return on assets and Tobin’s Q. the results supported the use of conservative working capital management strategies.
for enhancing profitability, however investors were found more interested in companies having aggressive working capital management strategies.

Nazir & Afza (2009) stated that earlier literature concerning corporate financial management has conventionally focused more on exploring the determinants of long term financial decisions. Most of the researches have been about investments, capital structures, dividend policies and corporate valuation decisions. Lesser emphasis has been on current assets and liabilities; hence it needs to be more extensively explored and analyzed to determine how it adds to profitability and market value of firms. Management of companies has been adopting various methods to identify the optimal working capital and then efforts are made to sustain that level through continuous monitoring of working capital management. The study examined the determinants of working capital management. 132 companies from manufacturing sector were taken as a sample belonging to 14 different industries. The companies were listed at Karachi Stock Exchange (KSE). The data was taken for the period 2004 to 2007. working capital management was taken as dependent variable and different financial and economical factors including length of operating cycle, level of economic activity, leverage, growth, operating cash flows, size, industry, return on assets Tobin’s Q were taken as independent variables as determinants of working capital management. Regression results suggested significant association between the studied variables.

Nazir & Afza (2008) continued with their earlier findings on the impact of working capital management on firms’ performance. This study took 204 companies from manufacturing sector covering 16 different industries. The financial data for the companies listed at Karachi Stock Exchange was taken for the years 1998 to 2006. Financial and economic factors were explored as determinants of working capital management. Operating cycle days, economic activity, leverage,
growth, operating cash flows, size and industry were explored as determinants of return on assets and Tobin’s Q. the study found significant associations between the studied variables supporting the earlier results and suggested measures to enhance firms’ performance through effective working capital management.

Afza & Nazir (2007) discussed that finance research has been more focused towards long term financial management and less towards short term financial management. The study highlighted the need to carefully analyze and evaluate the implications of current assets and current liabilities management since it deals with risk and return trade off. The companies determine the optimal working capital level and then continuously try to sustain that level through monitoring. The study investigated how the aggressive and conservative working capital policies affect the firms’ performance and risk. The study used financial statements data of 208 listed companies from Karachi Stock Exchange for the years 1998 to 2005. The empirical findings supported the significant negative association between working capital management policies and firms’ performance.

Abdul & Nasr (2007) studied the risk return trade off related to working capital management policies of 94 companies from Pakistan listed at Karachi Stock Exchange. The study took data from 1999 to 2004 to study the linkages among variables representing working capital management and the ones representing profitability. Average collection period, inventory turnover days, average payment period, cash conversion cycle and current ratio were explored as the factors causing change to the operating profits of the studied firms. Leverage, size and ratio of financial assets to total assets were taken as control variables. Results based on Pearson’s correlation, pooled least square and general least square regression analysis depicted strong and negative association between the variables studied. Cash conversion cycle increases caused a
decrease in firms’ profitability of the firm so it was suggested to decrease it to enhance the financial performance. Size was found to be positively associated to profitability of the firms.

Shah & Sana (2006) investigated association between working capital management practices of oil and gas sector companies of Pakistan to see the impact of these on the profitability of the selected industry. Financial data for the years 2001 to 2005 of listed oil and gas sector companies from Karachi stock exchange was selected for analysis purposes. Inventory turnover, receivables turnover, payables turnover, current ratio, quick ratio and cash conversion cycle were used as a proxy for measuring working capital management of the studied organizations. Results based on correlation and OLS with fixed effects model indicated that inventory turnover days, accounts receivable days, cash conversion cycle and sales growth are all negatively associated with gross margins whereas payable turnover days was positively associated with profit measured as gross margin.

Afza & Adnan (2006) discussed how appropriate liquidity management ensures the smooth firms’ operations. It creates a propensity to hold more of the assets in cash and cash equivalents, so as to make it available for buying of assets, dividend payments and to maintain cash balances at hand. The amount of cash to be held mainly depends on capital structure decisions, working capital management policies, cash flow management strategies, dividend policy decisions, investment management and assets management. The study threw light on determinants of corporate cash holdings in non financial listed companies of Pakistan. The study considered the size and industry differences in the context of determinants of corporate cash holdings. Financial statements data for the years 1998 to 2005 related to the studied firms was used for analysis. Size, growth opportunities, cash flows, net working capital, leverage, cash flow uncertainty and dividend payments were explored as possible determinants of corporate cash holdings. The
results of the study confirmed the earlier literature reflecting that firm size, cash flow, cash flow uncertainty, net working capital and leverage have a significant impact on corporate cash holdings.

2.4 Firms’ Performance, Profitability & Activity

2.4.1 Overview

Profitability as a primary and most common measure (Doyle, 1994) reflects how things are managed at organizations (Nash, 1993). Most commonly used profitability measures are sales, sales growth, net profit margin, gross profit margin, return on assets, return on equity, return on investments, market share, stock price and return on sales (Snow & Hrebiniak, 1980; Robinson, 1982; Galbraith & Schendel, 1983; Segev, 1987; Smith et al., 1989; Parnell & Wright, 1993; Thomas & Ramaswamy, 1996; Gimenez, 2000).

Despite the wide use of these measures as proxy for firms’ performance yet there is an argument regarding the use of these measures as a proxy for firms’ performance (Ford & Schellenberg, 1982), since none of these measures individually can fully encompass the firms’ performance (Snow & Hrebiniak, 1980). Yet these measures are frequently used for industry because of the uniformity of these measures across industry (Venkatraman & Ramunujam, 1986). These measures also facilitate analysts and researchers to conduct trend, competitor and industry standard analyses (Drew, 1997). Hence the use of multiple indicators to reflect firms’ performance is generally preferred over the use of single factor.

The core premise of the strategic management has always been the issues causing success or the failure of the firms (Porter, 1991). A lot of empirical studies conducted on exploring how firms profitability is affected by market specific factors and the firm specific factors, have been
showing contradictory results. Some studies supported that industry specific factors have more effect on firm performance (Schmalensee, 1985; Wernerfelt and Montgomery, 1988) whereas some supported that firm specific factors have more effect on firm performance (Rumelt, 1991; Roquebert et al. 1996; McGahan & Porter, 1997). This contradiction has been related to the differences of the data (McGahan & Porter, 1997).

These studies have used return on assets (Rumelt, 1991; Roquebert et al. 1996; McGahan & Porter, 1997; Mauri & Michaels, 1998) or market share (Wernerfelt & Montgomery, 1989; Chang & Singh, 1996) as accounting measures for quantifying firms’ performance. However the reliability of these measures is questionable on the basis of data differences due to reporting and measurement issues that may affect industry and firm effects. Moreover the positive relationship between market share and profitability is also questionable as the enormity of this relationship is effected by type of business and type of accounting measure used (Szymanski et al., 1993). Some studies have also taken Tobin’s q (Wernerfelt and Montgomery, 1988; McGahan, 1997) for measuring firm performance since it depicts the expectations of financial stakeholders regarding the future potential of the firm.

**2.4.2 International Studies - A Chronological Review**

Arabsalehi & Mahmoodi (2012) studied and compared value based measures and conventional accounting based measures to identify which one better predicts the stock returns. Panel data analysis was conducted on financial statements data and market data of 115 companies listed at Tehran Stock Exchange. Data for the years 2001-2008 was used to explore the predictability of four value based measures; including economic value added, refined economic value added, market value added and shareholder value added; and five accounting based measures including
earning per share, return on equity, return on assets, operating cash flows and return on sales. The findings evidenced that there is no superiority of value based measures as against conventional accounting based measures for predicting stock returns, rather accounting based measures such as return on equity and return on assets are better predictors of stock returns. Value based measures were found to add some marginal information to the results of accounting based measures. The study thus concluded that accounting based measures are usually dominant in predicting stock returns as against value based measures.

Mubashir et al. (2012) studied and analyzed the association among corporate strategy, financial structure and the firm performance. The study took financial data for the years 1998-2009 from financial statements of 158 listed non financial companies from Karachi stock exchange. Panel data analysis conducted for the variables sales growth, firms’ growth and corporate liquidity as a measure of corporate strategy to identify the possible changes in firms’ performance measured as return on assets and free cash flows. Free cash flows were found to be significantly and positively associated to firms’ growth and corporate liquidity, whereas debt ratio was found to have negatively significant association with return on assets and free cash flows.

Taani & Banykhaled (2011) studied and examined the impact of accounting information on earning per share. The study took five categories of financial ratios from 40 listed companies of Amman stock exchange. Multiple regression analysis was conducted to estimate the impact of financial ratios on earnings per share. Stepwise regression was used for profitability, liquidity, debit to equity, market ratio, size and operating cash flows as independent variables and earnings per share as dependent variable. The results indicated profitability, market ratio, operating cash flows and leverage as significantly affecting earnings per share.
Kamasak (2011) studied firm specific factors and industry specific factors for exploring their predictability of performance variation. The study empirically investigated the Turkish firm to achieve the research objectives. The study pointed out that most of the researches in this context have been carried out in US industry and quite a few studies are available for other than US countries. The study decomposed the effect of industry specific and firm specific factors on firms’ performance by taking sales turnover, market share and profitability into consideration. The study conducted primary data analysis by collecting data from general managers and other executives of 259 firms, to test the effect of firm specific and industry specific factors on performance variation through hierarchical regression technique. The results disclosed that firm specific factors are better explaining the performance variation as against industry specific factors. The Turkish companies were found to be more oriented towards resource based view of performance variation like the emerging economies of Taiwan, Brazil, Poland and South Korea. The study contributed to the strategic management literature by providing comparable results from another emerging economy. The study also verified resource based theory and thus suggested that the firms must pay attention to their unique resources for enhanced performance rather than trying to control the industry related factors.

Kheradyar & Ibrahim (2011) studied and investigated whether financial ratios can predict stock returns. The study tested the effect separately and individually on the data covering 2000-2009 for the companies listed at Bursa Malaysia. Dividend yield, earning yield and book to market ratios were checked for their empirical predictability of stock returns. The study used panel data and least squares techniques to estimate the predictability of the tested variables. The results supported the financial ratios as good predictors of stock return. Book to market was found to be the best predictor of stock returns followed by dividend yield and earnings yield. The combined
effects of the studied ratios were also found to be good predictors of stock returns. Hence the study concluded that the financial ratios can play significantly augmenting role for predicting stock returns.

Karunarathne & Rajapakse (2010) described that the investors and the other users of financial statements rely on financial accounting information to identify the risk and return of the firms. Value relevance of these statements is the capability of these financial statements to explain the variations in stock returns (Sushma et al., 2008). The study investigated the value relevance of the financial information sorted out from financial statements. The study focused especially on value relevance of earnings, book value, size, debt and cash flows for explaining variations in stock prices. Hundred non financial listed companies were selected for the study from different sectors. Five years data from 2004 to 2008 was taken for analyzing the relevance effect in the companies listed at Colombo Stock Exchange. The results depicted that earning per share is the most significant variable in terms of value relevance for explaining stock returns. Cash flows were then found to be significantly relevant in explaining stock returns.

Jibao & Kai (2010) studied the structure based view of the firms exploring how structural characteristic of the industry affect the firms’ performance, as against the resource based view. The study conducted empirical analysis of 945 listed companies from 18 different industries of China to explore the impact of industry specific factors on firms’ performance. Using one way ANOVA the findings suggested that as against the previous literature the industry factors were significantly affecting the firms’ performance, whereas in some industries the resource based view was dominant in predicting firms; performance.
Malay et al. (2010) conducted a study to test the association between price earnings ratio dividend yield, size and stock returns for listed companies of Jordan. The results depicted that the studied variables are having a constant relationship over the long run.

Martani et al., (2009) studied the role of financial ratios on stock returns by taking firm size and operating cash flows as predictors of stock variations. The study selected 39 listed companies from Indonesian stock exchange representing manufacturing sector of Indonesia. The results reflected that profitability, turnover and market ratio is significantly affecting the stock returns.

Abuzayed et al. (2009) studied and examined the relevance of earnings components for bridging the gaps between market values and book values of the banks. The study followed the literature regarding value relevance to test the linkages between book values and market values. The study employed regression using ordinary least square method and fixed effect approach for financial statements and market data of listed banks of Jordan covering the years 1993-2004. The results depicted that, earnings components are value relevant in explaining the gaps between market values and book values. Moreover cost efficiency was found to be significantly providing information not provided by market values. The study supported that, variations in stock prices are explained by market factors as well as the accounting systems of the firms.

Chang et al. (2008) investigated through panel data analysis and co integration methods the association between stock prices and earnings per share. The study explored how stock prices react to changes in earnings per share as per the differences in revenue growth rate of firms. The empirical results suggested the existence of co integration between the stock prices and earnings per share in the long run. Moreover the study suggested that the earnings per share of the firms
with high growth rate lesser explains the variations in stock prices, whereas the earnings per share of the firms with low growth rate has more power to explain the variations in stock prices.

Tudor (2008) studied and examined the impact of firm specific ratios on the stock market values of companies listed at Bucharest stock exchange of Romania taking financial data for the years 2002-2008, to test the explanatory power of firm specific ratios for predicting future stock returns. Capital structure, book to market value, size, earnings to price, return on assets and return on equity were analyzed to test their predictability for stock returns variations. The study found that size is the most powerful predictor of stock price variations, while it has a negative association with stock returns. Earnings to price ratio was also found to be significantly and positively associated to stock returns. Book to market ratio was found to be significantly and positively associated to stock returns through univariate analysis but insignificant through multivariate analysis. The study supported that beta has lesser explanatory power in predicting stock returns.

Kapusuzoglu (2008) conducted a study to analyze and assess the impact of financial statement values on financial success of companies. The study took 228 firms listed at Istanbul Stock Exchange. Financial statements data for the years 1996 to 2002 was used to assess the financial statement values as an indicator of financial success of the studied companies. Regression based results showed that financial statement values are good indicators of financial success. Equity capital value was found to have most strong and significant impact on financial success, whereas current assets and long term debt were found to have the least impact on financial success.

Karacaer & Kapusuzoğlu (2008) attempted to identify and evaluate the effect of key financial ratios related to liquidity, solvency, activity and profitability on the financial performance of
companies. The study took financial data from 2005 to 2007 of 61 companies listed at Istanbul Stock Exchange. Discriminant analysis method was used to test the results. The findings suggested that all financial ratios studied were significantly affecting the financial performance of firms with varying degrees. Liquidity was found to be having most significant impact on firms’ performance whereas the profitability ratios were the next.

Sinani et al. (2008) studied the impact of firm specific factors on firms’ efficiency. Firm size and firm type were explored for their possible effect on firms’ efficiency. Positively relationship was found between firm size and firm efficiency. No significant differences were observed in the studied relationship across industry. Type of industry was found to be significantly affecting the firm efficiency and it was same across industries.

Hamzah (2007) evaluated the relationship between financial ratios on capital gain or loss and dividend payout of the listed companies of Jakarta stock exchange. The financial ratios covering liquidity, profitability, activity and solvency were taken for analysis. For measuring liquidity current ratio, for measuring profitability return on investment, for measuring activity total assets turnover and for measuring solvency debt to equity ratios were used as proxies. Financial statements data of 135 listed companies from manufacturing sector was taken for analysis. The study found significant and positive association of all studied variables with capital gain and loss.

Wang & DiIorio (2007) explored size and book to market ratio as factors explaining stock return and market beta as not explaining stock returns. The study took listed companies of China and the financial and market data covering years 1994-2002 were included for the analysis. Panel data regression technique was used to explain the predictability of market beta along with size,
dividend yield, leverage, book to market ratio, return on assets and return on equity. The study supported size and book to market as good predictors whereas market beta was not supported for predicting stock returns variability.

Hobarth (2006) studied the effect of financial ratios on firms’ performance and selected listed firms of USA. The study took 19 years data consisting of 17 financial ratios and 3 performance variables including market performance, cash flow performance and profitability. The results concluded that the companies having high profitability tend to have low book to market ratio, low liquidity, more equity, less liabilities and high retained earnings. Moreover firms having high cash flows were the firms having unqualified auditor opinion, more liabilities, less equity, low total assets and low retained earnings. Firms with better market performance were having low book to market ratio, more equity, less liabilities, low liquidity, low total assets and high earnings before interest and tax.

Daniat & Suhairi (2006) investigated the firm specific factors as predictors of stock returns for listed companies of Indonesia. The study considered operating cash flows, investing cash flows, gross profit and company size for exploring their impact on stock returns. The study found that operating cash flows is not predicting stock returns whereas investing cash flows, gross profit and company size were good predictors of stock returns.

Meythi (2006) explored profit as an intervening variable for the effect of operating cash flow on stock returns. The study took 100 listed companies from manufacturing sector and included financial data from 1992 to 2002 to test the results. The study concluded that taking profit as an intervening variable no effect was recorded on stock returns due to changes in operating cash flows.
McNamara et al., (2005) argued the findings of Hawawini et al. (2001) and re examined the impact of industry specific and firm specific factors as predictors of firm performance. The study concluded that variation in firm performance due to industry specific factors increases when top and low performing firms are excluded from analysis whereas the variation in firm performance due to firm specific factors decreases when top and low performing firms are excluded from analysis. The study criticized the earlier finding that the impact of industry specific factors for average middle firms was underestimated.

Hawawini et al. (2005), replied to the arguments of McNamara (2005) by reevaluating the identification of the top and low performing firms of the industry and their role in explaining impact of firm specific and industry specific factors on firm performance. The study in response to McNamara et al. (2005) argued that the main findings of Hawawini (2003) were found to be insensitive while tested through various methods of identifying outliers. The findings supported the earlier results of Hawawini (2003). Johnson & Soenen (2003) analyzed financial statement data of 478 firms from USA for the period 1982 to 1998 to identify the impact of financial ratios on stock returns. The study found that the firm performance is explained by the size of firm and the level of advertising expenditures.

Ramezani et al. (2002) stated that the association between firms’ performance and shareholder value through sales and earnings growth has always been the core issue for taking certain investment decisions; hence it has a substantial impact on managerial compensation and investment decisions. The study explored the linkages between sales and revenue growth and firms’ performance by taking into consideration measures like economic value added and the growth rate of earnings and sales. The study further explored how corporate profitability improves or adds to shareholders’ value. Multivariate analysis was conducted to conclude that
corporate profitability usually increases as the earnings and sales grow up to a certain level, after that further growth in sales and earnings caused adverse effects on profitability and shareholders’ value both.

Hawawini et al., (2001) explored how firm specific and industry specific factors affect firms’ performance. The study extended the previous studies by testing whether the earlier results could be generalized for all firms or for a specific group of firms in the industry. The study as a departure from earlier ones took into consideration the value based measures of performance as against accounting based measures. The study used new techniques on new data to test the significance of the effects of studied variables. The study showed significant association of firm specific factors with firms’ performance due to the existence of some outstanding firms in the industry including two outperformers and two underperformers. This showed that only for the top or worst performers the firm specific factors matter otherwise not for all firms. The top performing and worst performing firms were due to their own superior or poor management respectively. Hence their top or worst performance was found to be due to their superior or poor management not the industry structure. The rest of the firms were found to be affected by industry specific factors for their performance variations, being the average middle firms in terms of managerial capabilities.

Pandey (2001) studied the impact of size in terms of market capitalization on the expected stock returns of listed companies of Bursa Malaysia. The study found significant linkage between size and stock returns but as the size and dividend yield were included the significance decreased in fixed effect multivariate regression analysis.
Ngobo (1999) studied the industry and firm effect on firms’ performance measured in terms of customer satisfaction. The study argued that the differences in customer satisfaction exist owing to the industry specific and firm specific factors. The study highlighted that industry specific factors are more significant in manufacturing and trading companies, whereas the firm specific factors are significant in service companies.

Opler & Titman (1994) found that high debt financed firm loose more market share in terms of sales as against the moderately financed firms in the industry during the recessionary trends. The same trends were observed in equity market values. The findings supported the convention that indirect financing costs have significant impact on firms’ performance in both sales and market value terms. Similarly the highly debt financed firms with customized products and extensive research and development activities were also most effected firms in terms of performance during recessions.

Fama & French (1992) investigated the combined effect of size and book to market ratio to evaluate the cross sectional variations in average stock returns. The study considered market beta, size, debt, book to market value of equity and earning to price ratios as predictors of stock price variations. The study supported that market beta is not a good predictor of cross section stock returns whereas the leverage and price earnings ratio were found to be significantly predicting the stock returns with size. The same variables showed insignificant association while taking size and book to market ratio combined.
2.5 Identification of Knowledge Gap

The review of the above literature identifies that the impact of corporate strategies on firms’ performance in relation to the environment, the resources and the leadership has been much observed in literature providing with various differences existing as per the organizational structure and environment. The relationship has been more observed in developed countries under different settings (Porter, 1980; Vankatraman & Grant, 1986; Prescott & Vankatraman, 1990; Rumelt, 1991; Miller, 1996) establishing the significance of these factors for firms’ performance. However there is a scarcity of studies testing the factors from various organizational perspectives holistically; as is normally done under case studies; by taking large samples and especially in developing countries (Andrews, 1987; Teoh, 1997; Hoskisson & Wright, 2000; Hafsi & Farashahi, 2002).

The strategic management literature has always been keen in exploring the determinants of firms’ performance and the differences in these determinants across the firms and also across the industry from various perspectives (Jibao & Kai, 2010). The resource based view and the structure based view clearly signifies the differences in firms’ performances in context of the role of firm specific and industry specific factors in creating competitive advantage for the firm (Rumelt, 1991; Mauri and Michaels 1998; Schulze, 1992; Amit & Schoemaker, 1993; Chi, 1994; Brush et al., 1999; McGahan and Porter, 2002; Hawawini et al., 2003; Rueflı & Wiggins, 2003; Mcnamara et al., 2005; Hough, 2006).

Moreover the corporate strategic decisions are not taken exclusively; these decisions are well integrated and synchronized with corporate financial decisions in relation to the firms’ financial strategy (Mubashir et al., 2012). Therefore the present study intends to discuss the corporate
financial strategies regarding financial decisions including liquidity, activity, profitability and solvency; that are considered detrimental for adding value to the business in terms of stockholders’ wealth maximization (Kim et al., 1998; Chathoth & Olsen, 2007; Su & Vo, 2010).

The research regarding the identification of the value relevance of the financial statements and the comparison of the value relevance across countries; though very popular; yet most of the literature is based on developed and efficient capital markets including New York, Washington, London, Tokyo, Hong Kong, and Singapore; showing significantly different results in the studied countries (Karunarathne & Rajapakse, 2010). The value relevance of financial information is a critically significant issue for both developed and developing countries. It helps in relying on accounting information while taking various investment and financial decisions, and knowing the impact on stock returns (Karunarathne & Rajapakse, 2010). This creates a need to explore the explanatory power of these accounting based measures for depicting firms’ performance in an emerging economy like Pakistan.

Though the literature has supported that financial ratios may predict stock returns yet a lot of extensive work is still required in emerging markets; moreover the said effect needs to be tested regressively in various settings to identify and explore how financial ratios may be used as good predictors of stock returns. This study intends to augment the earlier studies by contributing through testing the construct validity of the financial ratios of the industry of emerging markets. In a nut shell the study will test the empirical predictability of financial ratios for stock returns and how these ratios can be used to improve the stock returns.

There has been a debate among the usage of traditional and contemporary measures of firms’ performance for taking certain decisions. The accounting based measures and the value based
measures have been in use interchangeably by the firms to measure their performance, some of the studies have supported the conventional accounting based measures. Some of the studies have supported the use of conventional value based measures whereas some of the studies have shown mixed results and provided the evidence that the explanatory power of these measures is different across countries and it is significantly different between developing and developed countries (Stewart, 1991; Stewart, 1994; Stern et al., 1995; Uyemura et al., 1996; Bacidore et al., 1997; Rappaport, 1998; Turvey et al, 2000; Chen & Dodd, 2001; Copeland, 2002; Sparling & Turvey, 2003; Worthington & West, 2004; Maditions et al, 2006; Kyriazis & Anastasis, 2007; Lee & Kim, 2009; Arabsalehi & Mahmoodi, 2012). Hence it identifies the need to explore whether accounting based measures are relevant for taking certain strategic decisions by the corporate sector organizations of an emerging economy like Pakistan.

Capital structure determination has always been the most debatable issue in finance literature. Until recently the capital structure has evolved as the most researched and interesting area in finance (Karadeniz et al., 2009; Chakraborty, 2010) yet there is a question mark on the concept of optimal capital structure. The capital structure decisions of the firms; having an impact on the firms’ competitive advantage; aligned with corporate strategy add value for the firm. The review of the literature above has shown that the studies have augmented the association between corporate strategy and capital structure decisions yet these studies could not suggest that how these decisions to be integrated with corporate strategy. This shows that until today there has been a mired controversy in the studies conducted to advocate the acceptability and applicability of one school of thought over the other one. Owing to the mixed results, the studying of empirical relationships between capital structure and firm performance still holds logical (Ebaid, 2009). Moreover the ultimate objective of financial managers is to maximize the shareholders’
wealth, so it is highly customary to identify how changes in capital structures would lead to attain that objective. Further, though such empirical relationships have been tested in mature capital markets, yet the emerging markets have a lot of potential to be explored in such context to further generalize the earlier findings (Ebaid, 2009). Such controversy and debate arises the need to explore the variables in Pakistani context for different sectors of the industry to see how changes in capital structure affects the corporate performance in an emerging capital market of Pakistan. This study will identify the impact of capital structure decisions on firms’ value. The study is distinguished from earlier studies in terms of taking relativity of accounting and market based measures of firms’ performance.

Firms have been adopting different working capital management strategies as per their circumstances. These strategies are generally classified as aggressive, moderate and conservative strategies (Meszek & Polweski, 2006). It has been observed during the review of literature concerning working capital management that relatively lesser research has been conducted on working capital management during the past decades (Etiennot et al. 2011; Viskari et al., 2011). This necessitates a lot of extensive research to explore the working capital management and its determinants in various corporate settings (Sen et al., 2009; Nazir & Afza, 2009; Abdul et al., 2010; Etiennot et al. 2011, Hong et al., 2011; Deesomsak & Chau, 2011; Zahra & Azam, 2012).

Moreover there is a need to conduct more detailed studies concerning industry specific effects (Viskari et al., 2011). Case studies and interventionist research is highly required in working capital management studies to open new arenas for further explorations (Viskari et al., 2011). Moreover most of the research conducted on working capital management during 1990-2010 does not seem to be quality work exploring the issue, hence there is a lot more to do in it (Lukkari, 2011). Most of the studies are just replicating the same by taking different samples.
from different industries. None of these studies has explored how working capital management strategies affect the corporate performance in terms of market value measures. This research is an endeavor to look working capital management from that perspective. It will open new discussion about how effective working capital management policies may lead to enhancement of corporate performance in market value terms.

Profitability as a primary and most common measure (Doyle, 1994) reflects how things are managed at organizations (Nash, 1993). The core premise of the strategic management has always been the issues causing success or the failure of the firms (Porter, 1991). A lot of empirical studies conducted on exploring how firms profitability is affected by market specific factors and the firm specific factors, have been showing contradictory results. Some studies supported that industry specific factors have more effect on firm performance whereas some supported that firm specific factors have more effect on firm performance. This contradiction has been related to the differences of the data.

The above analysis of the review of literature revealed the need of exploring how various corporate financial strategies add value to the firm. The earlier literature on finance has been focusing on either the relationship between corporate strategy and firm performance or the relationship between financial structure and firm performance (Mubashir et al., 2012). Though these relationships have been explored exclusively yet the mutual effect of these along with taking other elements into the study is very much needed. This study addresses this issue by taking into consideration the individual as well the mutual effect of various corporate finance strategies on firms’ performance. The study attempts to fill the gap by testing the overall effect of various corporate financial strategies on corporate performance. The study will test how these strategies affect the firms’ performance separately and mutually. This will help the management
of the companies in formulating and implementing various corporate finance strategies leading to the value addition for the shareholders.

In Pakistan the internal and external environment of the firms and the industry is significantly different as against the developed and even developing countries. Moreover the literature on the determinants of firms’ performance in Pakistan is still in its infancy. Therefore this study is intended to carry out an empirical analysis of Pakistani listed companies; to explore the impact of the accounting based measures on market performance and as well to identify the differences in results as against developed and other developing and emerging economies.
Chapter 3
Research Methodology

Direction of the Study

The Hypothesized Model

Holistic View of Methodologies Adopted in Earlier Studies

Operationalization of Variables & Development of Hypotheses

Independent Variables

- Liquidity–Current Ratio; Quick Ratio; Inventory Turnover & Receivable Turnover
- Solvency - Debt to Equity & Interest Coverage
- Profitability - Gross Margin; Profit Margin; Return on Assets & Return on Equity
- Activity - Sales Growth & Assets Turnover

Dependent Variable

Measurement & Prediction of Variables

Population of the Study

Sample of the Study

Period of study

Data Collection

Type of Data

Data Analysis/Statistical Tools

- Descriptive Statistics
- Data Stationarity - Unit Root Test
- Data Heteroskedasticity
- Panel Least Square – Fixed Effects Model
3.1 Direction of the Study

The endurance of corporate sector of Pakistan after being affected by shocks such as relentless security challenges, escalating energy crisis, sheer inflation and the distress of global financial crisis; shows the flexibility and toughness of the sector. So it is highly believed that by deploying some continuous strategic efforts the corporate sector still can be conveniently put on the track leading to the sustainable growth (Economic Survey 2011-12). Capital market has been an imperative gauge to identify and evaluate the status of the corporate sector and the economy. Capital market efficiency; being a gauge to decide about the current and the prospective investments; very much depends on the level of information available to the investors through financial statements of the corporate organizations and the market value ratios (Zeytinoglu et al, 2012). Hence corporate sector organizations need to understand the inter linkages between the corporate financial strategies and the outcomes of those in terms of book values and market values. The present study is designed to identify and evaluate the association among corporate financial strategies and the corporate performance valuation. This study intends to contribute to the validity of various financial indicators and their impact on corporate performance by testing the predictability and the value relevance of the selected financial indicators. The study is aimed to consider the impact of four main areas; including profitability, solvency, activity and liquidity management on corporate performance valuation. Previous studies though considered some of the elements of the above mentioned aspects yet ignored the combined and interacting effects of the elements on corporate performance (Shian & Hong, 2010). The present study has addressed the factors holistically to explore the linkages between the variables and to better understand the implied relationships, so that the market value of firms could be maximized by devising various corporate finance strategies accordingly (Kheradyar & Ibrahim, 2011).
3.2 The Hypothesized Model

On the basis of the review of literature and the gaps identified; following hypothesized model has been developed considering the outcomes of earlier international research and the specific idiosyncrasies of Pakistani industry.

Figure 3.1 The Hypothesized Model

Profitability

Gross Margin

Profit Margin

Return on Assets

Return on Equity

Sales Growth

Activity

Assets Turn

Corporate Performance Valuation

Market to Book Value/Tobins’ Q

Debt to Equity

Solvency

Interest Cover

Inventory Turnover

Receivables Turnover

Current Ratio

Quick Ratio

Liquidity

Source: Researcher’s Processing
3.3 Holistic View of Methodologies Adopted in Earlier Studies

On the basis of the review of the literature, the study found the following methodologies adopted by the researchers around the world to develop the constructs and measure the relationship between the studied constructs and their impact on corporate performance valuation.

<table>
<thead>
<tr>
<th><strong>Liquidity</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent Variables</strong></td>
</tr>
<tr>
<td>Working Capital Management, Cash Conversion Cycle, Quick Ratio, Current Ratio, Current Assets to Total Assets, Current Liabilities to Total Assets, Total Debt to Total Assets Ratio, Inventory Days, Receivables Days, Operating Cycle, Operating Cash Flows</td>
</tr>
<tr>
<td><strong>Dependent Variables</strong></td>
</tr>
<tr>
<td>Return on Assets, Return on Equity, Market to Book Ratio, Size, Leverage, Tobin’s Q, Gross Operating Profit</td>
</tr>
<tr>
<td><strong>Methodology Adopted</strong></td>
</tr>
<tr>
<td>Fixed Effects Model, OLS Regression, Multivariate Analysis, Panel Data Analysis, Multiple Regression, Pearson Correlation, ANOVA, F-Statistics, Random Effect Model, Panel Unit Root Test, Heteroskedasticity of Residuals, Descriptive statistics Unbalanced Panel Data Analysis</td>
</tr>
</tbody>
</table>

References:
Zahra & Azam, 2012; Ebrahim et al., 2012; Alrjoub et al., 2012; Abbasali & Milad, 2012; Michael, 2012; Owolabi & Alu, 2012; Sunday et al., 2012; Kulkanya, 2012; Ghassan et al., 2012; Mona, 2012; Taghizadeh, 2012; Abuzayed, 2012; Sonia et al., 2012; Ben, 2012; Bhunia & Das, 2012; Atif et al., 2012; Mehrunisa & Khuram, 2012; Muneeb & Kashif, 2012; Usama,
Solvency

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Short Term Debt, Long Term Debt, Total Debt to Total Assets, Total Debt to Total Stockholders’ Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variables</td>
<td>Return on Equity, Return on Assets, Earnings Per Share, Market to Book, Tobin’s Q</td>
</tr>
<tr>
<td>Methodology Adopted</td>
<td>Cross Section Time Series Analysis, Panel Data Techniques, Pearson Correlation, Multiple Regression, One Way ANOVA, Financial Ratios, Multiple Correspondence Factorial Analysis, Principal Component Analysis, Discriminant Analysis, Data</td>
</tr>
</tbody>
</table>

2012; Gill & Shah, 2012; Wilson & Nathalie, 2012; Islam & Mili, 2012; Kaddumi & Ramadan, 2012; Vida et al., 2011; Haidham et al., 2011; Karaduman et al., 2011; Anna & Zbigniew, 2011; Karaduman et al., 2011; Anna & Zbigniew, 2011; Corazon, 2011; Deesomsak & Chau, 2011; Hong et al., 2011; Autukaite & Molay, 2011; Qazi et al., 2011; Etiennot et al., 2011; Shahid, 2011; Afza & Nazir, 2011; Abdul et al., 2011; Niaz et al., 2011; Azam & Irfan, 2011; Fuenzalida, 2010; Nor & Noriza, 2010; Suranga & Lakshan, 2010; Matthew et al., 2010; Faris, 2010; Jasmine, 2010; Banos et al., 2010; Dong & Su, 2010; Melita & Maria, 2010; Abdul et al., 2010; Umara et al., 2010; Viqar, 2009; Lakshan, 2009; Azhagaiah & Muralidharan, 2009; Sen & Oruc, 2009; Sen et al., 2009; Luo et al., 2009; Ali, 2009; Zariyawati et al., 2009; Nazir & Afza, 2009; Darun, 2008; Appuhami, 2008; Samiloglu & Demirgunes, 2008; Nazir & Afza, 2008; Pedro & Pedro, 2007; Anup & Muntasir, 2007; Ganesan, 2007; Salawu, 2007; Afza & Nazir, 2007; Abdul & Nasr, 2007; Rabih et al., 2006; Sayaduzzaman, 2006; Kesseven, 2006; Lazaridis & Tryfonidis, 2006; Shah & Sana, 2006; Afza & Adnan, 2006; Howorth & Westhead, 2003; Koury et al., 1998; Morris, 1995
| Envelopment Analysis, Quartile Regression, F-test, Hausman Test, Fixed & Random Effect Model, Panel Unit Root Test, Heteroskedasticity of Residuals, Descriptive statistics |

**References:**
Sebastian & Rapuluchukwu, 2012; Uwalomwa & Uadiale, 2012; Heydar et al., 2012; Mahdi & Zinat, 2012; Darush, 2012; Salawu et al., 2012 Faruk & Ayub, 2012; Nguyen et al., 2012; Ahmad et al., 2012; Javid & Imad, 2012; Khan, 2012; Akhtar et al., 2012; Aurangzeb & Haq, 2012; Memon et al., 2012; Gupta, 2011; Faris, 2011; Pratheepkanth, 2011; Bistrova et al., 2011; Azhagaiah, 2011; Mojtaba & Shahoo, 2011; Simon & Afolabi, 2011; San & Heng, 2011; Chen & Chen, 2011; Caglayan, 2011; Naser et al., 2011; Saaedi & Mehmoodi, 2011; Awan et al., 2011; Ali, 2011; Nadeem & Zongjun, 2011; Monica & Abir, 2010; Omorogie & Erah, 2010; Shahjahanpour et al., 2010; Pinar, 2009; Suhaila & Wan, 2009; Chou & Lee, 2009; Ebaid, 2009; Karadeniz et al., 2009; Dimitrios et al., 2009; Gill et al., 2009; Jasim et al., 2009; Mehmet & Eda, 2008; Xiaoyan, 2008; Jasir, 2008; Rafiq et al., 2008; Huat, 2008; Saeed, 2007; Eriotis et al., 2007; Margaritis & Psillaki, 2007; Maurizio, 2007; Zeitun & Tian, 2007; Abdussalam, 2006; Nguyen & Ramachandran, 2006; Buferna et al., 2005; Frielinghaus et al., 2005; Abor, 2005; Arsiraphongphisit & Ariff, 2004; Allen, 2003; Sogorb & Lopez, 2003; Mesquita & Lara, 2003; Eriotis & Neokosmides, 2002; Pandey, 2002; Pandey, 2001; Wald, 1999; Dhankar & Ajit, 1996

**Profitability & Activity**

| Independent Variables | Return On Assets, Profits, Economic Value Added, Market Value Added, Earning Per Share, Return on Equity, Return on Sales, Sales Growth, Firms Growth, Debt to Equity, Firms Size, Operating Cash |

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<table>
<thead>
<tr>
<th>Flows, Growth Rate of Earnings, Sales, Sales Turnover, Debt, Operating Cash Flows, Investing Cash Flows, Gross Profit, Cost Efficiency, Revenue Growth, Capital Structure, Solvency, Activity, Firm Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Share, Tobin’s Q, Sock Returns, Earnings Per Share, Dividend Yield, Earning Yield, Book to Market Ratio, Earnings to Price</td>
</tr>
<tr>
<td>Panel Data Analysis, Multiple Regression Analysis, Stepwise Regression, Hierarchical Regression, Least Squares Techniques, One Way ANOVA, Fixed Effect Approach, Earnings to Price Ratio, Discriminant Analysis, Multivariate Analysis</td>
</tr>
</tbody>
</table>

References:

Arabsalehi & Mahmoodi, 2012; Mubashir et al., 2012; Taani & Banykhaled, 2011; Kamasak, 2011; Kheradyar & Ibrahim, 2011; Jibao & Kai, 2010; Karunarathne & Rajapakse, 2010; Malay et al., 2010; Martani et al., 2009; Abuzayed et al., 2009; Chang et al., 2008; Tudor, 2008; Kapusuzoglu, 2008; Karacaer & Kapusuzoğu, 2008; Sinani et al., 2008; Sushma et al., 2008; Wang & DiIorio, 2007; Hamzah, 2007; Meythi, 2006; Hobarth, 2006; Daniat & Suhairi, 2006; McNamara et al., 2005; Hawawini et al., 2005; Ramezani et al., 2002; Hawawini et al., 2001; Pandey, 2001; Gimenez, 2000; Ngobo, 1999; Mauri & Michaels, 1998; McGahan & Porter, 1997; Thomas & Ramaswamy, 1996; Chang & Singh, 1996; Roquebert et al., 1996; Opler & Titman, 1994; Doyle, 1994; Nash, 1993; Szymanski et al., 1993; Parnell & Wright, 1993; Fama & French, 1992; Rumelt, 1991
3.4 Operationalization of Variables & Development of Hypotheses

The purpose of this study is to identify and measure the association between corporate performance valuation and various corporate financial strategies; taking corporate performance valuation as dependent variable and corporate financial strategies as independent variables. Based on the review of literature and the empirical findings of the earlier studies; four constructs including solvency, liquidity, profitability and activity are developed to represent the independent variable corporate financial strategies; whereas corporate performance valuation is represented by market to book value ratio - Tobin’s Q.

3.4.1 Independent Variables

For the purpose of this study four constructs have been developed to represent the independent variable – corporate financial strategies. These include liquidity, solvency, profitability and activity.

3.4.1.1 Liquidity–Current Ratio; Quick Ratio; Inventory Turnover & Receivable Turnover

**Liquidity:** Liquidity analysis is conducted to determine how far a company is stable or otherwise in payment of the short term obligations; whether short term debts or other accrued liabilities; as and when they are becoming due. Following the earlier studies and their methodologies it is measured through current ratio, quick ratio, receivable turnover and inventory turnover.

**Current Ratio:** Current ratio tells how far the company is convenient in payment of their short term obligations by comparing the level of current assets and the level of current liabilities. More the ratio is better the liquidity position is considered since more current assets are there for
the payment of existing current liabilities and vice versa. Higher level of current assets though improves liquidity on the one side but it also adversely affects the profitability owing to the lesser risks involved and the over investments in current assets promising lesser returns as against long term assets promising significantly higher returns. Therefore the corporate units have to identify that up to how far they may increase their liquidity through adding current assets without significantly affecting the profitability to add value to their financial results.

**Quick ratio:** Quick ratio is a more precise and absolute measure of liquidity comparing only more liquid assets or quick assets as against the current obligations. It excludes inventory being the least liquid asset covering for the timing and valuation differences; that generally affect the liquidity of a company. Higher the ratio safer the company is considered in terms of liquidity; owing to the availability of more liquid or quick assets for backing the payment of current obligations. Higher level of quick assets though again improves the liquidity yet it also adversely affects the profitability owing to the lesser risks involved and the over investments in quick assets promising lesser returns as against long term assets promising significantly higher returns. Therefore the corporate units have to identify that up to how far they may increase their investment in quick assets to improve liquidity without significantly affecting the profitability to add value to their financial results.

**Inventory turnover:** Inventory turnover being the measure of speed of selling inventory, that is, how quickly the company is selling inventory to its customer after it is being bought; is another tool of liquidity measurement. High speed or higher inventory turnover promises more and early recovery of funds for the payment of current obligations and thus it enhances the liquidity of the company. However due care should be taken to consider the effects of role of inventory valuation methods on the measure.
**Receivable Turnover:** Receivable turnover being the measure of speed of cash collection from the customers once the goods have been sold; is another measure of liquidity management. High turnover explicitly describes the possibility of convenience in payment of current obligations and thus depicts better liquidity and vice versa. However due care should be given to improve liquidity through increased receivable turnover as it may start resulting in losing customers and sales. Therefore the corporate units have to identify that up to how far they may increase their receivable turnover to improve the liquidity to add value to their financial results.

**Hypotheses:** The review of the literature and the idiosyncrasies of the corporate sector allow developing the following hypotheses for evaluating the effect of liquidity position of the corporate units on corporate performance valuation; by measuring the operationalized relationships.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H1</strong></td>
<td>Firms with low current ratio tend to have high market to book value</td>
</tr>
<tr>
<td><strong>H2</strong></td>
<td>Firms with low quick ratio tend to have high market to book value</td>
</tr>
<tr>
<td><strong>H3</strong></td>
<td>Firms with high inventory turnover tend to have high market to book value</td>
</tr>
<tr>
<td><strong>H4</strong></td>
<td>Firms with high receivable turnover tend to have high market to book value</td>
</tr>
</tbody>
</table>

**References:** Zahra & Azam, 2012; Ebrahim et al., 2012; Alrjoub et al., 2012; Abbasali & Milad, 2012; Michael, 2012; Owolabi & Alu, 2012; Sunday et al., 2012; Kulkanya, 2012; Ghassan et al., 2012; Mona, 2012; Taghizadeh, 2012; Abuzayed, 2012; Sonia et al., 2012; Ben, 2012; Bhunia & Das, 2012; Atif et al., 2012; Mehrunisa & Khuram, 2012; Muneeb & Kashif, 2012; Usama, 2012; Gill & Shah, 2012; Wilson & Nathalie, 2012; Islam & Mili, 2012; Kaddumi & Ramadan, 2012; Vida et al., 2011; Haitham et al., 2011; Karaduman et al., 2011; Anna & Zbigniew, 2011; Karaduman et al., 2011;
3.4.1.2 Solvency - Debt to Equity & Interest Coverage

**Solvency:** Solvency analysis is conducted to determine how far a company is financially stable or otherwise in payment of the principal amount of long term funds they have borrowed; along with the capability of the firm to service the debt over its life in terms of interest payments. Hence following the earlier studies and their methodologies it is measured through debt to equity ratio and interest coverage ratio.

**Debt to Equity:** Debt to equity ratio tells how far the company is debt financed. Higher level of debt financing brings in tax advantages on the one side but it also brings the risk of
insolvency due to inability of repayments of principal and the interest payments on the other side. Therefore the corporate units have to identify that up to how far debt financing is adding value to their financial results.

**Interest Coverage**  Interest coverage ratio tells how far company is convenient enough in payment of annual interest expenses based on their operating profits. Higher debt financing leads to higher level of interest expenses and thus may create risk of nonpayment of interest expenses if the funds borrowed are not carefully invested into the business operations promising more returns as against the cost of debt.

**Hypotheses:** The review of the literature and the idiosyncrasies of the corporate sector allow developing the following hypotheses for evaluating the effect of solvency position of the corporate units on corporate performance valuation; by measuring the operationalized relationships.

<table>
<thead>
<tr>
<th>H5</th>
<th>Firms with high debt to equity tend to have high market to book value</th>
</tr>
</thead>
<tbody>
<tr>
<td>H6</td>
<td>Firms with high interest coverage tend to have high market to book value</td>
</tr>
</tbody>
</table>

**References:** Sebastian & Rapuluchukwu, 2012; Uwalomwa & Uadiale, 2012; Heydar et al., 2012; Mahdi & Zinat, 2012; Darush, 2012; Salawu et al., 2012 Faruk & Ayub, 2012; Nguyen et al., 2012; Ahmad et al., 2012; Javid & Imad, 2012; Khan, 2012; Akhtar et al., 2012; Aurangzeb & Haq, 2012; Memon et al., 2012; Gupta, 2011; Faris, 2011; Pratheepkanth, 2011; Bistrova et al., 2011; Azhagaiah, 2011; Mojtaba & Shahoo, 2011; Simon & Afolabi, 2011; San & Heng, 2011; Chen & Chen, 2011; Caglayan, 2011; Naser et al., 2011; Saaedi & Mehmoodi, 2011; Awan et al., 2011; Ali, 2011; Nadeem & Zongjun, 2011; Monica & Abir, 2010; Omorogie & Erah, 2010;
3.4.1.3 Profitability - Gross Margin; Profit Margin; Return on Assets & Return on Equity

**Profitability:** Profitability measures the efficiency of firms’ operations in terms of their cost management, that is, how profitable a firm has been during a specific time period. High profitability depicts the better cost management of the companies and vice versa. A firm with efficient activity management may not necessarily be a profitable firm; similarly a firm with inefficient activity management again may not necessarily be a non profitable firm. To be successful a firm has to be efficient in both activity management and profitability management. Following the earlier studies and their methodologies it is measured through gross margin, profit margin, return on assets and return on equity.

**Gross Margin:** Gross margin measures the efficiency of a firm in generating gross profits through the manufacturing and trading activity. Firms with better controls on cost of buying and manufacturing usually show higher gross margins and vice versa. Therefore the corporate units
have to maintain and increase their gross margin to improve their profitability to add value to their financial results.

**Profit Margin:** Profit margin measures the efficiency of a firm in generating net profits after deducting all business operating expenses and financial charges. Firms with better controls on operating expenses and financial charges tend to have higher profit margins and vice versa. Therefore the corporate units have to maintain and increase their profit margin to improve their profitability to add value to their financial results.

**Return on Assets:** Return on assets measure the profits generated on total assets invested in the business. Generally more profitable firms tend to have better return on assets as against the lesser profitable firms. However due care in this regard is to be given regarding the given level of assets, as a profitable firm may not necessarily be producing the required return on assets owing to the poor activity management. Therefore the corporate units have to maintain and increase their return on assets to improve their profitability to add value to their financial results.

**Return on Equity:** Return on equity measures the level of profit generated for the given level of investment by the owners of the corporate units. Generally more profitable firms tend to have higher return on equity as against the lesser profitable firms. However due care in this regard is again to be given regarding the given level of total equity, as a profitable firm may not necessarily be producing the required return on equity owing to the poor activity management or solvency management. Therefore the corporate units have to maintain and increase their return on equity to improve their profitability to add value to their financial results.

**Hypotheses:** The review of the literature and the idiosyncrasies of the corporate sector allow developing the following hypotheses for evaluating the effect of activity and profitability of the
corporate units on corporate performance valuation; by measuring the operationalized relationships.

<table>
<thead>
<tr>
<th>H7</th>
<th>Firms with high gross margin tend to have high market to book value</th>
</tr>
</thead>
<tbody>
<tr>
<td>H8</td>
<td>Firms with high profit margin tend to have high market to book value</td>
</tr>
<tr>
<td>H9</td>
<td>Firms with high return on assets tend to have high market to book value</td>
</tr>
<tr>
<td>H10</td>
<td>Firms with high return on equity tend to have high market to book value</td>
</tr>
</tbody>
</table>

References: Arabsalehi & Mahmoodi, 2012; Mubashir et al., 2012; Taani & Banykhaled, 2011; Kamasak, 2011; Kheradyar & Ibrahim, 2011; Jibao & Kai, 2010; Karunarathne & Rajapakse, 2010; Malay et al., 2010; Martani et al., 2009; Abuzayed et al., 2009; Chang et al., 2008; Tudor, 2008; Kapusuzoglu, 2008; Karacaer & Kapusuzoğlu, 2008; Sinani et al., 2008; Sushima et al., 2008; Wang & DiIorio, 2007; Hamzah, 2007; Meythi, 2006; Hobarth, 2006; Daniat & Suhairi, 2006; McNamara et al., 2005; Hawawini et al., 2005; Ramezani et al., 2002; Hawawini et al., 2001; Pandey, 2001; Gimenez, 2000; Ngobo, 1999; Mauri & Michaels, 1998; McGahan & Porter, 1997; Thomas & Ramaswamy, 1996; Chang & Singh, 1996; Roquebert et al., 1996; Opler & Titman, 1994; Doyle, 1994; Nash, 1993; Szymanski et al., 1993; Parnell & Wright, 1993; Fama & French, 1992; Rumelt, 1991

3.4.1.4 Activity - Sales Growth & Assets Turnover

Activity analysis is conducted to determine how far a company is efficient or otherwise in enhancing sales and utilizing available assets to generate the sales. Following the earlier studies and their methodologies it is measured through sales growth and assets turnover.
Sales Growth: Sales growth measures the rate of increase in sales revenues to reflect the activity management of the company. Higher ratio depicts the better activity management of the companies and vice versa. Therefore the corporate units have to increase sales to improve their activity management to add value to their financial results.

Asset Turnover: Asset turnover measures how efficiently a firm is using the available assets to generate sales. It tells whether the total assets reported on the balance sheet seem reasonable, high or low in relation to the given level of sales. A firm with too high level of assets tends to have low returns if the assets employed are not efficiently utilized for generating revenues, thus affecting the profitability of the firm adversely. A firm with too low assets possibly tends to lose profitable sales thus again affecting adversely the profitability. Therefore the corporate units have to maintain and increase their asset turnover to improve their activity management to add value to their financial results.

<table>
<thead>
<tr>
<th>H11</th>
<th>Firms with high sales growth tend to have high market to book value</th>
</tr>
</thead>
<tbody>
<tr>
<td>H12</td>
<td>Firms with high assets turnover tend to have high market to book value</td>
</tr>
</tbody>
</table>

References: Arabsalehi & Mahmoodi, 2012; Mubashir et al., 2012; Taani & Banykhaled, 2011; Kamasak, 2011; Kheradyar & Ibrahim, 2011; Jibao & Kai, 2010; Karunarathne & Rajapakse, 2010; Malay et al., 2010; Martani et al., 2009; Abuzayed et al., 2009; Chang et al., 2008; Tudor, 2008; Kapusuzoglu, 2008; Karacaer & Kapusuzoğlu, 2008; Sinani et al., 2008; Sushma et al., 2008; Wang & DiIorio, 2007; Hamzah, 2007; Meythi, 2006; Hobarth, 2006; Daniat & Suhairi, 2006; McNamara et al., 2005; Hawawini et al., 2005; Ramezani et al., 2002; Hawawini et al.. 2001; Pandey, 2001; Gimenez, 2000; Ngobo, 1999; Mauri & Michaels, 1998; McGahan & Porter,
3.4.2 Dependent Variable

**Market to Book Value:** Corporate performance valuation is measured through market to book - Tobin’s Q. Major internal factors affecting the corporate financial performance have been related to operational, investment and financial strategies. The outcomes of these strategies are measured and reflected in terms of book values as presented by various accounting methods. These internal factors affect the overall market value of the company measured in terms of stock market value. The linkage between the two values – book value and market value, is measured by Tobin’s Q (Tobin, 1969) developed by Nobel Laureate James Tobin. Tobin’s Q is an extensively used score for measuring corporate performance and estimating the value of stock as against its replacement cost (Short, 2012). A low score reflects that the cost of replacing the assets is more as against the value of the stocks, presuming the stock to be undervalued. A high score reflects that the cost of replacing the assets is less as against the value of stocks, presuming the stock to be overvalued (Short, 2012). In other words if the score is less than 1, it implies that the company is earning the lesser return on assets as against the cost of assets. On the other hand if the score is greater than 1, it implies that the company is earning the higher return on assets as against the cost of assets (Carlton & Perloff, 2000).
3.5 Measurement & Prediction of Variables

On the basis of the review of literature and the above discussion, the variables of the study are measured and predicted as follows:

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Variables</th>
<th>Measurements</th>
<th>Type</th>
<th>Predicted Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidity</td>
<td>Current Ratio (CR)</td>
<td>Current Assets/Current Liabilities</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Quick Ratio (QR)</td>
<td>Quick Assets/Current Liabilities</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Inventory Turnover (IT)</td>
<td>Cost of sales/Inventory</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Receivable Turnover (RT)</td>
<td>Sales/Receivables</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Solvency</td>
<td>Debt Equity (DE)</td>
<td>Total Debt/Total Equity</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Interest Coverage (IC)</td>
<td>Operating Profit/Financial Charges</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Profitability</td>
<td>Gross Margin (GM)</td>
<td>Gross Profit/Sales</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Profit Margin (PM)</td>
<td>Net Profit/Sales</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Return on Assets (RA)</td>
<td>Net Income/Total Assets</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Return on Equity (RE)</td>
<td>Net Income/Total Equity</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Activity</td>
<td>Sales Growth (SG)</td>
<td>Current Sales-Previous Sales</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>Assets Turnover (AT)</td>
<td>Sales/Total Assets</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Corporate Performance</td>
<td>Market to Book (MB)/Tobin’s Q</td>
<td>Market Value Per Share/Book Value Per Share</td>
<td></td>
<td>+/-</td>
</tr>
</tbody>
</table>

3.6 Population of the Study

The population of the study is nonfinancial companies listed at Karachi Stock Exchange (KSE). The reason for selecting KSE is that it has got an outstanding place among all capital markets in
Pakistan. It offers highly proficient, rational and lucid system where investors can trade securities with full confidence. KSE can be compared with any other capital market in the region. It is considered as the primary indicator of the capital markets performance in Pakistan. Therefore due to its major role, the overall analysis and discussion of capital markets of Pakistan is largely and primarily based on the performance of the KSE. Due to the excellent performance of KSE during the past KSE has now become a significant component of global equity market (Economic Survey 2011-12).

The study takes into consideration only listed non financial sector companies and excludes the nonfinancial sector companies. The reason for excluding nonfinancial companies is that the financial statements of these institutions are prepared differently and are not comparable to non financial sector companies. The nonfinancial listed companies being a significant part of economy must be stable and sound for the development of economy. In Pakistan nonfinancial companies are segmented into various economic groups namely Textile; Chemicals & Pharmaceuticals; Motor Vehicles, Trailers & Auto Parts; Fuel & Energy; Other Manufacturing; Information, Communication & Transport Services; Electrical Machinery & Apparatus & Other Services; Coke & Petroleum Products; Food; Paper & Paperboard Products and Other Non-metallic Mineral Products. The total number of companies listed in each group is presented below (Table 3.1)
Table 3.1 - Distribution of Companies by Economic Groups

<table>
<thead>
<tr>
<th>Economic Groups</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Textiles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) Spinning, Weaving, Finishing of Textiles</td>
<td>145</td>
<td>137</td>
</tr>
<tr>
<td>ii) Made-up Textile Articles</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>iii) Other Textiles</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>2) Food</td>
<td>54</td>
<td>54</td>
</tr>
<tr>
<td>i) Sugar</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>ii) Other Food Products</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>3) Chemicals, Chemical Products &amp; Pharmaceuticals</td>
<td>43</td>
<td>43</td>
</tr>
<tr>
<td>4) Other Manufacturing</td>
<td>33</td>
<td>30</td>
</tr>
<tr>
<td>5) Other Non-Metallic Mineral Products</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>i) Cement</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>ii) Mineral Products</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>6) Motor Vehicles, Trailers &amp; Auto Parts</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>7) Fuel &amp; Energy</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>8) Information, Communication &amp; Transport Services</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>9) Coke &amp; Refined Petroleum Products</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>10) Paper, Paperboard &amp; Products</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>11) Electrical Machinery &amp; Apparatus</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>12) Other Services Activities</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>411</td>
<td>399</td>
</tr>
</tbody>
</table>


3.7 Sample of the Study

The study uses non probability sampling technique for the purpose of selecting sample companies for conducting analysis. Non probability sampling precludes random selection as in probability sampling. This does not imply that non probability based samples are not representing the population, but it implies that the sample to be selected cannot rely on the rationale of probability sampling. In case of applied research such as in finance; where secondary data is to be analyzed; random sampling being unfeasible or impractical does not serve the purpose of study.

Non probability sampling is further divided into convenience and purposive sampling. Purposive sampling also commonly referred to as judgmental sampling selects the sample based on the
knowledge of the population and the purpose of the study. The samples are selected on the basis of some predefined characteristics. In purposive sampling researcher approaches the sample with a specific objective to be achieved. This is adopted in cases where population is composed of one or more specific groups. Purposive sampling is usually considered very helpful in cases where the researcher intends to approach the target group quickly and where the proportionality within each group is not the primary issue.

For the purpose of this study three major economic groups have been selected on the basis of number of companies listed in the groups and the market capitalization; namely Sugar & Allied; Chemical & Allied and Cement & Allied. Thus the subset of the population consisted of 126 companies belonging to the selected economic groups. Further from each selected group only those companies have been selected having complete financial records availability and continuity of existence over the period of study. The companies not having the existence over the entire period of study are dropped for analysis purposes, since the newly entering companies and the companies leaving the industry distort the results due to the abnormality of their data. The details of the selected companies from each group are given below (Table 3.2).

### Table 3.2 - Population & Sample Distribution

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Listed Companies</th>
<th>Deselected Companies</th>
<th>Selected Companies</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar &amp; Allied</td>
<td>54</td>
<td>5</td>
<td>49</td>
<td>91%</td>
</tr>
<tr>
<td>Chemical &amp; Allied</td>
<td>43</td>
<td>13</td>
<td>30</td>
<td>70%</td>
</tr>
<tr>
<td>Cement &amp; Allied</td>
<td>29</td>
<td>7</td>
<td>22</td>
<td>76%</td>
</tr>
<tr>
<td>Total</td>
<td>126</td>
<td>25</td>
<td>101</td>
<td>80%</td>
</tr>
</tbody>
</table>
3.8 Period of study

The study took 10 years data from the financial statements of the selected 101 companies; covering years 2001 to 2011. The reason for selecting this period is that it covers a decade of activity and as such it includes much variations that might have occurred in the financial data and hence it would support the analysis in better digging out the implications of the studied variables over the long run. Moreover the analysis of such a longitudinal data will also add to the reliability of generalizing the results based on such data. Hence 1,010 firm years data is used for measuring and analyzing the relationships between the studied variables. The details are given below (Table 3.3).

Table 3.3 – Period of Study

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Selected Companies</th>
<th>Period of Study</th>
<th>Firm Years</th>
<th>Observed Firm Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar &amp; Allied</td>
<td>49</td>
<td>2001-2011</td>
<td>10</td>
<td>490</td>
</tr>
<tr>
<td>Chemical &amp; Allied</td>
<td>30</td>
<td>2001-2011</td>
<td>10</td>
<td>300</td>
</tr>
<tr>
<td>Cement &amp; Allied</td>
<td>22</td>
<td>2001-2011</td>
<td>10</td>
<td>220</td>
</tr>
<tr>
<td>Total Observed Firm Years</td>
<td></td>
<td></td>
<td></td>
<td>1010</td>
</tr>
</tbody>
</table>

3.9 Data Collection

Financial statements data is collected through “Financial Statements Analysis of Nonfinancial Companies Listed at Karachi Stock Exchange”; published by the Statistics & Data Warehouse Department of State Bank of Pakistan. The justification for taking data from this publication is that it provides with standardized data for all listed companies making the comparison prudent and valid. Since financial statements of large industrial concerns are usually complex being prepared as per international accounting standards; moreover sector wise financial statement
differences also present with complications in comparisons; therefore to overcome this problem the Financial Statements Analysis is prepared to facilitate inter firm and inter industry comparison of nonfinancial institutions. This report is prepared on the basis of selected useful and accurate data taken from financial statements of the corporate units.

3.10 Type of Data

Balanced panel data is taken for the purpose of study by selecting only those companies for which consecutive annual data is available for the period of study under consideration. Panel data possesses both the characteristics of time series and cross sectional data. Balanced panel data consists of same or equal number of observations over the period of study for the elements under study.

3.11 Data Analysis/Statistical Tools

The study uses both descriptive and inferential statistics to analyze the data and generalize the results. Following statistical measures are used for conducting the analysis of data.

3.11.1 Descriptive Statistics

Descriptive statistics describe the quantitative features of data through presenting summary of data characteristics and properties. Measures used for such summary are central tendency and dispersion measures including mean, median, mode, standard deviation, minimum, maximum, skewness and kurtosis. Descriptive statistics in support to inferential statistics contribute significantly in interpretation of data and its implications. Though the main conclusions are always drawn from inferential measures yet the significance of descriptive statistics cannot be
overlooked while conducting data analysis. Most commonly used descriptive statistics measures for secondary data are mean, median, standard deviation, skewness and kurtosis.

3.11.1.1 Mean

Mean is a statistical average of data series representing the central tendency of data. It is a widely used measure to know the central point of data set. It is calculated by taking simple average of data set values through the following formula

$$\bar{x} = \frac{1}{n} \cdot \sum_{i=1}^{n} x_i$$

Though mean has been more popular central tendency measure yet it carries a drawback that it is usually affected by either of extreme high or low values, if any, in the data series. Hence such outliers distort the average measure and affect the interpretations to be drawn on the basis of such data. Mean remains suitable for normally distributed data but it is not a strong indicator if data is not normally distributed.

3.11.1.2 Median

Median is a statistical average of data series representing the central tendency of data. Though mean has been more popular central tendency measure yet due to its drawback for being unsuitable for data sets with non normal distribution; median is used for such data to serve the purpose of measure of central tendency. Median takes midpoint of data through a numeric value splitting the upper half of data series from the lower half of the data. Median is suitable for skewed data set being more sensible and robust.
3.11.1.3 Standard Deviation

Standard deviation measures the variation or dispersion of the data from its mean or expected value and expresses it in the units of the data for which it is measured. Low standard deviation depicts that more of the data items are around mean values whereas high standard deviation indicates that data items are lying far away from mean value and are spread widely on either sides. Standard deviation of a data set is calculated by taking square root of data variance. Algebraically it is expressed as under.

\[
\sigma = \sqrt{\frac{1}{N} \sum_{i=1}^{N} (x_i - \mu)^2}, \quad \text{where} \quad \mu = \frac{1}{N} \sum_{i=1}^{N} x_i.
\]

3.11.1.4 Skewness

Skewness measures the asymmetry of the data series. Skewness statistics can be positive or negative or undefined. Negatively skewed data indicates that the left tail is longer than the right tail and more values lie towards the right of the mean. Such series have few low values relatively. Positively skewed data indicates that the right tail is longer than the left tail and more values lie towards the left of the mean. Such series have few high values relatively. Mathematically skewness is measured as under.

\[
\gamma_1 = E \left[ \left( \frac{X - \mu}{\sigma} \right)^3 \right] = \frac{\mu_3}{\sigma^3} = \frac{E \left[ (X - \mu)^3 \right]}{E \left[ (X - \mu)^2 \right]^{3/2}} = \frac{\kappa_3}{\kappa_2^{3/2}}.
\]

3.11.1.4 Kurtosis

Kurtosis measures the peak of the curve and weight of the tail of data series. Data series with more than normal and negative kurtosis are classified as platykurtic distributions whereas data
series with more than normal and positive kurtosis are classified as leptokurtic distributions. Kurtosis is measured as under.

\[ \gamma_2 = \frac{\kappa_4}{\kappa_2^2} = \frac{\mu_4}{\sigma^4} - 3 \]

### 3.11.2 Data Stationarity - Unit Root Test

A common assumption in time series analysis is that data are stationary. Stationary data implies that the mean, variance and autocorrelation structure of the data is same over time. If a time series data is not stationary, it can be converted to stationary data statistically. The reliability and validity of the model increases when the data is stationary. The application of unit root test for the panel data has become more popular after the findings of Levin & Lin (1992; 1993). Recent literature supports the panel based unit root tests for their more power to detect unit root as against the individual time series unit root tests. More commonly used unit root tests have been Dickey Fuller (1979), Augmented Dickey Fuller, Phillips Perron (1988) and Levin, Lin Chu (2002). The present study will use Levin, Lin & Chu (2002) test to check the stationarity of data. Levin, Lin and Chu (2002) test is commonly used panel unit root test for multiple series panel data structures with cross sections. Levin, Lin, and Chu (2002) assume that there is a common unit root and autoregressive coefficients are identical across cross sections. Levin, Lin and Chu (2002) use the following Augment Dickey Fuller specification.

\[ \Delta y_{it} = \alpha y_{it-1} + \sum_{j=1}^{p_i} \beta_{ij} \Delta y_{it-j} + X'_{it} \delta + \epsilon_{it} \]
The null and alternate hypotheses for the unit root test may be depicted as:

\[ H_0: \alpha = 0 \]
\[ H_1: \alpha < 0 \]

The null hypothesis assumes the presence of unit root whereas alternate hypothesis assumes the absence of unit root

### 3.11.3 Data Heteroskedasticity

Data is considered to be heteroskedastic if there are sub populations having difference in variances or other measures of dispersion. Heteroskedasticity is the absence of homoskedasticity. Heteroskedasticity does not affect the estimates of coefficients based on ordinary least squares; however it may affect estimates of the variance and standard errors based on ordinary least squares. Therefore heteroskedastic data provides an unbiased estimate for measuring the relationship between the explanatory and outcome variables; while using regression analysis; but the affected standard errors and variance coefficient may distort data analysis. Heteroskedasticity is usually measured through White Test (1980), Cook–Weisberg Test and Levene Test (1960). The study uses White Test (1980) to check the heteroskedasticity of data. The reliability and validity of the model increases when the data is free from heteroskedasticity problems. White test (1980) determines whether residual variance of variable in regression model is constant or not. If homoskedasticity is rejected or in other words heteroskedasticity is present then heteroskedasticity consistent standard errors would be used.
3.11.4 Panel Least Square – Fixed Effects Model

Panel data is like time series cross section data. Time series cross section possesses high number of observations with lesser number of cross sections whereas panel data has more number of cross sections and lesser number of observations. A panel is constituted as:

\[ X_{it}, \ i = 1, \ldots, N \ t = 1, \ldots, T, \]

A general panel data regression equation is presented as:

\[ y_{it} = \alpha + \beta'X_{it} + u_{it}. \]

Various assumptions may be taken for this general regression equation; however two most common models for panel regression are fixed effects model and the random effects model. The fixed effects model is presented as:

\[ y_{it} = \alpha + \beta'X_{it} + u_{it}, \]

\[ u_{it} = \mu_i + \nu_{it}. \]

\( \mu_i \) is individual specific time invariant effect and since it is assumed that it is fixed over time hence it is called as fixed effects model. Fixed effects model represents the explanatory variables as non random as against random effects model where variables are treated as random. The selection of model to be used for regression depends on the point of view of the analyst and the data set to be analyzed. However in panel data analysis fixed effects model is preferred for estimating the impact of variables through coefficients in the regression model. Fixed effects model is used to analyze and evaluate the impact of explanatory variables on dependent variable. It assumes that the individual cross section specific effect is correlated to the independent
variable. In fixed effects model time independent effects having possible correlation with regressors are inflicted for each cross section. This model helps in controlling the heterogeneity over time. It controls the effects of time invariant variables with time invariant effects. Panel least square fixed effect model is used after adjusting for heteroskedasticity of data through White test (1980), to measure the impact of independent variables on dependent variable.

Present study will apply panel least square technique with fixed effects model to determine the significance of the predicting variables and measure the impact of significant predictors of dependent variable. Following mathematical equations will be developed for the three sectors under study; on the basis of the findings.

**Liquidity & Corporate Performance**

\[ \text{LS}(CX=F,COV=\text{CXWHITE}) \ MB \ CR \ QR \ RT \ IT \]

\[ MB = C(1) + C(2)*CR + C(3)*QR + C(4)*RT + C(5)*IT + \{CX=F\} \]

**Solvency & Corporate Performance**

\[ \text{LS}(CX=F,COV=\text{CXWHITE}) \ MB \ DE \ IC \]

\[ MB = C(1) + C(2)*DE + C(3)*IC + \{CX=F\} \]

**Profitability & Corporate Performance**

\[ \text{LS}(CX=F,COV=\text{CXWHITE}) \ MB \ GM \ PM \ RA \ RE \]

\[ MB = C(1) + C(2)*GM + C(3)*PM + C(4)*RA + C(5)*RE + \{CX=F\} \]

**Activity & Corporate Performance**

\[ \text{LS}(CX=F,COV=\text{CXWHITE}) \ MB \ SG \ AT \]

\[ MB = C(1) + C(2)*SG + C(3)*AT + \{CX=F\} \]
Chapter 4  
Analysis & Discussion  

Analysis of Sugar & Allied Industry  
Liquidity & Corporate Performance Analysis  
Panel Descriptive Statistics Analysis  
Panel Unit Root Test  
Panel Least Square – Fixed Effects Model  
Solvency & Corporate Performance Analysis  
Panel Descriptive Statistics Analysis  
Panel Unit Root Test  
Panel Least Square – Fixed Effects Model  
Profitability & Corporate Performance Analysis  
Panel Descriptive Statistics Analysis  
Panel Unit Root Test  
Panel Least Square – Fixed Effects Model  
Activity & Corporate Performance Analysis  
Panel Descriptive Statistics Analysis  
Panel Unit Root Test  
Panel Least Square – Fixed Effects Model  

Analysis of Chemical & Allied Industry  
Liquidity & Corporate Performance Analysis  
Panel Descriptive Statistics Analysis  
Panel Unit Root Test  
Panel Least Square – Fixed Effects Model  
Solvency & Corporate Performance Analysis  
Panel Descriptive Statistics Analysis  
Panel Unit Root Test  
Panel Least Square – Fixed Effects Model  
Profitability & Corporate Performance Analysis  
Panel Descriptive Statistics Analysis  
Panel Unit Root Test  
Panel Least Square – Fixed Effects Model  
Activity & Corporate Performance Analysis  
Panel Descriptive Statistics Analysis  
Panel Unit Root Test  
Panel Least Square – Fixed Effects Model
Analysis of Cement & Allied Industry
- Liquidity & Corporate Performance Analysis
  - Panel Descriptive Statistics Analysis
  - Panel Unit Root Test
  - Panel Least Square – Fixed Effects Model
- Solvency & Corporate Performance Analysis
  - Panel Descriptive Statistics Analysis
  - Panel Unit Root Test
  - Panel Least Square – Fixed Effects Model
- Profitability & Corporate Performance Analysis
  - Panel Descriptive Statistics Analysis
  - Panel Unit Root Test
  - Panel Least Square – Fixed Effects Model
- Activity & Corporate Performance Analysis
  - Panel Descriptive Statistics Analysis
  - Panel Unit Root Test
  - Panel Least Square – Fixed Effects Model

Summary of Results

Discussion of Results
- Liquidity & Corporate Performance – Sugar & Allied
- Solvency & Corporate Performance – Sugar & Allied
- Profitability & Corporate Performance – Sugar & Allied
- Activity & Corporate Performance – Sugar & Allied
- Liquidity & Corporate Performance – Chemical & Allied
- Solvency & Corporate Performance – Chemical & Allied
- Profitability & Corporate Performance – Chemical & Allied
- Activity & Corporate Performance – Chemical & Allied
- Liquidity & Corporate Performance – Cement & Allied
- Solvency & Corporate Performance – Cement & Allied
- Profitability & Corporate Performance – Cement & Allied
- Activity & Corporate Performance – Cement & Allied
4.1 Analysis of Sugar & Allied Industry

4.1.1 Liquidity & Corporate Performance Analysis

4.1.1.1 Panel Descriptive Statistics Analysis

Descriptive statistics deal with the describing of key features of quantitative data. It aims to summarize the data to know its characteristics and properties. While conducting data analysis descriptive statistics help a lot in understanding the data and its implications along with the inferential statistics. Most commonly used descriptive statistics for secondary data are mean, median, standard deviation, skewness and kurtosis.

Mean and median measures the central tendency of the data series. Mean is though most popularly used average indicator, yet it has a disadvantage of sometimes being affected by a single too high or too low item as against the other items in the series. In such cases median serves as a better measure to know the central point of series. It separates the higher half of the series form the lower half. Mean is more useful for normally distributed data series whereas median serves as a better indicator for non normal data series or a skewed distribution. Moreover mean is not a robust indicator because it is highly affected by outliers, hence median is preferred for skewed data being more robust and sensible.

Skewness measures the asymmetry of the data series. It can be positive or negative. Negatively skewed data indicates that the left tail is longer than the right tail and more values lie towards the right of the mean. Such series have few low values relatively. Positively skewed data indicates that the right tail is longer than the left tail and more values lie towards the left of the mean. Such series have few high values relatively. Kurtosis measures the peak of the curve and weight of the tail of data series. Data series with more than normal and negative kurtosis are classified as
platykurtic distributions whereas data series with more than normal and positive kurtosis are classified as leptokurtic distributions.

**Table 4.1 – Panel Descriptive Statistics – Liquidity & Corporate Performance**

<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>CR</th>
<th>QR</th>
<th>RT</th>
<th>IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.000303</td>
<td>1.289037</td>
<td>1.000253</td>
<td>112.7873</td>
<td>18.35895</td>
</tr>
<tr>
<td>Median</td>
<td>0.526350</td>
<td>0.861500</td>
<td>0.531000</td>
<td>27.77780</td>
<td>3.663050</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>11.18716</td>
<td>2.073752</td>
<td>1.943816</td>
<td>226.4633</td>
<td>64.92360</td>
</tr>
<tr>
<td>Skewness</td>
<td>4.523485</td>
<td>6.102316</td>
<td>6.505920</td>
<td>3.062336</td>
<td>5.984817</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>48.48820</td>
<td>49.81405</td>
<td>57.19605</td>
<td>11.87616</td>
<td>42.24540</td>
</tr>
<tr>
<td>Observations</td>
<td>490</td>
<td>490</td>
<td>490</td>
<td>490</td>
<td>490</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The above table (Table 4.1) indicates that all the variables measuring the liquidity and corporate performance of sugar and allied sector are positively skewed and leptokurtic. It indicates that more values would be lying towards the left of the mean; therefore these liquidity variables along with the corporate performance measure variable would be having fewer high values relatively. Mean values indicate that overall liquidity position measured through CR, QR, RT and IT; and corporate performance measured through MB are satisfactory in sugar and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of liquidity in sugar and allied sector. Median values reflect weak liquidity position in terms of CR, QR and IT but not much week in terms of RT in the sector. The contradictory results indicate that the top performing companies have relatively good liquidity position with high CR, QR, RT and IT; and good corporate performance in terms of MB; as against the average and below average firms. Moreover the data being positively skewed and leptokurtic it is obvious that more of the studied firms in the industry are having low liquidity with lesser then mean values. Higher standard
deviation of the variables also reflects that most of the firms are having liquidity values and corporate performance values far from mean values.

### 4.1.1.2 Panel Unit Root Test

Levin, Lin and Chu (2002) test is used to check for the unit root in panel data under study. Panel unit root test is applied to panel data where due to cross section data multiple series are generated. Recent literature suggests that panel unit root tests have high power as against individual unit root.

Table 4.2 – Levin, Lin & Chu – Unit Root Test – Liquidity & Corporate Performance

Null Hypothesis: Unit root (common unit root process)
Sample: 2002 2011
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel
Cross-sections included: 49

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>-6.20932</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>CR</td>
<td>-7.01938</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>QR</td>
<td>-8.99595</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>RT</td>
<td>-10.3611</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>IT</td>
<td>-7.06031</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The Levin, Lin & Chu test statistics (Table 4.2) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.

### 4.1.1.3 Panel Least Square – Fixed Effect Model

A linear regression model may be treated as random or fixed depending on the point of view of the analyst and the data set to be analyzed. However in panel data analysis fixed effects model is
preferred for estimating the impact of variables through coefficients in the regression model. Fixed effects model is used to analyze and evaluate the impact of explanatory variables on dependent variable. It assumes that the individual cross section specific effect is correlated to the independent variable. It treats explanatory variables as non random. In fixed effects model time independent effects having possible correlation with regressors are inflicted for each cross section. This model helps in controlling the heterogeneity over time. It controls the effects of time invariant variables with time invariant effects. Panel least square fixed effect model is used after adjusting for heteroskedasticity of data through White test (1980), to measure the impact of independent variables on dependent variable.

Table 4.3 – Panel Least Square–Fixed Effects Model – Liquidity & Corporate Performance

Dependent Variable: MB  
Method: Panel Least Squares  
Sample: 2002 2011  
Cross-sections included: 49  
Total panel (unbalanced) observations: 489  
White cross-section standard errors & covariance (d.f. corrected)  

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.629394</td>
<td>0.083669</td>
<td>-7.522388</td>
<td>0.0000</td>
</tr>
<tr>
<td>CR</td>
<td>0.438521</td>
<td>0.117176</td>
<td>3.742422</td>
<td>0.0002</td>
</tr>
<tr>
<td>QR</td>
<td>-0.411012</td>
<td>0.137622</td>
<td>-2.986519</td>
<td>0.0030</td>
</tr>
<tr>
<td>RT</td>
<td>-0.030862</td>
<td>0.012689</td>
<td>-2.432270</td>
<td>0.0154</td>
</tr>
<tr>
<td>IT</td>
<td>0.168637</td>
<td>0.027929</td>
<td>6.037987</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed

<table>
<thead>
<tr>
<th>R-squared</th>
<th>F-statistic</th>
<th>Prob (F-statistic)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.739312</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.708221</td>
<td>Prob (F-statistic)</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Source: Secondary Data
The significance of t-statistics in panel least square results using fixed effects model (Table 4.3) depicts that all the explanatory variables CR, QR, RT and IT are significant predictors of the dependent variable MB. Coefficients depict that CR and IT are positively linked with MB whereas QR and RT are negatively linked with MB. This identifies that an increase in CR and IT will add to the MB of sugar and allied industry whereas decrease in QR and RT will add to the MB of sugar and allied industry. Adjusted $R^2$ tells that almost 71% of the variation in MB is explained by variation in CR, QR, RT and IT. The significance value of F statistics endorses the overall fitness of the model. As per the fixed effects model results H2 & H4 are accepted whereas H1 & H3 are rejected due to opposite relationship observed though significant for sugar and allied industry. The summary of the observed and actual relationships is given below:

**Table 4.4 – Result Summary – Liquidity & Corporate Performance**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR &amp; MB</td>
<td>-</td>
<td>+</td>
<td>Rejected</td>
</tr>
<tr>
<td>QR &amp; MB</td>
<td>-</td>
<td>-</td>
<td>Accepted</td>
</tr>
<tr>
<td>RT &amp; MB</td>
<td>+</td>
<td>-</td>
<td>Rejected</td>
</tr>
<tr>
<td>IT &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data

Mathematically the relationships may be expressed as:

$$\text{LS(CX=F,COV=CXWHITE) MB CR QR RT IT}$$

$$\text{MB} = C(1) + C(2)*\text{CR} + C(3)*\text{QR} + C(4)*\text{RT} + C(5)*\text{IT} + [\text{CX=F}]$$

$$\text{MB} = -0.6294 + 0.4385*\text{CR} - 0.4110*\text{QR} - 0.0309*\text{RT} + 0.1686*\text{IT} + [\text{CX=F}]$$

The cross section effects of each of the firm under study are presented below:
Table 4.5 – Cross Section Effects – Liquidity & Corporate Performance

<table>
<thead>
<tr>
<th>AGSML</th>
<th>ADAMS</th>
<th>HAL</th>
<th>SKRS</th>
<th>WAIL</th>
<th>CLOV</th>
<th>-0.75449</th>
<th>-0.31662</th>
<th>0.546333</th>
<th>-0.62516</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.11284</td>
<td>-0.58154</td>
<td>0.830330</td>
<td>-2.6278</td>
<td></td>
<td></td>
<td>-0.58147</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AABS</td>
<td>0.255365</td>
<td>HWQS</td>
<td>-0.58154</td>
<td>SHSML</td>
<td>IFPL</td>
<td>0.830330</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-0.74514</td>
<td>HUSS</td>
<td>-0.02115</td>
<td>-0.36717</td>
<td>0.966186</td>
<td>0.316519</td>
<td>-0.48732</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANSM</td>
<td>1.551227</td>
<td>JDWS</td>
<td>0.074339</td>
<td>SGML</td>
<td>MFFL</td>
<td>2.11284</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.824899</td>
<td>KPUS</td>
<td>0.179993</td>
<td>SASML</td>
<td>0.357936</td>
<td>MUREB</td>
<td>0.557085</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSML</td>
<td>-1.87556</td>
<td>KOHS</td>
<td>0.801285</td>
<td>TSML</td>
<td>NATF</td>
<td>0.022886</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHAS</td>
<td>-0.36866</td>
<td>MRNS</td>
<td>0.544407</td>
<td>FRSL</td>
<td>NESTLE</td>
<td>-0.26063</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRES</td>
<td>1.294346</td>
<td>MIRKS</td>
<td>0.024285</td>
<td>PMRS</td>
<td>NOPK</td>
<td>-1.14542</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DWSM</td>
<td>-0.37416</td>
<td>MZSM</td>
<td>-0.96852</td>
<td>TICL</td>
<td>QUICE</td>
<td>-1.11055</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRSM</td>
<td>-0.50384</td>
<td>NONS</td>
<td>0.069201</td>
<td>POML</td>
<td>RMPL</td>
<td>1.284722</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FECTO</td>
<td>0.083603</td>
<td>PNGRS</td>
<td>0.420567</td>
<td>SSOM</td>
<td>SHEZ</td>
<td>4.335229</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ULEVER</td>
<td>1.763287</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Secondary Data

4.1.2 Solvency & Corporate Performance Analysis

4.1.2.1 Panel Descriptive Statistics Analysis

Table 4.6 – Panel Descriptive Statistics – Solvency & Corporate Performance

<table>
<thead>
<tr>
<th>MB</th>
<th>DE</th>
<th>IC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.000303</td>
<td>4.133461</td>
</tr>
<tr>
<td>Median</td>
<td>0.526350</td>
<td>1.368500</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>11.18716</td>
<td>19.89734</td>
</tr>
<tr>
<td>Skewness</td>
<td>4.523485</td>
<td>13.41305</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>48.48820</td>
<td>204.3608</td>
</tr>
<tr>
<td>Observations</td>
<td>490</td>
<td>490</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The above table (Table 4.6) indicates that all the variables measuring the solvency and corporate performance of sugar and allied sector are positively skewed and leptokurtic. It indicates that more values would be lying towards the left of the mean; therefore these solvency variables and the corporate performance valuation measure would be having fewer high values relatively.
Mean values indicate that overall solvency position is good in terms of IC but unsatisfactory being DE too high whereas corporate performance seems satisfactory in sugar and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of liquidity in sugar and allied sector. Median values reflect slightly weak but satisfactory solvency position in terms of IC but again unsatisfactory in terms of DE being again more than 1 whereas weak position in terms of corporate performance measurement for the sector. The contradictory results indicate that the top performing companies have relatively good interest coverage, debt financing level and corporate performance measurement as against the average and below average firms. The highly debt financed outliers have caused the mean DE to be quite high. Moreover the data being positively skewed and leptokurtic it is obvious that more of the studied firms in the industry are having weak solvency in terms of IC but good in terms of DE with lesser then mean values. Higher standard deviation of the variables also reflects that most of the firms are having solvency values and corporate performance measurement values far from mean values.

4.1.2.2 Panel Unit Root Test

Table 4.7 – Levin, Lin & Chu – Unit Root Test – Solvency & Corporate Performance

Null Hypothesis: Unit root (common unit root process)
Sample: 2002 2011
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel
Cross-sections included: 49

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>-6.20932</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>DE</td>
<td>-8.75749</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>IC</td>
<td>-10.7607</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data
The Levin, Lin & Chu test statistics (Table 4.2) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.

### 4.1.2.3 Panel Least Square – Fixed Effect Model

**Table 4.8 – Panel Least Square–Fixed Effects Model – Solvency & Corporate Performance**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.595095</td>
<td>0.128202</td>
<td>-4.641848</td>
<td>0.0000</td>
</tr>
<tr>
<td>DE</td>
<td>0.347173</td>
<td>0.039165</td>
<td>8.864306</td>
<td>0.0000</td>
</tr>
<tr>
<td>IC</td>
<td>0.124929</td>
<td>0.033476</td>
<td>3.731926</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

**Cross-section fixed**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>F-statistic</th>
<th>Prob (F-statistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.732479</td>
<td></td>
<td>24.03985</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.702010</td>
<td>Prob (F-statistic)</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The significance of t-statistics in panel least square results using fixed effects model (Table 4.8) depicts that all the explanatory variables DE and IC are significant predictors of the dependent variable MB. Coefficients depict that DE and IC are positively linked with MB. This identifies that an increase in DE and IC will add to the MB of sugar and allied industry. Adjusted $R^2$ tells that almost 70% of the variation in MB is explained by variation in DE and IC. The significance value of F statistics endorses the overall fitness of the model. As per the fixed effects model
results H5 & H6 are accepted for sugar and allied industry. The summary of the observed and actual relationships is given below:

**Table 4.9 – Result Summary – Solvency & Corporate Performance**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
<tr>
<td>IC &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data

Mathematically the relationships may be expressed as:

\[
\text{LS(CX=F,COV=CXWHITE)} \ MB \ DE \ IC
\]

\[
MB = C(1) + C(2) \cdot DE + C(3) \cdot IC + [CX=F]
\]

\[
MB = -0.5951 + 0.3472 \cdot DE + 0.1249 \cdot IC + [CX=F]
\]

The cross section effects of each firm under study are presented below:

**Table 4.10 – Cross Section Effects – Solvency & Corporate Performance**

<table>
<thead>
<tr>
<th>AGSML</th>
<th>-2.26389</th>
<th>HAL</th>
<th>0.571456</th>
<th>SKRS</th>
<th>-2.29652</th>
<th>WAIL</th>
<th>-0.62006</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADAMS</td>
<td>-0.83005</td>
<td>HABSM</td>
<td>0.066797</td>
<td>SANSM</td>
<td>0.774368</td>
<td>CLOV</td>
<td>-0.57857</td>
</tr>
<tr>
<td>AABS</td>
<td>0.254271</td>
<td>HWQS</td>
<td>-0.47803</td>
<td>SHSML</td>
<td>-0.24201</td>
<td>IFPL</td>
<td>-0.73086</td>
</tr>
<tr>
<td>ALNRS</td>
<td>-0.70549</td>
<td>HUSS</td>
<td>0.234047</td>
<td>SHJS</td>
<td>0.896004</td>
<td>ISIL</td>
<td>0.693953</td>
</tr>
<tr>
<td>ANSM</td>
<td>1.357969</td>
<td>JDWS</td>
<td>0.412777</td>
<td>SGML</td>
<td>2.395380</td>
<td>MFFL</td>
<td>-0.32405</td>
</tr>
<tr>
<td>BAFS</td>
<td>0.629597</td>
<td>KPUS</td>
<td>0.150033</td>
<td>SASML</td>
<td>0.201011</td>
<td>MUREB</td>
<td>0.620917</td>
</tr>
<tr>
<td>BSML</td>
<td>-1.89545</td>
<td>KOHS</td>
<td>0.565647</td>
<td>TSML</td>
<td>-0.1915</td>
<td>NATF</td>
<td>-0.10268</td>
</tr>
<tr>
<td>CHAS</td>
<td>-0.2767</td>
<td>MRNS</td>
<td>0.094997</td>
<td>FRSL</td>
<td>-2.29413</td>
<td>NESTLE</td>
<td>-0.27804</td>
</tr>
<tr>
<td>CRES</td>
<td>1.050704</td>
<td>MIRKS</td>
<td>-0.10376</td>
<td>PMRS</td>
<td>-0.65151</td>
<td>NOPK</td>
<td>-0.10067</td>
</tr>
<tr>
<td>DWSM</td>
<td>-0.291</td>
<td>MZSM</td>
<td>-0.70403</td>
<td>TICL</td>
<td>0.037050</td>
<td>QUICE</td>
<td>-0.44318</td>
</tr>
<tr>
<td>FRSM</td>
<td>-0.83778</td>
<td>NONS</td>
<td>-0.00137</td>
<td>POML</td>
<td>1.457340</td>
<td>RMPL</td>
<td>0.866870</td>
</tr>
<tr>
<td>FECTO</td>
<td>-0.17065</td>
<td>PNGRS</td>
<td>0.250923</td>
<td>SSOM</td>
<td>-1.5361</td>
<td>SHEZ</td>
<td>3.852317</td>
</tr>
<tr>
<td>ULEVER</td>
<td>1.513648</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Secondary Data
4.1.3 Profitability & Corporate Performance Analysis

4.1.3.1 Panel Descriptive Statistics Analysis

Table 4.11 – Panel Descriptive Statistics – Profitability & Corporate Performance

<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>GM</th>
<th>PM</th>
<th>RA</th>
<th>RE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.000303</td>
<td>4.433161</td>
<td>-0.068683</td>
<td>0.049567</td>
<td>-0.106908</td>
</tr>
<tr>
<td>Median</td>
<td>0.526350</td>
<td>1.136000</td>
<td>0.021000</td>
<td>0.030000</td>
<td>0.066500</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>11.18716</td>
<td>14.41289</td>
<td>1.083999</td>
<td>0.256379</td>
<td>2.737376</td>
</tr>
<tr>
<td>Skewness</td>
<td>4.523485</td>
<td>5.727344</td>
<td>-9.169254</td>
<td>5.501895</td>
<td>-14.33876</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>48.48820</td>
<td>39.11318</td>
<td>136.7895</td>
<td>82.72993</td>
<td>218.2228</td>
</tr>
<tr>
<td>Observations</td>
<td>490</td>
<td>490</td>
<td>490</td>
<td>490</td>
<td>490</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The above table (Table 4.11) indicates that GM and RA measuring the profitability of sugar and allied sector are positively skewed and leptokurtic whereas PM and RE are negatively skewed and leptokurtic. It indicates that more values of GM and RA would be lying towards the left of the mean, whereas more values of PM and RE would be lying on the right of the mean. Hence GM and RA would be having fewer high values relatively and PM and RE would be having fewer low values. Mean values indicate that overall profitability position and corporate performance is not satisfactory in sugar and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of profitability in sugar and allied sector. Median values reflect satisfactory profitability position in terms of GM but slightly weak profitability position in terms of PM, RA and RE for the sugar and allied sector. The contradictory results indicate that the top performing companies have relatively good profitability but due to bottom line performers PM and RE have shown negative statistics. However median value tells that overall all the profitability indicators are positive. Most of the firms in the industry are having higher
than average PM and RE being negatively skewed and leptokurtic whereas much firms are having lesser than average GM and RA being positively skewed and leptokurtic. Higher standard deviation of the variables also reflects that most of the firms are having profitability values and corporate performance measurement values far from mean values.

4.1.3.2 Panel Unit Root Test

Table 4.12 – Levin, Lin & Chu – Unit Root Test – Profitability & Corporate Performance

Null Hypothesis: Unit root (common unit root process)
Sample: 2002 2011
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel
Cross-sections included: 49

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>-6.20932</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>GM</td>
<td>-4.23688</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>PM</td>
<td>-16.6562</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>RA</td>
<td>19.4313</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>RE</td>
<td>-15.5477</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The Levin, Lin & Chu test statistics (Table 4.12) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.
4.1.3.3 Panel Least Square – Fixed Effect Model

Table 4.13 – Panel Least Square–Fixed Effects Model – Profitability & Corporate Performance

Dependent Variable: MB  
Method: Panel Least Squares  
Sample: 2002 2011  
Cross-sections included: 49  
Total panel (unbalanced) observations: 489  
White cross-section standard errors & covariance (d.f. corrected)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.318891</td>
<td>0.161195</td>
<td>-1.978288</td>
<td>0.0485</td>
</tr>
<tr>
<td>GM</td>
<td>0.008909</td>
<td>0.037265</td>
<td>0.239063</td>
<td>0.8112</td>
</tr>
<tr>
<td>PM</td>
<td>-0.168653</td>
<td>0.075421</td>
<td>-2.236153</td>
<td>0.0258</td>
</tr>
<tr>
<td>RA</td>
<td>-0.033823</td>
<td>0.107587</td>
<td>-0.314374</td>
<td>0.7534</td>
</tr>
<tr>
<td>RE</td>
<td>0.416119</td>
<td>0.091097</td>
<td>4.567847</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed

<table>
<thead>
<tr>
<th>Statistics</th>
<th>Value</th>
<th>Prob (F-statistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.742359</td>
<td>24.15912</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.711631</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The significance of t-statistics in panel least square results using fixed effects model (Table 4.13) depicts that two explanatory variables PM and RE are significant predictors of the dependent variable MB, whereas two variables GM and RA are not significantly explaining the variations in MB. Coefficients depict that GM and RE are positively linked with MB whereas PM and RA are negatively linked with MB in sugar and allied sector. This identifies that an increase in RE will add to the MB of sugar and allied industry whereas a decrease in PM will lead to increase in MB. Adjusted $R^2$ tells that almost 71% of the variation in MB is explained by variation in GM, PM, RA and RE. The significance value of F statistics endorse the overall fitness of the model.
As per the fixed effects model results H7, H8 and H9 are rejected whereas H10 is accepted for sugar and allied industry. H7 and H9 are rejected due to insignificant relationship whereas H8 is rejected due to opposite relationship found though significant. The summary of the observed and actual relationships is given below:

**Table 4.14 – Result Summary – Profitability & Corporate Performance**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Rejected*</td>
</tr>
<tr>
<td>PM &amp; MB</td>
<td>+</td>
<td>-</td>
<td>Rejected</td>
</tr>
<tr>
<td>RA &amp; MB</td>
<td>+</td>
<td>-</td>
<td>Rejected*</td>
</tr>
<tr>
<td>RE &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data  * Insignificant Predictor

Mathematically the relationships may be expressed as:

\[
\text{LS(CX=F,COV=CXWHITE)} \; \text{MB} \; \text{GM} \; \text{PM} \; \text{RA} \; \text{RE}
\]

\[
\text{MB} = C(1) + C(2)\times\text{GM} + C(3)\times\text{PM} + C(4)\times\text{RA} + C(5)\times\text{RE} + [\text{CX=F}]
\]

\[
\text{MB} = -0.3189 + 0.0089\times\text{GM} - 0.1686\times\text{PM} - 0.0338\times\text{RA} + 0.4161\times\text{RE} + [\text{CX=F}]
\]

The cross section effects of each firm under study are presented below:

**Table 4.15 – Cross Section Effects – Profitability & Corporate Performance**

<p>| AGSML -2.62383 | HAL 0.066525 | SKRS -2.91756 | WAIL -1.06381 | CLOV -0.43679 |
| ADAMS -0.62191 | HABSM -0.06531 | SANSM 0.782291 | IFPL -0.23114 |
| AABS 0.454867 | HWQS -0.35769 | SHSML -0.03709 | MFFL -0.11684 |
| ALNRS -0.51393 | HUSS 0.365950 | SHJS 0.874856 | ISIL 0.445011 |
| ANSM 1.045024 | JDWS 0.218414 | SGML 2.331901 | MUREB 0.588806 |
| BAFS 0.566973 | KPUS 0.268451 | SASML 0.392372 | NOPK -0.13979 |
| BSML -2.34455 | KOHS 0.869758 | TSML -0.19716 | NATF 0.066953 |
| CHAS -0.21848 | MRNS 0.315839 | FRSL -2.9743 | NESTLE 0.046696 |
| CRES 1.110076 | MIRKS -0.21461 | PMRS -0.55667 | NOPK -0.13979 |</p>
<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>SG</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.000303</td>
<td>0.181460</td>
<td>1.449465</td>
</tr>
<tr>
<td>Median</td>
<td>0.526350</td>
<td>0.110000</td>
<td>1.230500</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>11.18716</td>
<td>0.724614</td>
<td>0.939298</td>
</tr>
<tr>
<td>Skewness</td>
<td>4.523485</td>
<td>10.03613</td>
<td>1.201376</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>48.48820</td>
<td>163.7592</td>
<td>4.683103</td>
</tr>
<tr>
<td>Observations</td>
<td>490</td>
<td>490</td>
<td>490</td>
</tr>
</tbody>
</table>

Source: Secondary Data

4.1.4 Activity & Corporate Performance Analysis

4.1.4.1 Panel Descriptive Statistics Analysis

The above table (Table 4.16) indicates that both of the activity measuring indicators of sugar and allied sector are positively skewed and leptokurtic. It indicates that more values of SG and AT would be lying towards the left of the mean. Hence SG and AT would be having fewer high values relatively. Mean values indicate that overall activity position and corporate performance is satisfactory in sugar and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of activity in sugar and allied sector. Median values again reflect satisfactory activity position in terms of SG and AT for the sugar and allied sector. The non contradictory results indicate that most of the companies have relatively good activity. Most of the firms in the industry are having lower than average SG and AT being positively skewed and
leptokurtic. Higher standard deviation of the variables also reflects that most of the firms are having activity values and corporate performance measurement values far from mean values.

4.1.4.2 Panel Unit Root Test

**Table 4.17 – Levin, Lin & Chu – Unit Root Test – Activity & Corporate Performance**

Null Hypothesis: Unit root (common unit root process)
Sample: 2002 2011
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel
Cross-sections included: 49

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>-6.20932</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>SG</td>
<td>-17.9936</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>AT</td>
<td>-8.46593</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The Levin, Lin & Chu test statistics (Table 4.17) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.

4.1.4.3 Panel Least Square – Fixed Effect Model

**Table 4.18 – Panel Least Square–Fixed Effects Model – Activity & Corporate Performance**

Dependent Variable: MB
Method: Panel Least Squares
Sample: 2002 2011
Cross-sections included: 49
Total panel (unbalanced) observations: 489
White cross-section standard errors & covariance (d.f. corrected)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.637606</td>
<td>0.054396</td>
<td>-11.72159</td>
<td>0.0000</td>
</tr>
<tr>
<td>SG</td>
<td>-0.156979</td>
<td>0.037738</td>
<td>-4.159760</td>
<td>0.0000</td>
</tr>
<tr>
<td>AT</td>
<td>0.515075</td>
<td>0.046423</td>
<td>11.09530</td>
<td>0.0000</td>
</tr>
</tbody>
</table>
The significance of t-statistics in panel least square results using fixed effects model (Table 4.18) depicts that the two explanatory variables SG and AT are significant predictors of the dependent variable MB. Coefficients depict that SG is negatively linked with MB whereas AT is positively linked with MB in sugar and allied sector. This identifies that an increase in AT will add to the MB of sugar and allied industry whereas a decrease in SG will lead to increase in MB. Adjusted R\(^2\) tells that almost 16\% of the variation in MB is explained by variation in SG and AT. The significance value of F statistics endorses the overall fitness of the model. As per the fixed effects model results H11 is rejected whereas H12 is accepted for sugar and allied industry. H11 is rejected due to the opposite relationship found though significant. The summary of the observed and actual relationships is given below:

**Table 4.19 – Result Summary – Activity & Corporate Performance**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG &amp; MB</td>
<td>+</td>
<td>-</td>
<td>Rejected</td>
</tr>
<tr>
<td>AT &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Mathematically the relationships may be expressed as:

\[
\text{LS(CX=F,COV=CXWHITE) MB SG AT} \\
\text{MB} = C(1) + C(2)*SG + C(3)*AT + [CX=F]
\]
MB = -0.6376 - 0.1570*SG + 0.5151*AT+ [CX=F]

The cross section effects of each firm under study are presented below:

**Table 4.20 – Cross Section Effects – Activity & Corporate Performance**

<table>
<thead>
<tr>
<th>Firm</th>
<th>MB</th>
<th>HAL</th>
<th>SKRS</th>
<th>WAIL</th>
<th>1.723507</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGSML</td>
<td>-2.22757</td>
<td>-0.31682</td>
<td>-0.66374</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADAMS</td>
<td>-0.67544</td>
<td>-0.68911</td>
<td>-0.44092</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AABS</td>
<td>0.258177</td>
<td>0.072816</td>
<td>-0.54318</td>
<td>IFPL</td>
<td>0.373460</td>
</tr>
<tr>
<td>ALNRS</td>
<td>-0.7561</td>
<td>HUSS</td>
<td>0.101855</td>
<td>SHJS</td>
<td>0.385292</td>
</tr>
<tr>
<td>ANSM</td>
<td>1.564849</td>
<td>0.311702</td>
<td>SGML</td>
<td>-0.27797</td>
<td>MFFL</td>
</tr>
<tr>
<td>BAFS</td>
<td>0.836894</td>
<td>0.138505</td>
<td>SASML</td>
<td>0.087392</td>
<td>MUREB</td>
</tr>
<tr>
<td>BSML</td>
<td>-1.99121</td>
<td>KOHS</td>
<td>-0.90765</td>
<td>TSML</td>
<td>-0.26107</td>
</tr>
<tr>
<td>CHAS</td>
<td>-0.32081</td>
<td>MRNS</td>
<td>0.027435</td>
<td>FRSL</td>
<td>-0.9493</td>
</tr>
<tr>
<td>CRES</td>
<td>-0.43818</td>
<td>MIRKS</td>
<td>0.336002</td>
<td>PMRS</td>
<td>-1.1793</td>
</tr>
<tr>
<td>DWSM</td>
<td>-0.61951</td>
<td>MZSM</td>
<td>-2.53139</td>
<td>TICL</td>
<td>1.254089</td>
</tr>
<tr>
<td>FRSM</td>
<td>0.039403</td>
<td>NONS</td>
<td>-0.53905</td>
<td>POML</td>
<td>-0.31513</td>
</tr>
<tr>
<td>FECTO</td>
<td>0.900233</td>
<td>PNGRS</td>
<td>-2.47614</td>
<td>SSOM</td>
<td>-1.56902</td>
</tr>
<tr>
<td>Source: Secondary Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**4.2 Analysis of Chemical & Allied Industry**

**4.2.1 Liquidity & Corporate Performance Analysis**

**4.2.1.1 Panel Descriptive Statistics Analysis**

**Table 4.21 – Panel Descriptive Statistics – Liquidity & Corporate Performance**

<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>CR</th>
<th>QR</th>
<th>RT</th>
<th>IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.322745</td>
<td>1.660210</td>
<td>1.306250</td>
<td>39.87713</td>
<td>9.520292</td>
</tr>
<tr>
<td>Median</td>
<td>1.302700</td>
<td>1.456500</td>
<td>1.073500</td>
<td>10.52630</td>
<td>3.409850</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>6.060851</td>
<td>1.219457</td>
<td>1.118554</td>
<td>124.5864</td>
<td>26.74468</td>
</tr>
<tr>
<td>Skewness</td>
<td>11.34095</td>
<td>2.363522</td>
<td>3.207565</td>
<td>6.572826</td>
<td>8.459481</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>159.5298</td>
<td>12.51996</td>
<td>19.55053</td>
<td>48.83770</td>
<td>96.46043</td>
</tr>
<tr>
<td>Observations</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>

Source: Secondary Data
The above table (Table 4.21) above indicates that all the variables measuring the liquidity and corporate performance of chemical and allied sector are positively skewed and leptokurtic. It indicates that more values would be lying towards the left of the mean; therefore these liquidity variables along with the corporate performance measure variable would be having fewer high values relatively. Mean values indicate that overall liquidity position measured through CR, QR, RT and IT; and corporate performance measured through MB are satisfactory in chemical and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of chemical and allied sector. Median values again reflect satisfactory liquidity position in terms of CR, QR, RT and IT in the sector. The mutually supporting statistics indicate that all the average and above performing companies have relatively good liquidity position with high CR, QR, RT and IT; and good corporate performance in terms of MB; as against the below average firms. Moreover the data being positively skewed and leptokurtic it is obvious that more of the studied firms in the industry are having lesser liquidity and market values then mean values, yet the reasonable median value supports that much of these firms are still having satisfactory liquidity and reasonable corporate performance. Higher standard deviation of the variables also reflects that most of the firms are having liquidity values and corporate performance values far from mean values.

4.2.1.2 Panel Unit Root Test

Table 4.22– Levin, Lin & Chu – Unit Root Test – Liquidity & Corporate Performance

Null Hypothesis: Unit root (common unit root process)
Sample: 2002 2011
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel
Cross-sections included: 30

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>8.53339</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>CR</td>
<td>-5.03947</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>QR</td>
<td>-5.02745</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>RT</td>
<td>-10.4643</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>IT</td>
<td>-4.70974</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The Levin, Lin & Chu test statistics (Table 4.22) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.

4.2.1.3 Panel Least Square – Fixed Effect Model

Table 4.23 – Panel Least Square–Fixed Effects Model–Liquidity & Corporate Performance

Dependent Variable: MB
Method: Panel Least Squares
Sample: 2002 2011
Cross-sections included: 30
Total panel (balanced) observations: 300
White cross-section standard errors & covariance (d.f. corrected)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.335630</td>
<td>0.118151</td>
<td>-2.840682</td>
<td>0.0048</td>
</tr>
<tr>
<td>CR</td>
<td>0.365249</td>
<td>0.145072</td>
<td>2.517703</td>
<td>0.0124</td>
</tr>
<tr>
<td>QR</td>
<td>-0.476297</td>
<td>0.127727</td>
<td>-3.729035</td>
<td>0.0002</td>
</tr>
<tr>
<td>RT</td>
<td>0.078546</td>
<td>0.026450</td>
<td>2.969608</td>
<td>0.0033</td>
</tr>
<tr>
<td>IT</td>
<td>0.179364</td>
<td>0.055600</td>
<td>3.225969</td>
<td>0.0014</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed

<table>
<thead>
<tr>
<th>R-squared</th>
<th>F-statistic</th>
<th>Prob (F-statistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.752832</td>
<td>24.55129</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Source: Secondary Data
The significance of t-statistics in panel least square results using fixed effects model (Table 4.23) depicts that all the explanatory variables CR, QR, RT and IT are significant predictors of the dependent variable MB. Coefficients depict that CR, RT and IT are positively linked with MB whereas QR is negatively linked with MB. This identifies that an increase in CR, RT and IT will add to the MB of chemical and allied industry whereas decrease in QR will add to the MB of chemical and allied industry. Adjusted $R^2$ tells that almost 72% of the variation in MB is explained by variation in CR, QR, RT and IT. The significance value of F statistics endorses the overall fitness of the model. As per the fixed effects model results H2, H3 & H4 are accepted whereas H1 is rejected due to opposite relationship observed though significant for chemical and allied industry. The summary of the observed and actual relationships is given below:

**Table 4.24 – Result Summary – Liquidity & Corporate Performance**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR &amp; MB</td>
<td>-</td>
<td>+</td>
<td>Rejected</td>
</tr>
<tr>
<td>QR &amp; MB</td>
<td>-</td>
<td>-</td>
<td>Accepted</td>
</tr>
<tr>
<td>RT &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
<tr>
<td>IT &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data

Mathematically the relationships may be expressed as:

$$\text{LS(CX=F,COV=CXWHITE)} \ MB \ CR \ QR \ RT \ IT$$

$$MB = C(1) + C(2) \ast CR + C(3) \ast QR + C(4) \ast RT + C(5) \ast IT + [CX=F]$$

$$MB = -0.3356 + 0.3652 \ast CR - 0.4763 \ast QR + 0.0785 \ast RT + 0.1794 \ast IT + [CX=F]$$

The cross section effects of each of the firm under study are presented below:
Table 4.25 – Cross Section Effects – Liquidity & Corporate Performance

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ABOT</td>
<td>0.714455</td>
<td>DAAG</td>
<td>-2.49784</td>
<td>HINOON</td>
<td>-0.611</td>
</tr>
<tr>
<td>BOC</td>
<td>-0.45104</td>
<td>DAWH</td>
<td>0.041324</td>
<td>ICI</td>
<td>-0.09144</td>
</tr>
<tr>
<td>BAPL</td>
<td>-0.47616</td>
<td>DYNO</td>
<td>-1.04448</td>
<td>LPGL</td>
<td>-0.28741</td>
</tr>
<tr>
<td>BERG</td>
<td>-0.11445</td>
<td>ENGRO</td>
<td>0.510687</td>
<td>NICL</td>
<td>-0.30336</td>
</tr>
<tr>
<td>BIFO</td>
<td>0.798034</td>
<td>FFBL</td>
<td>0.811164</td>
<td>OTSU</td>
<td>0.251698</td>
</tr>
<tr>
<td>BUXL</td>
<td>-0.05068</td>
<td>FFC</td>
<td>0.609638</td>
<td>PGCL</td>
<td>-0.07719</td>
</tr>
<tr>
<td>CPL</td>
<td>0.584998</td>
<td>FEROZ</td>
<td>0.368441</td>
<td>PPVC</td>
<td>-1.16346</td>
</tr>
<tr>
<td>COLG</td>
<td>0.760864</td>
<td>GLAXO</td>
<td>0.643504</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Secondary Data

4.2.2 Solvency & Corporate Performance Analysis

4.2.2.1 Panel Descriptive Statistics Analysis

Table 4.26 – Panel Descriptive Statistics – Solvency & Corporate Performance

<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>DE</th>
<th>IC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.322745</td>
<td>5.049050</td>
<td>31.85593</td>
</tr>
<tr>
<td>Median</td>
<td>1.302700</td>
<td>1.026500</td>
<td>3.802800</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>6.060851</td>
<td>60.16123</td>
<td>94.70815</td>
</tr>
<tr>
<td>Skewness</td>
<td>11.34095</td>
<td>17.20827</td>
<td>5.797473</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>159.5298</td>
<td>297.4165</td>
<td>46.37855</td>
</tr>
<tr>
<td>Observations</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The above table (Table 4.26) indicates that all the variables measuring the solvency and corporate performance of chemical and allied sector are positively skewed and leptokurtic. It indicates that more values would be lying towards the left of the mean; therefore these solvency variables and the corporate performance valuation measure would be having fewer high values relatively. Mean values indicate that overall solvency position is satisfactory in terms of IC but quite weak in terms of DE whereas corporate performance looks reasonable in chemical and allied industry. Mean is not a robust indicator since affected by outliers, hence median is
preferred for such data being more robust and sensible. It is a better indicator of average values of chemical and allied sector. Median values reflect reasonably satisfactory solvency position in terms of IC but slightly weak solvency position in terms of DE whereas reasonable position in terms of corporate performance measurement for the sector. The mean and median statistics mutually support that more of the firms are having better position in terms of IC and weak position in terms of DE whereas corporate performance indicator remains good and satisfactory. The highly debt financed outliers have caused the mean DE to be quite high. Moreover the data being positively skewed and leptokurtic it is obvious that more of the studied firms in the industry are having satisfactory solvency in terms of IC but weak in terms of DE with lesser then mean values. Higher standard deviation of the variables also reflects that most of the firms are having solvency values and corporate performance measurement values far from mean values.

4.2.2.2 Panel Unit Root Test

Table 4.27 – Levin, Lin & Chu – Unit Root Test – Solvency & Corporate Performance

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>8.53339</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>DE</td>
<td>-3.47585</td>
<td>0.0003</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>IC</td>
<td>-13.1080</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The Levin, Lin & Chu test statistics (Table 4.27) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.
4.2.2.3 Panel Least Square – Fixed Effect Model

Table 4.28 – Panel Least Square–Fixed Effects Model–Solvency & Corporate Performance

Dependent Variable: MB
Method: Panel Least Squares
Sample: 2002 2011
Cross-sections included: 30
Total panel (balanced) observations: 300
White cross-section standard errors & covariance (d.f. corrected)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.127351</td>
<td>0.134394</td>
<td>-0.947593</td>
<td>0.3442</td>
</tr>
<tr>
<td>DE</td>
<td>0.430119</td>
<td>0.086605</td>
<td>4.966425</td>
<td>0.0000</td>
</tr>
<tr>
<td>IC</td>
<td>0.170816</td>
<td>0.043523</td>
<td>3.924718</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

Effects Specification

<table>
<thead>
<tr>
<th></th>
<th>R-squared</th>
<th>F-statistic</th>
<th>Prob (F-statistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-section fixed</td>
<td>0.749933</td>
<td>25.92620</td>
<td>0.000000</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.721007</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Secondary Data

The significance of t-statistics in panel least square results using fixed effects model (Table 4.28) depicts that all the explanatory variables DE and IC are significant predictors of the dependent variable MB. Coefficients depict that DE and IC are positively linked with MB. This identifies that an increase in DE and IC will add to the MB of chemical and allied industry. Adjusted $R^2$ tells that almost 72% of the variation in MB is explained by variation in DE and IC. The significance value of F statistics endorses the overall fitness of the model. As per the fixed effects model results H5 & H6 are accepted for chemical and allied industry. The summary of the observed and actual relationships is given below:
Table 4.29 – Result Summary – Solvency & Corporate Performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
<tr>
<td>IC &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data

Mathematically the relationships may be expressed as:

\[
\text{LS(CX=F, COV=CXWHITE)} \ \text{MB DE IC}
\]

\[
\text{MB} = C(1) + C(2) \times \text{DE} + C(3) \times \text{IC} + [\text{CX=F}]
\]

\[
\text{MB} = -0.1273 + 0.4301 \times \text{DE} + 0.1708 \times \text{IC} + [\text{CX=F}]
\]

The cross section effects of each firm under study are presented below:

Table 4.30 – Cross Section Effects – Solvency & Corporate Performance

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ABOT</td>
<td>0.715264</td>
<td>DAAG</td>
<td>-2.73123</td>
<td>HINOON</td>
<td>-0.37476</td>
<td>SAPL</td>
</tr>
<tr>
<td>BOC</td>
<td>0.793247</td>
<td>DAWH</td>
<td>0.423732</td>
<td>ICI</td>
<td>0.094040</td>
<td>SARC</td>
</tr>
<tr>
<td>BAPL</td>
<td>-0.24318</td>
<td>DYNO</td>
<td>-0.77554</td>
<td>LPGL</td>
<td>-0.04813</td>
<td>SEARL</td>
</tr>
<tr>
<td>BERG</td>
<td>-0.68365</td>
<td>ENGRO</td>
<td>0.440141</td>
<td>NICL</td>
<td>-0.43901</td>
<td>SHCI</td>
</tr>
<tr>
<td>BIFO</td>
<td>0.250108</td>
<td>FFBL</td>
<td>0.426766</td>
<td>OTSU</td>
<td>0.049201</td>
<td>SITC</td>
</tr>
<tr>
<td>BUXL</td>
<td>-0.28234</td>
<td>FFC</td>
<td>0.717998</td>
<td>PGCL</td>
<td>0.013762</td>
<td>WAHN</td>
</tr>
<tr>
<td>CPL</td>
<td>0.198689</td>
<td>FEROZ</td>
<td>0.421149</td>
<td>PPVC</td>
<td>-1.01977</td>
<td>WYETH</td>
</tr>
<tr>
<td>COLG</td>
<td>0.815409</td>
<td>GLAXO</td>
<td>0.727892</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Secondary Data
4.2.3 Profitability & Corporate Performance Analysis

4.2.3.1 Panel Descriptive Statistics Analysis

Table 4.31 – Panel Descriptive Statistics – Profitability & Corporate Performance

<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>GM</th>
<th>PM</th>
<th>RA</th>
<th>RE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.322745</td>
<td>0.096094</td>
<td>-0.006583</td>
<td>0.119217</td>
<td>-0.362657</td>
</tr>
<tr>
<td>Median</td>
<td>1.302700</td>
<td>0.239800</td>
<td>0.086000</td>
<td>0.110500</td>
<td>0.216500</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>6.060851</td>
<td>1.000867</td>
<td>1.730491</td>
<td>0.146362</td>
<td>9.752400</td>
</tr>
<tr>
<td>Skewness</td>
<td>11.34095</td>
<td>-7.851985</td>
<td>-4.213498</td>
<td>1.374425</td>
<td>-17.18750</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>159.5298</td>
<td>69.36851</td>
<td>70.07000</td>
<td>12.15195</td>
<td>296.9419</td>
</tr>
<tr>
<td>Observations</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The above table (Table 4.31) indicates that GM, PM and RE measuring the profitability of chemical and allied sector are negatively skewed and leptokurtic whereas RA is positively skewed and leptokurtic. It indicates that more values of GM, PM and RE would be lying towards the right of the mean, whereas more values of RA would be lying on the left of the mean. Hence GM would be having more high values relatively ad lesser low values. Similarly being negatively skewed PM and RE would be having lesser low values and more high values. Mean values indicate that overall profitability position is not good in terms of PM and RE but it is quite satisfactory in terms of GM and RA. Corporate performance indicator is satisfactory in chemical and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of profitability in chemical and allied sector. Median values reflect reasonably satisfactory profitability position in terms of GM, PM, RA and RE whereas corporate performance indicator looks weak in terms of MB in chemical and allied sector. The contradictory results of PM and RE indicate that the least performing companies having relatively quite low profitability has
shown negative statistics due to their bottom line profitability performance. However data being skewed and leptokurtic; median value tells that overall all the profitability indicators are positive. The negative results owe to some of the outliers on bottom line side. Most of the firms in the industry are having higher than average GM, PM and RE being negatively skewed and leptokurtic whereas much firms are having lesser than average RA being positively skewed and leptokurtic. Higher standard deviation of the variables also reflects that most of the firms are having profitability values and corporate performance measurement values far from mean values.

4.2.3.2 Panel Unit Root Test

Table 4.32 – Levin, Lin & Chu – Unit Root Test – Profitability & Corporate Performance

Null Hypothesis: Unit root (common unit root process)
Sample: 2002 2011
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel
Cross-sections included: 30

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>8.53339</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>GM</td>
<td>-36.8816</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>PM</td>
<td>-7.09775</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>RA</td>
<td>-6.97472</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>RE</td>
<td>-10.0288</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The Levin, Lin & Chu test statistics (Table 4.32) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.
4.2.3.3 Panel Least Square – Fixed Effect Model

Table 4.33 – Panel Least Square–Fixed Effects Model – Profitability & Corporate Performance

Dependent Variable: MB  
Method: Panel Least Squares  
Sample: 2002 2011  
Cross-sections included: 30  
Total panel (balanced) observations: 300  
White cross-section standard errors & covariance (d.f. corrected)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.051400</td>
<td>0.167785</td>
<td>-0.306346</td>
<td>0.7596</td>
</tr>
<tr>
<td>GM</td>
<td>0.004259</td>
<td>0.109934</td>
<td>0.038740</td>
<td>0.9691</td>
</tr>
<tr>
<td>PM</td>
<td>-0.086687</td>
<td>0.093371</td>
<td>-0.928412</td>
<td>0.3540</td>
</tr>
<tr>
<td>RA</td>
<td>-0.423672</td>
<td>0.093550</td>
<td>-4.528828</td>
<td>0.0000</td>
</tr>
<tr>
<td>RE</td>
<td>0.616804</td>
<td>0.068196</td>
<td>9.044533</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed

| R-squared | 0.753675 | F-statistic | 24.66288 |
| Adjusted R-squared | 0.723116 | Prob (F-statistic) | 0.000000 |

Source: Secondary Data

The significance of t-statistics in panel least square results using fixed effects model (Table 4.33) depicts that two explanatory variables RA and RE are significant predictors of the dependent variable MB, whereas two variables GM and PM are not significantly explaining the variations in MB. Coefficients depict that GM and RE are positively linked with MB whereas PM and RA are negatively linked with MB in chemical and allied sector. This identifies that an increase in RE will add to the MB of chemical and allied industry whereas a decrease in RA will lead to increase in MB. Adjusted $R^2$ tells that almost 72% of the variation in MB is explained by variation in GM, PM, RA and RE. The significance value of F statistics endorses the overall
fitness of the model. As per the fixed effects model results H7, H8 and H9 are rejected whereas 
H10 is accepted for chemical and allied industry. H7 and H8 are rejected due to insignificant 
relationship whereas H9 is rejected due to opposite relationship found though significant. The 
summary of the observed and actual relationships is given below:

**Table 4.34 – Result Summary – Profitability & Corporate Performance**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Rejected*</td>
</tr>
<tr>
<td>PM &amp; MB</td>
<td>+</td>
<td>-</td>
<td>Rejected*</td>
</tr>
<tr>
<td>RA &amp; MB</td>
<td>+</td>
<td>-</td>
<td>Rejected</td>
</tr>
<tr>
<td>RE &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data  * Insignificant Predictor

Mathematically the relationships may be expressed as:

\[ LS(CX=F, COV=CXWHITE) MB GM PM RA RE \]

\[ MB = C(1) + C(2)\cdot GM + C(3)\cdot PM + C(4)\cdot RA + C(5)\cdot RE + [CX=F] \]

\[ MB = -0.0514 + 0.0042\cdot GM - 0.0867\cdot PM - 0.4237\cdot RA + 0.6168\cdot RE + [CX=F] \]

The cross section effects of each firm under study are presented below:

**Table 4.35 – Cross Section Effects – Profitability & Corporate Performance**

<table>
<thead>
<tr>
<th></th>
<th>ABOT</th>
<th>DAAG</th>
<th>DAUG</th>
<th>HINOON</th>
<th>SAPO</th>
<th>SAPL</th>
<th>SARC</th>
<th>SHCI</th>
<th>SITC</th>
<th>SARC</th>
<th>SHCI</th>
<th>SITC</th>
<th>WAHN</th>
<th>WYETH</th>
<th>WAHN</th>
<th>WYETH</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOC</td>
<td>-0.26077</td>
<td>0.434461</td>
<td>0.388898</td>
<td>0.178735</td>
<td>-0.04635</td>
<td>0.178735</td>
<td>-0.04635</td>
<td>0.178735</td>
<td>-0.04635</td>
<td>0.178735</td>
<td>-0.04635</td>
<td>0.178735</td>
<td>-0.04635</td>
<td>0.178735</td>
<td>-0.04635</td>
<td>0.178735</td>
</tr>
<tr>
<td>BIFQ</td>
<td>0.917490</td>
<td>0.388898</td>
<td>0.178735</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
<td>0.218900</td>
</tr>
<tr>
<td>BUXL</td>
<td>-0.34039</td>
<td>0.704519</td>
<td>0.56231</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
<td>0.28374</td>
</tr>
<tr>
<td>CPL</td>
<td>0.116871</td>
<td>0.536346</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
</tr>
<tr>
<td>COLG</td>
<td>0.814260</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
<td>0.816922</td>
</tr>
</tbody>
</table>

Source: Secondary Data
4.2.4 Activity & Corporate Performance Analysis

4.2.4.1 Panel Descriptive Statistics Analysis

Table 4.36 – Panel Descriptive Statistics – Activity & Corporate Performance

<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>SG</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.322745</td>
<td>0.195440</td>
<td>1.165013</td>
</tr>
<tr>
<td>Median</td>
<td>1.302700</td>
<td>0.104500</td>
<td>1.177500</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>6.060851</td>
<td>0.794492</td>
<td>0.708763</td>
</tr>
<tr>
<td>Skewness</td>
<td>11.34095</td>
<td>9.528022</td>
<td>0.716356</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>159.5298</td>
<td>105.3733</td>
<td>3.772176</td>
</tr>
<tr>
<td>Observations</td>
<td>300</td>
<td>300</td>
<td>300</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The above table (Table 4.36) indicates that both of the activity measuring indicators of chemical and allied sector are positively skewed and leptokurtic. It indicates that more values of SG and AT would be lying towards the left of the mean. Hence SG and AT would be having fewer high values relatively. Mean values indicate that overall activity position and corporate performance is satisfactory in chemical and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of activity in chemical and allied sector. Median values again reflect satisfactory activity position in terms of SG and AT for the chemical and allied sector. The non contradictory results indicate that most of the companies have relatively good activity. Most of the firms in the industry are having lower than average SG and AT being positively skewed and leptokurtic. Higher standard deviation of the variables also reflects that most of the firms are having activity values and corporate performance measurement values far from mean values.
4.2.4.2 Panel Unit Root Test

Table 4.37 – Levin, Lin & Chu – Unit Root Test – Activity & Corporate Performance

Null Hypothesis: Unit root (common unit root process)
Sample: 2002 2011
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel
Cross-sections included: 30

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>8.53339</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>SG</td>
<td>-13.2955</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>AT</td>
<td>-9.81760</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The Levin, Lin & Chu test statistics (Table 4.37) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.

4.2.4.3 Panel Least Square – Fixed Effect Model

Table 4.38 – Panel Least Square–Fixed Effects Model – Activity & Corporate Performance

Dependent Variable: MB
Method: Panel Least Squares
Sample: 2002 2011
Cross-sections included: 30
Total panel (balanced) observations: 300
White cross-section standard errors & covariance (d.f. corrected)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.293367</td>
<td>0.079608</td>
<td>3.685121</td>
<td>0.0003</td>
</tr>
<tr>
<td>SG</td>
<td>0.028271</td>
<td>0.025312</td>
<td>1.116883</td>
<td>0.2650</td>
</tr>
<tr>
<td>AT</td>
<td>0.218788</td>
<td>0.096357</td>
<td>2.270583</td>
<td>0.0240</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed
The significance of t-statistics in panel least square results using fixed effects model (Table 4.38) depicts that out of the two explanatory variables; SG is not significant predictor of MB in chemical and allied sector whereas AT is significant predictor of the dependent variable MB. Coefficients depict that SG and AT are positively linked with MB in chemical and allied sector. This identifies that an increase in AT will add to the MB of chemical and allied industry. Adjusted $R^2$ tells that almost 66% of the variation in MB is explained by variation in SG and AT. The significance value of F statistics endorses the overall fitness of the model. As per the fixed effects model results H11 is rejected whereas H12 is accepted for chemical and allied industry. H11 is rejected due to the insignificant relationship though positive as expected. The summary of the observed and actual relationships is given below:

**Table 4.39 – Result Summary – Activity & Corporate Performance**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Rejected*</td>
</tr>
<tr>
<td>AT &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data  
* Insignificant Predictor

Mathematically the relationships may be expressed as:

$$\text{LS(CX=F,COV=CXWHITE) MB SG AT}$$

$$\text{MB} = C(1) + C(2)*\text{SG} + C(3)*\text{AT} + [\text{CX=F}]$$

$$\text{MB} = 0.2934 + 0.0283*\text{SG} + 0.2188*\text{AT} + [\text{CX=F}]$$

The cross section effects of each firm under study are presented below:
### Table 4.40 – Cross Section Effects – Activity & Corporate Performance

<table>
<thead>
<tr>
<th></th>
<th>ABOT</th>
<th>DAAG</th>
<th>HINOON</th>
<th>SAPL</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.563798</td>
<td>-2.3107</td>
<td>-0.5332</td>
<td>0.194032</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>0.852732</td>
<td>0.260052</td>
<td>-0.32234</td>
<td>-1.48712</td>
<td></td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>-0.10691</td>
<td>-1.25928</td>
<td>0.888455</td>
<td>0.00822</td>
<td></td>
</tr>
<tr>
<td>Skewness</td>
<td>-0.66234</td>
<td>0.509721</td>
<td>-1.00822</td>
<td>-0.21222</td>
<td></td>
</tr>
<tr>
<td>Kurtosis</td>
<td>0.11155</td>
<td>1.106714</td>
<td>108.0351</td>
<td>17.23128</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
</tr>
</tbody>
</table>

Source: Secondary Data

### 4.3 Analysis of Cement & Allied Industry

#### 4.3.1 Liquidity & Corporate Performance Analysis

##### 4.3.1.1 Panel Descriptive Statistics Analysis

### Table 4.41 – Panel Descriptive Statistics – Liquidity & Corporate Performance

<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>CR</th>
<th>QR</th>
<th>RT</th>
<th>IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.600511</td>
<td>1.025773</td>
<td>0.888455</td>
<td>108.0351</td>
<td>17.23128</td>
</tr>
<tr>
<td>Median</td>
<td>0.903900</td>
<td>0.847500</td>
<td>0.736000</td>
<td>33.90805</td>
<td>6.680700</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>3.499878</td>
<td>0.748442</td>
<td>0.723643</td>
<td>217.1511</td>
<td>34.98684</td>
</tr>
<tr>
<td>Skewness</td>
<td>7.983001</td>
<td>2.339814</td>
<td>2.175531</td>
<td>3.265392</td>
<td>7.789060</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>79.64086</td>
<td>13.07025</td>
<td>10.51618</td>
<td>13.31535</td>
<td>87.57272</td>
</tr>
<tr>
<td>Observations</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The above table (Table 4.41) above indicates that all the variables measuring the liquidity and corporate performance of cement and allied sector are positively skewed and leptokurtic. It indicates that more values would be lying towards the left of the mean; therefore these liquidity variables along with the corporate performance measure variable would be having fewer high values relatively. Mean values indicate that liquidity position measured through low CR and QR scores is not satisfactory whereas RT and IT are indicating satisfactory liquidity. Corporate
performance measured through MB is satisfactory in cement and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of chemical and allied sector. Median values again reflect unsatisfactory liquidity position in terms of CR and QR and unsatisfactory corporate performance in terms of MB whereas RT and IT are still showing satisfactory liquidity in the sector. The mutually supporting statistics regarding CR and QR clearly indicates that the cement sector is facing weak liquidity. Most of the firms are having relatively weak liquidity position with low CR, QR, RT and IT; and unsatisfactory corporate performance in terms of MB; as against the above average firms. Moreover the data being positively skewed and leptokurtic it is obvious that more of the studied firms in the industry are having lesser liquidity and market values then mean values. Higher standard deviation of the variables also reflects that most of the firms are having liquidity values and corporate performance values far from mean values.

4.3.1.2 Panel Unit Root Test

Table 4.42– Levin, Lin & Chu – Unit Root Test – Liquidity & Corporate Performance

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>-5.10109</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>CR</td>
<td>-4.73219</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>QR</td>
<td>-3.80221</td>
<td>0.0001</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>RT</td>
<td>-3.10302</td>
<td>0.0010</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>IT</td>
<td>-5.07739</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data
The Levin, Lin & Chu test statistics (Table 4.42) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.

4.3.1.3 Panel Least Square – Fixed Effect Model

Table 4.43 – Panel Least Square–Fixed Effects Model–Liquidity & Corporate Performance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.501648</td>
<td>0.098720</td>
<td>-5.081510</td>
<td>0.0000</td>
</tr>
<tr>
<td>CR</td>
<td>0.793944</td>
<td>0.241329</td>
<td>3.289875</td>
<td>0.0012</td>
</tr>
<tr>
<td>QR</td>
<td>-0.681822</td>
<td>0.162243</td>
<td>-4.202480</td>
<td>0.0000</td>
</tr>
<tr>
<td>RT</td>
<td>-0.094411</td>
<td>0.043277</td>
<td>-2.181522</td>
<td>0.0303</td>
</tr>
<tr>
<td>IT</td>
<td>0.306472</td>
<td>0.035055</td>
<td>8.742633</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Effects Specification

| R-squared    | 0.592958 | F-statistic | 11.30437 |
| Adjusted R-squared | 0.540504 | Prob (F-statistic) | 0.000000 |

Source: Secondary Data

The significance of t-statistics in panel least square results using fixed effects model (Table 4.43) depicts that all the explanatory variables CR, QR, RT and IT are significant predictors of the dependant variable MB. Coefficients depict that CR and IT are positively linked with MB whereas QR and RT are negatively linked with MB. This identifies that an increase in CR and IT will add to the MB of cement and allied industry whereas decrease in QR and RT will add to the MB of cement and allied industry. Adjusted $R^2$ tells that almost 54% of the variation in MB is
explained by variation in CR, QR, RT and IT. The significance value of F statistics endorses the overall fitness of the model. As per the fixed effects model results H2 and H4 are accepted whereas H1 and H3 are rejected due to opposite relationship observed though significant for cement and allied industry. The summary of the observed and actual relationships is given below:

Table 4.44 – Result Summary – Liquidity & Corporate Performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR &amp; MB</td>
<td>-</td>
<td>+</td>
<td>Rejected</td>
</tr>
<tr>
<td>QR &amp; MB</td>
<td>-</td>
<td>-</td>
<td>Accepted</td>
</tr>
<tr>
<td>RT &amp; MB</td>
<td>+</td>
<td>-</td>
<td>Rejected</td>
</tr>
<tr>
<td>IT &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data

Mathematically the relationships may be expressed as:

\[
LS(CX=F,COV=CXWHITE) \ MB \ CR \ QR \ RT \ IT
\]

\[
MB = C(1) + C(2)\times CR + C(3)\times QR + C(4)\times RT + C(5)\times IT + [CX=F]
\]

\[
MB = -0.5016 + 0.7939\times CR - 0.6818\times QR - 0.0944\times RT + 0.3065\times IT + [CX=F]
\]

The cross section effects of each of the firm under study are presented below:

Table 4.45 – Cross Section Effects – Liquidity & Corporate Performance

| Source: Secondary Data |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| AACIL | 0.447886 | FCCL | 0.892449 | MLCF | -0.31035 | GHGL | 0.565380 |
| CHCC | 0.329994 | FECTC | -0.0263 | PIOC | 0.106171 | KCL | -0.09561 |
| DGKC | -0.34404 | GWLC | -0.89534 | ZELP | 0.149312 | STCL | -0.66973 |
| DBCI | -1.31295 | JVCL | 0.937059 | BGL | 0.436828 | TGL | 0.486186 |
| DNCC | 0.674938 | KOHC | 0.466846 | FRCL | -1.66833 | DADX | -0.14566 |
| DCL | -0.57243 | LUCK | 0.547689 | | | | |
4.3.2 Solvency & Corporate Performance Analysis

4.3.2.1 Panel Descriptive Statistics Analysis

Table 4.46 – Panel Descriptive Statistics – Solvency & Corporate Performance

<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>DE</th>
<th>IC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.600511</td>
<td>3.692598</td>
<td>5.833307</td>
</tr>
<tr>
<td>Median</td>
<td>0.903900</td>
<td>1.593000</td>
<td>1.287100</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>3.499878</td>
<td>13.38514</td>
<td>49.84712</td>
</tr>
<tr>
<td>Skewness</td>
<td>7.983001</td>
<td>10.63505</td>
<td>-1.954968</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>79.64086</td>
<td>130.8580</td>
<td>66.48709</td>
</tr>
<tr>
<td>Observations</td>
<td>220</td>
<td>220</td>
<td>220</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The above table (Table 4.46) indicates that MB and DC of cement and allied sector are positively skewed and leptokurtic whereas IC is negatively skewed and leptokurtic. It indicates that more values of DE and MB would be lying towards the left of the mean; therefore the solvency variable DE and the corporate performance valuation measure MB would be having fewer high values relatively. IC being negatively skewed indicates that more values of IC would be lying towards the right of the mean; therefore the solvency variable IC would be having more high values relatively. Mean values indicate that overall solvency position is satisfactory in terms of IC but quite weak in terms of DE whereas corporate performance looks reasonable in cement and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of cement and allied sector. Median values reflect reasonably satisfactory solvency position in terms of IC but again weak solvency position in terms of DE. Corporate performance is not satisfactory as measured by MB for the sector. The mean and median statistics mutually support that more of the firms are having better position in terms of IC and weak position in terms of DE.
The contradictory results regarding MB are due to outliers existing having better market values as against average firms. The highly debt financed outliers have caused the mean DE to be quite high. Moreover the data is positively skewed and leptokurtic for MB and DE so it is obvious that more of the studied firms in the industry are having unsatisfactory solvency in terms of DE and weak corporate performance in terms of MB with lesser than mean values. Higher standard deviation of the variables also reflects that most of the firms are having solvency values and corporate performance measurement values far from mean values.

4.3.2.2 Panel Unit Root Test

Table 4.47 – Levin, Lin & Chu – Unit Root Test – Solvency & Corporate Performance

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>-5.10109</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>DE</td>
<td>-3.06267</td>
<td>0.0011</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>IC</td>
<td>-4.98352</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The Levin, Lin & Chu test statistics (Table 4.47) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.
4.3.2.3 Panel Least Square – Fixed Effect Model

Table 4.48 – Panel Least Square–Fixed Effects Model–Solvency & Corporate Performance

Dependent Variable: MB  
Method: Panel Least Squares  
Sample: 2002 2011  
Cross-sections included: 22  
Total panel (balanced) observations: 220  
White cross-section standard errors & covariance (d.f. corrected)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.443140</td>
<td>0.159185</td>
<td>-2.783804</td>
<td>0.0059</td>
</tr>
<tr>
<td>DE</td>
<td>0.477843</td>
<td>0.048732</td>
<td>9.805520</td>
<td>0.0000</td>
</tr>
<tr>
<td>IC</td>
<td>0.140243</td>
<td>0.032767</td>
<td>4.280003</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed

<table>
<thead>
<tr>
<th>R-squared</th>
<th>F-statistic</th>
<th>Prob (F-statistic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.662153</td>
<td>16.19062</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The significance of t-statistics in panel least square results using fixed effects model (Table 4.48) depicts that all the explanatory variables DE and IC are significant predictors of the dependent variable MB. Coefficients depict that DE and IC are positively linked with MB. This identifies that an increase in DE and IC will add to the MB of cement and allied industry. Adjusted R² tells that almost 62% of the variation in MB is explained by variation in DE and IC. The significance value of F statistics endorses the overall fitness of the model. As per the fixed effects model results H5 & H6 are accepted for chemical and allied industry. The summary of the observed and actual relationships is given below:
Table 4.49 – Result Summary – Solvency & Corporate Performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
<tr>
<td>IC &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data

Mathematically the relationships may be expressed as:

\[ \text{LS(CX=F,COV=CXWHITE) MB DE IC} \]

\[ \text{MB} = C(1) + C(2) \times \text{DE} + C(3) \times \text{IC} + [\text{CX=F}] \]

\[ \text{MB} = -0.4431 + 0.4778 \times \text{DE} + 0.1402 \times \text{IC} + [\text{CX=F}] \]

The cross section effects of each firm under study are presented below:

Table 4.50 – Cross Section Effects – Solvency & Corporate Performance

<table>
<thead>
<tr>
<th>Source: Secondary Data</th>
</tr>
</thead>
</table>

|  | AACIL | 0.148135 | FCCL | 0.561266 | MLCF | -0.23852 | GHGL | 1.236196 |
| CHCC | 0.774948 | FECTC | 0.174908 | PIOC | -0.09806 | KCL | -0.13463 |
| DGKC | -0.08919 | GWLC | -0.64686 | ZELP | -0.11558 | STCL | -0.48869 |
| DBCI | -1.24902 | JVCL | 1.636781 | BGL | -0.06302 | TGL | 0.146785 |
| DNCC | 0.433741 | KOHC | 0.575344 | FRCL | -2.05967 | DADX | 0.227007 |
| DCL | -0.73352 | LUCK | 0.635558 | | | | |
4.3.3 Profitability & Corporate Performance Analysis

4.3.3.1 Panel Descriptive Statistics Analysis

Table 4.51 – Panel Descriptive Statistics – Profitability & Corporate Performance

<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>GM</th>
<th>PM</th>
<th>RA</th>
<th>RE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.600511</td>
<td>0.106111</td>
<td>-0.023161</td>
<td>0.029776</td>
<td>-0.214965</td>
</tr>
<tr>
<td>Median</td>
<td>0.903900</td>
<td>0.138100</td>
<td>0.033000</td>
<td>0.020500</td>
<td>0.056500</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>3.499878</td>
<td>0.198166</td>
<td>0.297124</td>
<td>0.121471</td>
<td>2.105885</td>
</tr>
<tr>
<td>Skewness</td>
<td>7.983001</td>
<td>-2.799531</td>
<td>-3.415933</td>
<td>0.190515</td>
<td>-9.840477</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>79.64086</td>
<td>14.41571</td>
<td>19.51123</td>
<td>4.671149</td>
<td>113.1815</td>
</tr>
<tr>
<td>Observations</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The above table (Table 4.51) indicates that GM, PM and RE measuring the profitability of cement and allied sector are negatively skewed and leptokurtic whereas RA is positively skewed and leptokurtic. It indicates that more values of GM, PM and RE would be lying towards the right of the mean, whereas more values of RA would be lying on the left of the mean. Hence GM would be having more high values relatively ad lesser low values. Similarly being negatively skewed PM and RE would be having lesser low values and more high values. Mean values indicate that overall profitability position is not good in terms of PM, RE and RA but it is quite satisfactory in terms of GM. Corporate performance indicator is satisfactory in cement and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of profitability in cement and allied sector. Median values reflect reasonably satisfactory profitability position in terms of GM but PM, RA and RE are still at quite low figure though positive in terms of median statistics whereas corporate performance indicator looks slightly weak in terms of MB in cement and allied sector. The contradictory results of PM and RE indicate that the least performing
companies having relatively quite low profitability has shown negative statistics due to their bottom line profitability performance. However data being skewed and leptokurtic; median value tells that overall all the profitability indicators are positive. The negative results owe to some of the outliers on bottom line side. Most of the firms in the industry are having higher than average GM, PM and RE being negatively skewed and leptokurtic whereas much firms are having lesser than average RA being positively skewed and leptokurtic. Higher standard deviation of the variables also reflects that most of the firms are having profitability values and corporate performance measurement values far from mean values.

4.3.3.2 Panel Unit Root Test

Table 4.52 – Levin, Lin & Chu – Unit Root Test – Profitability & Corporate Performance

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>-5.10109</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>GM</td>
<td>-7.73620</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>PM</td>
<td>-7.12490</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>RA</td>
<td>-7.25935</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>RE</td>
<td>-8.34356</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The Levin, Lin & Chu test statistics (Table 4.52) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.
4.3.3.3 Panel Least Square – Fixed Effect Model

Table 4.53  – Panel Least Square–Fixed Effects Model – Profitability & Corporate Performance

Dependent Variable: MB  
Method: Panel Least Squares  
Sample: 2002 2011  
Cross-sections included: 20  
Total panel (balanced) observations: 220  
White cross-section standard errors & covariance (d.f. corrected)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.222915</td>
<td>0.273120</td>
<td>-0.816178</td>
<td>0.4154</td>
</tr>
<tr>
<td>GM</td>
<td>0.084432</td>
<td>0.092164</td>
<td>0.916107</td>
<td>0.3608</td>
</tr>
<tr>
<td>PM</td>
<td>0.055367</td>
<td>0.127684</td>
<td>0.433622</td>
<td>0.6651</td>
</tr>
<tr>
<td>RA</td>
<td>-0.569948</td>
<td>0.163423</td>
<td>-3.487567</td>
<td>0.0006</td>
</tr>
<tr>
<td>RE</td>
<td>0.663604</td>
<td>0.108887</td>
<td>6.094452</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.657857</td>
<td>F-statistic</td>
<td>14.45913</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.612360</td>
<td>Prob (F-statistic)</td>
<td>0.000000</td>
<td></td>
</tr>
</tbody>
</table>

Source: Secondary Data

The significance of t-statistics in panel least square results using fixed effects model (Table 4.53) depicts that two explanatory variables RA and RE are significant predictors of the dependent variable MB, whereas two variables GM and PM are not significantly explaining the variations in MB. Coefficients depict that GM, PM and RE are positively linked with MB whereas RA is negatively linked with MB in cement and allied sector. This identifies that an increase in RE will add to the MB of cement and allied industry whereas a decrease in RA will lead to increase in MB. Adjusted $R^2$ tells that almost 61% of the variation in MB is explained by variation in GM, PM, RA and RE. The significance value of F statistics endorses the overall fitness of the model.
As per the fixed effects model results H7, H8 and H9 are rejected whereas H10 is accepted for cement and allied industry. H7 and H8 both are rejected due to insignificant relationship though same as expected whereas H9 is rejected due to opposite relationship found though significant.

The summary of the observed and actual relationships is given below:

**Table 4.54 – Result Summary – Profitability & Corporate Performance**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Rejected*</td>
</tr>
<tr>
<td>PM &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Rejected*</td>
</tr>
<tr>
<td>RA &amp; MB</td>
<td>+</td>
<td>-</td>
<td>Rejected</td>
</tr>
<tr>
<td>RE &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data * Insignificant Predictor

Mathematically the relationships may be expressed as:

$$LS(CX=F, COV=CXWHITE) MB\ GM\ PM\ RA\ RE$$

$$MB = C(1) + C(2)*GM + C(3)*PM + C(4)*RA + C(5)*RE + [CX=F]$$

$$MB = -0.2229 + 0.0844*GM + 0.0554*PM - 0.5699*RA + 0.6636*RE + [CX=F]$$

The cross section effects of each firm under study are presented below:

**Table 4.55 – Cross Section Effects – Profitability & Corporate Performance**

<table>
<thead>
<tr>
<th>Firm</th>
<th>AACIL</th>
<th>FCCL</th>
<th>MLCF</th>
<th>GHGL</th>
<th>LUCK</th>
<th>KOHC</th>
<th>BFCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>AACIL</td>
<td>0.344690</td>
<td>0.489335</td>
<td>-0.21847</td>
<td>0.829315</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHCC</td>
<td>0.779633</td>
<td>0.251978</td>
<td>-0.05989</td>
<td>0.003166</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DGKC</td>
<td>-0.05455</td>
<td>-0.707753</td>
<td>-0.26666</td>
<td>0.06567</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DBCI</td>
<td>-1.10539</td>
<td>1.829280</td>
<td>-0.30429</td>
<td>0.237374</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNCC</td>
<td>0.208857</td>
<td>0.583843</td>
<td>0.301276</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DCL</td>
<td>0.55175</td>
<td>0.621694</td>
<td>0.621694</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Secondary Data
4.3.4 Activity & Corporate Performance Analysis

4.3.4.1 Panel Descriptive Statistics Analysis

Table 4.56 – Panel Descriptive Statistics – Activity & Corporate Performance

<table>
<thead>
<tr>
<th></th>
<th>MB</th>
<th>SG</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1.600511</td>
<td>0.274079</td>
<td>0.800836</td>
</tr>
<tr>
<td>Median</td>
<td>0.903900</td>
<td>0.116000</td>
<td>0.658500</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>3.499878</td>
<td>1.369504</td>
<td>0.520954</td>
</tr>
<tr>
<td>Skewness</td>
<td>7.983001</td>
<td>9.029490</td>
<td>1.013167</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>79.64086</td>
<td>95.94978</td>
<td>4.082432</td>
</tr>
<tr>
<td>Observations</td>
<td>220</td>
<td>220</td>
<td>220</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The above table (Table 4.56) indicates that both of the activity measuring indicators of cement and allied sector are positively skewed and leptokurtic. It indicates that more values of SG and AT would be lying towards the left of the mean. Hence SG and AT would be having fewer high values relatively. Mean values indicate that activity position is better in terms of SG but not in terms of AT and corporate performance is satisfactory in cement and allied industry. Mean is not a robust indicator since affected by outliers, hence median is preferred for such data being more robust and sensible. It is a better indicator of average values of activity in sugar and allied sector. Median values again reflect satisfactory activity position in terms of SG but not in terms of AT for the cement and allied sector. The non contradictory results indicate that most of the companies have relatively good activity in terms of SG and weak in terms of AT. Most of the firms in the industry are having lower than average SG and AT being positively skewed and leptokurtic. Higher standard deviation of the variables also reflects that most of the firms are having activity values and corporate performance measurement values far from mean values.
4.3.4.2 Panel Unit Root Test

Table 4.57 – Levin, Lin & Chu – Unit Root Test – Activity & Corporate Performance

Null Hypothesis: Unit root (common unit root process)
Sample: 2002 2011
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic selection of lags based on SIC: 0 to 1
Newey-West bandwidth selection using Bartlett kernel
Cross-sections included: 22

<table>
<thead>
<tr>
<th>Method</th>
<th>Variable</th>
<th>Statistic</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>MB</td>
<td>-5.10109</td>
<td>0.0000</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>SG</td>
<td>-2.59436</td>
<td>0.0047</td>
</tr>
<tr>
<td>Levin, Lin &amp; Chu t*</td>
<td>AT</td>
<td>-1.84500</td>
<td>0.0325</td>
</tr>
</tbody>
</table>

Source: Secondary Data

The Levin, Lin & Chu test statistics (Table 4.57) suggest the rejection of null hypothesis of presence of unit root in the panel data. Hence all the variable series are stationary at the level.

4.3.4.3 Panel Least Square – Fixed Effect Model

Table 4.58 – Panel Least Square–Fixed Effects Model – Activity & Corporate Performance

Dependent Variable: MB
Method: Panel Least Squares
Sample: 2002 2011
Cross-sections included: 22
Total panel (balanced) observations: 220
White cross-section standard errors & covariance (d.f. corrected)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>-0.023087</td>
<td>0.119695</td>
<td>-0.192879</td>
<td>0.8472</td>
</tr>
<tr>
<td>SG</td>
<td>-0.034836</td>
<td>0.056943</td>
<td>-0.611758</td>
<td>0.5414</td>
</tr>
<tr>
<td>AT</td>
<td>0.391738</td>
<td>0.044978</td>
<td>8.709517</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Effects Specification

Cross-section fixed
The significance of t-statistics in panel least square results using fixed effects model (Table 4.58) depicts that out of the two explanatory variables; SG is not significant predictor of MB in cement and allied sector whereas AT is significant predictor of the dependent variable MB. Coefficients depict that SG is negatively linked with MB whereas AT is positively linked with MB in cement and allied sector. This identifies that an increase in AT will add to the MB of cement and allied industry. Adjusted $R^2$ tells that almost 30% of the variation in MB is explained by variation in SG and AT. The significance value of F statistics endorses the overall fitness of the model. As per the fixed effects model results H11 is rejected whereas H12 is accepted for cement and allied industry. H11 is rejected due to the insignificant and opposite relationship as observed. The summary of the observed and actual relationships is given below:

**Table 4.59 – Result Summary – Activity & Corporate Performance**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected Relationship</th>
<th>Observed Relationship</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG &amp; MB</td>
<td>+</td>
<td>-</td>
<td>Rejected*</td>
</tr>
<tr>
<td>AT &amp; MB</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data  * Insignificant Predictor

Mathematically the relationships may be expressed as:

$$\text{LS}(\text{CX=F, COV=CXWHITE}) \ MB \ SG \ AT$$

$$MB = C(1) + C(2)\times SG + C(3)\times AT+ [\text{CX=F}]$$

$$MB = -0.0231 - 0.0348\times SG + 0.3917\times AT+ [\text{CX=F}]$$

The cross section effects of each firm under study are presented below:
Table 4.60 – Cross Section Effects – Activity & Corporate Performance

<table>
<thead>
<tr>
<th>Construct</th>
<th>Hypothesis</th>
<th>Sugar &amp; Allied</th>
<th>Chemical &amp; Allied</th>
<th>Cement &amp; Allied</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Expected</td>
<td>Actual</td>
<td>Acceptance/ Rejection</td>
</tr>
<tr>
<td>Liquidity</td>
<td>H1</td>
<td>-</td>
<td>+</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>H2</td>
<td>-</td>
<td>-</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>H3</td>
<td>+</td>
<td>-</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>H4</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
<tr>
<td>Solvency</td>
<td>H5</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
<tr>
<td></td>
<td>H6</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
<tr>
<td>Profitability</td>
<td>H7</td>
<td>+</td>
<td>+</td>
<td>Rejected*</td>
</tr>
<tr>
<td></td>
<td>H8</td>
<td>+</td>
<td>-</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>H9</td>
<td>+</td>
<td>-</td>
<td>Rejected*</td>
</tr>
<tr>
<td></td>
<td>H10</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
<tr>
<td>Activity</td>
<td>H11</td>
<td>+</td>
<td>-</td>
<td>Rejected</td>
</tr>
<tr>
<td></td>
<td>H12</td>
<td>+</td>
<td>+</td>
<td>Accepted</td>
</tr>
</tbody>
</table>

Source: Secondary Data

4.4 Summary of Results

The comparative results for the three sectors studied above are summarized below

Table 4.61 – Comparative Statement of Hypotheses Acceptance/Rejection

* Insignificant Predictors
4.4 Discussion of Results

4.4.1 Liquidity & Corporate Performance – Sugar & Allied

Descriptive statistics describing key features of financial data regarding liquidity management of sugar and allied industry depicts that all the variables measuring the liquidity and corporate performance of sugar and allied sector are positively skewed and leptokurtic with more values lying towards the left of the mean. The mean and median statistics endorse that the sugar and allied industry is facing liquidity problems, since the mean current ratio and quick ratio are slightly above 1, whereas median current ratio and quick ratio are well below 1. More companies from sugar and allied sector are having current ratio and quick ratio between mean and median values; hence more companies will be having liquidity problems. Moreover mean and median values of receivable turnover and inventory turnover also depicts that the sugar and allied industry is having reasonable receivable management but weak inventory management, hence the liquidity of the sector is affected again due to low inventory turnovers.

Since due to low liquidity; the companies from sugar and allied sector are facing liquidity risk or in other words they have more inclination towards investment in long term assets rather than short term assets; therefore such companies must have higher profitability due to higher risks or more investments in higher return generating assets/noncurrent assets as against low return generating assets/current assets. If the profitability of sugar and allied sector is satisfactory then the low liquidity is acceptable as the liquidity risk is covered by the profitability returns, as long as those returns are greater than the cost of risk associated with low liquidity.

The results indicate that the top performing companies along with the well above average companies have relatively good liquidity position with higher current ratio, quick ratio,
receivable turnover and inventory turnover as against the average and below average firms of the industry. Yet the data being positively skewed and leptokurtic it is obvious that more number of the studied firms in the industry is having low liquidity with lesser then mean values. Higher standard deviation of the liquidity measures also reflects that most of the firms are having liquidity values far from mean values.

Measure regarding corporate performance of sugar and allied industry depicts that market to book value of sugar and allied sector is positively skewed and leptokurtic with more values lying towards the left of the mean. The mean statistics endorse that the sugar and allied industry is having satisfactory market to book value ratio being more than 1, but the median statistics disclose that the average figure of the industry is less than 1. The contradictory statistics tell that more of the firms are having weak corporate performance in terms of market to book value ratio. The results indicate that the top performing companies along with the well above average companies have relatively good market to book value ratio as against the average and below average firms of the industry. Yet the data being positively skewed and leptokurtic it is obvious that more number of the studied firms in the industry is having low market to book value ratio with lesser then mean values. Higher standard deviation of the corporate performance measure also reflects that most of the firms are having market to book values far from mean values.

The inferential statistics based on financial data regarding liquidity management and corporate performance of sugar and allied industry depict that all the explanatory variables current ratio, quick ratio, receivable turnover and inventory turnover are significant predictors of the dependent variable market to book value ratio. The resultant coefficients disclose that current ratio and inventory turnover are positively linked with market to book value ratio whereas quick ratio and receivable turnover are negatively linked with market to book value ratio. Hence an
increase in current ratio and inventory turnover will add to the market to book value ratio of sugar and allied industry whereas decrease in quick ratio and receivable turnover will add to the market to book value ratio of sugar and allied industry. This implies that the sugar and allied sector companies should invest more in current assets on one side or decrease reliance on short term finances on the other side to improve current ratio, which will result in better market to book value ratio along with the improved liquidity position.

Similarly the sugar and allied sector companies should improve inventory turnover by speeding up their selling efforts and reducing the time inventory is lying on the floors unsold, this will result in better market to book value ratio along with the improved liquidity position of the companies due to improved turnover. Further the sugar and allied sector companies should decrease their quick ratio by decreasing either of quick assets held by the companies. This will add to the market and book value ratio of the companies. The above analysis demands that the sugar and allied industry should improve current ratio on one side and decrease quick ratio on the other side to improve market to book value ratio. Hence it implies that the sugar and allied sector companies may increase inventory to get the desired outcomes, but the speed of selling that inventory must not be compromised in order to have higher inventory turnover leading to better market to book value ratio. Moreover receivable turnover should be decreased by sugar and allied sector companies in order to have better market to book value ratio through offering more lenient credit terms to inflate investment in receivable level, however due care should be taken in this regard by the companies to financially evaluate the risk and returns associated with increasing receivables. The level of receivables should be increased to the level as long as the returns associated with higher credit sales are greater than the cost of investment in the incremental receivables.
The inferential statistics results suggested the acceptance of H2 & H4 whereas rejection of H1 & H3. The relationship between current ratio and market to book value ratio was expected to be negative as per the review of earlier literature but it turns out to be positive. Hence the sugar and allied sector companies should not take risk by decreasing their investment in current assets in order to increase their profitability as the decrease will adversely affect their profitability. Similarly the relationship between receivable turnover and market to book value ratio was expected to be positive as per the review of earlier literature but it turns out to be negative. Hence the sugar and allied sector companies should not take risk by decreasing their investment in receivables through stricter credit policies in order to increase their profitability as the decrease will adversely affect their profitability. The relationships between quick ratio and market to book value as well as inventory turnover and market to book value ratio were observed to be same as predicted.

4.4.2 Solvency & Corporate Performance – Sugar & Allied

Descriptive statistics describing key features of financial data regarding solvency management of sugar and allied industry depicts that all the variables measuring the solvency management and corporate performance of sugar and allied sector are positively skewed and leptokurtic with more values lying towards the left of the mean. The mean and median statistics endorse that the sugar and allied industry is facing solvency problems, since the mean and median debt ratio both depicts that more of the firms in the sector are heavily debt financed with more than 1 debt to equity ratio. The mean and median statistics of interest coverage ratio depicts that the sugar and allied industry is not facing as such interest payment problems since the ratio is more than 1. This implies that the sector despite being heavily debt financed yet does not face serious interest coverage problems. This endorses that the debt financing is used efficiently to generate profits.
from the funds raised through debt financing. The mean and median differences of debt to equity ratio disclose that the highly debt financed outliers have caused the mean debt to equity ratio to be quite high. Moreover the data being positively skewed and leptokurtic it is obvious that more of the studied firms in the industry would be having lesser debt to equity as compared to mean value and more of the companies will be lying far away from mean because of high standard deviation. The mean and median differences of interest coverage ratio disclose that due to the top performing companies utilizing debt financing efficiently, interest coverage is quite high, but the data being positively skewed and leptokurtic it is obvious that more of the studied firms in the industry would be having lesser interest coverage as compared to mean value and again more of the companies will be lying far away from mean because of high standard deviation.

Since due to low solvency; the companies from sugar and allied sector are facing solvency risk or in other words they have more inclination towards relying on external financing (long term and short term finances) rather than internal financing (shareholders’ equity); therefore such companies may face lower profitability due to higher reliance on external financing carrying fixed obligatory interest payments as against the internal financing carrying varying and optional dividend payments. The increased burden of interest payment due to heavy debt financing decreases the profitability of the companies on one side yet it increases the cash inflows due to tax advantages associated with such high debt financing, thus ultimately increase the returns for the owners of the companies despite their lower investments. Hence present debt financing levels at sugar and allied sectors is needed to be carefully reviewed; to financially evaluate the costs of debts as against the returns generated on those funds. As long as the returns exceed the costs; debt financing may be continued otherwise there is a serious need of restructuring the debt equity
mix, since the higher debt to equity ratio may lead the sugar and allied industry towards insolvency and eventual bankruptcy especially for the outliers.

The results indicate that the top performing companies along with the well above average companies have relatively good solvency position with higher interest coverage ratio as against the average and below average firms of the industry. Yet the data being positively skewed and leptokurtic it is obvious that more number of the studied firms in the industry is having low interest coverage with lesser then mean values and higher standard deviation of the interest coverage ratio reflects that most of the firms are having interest coverage ratio far from mean values. Moreover the heavily debt financed outliers have resulted in high debt to equity mean statistics but the media statistics tell that more of the companies are having slightly higher than 1 debt to equity ratio, and since more values are lying on left side therefore it may be concluded that more of the companies are not facing serious solvency issues.

The inferential statistics based on financial data regarding solvency management and corporate performance of sugar and allied industry depict that all the explanatory variables debt to equity ratio and interest coverage are significant predictors of the dependent variable market to book value ratio. The resultant coefficients disclose that debt to equity ratio and interest coverage both are positively linked with market to book value ratio. Hence an increase in debt to equity ratio and interest coverage will add to the market to book value ratio of sugar and allied industry. This implies that the sugar and allied sector companies should rely more on debt financing to improve the market to book value ratio and also should they improve their interest coverage to increase the market to book value ratio. It implies that the level of debt financing in sugar and allied industry may be raised but the funds generated so must be invested carefully in the projects ensuring the returns higher than the cost of the funds employed in the projects; otherwise the
sugar and allied sector would be facing risk of insolvency and bankruptcy eventually. In addition, the sugar and allied companies are also required to improve their operating profits by controlling their costs of production or operating expenses to improve the eventual interest coverage ratio.

The inferential statistics results suggested the acceptance of H5 & H6. The relationship between debt to equity ratio and market to book value ratio as well as interest coverage ratio and market to book value ratio were observed to be same as predicted. Hence the sugar and allied sector companies may take risk by relying more on debt financing and utilizing the funds effectively to generate more returns for the companies.

4.4.3 Profitability & Corporate Performance – Sugar & Allied

Descriptive statistics describing key features of financial data regarding profitability management of sugar and allied industry depicts that gross margin and return on assets are positively skewed and leptokurtic with more values lying towards the left of the mean and fewer higher values whereas profit margin and return on equity are negatively skewed and leptokurtic with more values lying on the right of the mean and fewer lower values. The mean and median statistics endorse that the sugar and allied industry is facing low profitability in terms of profit margin, return on assets and return on equity, whereas gross margin is satisfactory. Due to bottom line performers return on equity and profit margins appear to be negative, but the data being negatively skewed more of the companies would be having positive values, for profit margin and return on equity, with higher than mean values. Mean and median of gross margin values support the strong profitability of the sector whereas return on assets remains stable in both terms though quite low. The results indicate that the top performing companies along with
the well above average companies have relatively good profitability position with higher gross
margins, profit margins, return on assets and return on equity as against the average and below
average firms of the industry. Moreover more of the companies are having higher profit margins
and return on equity as against mean and median statistics, whereas lower gross margin and
return on assets as compared to mean and median indicators.

Higher gross margins endorse that the companies are well controlling their cost of production as
against the revenues being generated through sales. However the low profit margins disclose that
the sugar and allied companies are not well controlling their operating and financial expenses;
hence as a result the higher gross profits are consumed by the inflated operating and financial
expenses. The sugar and allied companies since relying more on debt financing therefore the
profitability is reduced possibly due to increased interest burden. However as it is already
discussed above that debt financing is preferable for sugar and allied industry therefore there is a
need to increase return on the debt funds on the one side and to control the operating expenses on
the other side to improve the profit margins, instead of decreasing the debt financing to avoid
interest payments. Return on assets and return on equity will also be improving as profit margins
will improve. Return on assets and return on equity may also be improved by decreasing the
investments in assets and retiring the equivalent from equity, however due care should be taken
in eliminating unnecessary assets as it may adversely affect the operations of the sugar and allied
companies.

The inferential statistics based on financial data regarding profitability management and
corporate performance of sugar and allied industry depict that profit margin and return on equity
are significant predictors whereas gross margin and return on assets are insignificant predictors
of the dependent variable market to book value ratio. Coefficients disclose that gross margin and
return on equity are positively linked with market to book value ratio whereas profit margin and return on assets are negatively linked with market to book value ratio. Hence an increase in return on equity will add to the market to book value ratio of sugar and allied industry whereas profit margins have a negative relationship with market to book value ratio of sugar and allied industry. This implies that the sugar and allied sector companies should focus more on increasing the returns on equity investments as against increasing the returns on sales to increase market to book value ratio. The summary of the observed and actual relationships suggested the acceptance of H10 whereas rejection of H7, H8 & H9 for sugar and allied industry. H7 and H9 are rejected due to insignificant relationships observed between gross margin and market to book value ratio and return on assets and market to book value ratio, whereas H8 is rejected due to the opposite relationship observed between profit margin and market to book value ratio though significant. It implies that gross margin and return on assets have no impact on the market to book value of sugar and allied industry hence any changes in these will have no effect on the market to book value. The relationship between profit margin and market to book value ratio was expected to be positive as per the review of earlier literature but it turns out to be negative, one of the possible reason for this opposite result could be that despite decreasing profitability stock prices have been increasing due to some other factors or vice versa.

### 4.4.4 Activity & Corporate Performance – Sugar & Allied

Descriptive statistics describing key features of financial data regarding activity management of sugar and allied industry depicts that all the variables measuring the activity and corporate performance of sugar and allied sector are positively skewed and leptokurtic with more values lying towards the left of the mean and fewer high values. The mean and median statistics endorse that the sugar and allied industry is having good activity in terms of sales growth and assets
turnover. More of the companies would be having lower than mean values, yet the median values are satisfactory enough to support the reasonable activity management of the sugar and allied industry. The results indicate that the top performing companies along with the well above average companies have relatively extremely good activity management with very high sales growth and asset turnover as against the average and below average firms of the industry having reasonably good sales growth and asset turnover. However, the companies must put more efforts to increase the sales growth and improve the asset turnover, since already the companies are facing low profitability due to higher expenses. The increased sales growth along with the improved asset turnover will improve the profitability of the companies due to economies of scale. As discussed earlier, the sugar and allied industry is suggested to decrease receivable turnover by introducing lenient credit policies to increase sales and the receivable level, thus the increased sales would also improve the asset turnover, hence twofold objectives would be achieved through the receivable management. Asset turnover may also be improved by decreasing the investments in assets and retiring the equivalent from equity, however due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the sugar and allied companies.

The inferential statistics based on financial data regarding activity management and corporate performance of sugar and allied industry depict that all the explanatory variables sales growth and assets turnover are significant predictors of the dependent variable market to book value ratio. The resultant coefficients disclose that sales growth is negatively associated whereas asset turnover is positively linked with market to book value ratio. Hence an increase in asset turnover will add to the market to book value ratio of sugar and allied industry whereas increase in sales growth would have adverse outcomes for the market to book value ratio of sugar and allied industry.
industry. This implies that the sugar and allied sector companies should keep a close eye on sales and assets level to improve the market to book value ratio along with the improved activity management. The inferential statistics results suggested the acceptance of H12 whereas rejection of H11. The relationship between sales growth and market to book value ratio was expected to be positive as per the review of earlier literature but it turns out to be negative. One of the possible reasons for this opposite result could be that despite increasing sales growth stock prices might have been decreasing due to some other factors or vice versa. The relationship between asset turnover and market to book value ratio was observed to be same as expected.

4.4.5 Liquidity & Corporate Performance – Chemical & Allied

Descriptive statistics describing key features of financial data regarding liquidity management of chemical and allied industry depicts that all the variables measuring the liquidity and corporate performance of chemical and allied sector are positively skewed and leptokurtic with more values lying towards the left of the mean and fewer high values. The mean and median statistics endorse that the chemical and allied industry is facing satisfactory liquidity position, since the mean and median current ratio and quick ratio are well above 1. More companies from chemical and allied sector are having current ratio and quick ratio between mean and median values; hence more companies will be having satisfactory liquidity. Moreover mean and median values of receivable turnover and inventory turnover also depicts that the chemical and allied industry is having reasonable receivable management but weak inventory management, hence the liquidity of the sector is affected again due to low inventory turnovers. The results indicate that the top performing companies along with the well above average companies have relatively very good liquidity position with higher current ratio, quick ratio, receivable turnover and inventory turnover as against the average firms of the industry having satisfactory liquidity. Yet the data
being positively skewed and leptokurtic it is obvious that more number of the studied firms in the industry is having liquidity lesser then the mean values. Higher standard deviation of the liquidity measures also reflects that most of the firms are having liquidity values far from mean values.

Since the chemical and allied sector companies are having satisfactory liquidity and are not facing liquidity risk as such therefore the companies may go ahead with taking risk to enhance profitability of the sector, by investing more in long term assets and less in short term assets. However due care should be taken while doing so regarding the cost of risk associated with the decreased investment in current assets and the returns associated with noncurrent assets.

Measure regarding corporate performance of chemical and allied industry depicts that market to book value of chemical and allied sector is positively skewed and leptokurtic with more values lying towards the left of the mean. The mean and median statistics both endorse that the chemical and allied industry is having satisfactory market to book value ratio being more than 1. The results indicate that the top performing companies along with the average and above average companies have relatively good market to book value ratio as against the below average firms of the industry. Yet the data being positively skewed and leptokurtic it is obvious that more number of the studied firms in the industry is having low market to book value ratio with lesser then mean values. Higher standard deviation of the corporate performance measure also reflects that most of the firms are having market to book values far from mean values.

The inferential statistics based on financial data regarding liquidity management and corporate performance of chemical and allied industry depict that all the explanatory variables current ratio, quick ratio, receivable turnover and inventory turnover are significant predictors of the
dependent variable market to book value ratio. The resultant coefficients disclose that current ratio, receivable turnover and inventory turnover ratio are positively linked with market to book value ratio whereas quick ratio is negatively linked with market to book value ratio. Hence an increase in current ratio, receivable turnover and inventory turnover will add to the market to book value ratio of chemical and allied industry whereas decrease in quick ratio will add to the market to book value ratio of chemical and allied industry. This implies that the chemical and allied sector companies should invest more in current assets on one side or decrease reliance on short term finances on the other side to improve current ratio, which will result in better market to book value ratio along with the improved liquidity position.

Similarly the chemical and allied sector companies should improve inventory turnover by speeding up their selling efforts and reducing the time inventory is lying on the floors unsold, this will result in better market to book value ratio along with the improved liquidity position of the companies due to improved turnover. Further the chemical and allied sector companies should decrease their quick ratio by decreasing either of quick assets held by the companies. This will add to the market and book value ratio of the companies. The above analysis demands that the chemical and allied industry should improve current ratio on one side and decrease quick ratio on the other side to improve market to book value ratio. Hence it implies that the chemical and allied sector companies may increase inventory to get the desired outcomes, but the speed of selling that inventory must not be compromised in order to have higher inventory turnover leading to better market to book value ratio. Moreover receivable turnover should also be increased by chemical and allied sector companies in order to have better market to book value ratio through offering stricter credit terms to deflate investment in receivable level, however due care should be taken in this regard by the companies to financially evaluate the risk and returns
associated with decreasing receivables. The level of receivables should be decreased to the level
as long as the returns associated with funds released from receivables are greater than the cost of
lost sales due to stricter policies.

The inferential statistics results suggested the acceptance of H2, H3 & H4 whereas rejection of
H1. The relationship between current ratio and market to book value ratio was expected to be
negative as per the review of earlier literature but it turns out to be positive. Hence the chemical
and allied sector companies should not take risk by decreasing their investment in current assets
in order to increase their profitability as the decrease will adversely affect their profitability. The
relationships between quick ratio and market to book value; receivable turnover and market to
book value as well as inventory turnover and market to book value ratio were observed to be
same as predicted.

4.4.6 Solvency & Corporate Performance – Chemical & Allied

Descriptive statistics describing key features of financial data regarding solvency management of
chemical and allied industry depicts that all the variables measuring the solvency management
and corporate performance of chemical and allied sector are positively skewed and leptokurtic
with more values lying towards the left of the mean and fewer high values. The mean and
median statistics endorse that the chemical and allied industry is facing solvency problems in
terms of debt to equity but the interest coverage is satisfactory. The mean and median debt ratio
both depicts that more of the firms in the sector are heavily debt financed with more than 1 debt
to equity ratio. The mean and median statistics of interest coverage ratio depicts that the
chemical and allied industry is not facing as such interest payment problems since the ratio is
more than 1. This implies that the sector despite being heavily debt financed yet does not face
serious interest coverage problems. This endorses that the debt financing is used efficiently to
generate profits from the funds raised through debt financing. The mean and median differences
of debt to equity ratio disclose that the highly debt financed outliers have caused the mean debt
to equity ratio to be quite high. Moreover the data being positively skewed and leptokurtic it is
obvious that more of the studied firms in the industry would be having lesser debt to equity as
compared to mean value and more of the companies will be lying far away from mean because
of high standard deviation. The median value is just slightly higher than 1, therefore t may be
concluded that average firms are having slightly weak solvency position whereas below average
firms might be facing solvency issues. The mean and median differences of interest coverage
ratio disclose that due to the top performing companies utilizing debt financing efficiently,
interest coverage is quite high, but the data being positively skewed and leptokurtic it is obvious
that more of the studied firms in the industry would be having lesser interest coverage as
compared to mean value and again more of the companies will be lying far away from mean
because of high standard deviation.

Since due to low solvency; the below average companies from chemical and allied sector are
facing solvency risk or in other words they have more inclination towards relying on external
financing (long term and short term finances) rather than internal financing (shareholders’
equity); therefore such companies may face lower profitability due to higher reliance on external
financing carrying fixed obligatory interest payments as against the internal financing carrying
varying and optional dividend payments. The increased burden of interest payment due to heavy
debt financing decreases the profitability of the companies on one side yet it increases the cash
inflows due to tax advantages associated with such high debt financing, thus ultimately increase
the returns for the owners of the companies despite their lower investments. Hence present debt
financing levels at chemical and allied sectors is needed to be carefully reviewed; to financially evaluate the costs of debts as against the returns generated on those funds. As long as the returns exceed the costs; debt financing may be continued otherwise there is a serious need of restructuring the debt equity mix, since the higher debt to equity ratio may lead the chemical and allied industry towards insolvency and eventual bankruptcy especially for the outliers.

The results indicate that the top performing companies along with the average and above average companies have relatively good solvency position with higher interest coverage ratio and reasonable debt to equity ratio as against the below average firms of the industry. Yet the data being positively skewed and leptokurtic it is obvious that more number of the studied firms in the industry is having low interest coverage with lesser then mean values and higher standard deviation of the interest coverage ratio reflects that most of the firms are having interest coverage ratio far from mean values. Moreover the heavily debt financed outliers have resulted in high debt to equity mean statistics but the media statistics tell that more of the companies are having slightly higher than 1 debt to equity ratio, and since more values are lying on left side therefore it may be concluded that more of the companies are not facing serious solvency issues.

The inferential statistics based on financial data regarding solvency management and corporate performance of chemical and allied industry depict that all the explanatory variables debt to equity ratio and interest coverage are significant predictors of the dependent variable market to book value ratio. The resultant coefficients disclose that debt to equity ratio and interest coverage both are positively linked with market to book value ratio. Hence an increase in debt to equity ratio and interest coverage will add to the market to book value ratio of chemical and allied industry. This implies that the chemical and allied sector companies should rely more on debt financing to improve the market to book value ratio and also should they improve their interest
coverage to increase the market to book value ratio. It implies that the level of debt financing in chemical and allied industry may be raised but the funds generated so must be invested carefully in the projects ensuring the returns higher than the cost of the funds employed in the projects; otherwise the chemical and allied sector would be facing risk of insolvency and bankruptcy eventually. In addition, the chemical and allied companies are also required to improve their operating profits by controlling their costs of production or operating expenses to improve the eventual interest coverage ratio.

The inferential statistics results suggested the acceptance of H5 & H6. The relationship between debt to equity ratio and market to book value ratio as well as interest coverage ratio and market to book value ratio were observed to be same as predicted. Hence the chemical and allied sector companies may take risk by relying more on debt financing and utilizing the funds effectively to generate more returns for the companies.

4.4.7 Profitability & Corporate Performance – Chemical & Allied

Descriptive statistics describing key features of financial data regarding profitability management of chemical and allied industry depicts that return on assets is positively skewed and leptokurtic with more values lying towards the left of the mean and fewer higher values whereas gross margin, profit margin and return on equity are negatively skewed and leptokurtic with more values lying on the right of the mean and fewer lower values. The mean statistics disclose reasonable profitability in terms of gross margins and good profitability in terms of return on assets but quite weak profitability in terms of profit margin and return on equity. Median statistics endorse that the chemical and allied industry is facing reasonable profitability in terms of gross margins, profit margin, return on assets and return on equity. The contradictory
results of profit margins and return on equity are due to the least performing companies having relatively quite low profitability with negative statistics. However data being negatively skewed and leptokurtic profit margins and return on equity of more of the firms are lying towards the right of mean with more than average returns. Most of the firms in the industry are having higher than average gross margins, profit margin and return on equity, whereas more of the firms are having lesser than average return on assets. Mean and median statistics endorses the stability of return on assets of the chemical and allied industry. Higher standard deviation of the variables also reflects that most of the firms are having profitability values and corporate performance measurement values far from mean values. The results indicate that the top performing companies along with the above average companies have relatively good profitability position with higher gross margins, profit margins, return on assets and return on equity as against the average and below average firms of the industry.

Higher gross margins endorse that the companies are well controlling their cost of production as against the revenues being generated through sales. However the low profit margins disclose that the chemical and allied companies are not well controlling their operating and financial expenses; hence as a result the higher gross profits are consumed by the inflated operating and financial expenses. The chemical and allied companies since relying more on debt financing therefore the profitability is reduced possibly due to increased interest burden. However as it is already discussed above that debt financing is preferable for chemical and allied industry therefore there is a need to increase return on the debt funds on the one side and to control the operating expenses on the other side to improve the profit margins, instead of decreasing the debt financing to avoid interest payments. Return on assets and return on equity will also be improving as profit margins will improve. Return on assets and return on equity may also be
improved by decreasing the investments in assets and retiring the equivalent from equity, however due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the chemical and allied companies.

The inferential statistics based on financial data regarding profitability management and corporate performance of chemical and allied industry depict that return on assets and return on equity are significant predictors whereas gross margin and profit margins are insignificant predictors of the dependent variable market to book value ratio. Coefficients disclose that gross margin and return on equity are positively linked with market to book value ratio whereas profit margin and return on assets are negatively linked with market to book value ratio. Hence an increase in return on equity will add to the market to book value ratio of chemical and allied industry whereas return on assets have a negative relationship with market to book value ratio of chemical and allied industry. This implies that the chemical and allied sector companies should focus more on increasing the returns on equity investments as against increasing the returns on assets to increase market to book value ratio. The summary of the observed and actual relationships suggested the acceptance of H10 whereas rejection of H7, H8 & H9 for chemical and allied industry. H7 and H8 are rejected due to insignificant relationships observed between gross margin and market to book value ratio and profit margin and market to book value ratio, whereas H9 is rejected due to the opposite relationship observed between return on assets and market to book value ratio though significant. It implies that gross margin and profit margin have no impact on the market to book value of chemical and allied industry hence any changes in these will have no effect on the market to book value. The relationship between return on assets and market to book value ratio was expected to be positive as per the review of earlier literature but it turns out to be negative, one of the possible reason for this opposite result could be that
despite decreasing return on assets stock prices have been increasing due to some other factors or vice versa.

4.4.8 Activity & Corporate Performance – Chemical & Allied

Descriptive statistics describing key features of financial data regarding activity management of chemical and allied industry depicts that all the variables measuring the activity and corporate performance of chemical and allied sector are positively skewed and leptokurtic with more values lying towards the left of the mean and fewer high values. The mean and median statistics endorse that the chemical and allied industry is having good activity in terms of sales growth and assets turnover. More of the companies would be having lower than mean values, yet the median values are satisfactory enough to support the reasonable activity management of the chemical and allied industry. The results indicate that the top performing companies along with the well above average companies have relatively extremely good activity management with very high sales growth and asset turnover as against the average and below average firms of the industry having reasonably good sales growth and asset turnover. However the companies must put more efforts to increase the sales growth and improve the asset turnover, since already the companies are facing low profitability due to higher expenses. The increased sales growth along with the improved asset turnover will improve the profitability of the companies due to economies of scale. Asset turnover may also be improved by decreasing the investments in assets and retiring the equivalent from equity, however due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the chemical and allied companies.

The inferential statistics based on financial data regarding activity management and corporate performance of chemical and allied industry depict that the explanatory variable sales growth is
not significant predictor whereas asset turnover is significant predictor of the dependent variable market to book value ratio. The resultant coefficients disclose that sales growth and asset turnover are positively linked with market to book value ratio. Hence an increase in asset turnover will add to the market to book value ratio of chemical and allied industry whereas changes in sales growth would have no outcomes for the market to book value ratio of chemical and allied industry. This implies that the chemical and allied sector companies should keep a close eye on sales and assets level to improve the market to book value ratio along with the improved activity management. The inferential statistics results suggested the acceptance of H12 whereas rejection of H11. The relationship between sales growth and market to book value ratio was expected to be positive as per the review of earlier literature but it turns out to be positive but insignificant. The relationship between asset turnover and market to book value ratio was observed to be same as expected.

4.4.9 Liquidity & Corporate Performance – Cement & Allied

Descriptive statistics describing key features of financial data regarding liquidity management of cement and allied industry depicts that all the variables measuring the liquidity and corporate performance of cement and allied sector are positively skewed and leptokurtic with more values lying towards the left of the mean. The mean and median statistics endorse that the cement and allied industry is facing liquidity problems, since the mean current ratio is slightly above 1 with mean quick ratio less than 1, whereas median current ratio and quick ratio are also below 1. More companies from cement and allied sector are having current ratio and quick ratio between mean and median values; hence more companies will be having liquidity problems. Moreover mean and median values of receivable turnover and inventory turnover also depicts that the
cement and allied industry is having reasonable receivable management but weak inventory management, hence the liquidity of the sector is affected again due to low inventory turnovers.

Since due to low liquidity; the companies from cement and allied sector are facing liquidity risk or in other words they have more inclination towards investment in long term assets rather than short term assets; therefore such companies must have higher profitability due to higher risks or more investments in higher return generating assets/noncurrent assets as against low return generating assets/current assets. If the profitability of cement and allied sector is satisfactory then the low liquidity is acceptable as the liquidity risk is covered by the profitability returns, as long as those returns are greater than the cost of risk associated with low liquidity.

The results indicate that the top performing companies along with the well above average companies have relatively good liquidity position with higher current ratio, quick ratio, receivable turnover and inventory turnover as against the average and below average firms of the industry. Yet the data being positively skewed and leptokurtic it is obvious that more number of the studied firms in the industry is having low liquidity with lesser then mean values. Higher standard deviation of the liquidity measures also reflects that most of the firms are having liquidity values far from mean values.

Measure regarding corporate performance of cement and allied industry depicts that market to book value of cement and allied sector is positively skewed and leptokurtic with more values lying towards the left of the mean. The mean statistics endorse that the cement and allied industry is having satisfactory market to book value ratio being more than 1, but the median statistics disclose that the average figure of the industry is less than 1. The contradictory statistics tell that more of the firms are having weak corporate performance in terms of market to book...
value ratio. The results indicate that the top performing companies along with the well above average companies have relatively good market to book value ratio as against the average and below average firms of the industry. Yet the data being positively skewed and leptokurtic it is obvious that more number of the studied firms in the industry is having low market to book value ratio with lesser then mean values. Higher standard deviation of the corporate performance measure also reflects that most of the firms are having market to book values far from mean values.

The inferential statistics based on financial data regarding liquidity management and corporate performance of cement and allied industry depict that all the explanatory variables current ratio, quick ratio, receivable turnover and inventory turnover are significant predictors of the dependent variable market to book value ratio. The resultant coefficients disclose that current ratio and inventory turnover are positively linked with market to book value ratio whereas quick ratio and receivable turnover are negatively linked with market to book value ratio. Hence an increase in current ratio and inventory turnover will add to the market to book value ratio of cement and allied industry whereas decrease in quick ratio and receivable turnover will add to the market to book value ratio of cement and allied industry. This implies that the cement and allied sector companies should invest more in current assets on one side or decrease reliance on short term finances on the other side to improve current ratio, which will result in better market to book value ratio along with the improved liquidity position.

Similarly the cement and allied sector companies should improve inventory turnover by speeding up their selling efforts and reducing the time inventory is lying on the floors unsold, this will result in better market to book value ratio along with the improved liquidity position of the companies due to improved turnover. Further the cement and allied sector companies should
decrease their quick ratio by decreasing either of quick assets held by the companies. This will add to the market and book value ratio of the companies. The above analysis demands that the cement and allied industry should improve current ratio on one side and decrease quick ratio on the other side to improve market to book value ratio. Hence it implies that the cement and allied sector companies may increase inventory to get the desired outcomes, but the speed of selling that inventory must not be compromised in order to have higher inventory turnover leading to better market to book value ratio. Moreover receivable turnover should be decreased by cement and allied sector companies in order to have better market to book value ratio through offering more lenient credit terms to inflate investment in receivable level, however due care should be taken in this regard by the companies to financially evaluate the risk and returns associated with increasing receivables. The level of receivables should be increased to the level as long as the returns associated with higher credit sales are greater than the cost of investment in the incremental receivables.

The inferential statistics results suggested the acceptance of H2 & H4 whereas rejection of H1 & H3. The relationship between current ratio and market to book value ratio was expected to be negative as per the review of earlier literature but it turns out to be positive. Hence the cement and allied sector companies should not take risk by decreasing their investment in current assets in order to increase their profitability as the decrease will adversely affect their profitability. Similarly the relationship betweenreceivable turnover and market to book value ratio was expected to be positive as per the review of earlier literature but it turns out to be negative. Hence the cement and allied sector companies should not take risk by decreasing their investment in receivables through stricter credit policies in order to increase their profitability as the decrease will adversely affect their profitability. The relationships between quick ratio and
market to book value as well as inventory turnover and market to book value ratio were observed to be same as predicted.

4.4.10 Solvency & Corporate Performance – Cement & Allied

Descriptive statistics describing key features of financial data regarding solvency management of cement and allied industry depicts that all the variables measuring the solvency management and corporate performance of cement and allied sector are positively skewed and leptokurtic with more values lying towards the left of the mean. The mean and median statistics endorse that the cement and allied industry is facing solvency problems, since the mean and median debt ratio both depicts that more of the firms in the sector are heavily debt financed with more than 1 debt to equity ratio. The mean and median statistics of interest coverage ratio depicts that the cement and allied industry is not facing as such interest payment problems since the ratio is more than 1. This implies that the sector despite being heavily debt financed yet does not face serious interest coverage problems. This endorses that the debt financing is used efficiently to generate profits from the funds raised through debt financing. The mean and median differences of debt to equity ratio disclose that the highly debt financed outliers have caused the mean debt to equity ratio to be quite high. Moreover the data being positively skewed and leptokurtic it is obvious that more of the studied firms in the industry would be having lesser debt to equity as compared to mean value and more of the companies will be lying far away from mean because of high standard deviation. The mean and median differences of interest coverage ratio disclose that due to the top performing companies utilizing debt financing efficiently, interest coverage is quite high, but the data being positively skewed and leptokurtic it is obvious that more of the studied firms in the industry would be having lesser interest coverage as compared to mean value and again more of the companies will be lying far away from mean because of high standard deviation.
Since due to low solvency; the companies from cement and allied sector are facing solvency risk or in other words they have more inclination towards relying on external financing (long term and short term finances) rather than internal financing (shareholders’ equity); therefore such companies may face lower profitability due to higher reliance on external financing carrying fixed obligatory interest payments as against the internal financing carrying varying and optional dividend payments. The increased burden of interest payment due to heavy debt financing decreases the profitability of the companies on one side yet it increases the cash inflows due to tax advantages associated with such high debt financing, thus ultimately increase the returns for the owners of the companies despite their lower investments. Hence present debt financing levels at cement and allied sectors is needed to be carefully reviewed; to financially evaluate the costs of debts as against the returns generated on those funds. As long as the returns exceed the costs; debt financing may be continued otherwise there is a serious need of restructuring the debt equity mix, since the higher debt to equity ratio may lead the cement and allied industry towards insolvency and eventual bankruptcy especially for the outliers.

The results indicate that the top performing companies along with the well above average companies have relatively good solvency position with higher interest coverage ratio as against the average and below average firms of the industry. Yet the data being positively skewed and leptokurtic it is obvious that more number of the studied firms in the industry is having low interest coverage with lesser then mean values and higher standard deviation of the interest coverage ratio reflects that most of the firms are having interest coverage ratio far from mean values. Moreover the heavily debt financed outliers have resulted in high debt to equity mean statistics but the media statistics tell that more of the companies are having slightly higher than 1
debt to equity ratio, and since more values are lying on left side therefore it may be concluded that more of the companies are not facing serious solvency issues.

The inferential statistics based on financial data regarding solvency management and corporate performance of cement and allied industry depict that all the explanatory variables debt to equity ratio and interest coverage are significant predictors of the dependent variable market to book value ratio. The resultant coefficients disclose that debt to equity ratio and interest coverage both are positively linked with market to book value ratio. Hence an increase in debt to equity ratio and interest coverage will add to the market to book value ratio of cement and allied industry. This implies that the cement and allied sector companies should rely more on debt financing to improve the market to book value ratio and also should they improve their interest coverage to increase the market to book value ratio. It implies that the level of debt financing in cement and allied industry may be raised but the funds generated so must be invested carefully in the projects ensuring the returns higher than the cost of the funds employed in the projects; otherwise the cement and allied sector would be facing risk of insolvency and bankruptcy eventually. In addition, the cement and allied companies are also required to improve their operating profits by controlling their costs of production or operating expenses to improve the eventual interest coverage ratio.

The inferential statistics results suggested the acceptance of H5 & H6. The relationship between debt to equity ratio and market to book value ratio as well as interest coverage ratio and market to book value ratio were observed to be same as predicted. Hence the cement and allied sector companies may take risk by relying more on debt financing and utilizing the funds effectively to generate more returns for the companies.
4.4.11 Profitability & Corporate Performance – Cement & Allied

Descriptive statistics describing key features of financial data regarding profitability management of cement and allied industry depicts that return on assets is positively skewed and leptokurtic with more values lying towards the left of the mean and fewer higher values whereas gross margin, profit margin and return on equity are negatively skewed and leptokurtic with more values lying on the right of the mean and fewer lower values. The mean and median statistics endorse that the cement and allied industry is facing low profitability in terms of profit margin, return on assets and return on equity, whereas gross margin is a little satisfactory but low. Due to bottom line performers return on equity and profit margins appear to be negative, but the data being negatively skewed more of the companies would be having positive values, for profit margin and return on equity, with higher than mean values. Mean and median of gross margin values support the gross profitability of the sector being positive though quite low. Similarly return on assets remains stable in both terms though quite low. The results indicate that the top performing companies along with the well above average companies have relatively good profitability position with higher gross margins, profit margins, return on assets and return on equity as against the average and below average firms of the industry. Moreover more of the companies are having higher profit margins and return on equity as against mean and median statistics, whereas lower gross margin and return on assets as compared to mean and median indicators.

Lower gross margins endorse that the companies are not very well controlling their cost of production as against the revenues being generated through sales, moreover the low profit margins disclose that the cement and allied companies are not again well controlling their operating and financial expenses; hence as a result the earned gross profits are consumed by the
inflated operating and financial expenses. The cement and allied companies since relying more on debt financing therefore the profitability is reduced possibly due to increased interest burden. However as it is already discussed above that debt financing is preferable for cement and allied industry therefore there is a need to increase return on the debt funds on the one side and to control the operating expenses on the other side to improve the profit margins, instead of decreasing the debt financing to avoid interest payments. Return on assets and return on equity will also be improving as profit margins will improve. Return on assets and return on equity may also be improved by decreasing the investments in assets and retiring the equivalent from equity, however due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the cement and allied companies.

The inferential statistics based on financial data regarding profitability management and corporate performance of cement and allied industry depict that return on assets and return on equity are significant predictors whereas gross margin and profit margins are insignificant predictors of the dependent variable market to book value ratio. Coefficients disclose that gross margin, profit margin and return on equity are positively linked with market to book value ratio whereas return on assets is negatively linked with market to book value ratio. Hence an increase in return on equity will add to the market to book value ratio of cement and allied industry whereas return on assets have a negative relationship with market to book value ratio of cement and allied industry. This implies that the cement and allied sector companies should focus more on increasing the returns on equity investments as against increasing the returns on assets to increase market to book value ratio. The summary of the observed and actual relationships suggested the acceptance of H10 whereas rejection of H7, H8 & H9 for cement and allied industry. H7 and H8 are rejected due to insignificant relationships observed between gross
margin and market to book value ratio and profit margin and market to book value ratio, whereas H9 is rejected due to the opposite relationship observed between return on assets and market to book value ratio though significant. It implies that gross margin and profit margin have no impact on the market to book value of chemical and allied industry hence any changes in these will have no effect on the market to book value. The relationship between return on assets and market to book value ratio was expected to be positive as per the review of earlier literature but it turns out to be negative, one of the possible reason for this opposite result could be that despite decreasing return on assets stock prices have been increasing due to some other factors or vice versa.

4.4.12 Activity & Corporate Performance – Cement & Allied

Descriptive statistics describing key features of financial data regarding activity management of cement and allied industry depicts that all the variables measuring the activity and corporate performance of cement and allied sector are positively skewed and leptokurtic with more values lying towards the left of the mean and fewer high values. The mean and median statistics endorse that the cement and allied industry is having good activity in terms of sales growth but weak activity in terms of assets turnover. More of the companies would be having lower than mean values, yet the median values are satisfactory enough to support the reasonable activity management of the cement and allied industry as far as sales growth are concerned but again asset turnover statistic is unsatisfactory. The results indicate that the top performing companies along with the well above average companies have relatively extremely good activity management with very high sales growth and asset turnover as against the average and below average firms of the industry having reasonably good sales growth but weak asset turnover. The results imply that though he cement and allied companies sales are growing but not at the desired
pace since asset turnover is low. This depicts that with the given level of assets more sales could be achieved hence sales growth could be even better. Hence the companies should either increase their sales growth to a higher rate to improve asset turnover with the given level of assets, otherwise decrease the investments in assets and retiring the equivalent from equity to improve the asset turnover. However due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the cement and allied companies. Since the cement and allied sector companies are facing low profitability due to higher expenses, the increased sales growth along with the improved asset turnover will improve the profitability of the companies due to economies of scale. As discussed earlier the cement and allied industry is suggested to decrease receivable turnover by introducing lenient credit policies to increase sales and the receivable level, thus the increased sales would also improve the asset turnover, hence twofold objectives would be achieved through the receivable management.

The inferential statistics based on financial data regarding activity management and corporate performance of cement and allied industry depict that all the explanatory variables sales growth and assets turnover are significant predictors of the dependent variable market to book value ratio. The resultant coefficients disclose that sales growth is negatively associated whereas asset turnover is positively linked with market to book value ratio. Hence an increase in asset turnover will add to the market to book value ratio of cement and allied industry whereas increase in sales growth would have adverse outcomes for the market to book value ratio of cement and allied industry. This implies that the cement and allied sector companies should keep a close eye on sales and assets level to improve the market to book value ratio along with the improved activity management. The inferential statistics results suggested the acceptance of H12 whereas rejection of H11. The relationship between sales growth and market to book value ratio was expected to
be positive as per the review of earlier literature but it turns out to be negative. One of the possible reasons for this opposite result could be that despite increasing sales growth stock prices might have been decreasing due to some other factors or vice versa. The relationship between asset turnover and market to book value ratio was observed to be same as expected.
Chapter 5

Conclusion & Recommendations

Liquidity & Corporate Performance
Sugar & Allied
Chemical & Allied
Cement & Allied

Solvency & Corporate Performance
Sugar & Allied
Chemical & Allied
Cement & Allied

Profitability & Corporate Performance
Sugar & Allied
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Activity & Corporate Performance
Sugar & Allied
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Cement & Allied
5.1 Conclusion & Recommendations

The present study observed that the performance of the selected corporate sectors in terms of market to book value is affected by a variety of internal firm and industry specific factors. Since it is a challenge for every corporate sector organization to generate, sustain and enhance their profits to increase the value of business in terms of increased equity market value, hence these sectors need to perceive clearly about how their developed strategies would affect their performance and the valuation. The study took corporate financial strategies related to various operational, investment and financial decisions being represented by four constructs, liquidity, solvency, profitability and activity. The outcomes of the strategies were measured and reflected by book values as presented by various accounting methods whereas corporate performance been measured through market to book value.

The study identified, measured and evaluated the association among corporate financial strategies and the corporate performance valuation and contributed to the construct validity of various financial indicators and their impact on corporate performance. Moreover the study determined the predictability of certain financial ratios for measuring corporate performance and suggested what combination of these ratios may lead to improved corporate performance in future. Findings of the study provide with the overview of historic performance and the potential performance of the selected sectors to help policy makers including finance, economics and industry experts. The results supported the resource based view that the firm specific capabilities along with the available resources are equally significant for creating value through the idiosyncratic resources and thus the firm specific factors are considered key determinants of firms’ performance.
Since the investors of the developed and the developing countries rely heavily on accounting information in taking certain decisions resulting in strengthening of the capital market and the eventual economic growth, hence the study also augmented the value relevance of the financial information reflected in financial statements in defining the association between accounting information and market values. The findings in this regard added to the earlier studies related to value relevance of the financial statements and the comparison of the value relevance across countries, signifying the issue for a developing country like Pakistan where the internal and external environment of the firms and the industry is significantly different as against the developed and other developing countries. Moreover the literature on the determinants of firms’ performance in Pakistan is still in its infancy, so the results of the study presented with significant findings to continue with further such endeavors in this area to extend support for corporate organizations in determining how accounting based measures explain and affect their performance.

5.1.1 Liquidity & Corporate Performance

The study first of all analyzed how working capital management practices or liquidity management is affecting the corporate performance in the three studied sectors.

5.1.1.1 Sugar & Allied

The results indicated that sugar and allied industry is facing liquidity problems with weaker current ratio, quick ratio and inventory turnover but slightly better receivable turnover. The low liquidity indicators and more liquidity risk depicted that sugar and allied industry is more oriented towards investment in long term assets rather than short term assets; therefore such companies must have higher profitability due to higher risks or more investments in higher return
generating assets/noncurrent assets as against low return generating assets/current assets. The inferential statistics supported the significance of liquidity measures for corporate performance and disclosed that current ratio and inventory turnover are positively linked with market to book value ratio whereas quick ratio and receivable turnover are negatively linked with market to book value ratio; implying that the sugar and allied sector companies should invest more in current assets on one side or decrease reliance on short term finances on the other side to improve current ratio resulting in better market to book value ratio. Similarly the sugar and allied sector companies are suggested to improve inventory turnover by speeding up their selling efforts and reducing the time inventory is lying on the floors unsold to improve market to book value ratio. Further the sugar and allied sector companies should decrease their quick ratio by decreasing either of quick assets held by the companies. This will add to the market and book value ratio of the companies. Hence it implies that the sugar and allied sector companies may increase inventory to get the desired outcomes, but the speed of selling that inventory must not be compromised in order to have higher inventory turnover leading to better market to book value ratio. Moreover receivable turnover should be decreased by sugar and allied sector companies in order to have better market to book value ratio through offering more lenient credit terms to inflate investment in receivable level, however due care should be taken in this regard by the companies to financially evaluate the risk and returns associated with increasing receivables. The level of receivables should be increased to the level as long as the returns associated with higher credit sales are greater than the cost of investment in the incremental receivables.

5.1.1.2 Chemical & Allied

Chemical and allied industry is found to have satisfactory liquidity position with reasonable current ratio, quick ratio and receivable turnover but slightly weak inventory management; hence
the liquidity of the sector is affected due to low inventory turnovers. Since the chemical and allied sector companies are having satisfactory liquidity and are not facing liquidity risk as such therefore the companies may go ahead with taking risk to enhance profitability of the sector, by investing more in long term assets and less in short term assets. However due care should be taken while doing so regarding the cost of risk associated with the decreased investment in current assets and the returns associated with noncurrent assets. The inferential statistics supported the significance of liquidity management for corporate performance of chemical and allied industry and disclosed that current ratio, receivable turnover and inventory turnover ratio are positively linked with market to book value ratio whereas quick ratio is negatively linked with market to book value ratio. Hence an increase in current ratio, receivable turnover and inventory turnover will add to the market to book value ratio of chemical and allied industry whereas decrease in quick ratio will add to the market to book value ratio of chemical and allied industry. This implies that the chemical and allied sector companies should invest more in current assets on one side or decrease reliance on short term finances on the other side to improve current ratio, which will result in better market to book value ratio along with the improved liquidity position. Similarly the chemical and allied sector companies should improve inventory turnover by speeding up their selling efforts and reducing the time inventory is lying on the floors unsold, this will result in better market to book value ratio along with the improved liquidity position of the companies due to improved turnover. Further the chemical and allied sector companies should decrease their quick ratio by decreasing either of quick assets held by the companies. This will add to the market and book value ratio of the companies. Hence it implies that the chemical and allied sector companies may increase inventory to get the desired outcomes, but the speed of selling that inventory must not be compromised in order to have
higher inventory turnover leading to better market to book value ratio. Moreover receivable turnover should also be increased by chemical and allied sector companies in order to have better market to book value ratio through offering stricter credit terms to deflate investment in receivable level, however due care should be taken in this regard by the companies to financially evaluate the risk and returns associated with decreasing receivables. The level of receivables should be decreased to the level as long as the returns associated with funds released from receivables are greater than the cost of lost sales due to stricter policies.

5.1.1.3 Cement & Allied

Cement and allied industry is found to have liquidity problems with weak current ratio, quick ratio and inventory turnover but slightly better receivable turnover. Since due to low liquidity; the companies from cement and allied sector are facing liquidity risk or in other words they have more inclination towards investment in long term assets rather than short term assets; therefore such companies must have higher profitability due to higher risks or more investments in higher return generating assets/noncurrent assets as against low return generating assets/current assets. The inferential statistics supported the significance of liquidity management for corporate performance of cement and allied industry and depicted that current ratio and inventory turnover are positively linked with market to book value ratio whereas quick ratio and receivable turnover are negatively linked with market to book value ratio. Hence an increase in current ratio and inventory turnover will add to the market to book value ratio of cement and allied industry whereas decrease in quick ratio and receivable turnover will add to the market to book value ratio of cement and allied industry. This implies that the cement and allied sector companies should invest more in current assets on one side or decrease reliance on short term finances on the other side to improve current ratio, which will result in better market to book value ratio
along with the improved liquidity position. Similarly the cement and allied sector companies should improve inventory turnover by speeding up their selling efforts and reducing the time inventory is lying on the floors unsold, this will result in better market to book value ratio along with the improved liquidity position of the companies due to improved turnover. Further the cement and allied sector companies should decrease their quick ratio by decreasing either of quick assets held by the companies. This will add to the market and book value ratio of the companies. Hence it implies that the cement and allied sector companies may increase inventory to get the desired outcomes, but the speed of selling that inventory must not be compromised in order to have higher inventory turnover leading to better market to book value ratio. Moreover receivable turnover should be decreased by cement and allied sector companies in order to have better market to book value ratio through offering more lenient credit terms to inflate investment in receivable level, however due care should be taken in this regard by the companies to financially evaluate the risk and returns associated with increasing receivables. The level of receivables should be increased to the level as long as the returns associated with higher credit sales are greater than the cost of investment in the incremental receivables.

5.1.2 Solvency & Corporate Performance

Secondly the study analyzed how capital structure decisions or solvency management is affecting the corporate performance in the three studied sectors.

5.1.2.1 Sugar & Allied

The results indicated that sugar and allied industry is facing solvency problems due to heavy debt financing with somewhat reasonable interest coverage ratio implying that the sector despite being heavily debt financed yet does not face serious interest coverage problems. This endorses
that the debt financing is used efficiently to generate profits from the funds raised through debt financing. Since due to low solvency; the companies from sugar and allied sector are facing solvency risk or in other words they have more inclination towards relying on external financing (long term and short term finances) rather than internal financing (shareholders’ equity); therefore such companies may face lower profitability due to higher reliance on external financing carrying fixed obligatory interest payments as against the internal financing carrying varying and optional dividend payments. The increased burden of interest payment due to heavy debt financing decreases the profitability of the companies on one side yet it increases the cash inflows due to tax advantages associated with such high debt financing, thus ultimately increase the returns for the owners of the companies despite their lower investments. Hence present debt financing levels at sugar and allied sectors is needed to be carefully reviewed; to financially evaluate the costs of debts as against the returns generated on those funds. As long as the returns exceed the costs; debt financing may be continued otherwise there is a serious need of restructuring the debt equity mix, since the higher debt to equity ratio may lead the sugar and allied industry towards insolvency and eventual bankruptcy especially for the outliers. The inferential statistics supported the significance of solvency management for corporate performance of sugar and allied industry and depicted that debt to equity ratio and interest coverage both are positively linked with market to book value ratio. Hence an increase in debt to equity ratio and interest coverage will add to the market to book value ratio of sugar and allied industry. This implies that the sugar and allied sector companies should rely more on debt financing to improve the market to book value ratio and also should they improve their interest coverage to increase the market to book value ratio. It implies that the level of debt financing in sugar and allied industry may be raised but the funds generated so must be invested carefully in
the projects ensuring the returns higher than the cost of the funds employed in the projects; otherwise the sugar and allied sector would be facing risk of insolvency and bankruptcy eventually. In addition, the sugar and allied companies are also required to improve their operating profits by controlling their costs of production or operating expenses to improve the eventual interest coverage ratio.

5.1.2.2 Chemical & Allied

Chemical and allied industry is also facing solvency problems in terms of debt to equity but the interest coverage is satisfactory implying that the sector despite being heavily debt financed yet does not face serious interest coverage problems. This endorses that the debt financing is used efficiently to generate profits from the funds raised through debt financing. Since due to low solvency; the below average companies from chemical and allied sector are facing solvency risk or in other words they have more inclination towards relying on external financing (long term and short term finances) rather than internal financing (shareholders’ equity); therefore such companies may face lower profitability due to higher reliance on external financing carrying fixed obligatory interest payments as against the internal financing carrying varying and optional dividend payments. The increased burden of interest payment due to heavy debt financing decreases the profitability of the companies on one side yet it increases the cash inflows due to tax advantages associated with such high debt financing, thus ultimately increase the returns for the owners of the companies despite their lower investments. Hence present debt financing levels at chemical and allied sectors is needed to be carefully reviewed; to financially evaluate the costs of debts as against the returns generated on those funds. As long as the returns exceed the costs; debt financing may be continued otherwise there is a serious need of restructuring the debt equity mix, since the higher debt to equity ratio may lead the chemical and allied industry towards
insolvency and eventual bankruptcy especially for the outliers. The inferential statistics supported the significance of solvency management for corporate performance of chemical and allied industry and depicted that debt to equity ratio and interest coverage both are positively linked with market to book value ratio. Hence an increase in debt to equity ratio and interest coverage will add to the market to book value ratio of chemical and allied industry. This implies that the chemical and allied sector companies should rely more on debt financing to improve the market to book value ratio and also should they improve their interest coverage to increase the market to book value ratio. It implies that the level of debt financing in chemical and allied industry may be raised but the funds generated so must be invested carefully in the projects ensuring the returns higher than the cost of the funds employed in the projects; otherwise the chemical and allied sector would be facing risk of insolvency and bankruptcy eventually. In addition, the chemical and allied companies are also required to improve their operating profits by controlling their costs of production or operating expenses to improve the eventual interest coverage ratio.

5.1.2.3 Cement & Allied

Cement and allied industry is also facing solvency problems being heavily debt financed with reasonable interest coverage ratio implying the sector despite being heavily debt financed yet does not face serious interest coverage problems. This endorses that the debt financing is used efficiently to generate profits from the funds raised through debt financing. Since due to low solvency; the companies from cement and allied sector are facing solvency risk or in other words they have more inclination towards relying on external financing (long term and short term finances) rather than internal financing (shareholders’ equity); therefore such companies may face lower profitability due to higher reliance on external financing carrying fixed obligatory
interest payments as against the internal financing carrying varying and optional dividend payments. The increased burden of interest payment due to heavy debt financing decreases the profitability of the companies on one side yet it increases the cash inflows due to tax advantages associated with such high debt financing, thus ultimately increase the returns for the owners of the companies despite their lower investments. Hence present debt financing levels at cement and allied sectors is needed to be carefully reviewed; to financially evaluate the costs of debts as against the returns generated on those funds. As long as the returns exceed the costs; debt financing may be continued otherwise there is a serious need of restructuring the debt equity mix, since the higher debt to equity ratio may lead the cement and allied industry towards insolvency and eventual bankruptcy especially for the outliers. The inferential statistics supported the significance of solvency management for corporate performance of cement and allied industry and depicted that debt to equity ratio and interest coverage both are positively linked with market to book value ratio. Hence an increase in debt to equity ratio and interest coverage will add to the market to book value ratio of cement and allied industry. This implies that the cement and allied sector companies should rely more on debt financing to improve the market to book value ratio and also should they improve their interest coverage to increase the market to book value ratio. It implies that the level of debt financing in cement and allied industry may be raised but the funds generated so must be invested carefully in the projects ensuring the returns higher than the cost of the funds employed in the projects; otherwise the cement and allied sector would be facing risk of insolvency and bankruptcy eventually. In addition, the cement and allied companies are also required to improve their operating profits by controlling their costs of production or operating expenses to improve the eventual interest coverage ratio.
5.1.3 Profitability & Corporate Performance

Thirdly the study analyzed how profitability management is affecting the corporate performance in the three studied sectors.

5.1.3.1 Sugar & Allied

The results indicated that sugar and allied industry is facing low profitability in terms of profit margin, return on assets and return on equity, whereas gross margin is satisfactory. Higher gross margins endorse that the companies are well controlling their cost of production as against the revenues being generated through sales. However the low profit margins disclose that the sugar and allied companies are not well controlling their operating and financial expenses; hence as a result the higher gross profits are consumed by the inflated operating and financial expenses. The sugar and allied companies since relying more on debt financing therefore the profitability is reduced possibly due to increased interest burden. However as it is already discussed above that debt financing is preferable for sugar and allied industry therefore there is a need to increase return on the debt funds on the one side and to control the operating expenses on the other side to improve the profit margins, instead of decreasing the debt financing to avoid interest payments. Return on assets and return on equity will also be improving as profit margins will improve. Return on assets and return on equity may also be improved by decreasing the investments in assets and retiring the equivalent from equity, however due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the sugar and allied companies. The inferential statistics supported the significance of profitability management for corporate performance of sugar and allied industry and depicted that gross margin and return on equity are positively linked with market to book value ratio whereas profit margin and return on assets are
negatively linked with market to book value ratio. Hence an increase in return on equity will add to the market to book value ratio of sugar and allied industry whereas profit margins have a negative relationship with market to book value ratio of sugar and allied industry. Moreover gross margin and return on assets have no impact on the market to book value of sugar and allied industry hence any changes in these will have no effect on the market to book value.

5.1.3.2 Chemical & Allied

Chemical and allied industry is enjoying reasonable profitability in terms of gross margins, profit margins, return on assets and return on equity. Higher gross margins endorse that the companies are well controlling their cost of production as against the revenues being generated through sales. However the low profit margins disclose that the chemical and allied companies are not well controlling their operating and financial expenses; hence as a result the higher gross profits are consumed by the inflated operating and financial expenses. The chemical and allied companies since relying more on debt financing therefore the profitability is reduced possibly due to increased interest burden. However as it is already discussed above that debt financing is preferable for chemical and allied industry therefore there is a need to increase return on the debt funds on the one side and to control the operating expenses on the other side to improve the profit margins, instead of decreasing the debt financing to avoid interest payments. Return on assets and return on equity will also be improving as profit margins will improve. Return on assets and return on equity may also be improved by decreasing the investments in assets and retiring the equivalent from equity, however due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the chemical and allied companies. The inferential statistics also supported the significance of profitability management for corporate performance of chemical and allied industry and depicted that gross margin and return on equity
are positively linked with market to book value ratio whereas profit margin and return on assets are negatively linked with market to book value ratio. The results suggested that an increase in return on equity will add to the market to book value ratio of chemical and allied industry whereas return on assets have a negative relationship with market to book value ratio of chemical and allied industry. This implies that the chemical and allied sector companies should focus more on increasing the returns on equity investments as against increasing the returns on assets to increase market to book value ratio. The results depicted that gross margin and profit margin have no impact on the market to book value of chemical and allied industry hence any changes in these will have no effect on the market to book value.

5.1.3.3 Cement & Allied

Cement and allied industry is facing low profitability in terms of profit margin, return on assets and return on equity, whereas gross margin is a little satisfactory but low. Lower gross margins endorse that the companies are not very well controlling their cost of production as against the revenues being generated through sales, moreover the low profit margins disclose that the cement and allied companies are not again well controlling their operating and financial expenses; hence as a result the earned gross profits are consumed by the inflated operating and financial expenses. The cement and allied companies since relying more on debt financing therefore the profitability is reduced possibly due to increased interest burden. However as it is already discussed above that debt financing is preferable for cement and allied industry therefore there is a need to increase return on the debt funds on the one side and to control the operating expenses on the other side to improve the profit margins, instead of decreasing the debt financing to avoid interest payments. Return on assets and return on equity will also be improving as profit margins will improve. Return on assets and return on equity may also be improved by decreasing
the investments in assets and retiring the equivalent from equity, however due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the cement and allied companies. The inferential statistics supported the significance of profitability management for corporate performance of cement and allied industry and depicted that gross margin; profit margin and return on equity are positively linked with market to book value ratio whereas return on assets is negatively linked with market to book value ratio. The results supported that an increase in return on equity will add to the market to book value ratio of cement and allied industry whereas return on assets have a negative relationship with market to book value ratio of cement and allied industry. This implies that the cement and allied sector companies should focus more on increasing the returns on equity investments as against increasing the returns on assets to increase market to book value ratio. Moreover gross margin and profit margin have no impact on the market to book value of chemical and allied industry hence any changes in these will have no effect on the market to book value.

5.1.4 Activity & Corporate Performance

Finally the study analyzed how activity management is affecting the corporate performance in the three studied sectors.

5.1.4.1 Sugar & Allied

The results indicated that sugar and allied industry is having good activity in terms of sales growth and assets turnover. However the companies must put more efforts to increase the sales growth and improve the asset turnover, since already the companies are facing low profitability due to higher expenses. The increased sales growth along with the improved asset turnover will improve the profitability of the companies due to economies of scale. As discussed earlier the
sugar and allied industry is suggested to decrease receivable turnover by introducing lenient credit policies to increase sales and the receivable level, thus the increased sales would also improve the asset turnover, hence twofold objectives would be achieved through the receivable management. Asset turnover may also be improved by decreasing the investments in assets and retiring the equivalent from equity, however due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the sugar and allied companies. The inferential statistics supported the significance of activity management for corporate performance of sugar and allied industry and depicted that sales growth is negatively associated whereas asset turnover is positively linked with market to book value ratio. Hence an increase in asset turnover will add to the market to book value ratio of sugar and allied industry whereas increase in sales growth would have adverse outcomes for the market to book value ratio of sugar and allied industry. This implies that the sugar and allied sector companies should keep a close eye on sales and assets level to improve the market to book value ratio along with the improved activity management.

5.1.4.2 Chemical & Allied

Chemical and allied industry is having good activity in terms of sales growth and assets turnover. However the companies must put more efforts to increase the sales growth and improve the asset turnover, since already the companies are facing low profitability due to higher expenses. The increased sales growth along with the improved asset turnover will improve the profitability of the companies due to economies of scale. Asset turnover may also be improved by decreasing the investments in assets and retiring the equivalent from equity, however due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the chemical and allied companies. The inferential statistics supported the significance of activity management.
for corporate performance of chemical and allied industry and depicted that sales growth and asset turnover are positively linked with market to book value ratio. The results inferred that an increase in asset turnover will add to the market to book value ratio of chemical and allied industry whereas changes in sales growth would have no outcomes for the market to book value ratio of chemical and allied industry.

5.1.4.3 Cement & Allied

Cement and allied industry is having good activity in terms of sales growth but weak activity in terms of assets turnover. The results imply that though the cement and allied companies sales are growing but not at the desired pace since asset turnover is low. This depicts that with the given level of assets more sales could be achieved hence sales growth could be even better. Hence the companies should either increase their sales growth to a higher rate to improve asset turnover with the given level of assets, otherwise decrease the investments in assets and retiring the equivalent from equity to improve the asset turnover. However due care should be taken in eliminating unnecessary assets as it may adversely affect the operations of the cement and allied companies. Since the cement and allied sector companies are facing low profitability due to higher expenses, the increased sales growth along with the improved asset turnover will improve the profitability of the companies due to economies of scale. As discussed earlier the cement and allied industry is suggested to decrease receivable turnover by introducing lenient credit policies to increase sales and the receivable level, thus the increased sales would also improve the asset turnover, hence twofold objectives would be achieved through the receivable management. The inferential statistics supported the significance of activity management for corporate performance of cement and allied industry and depicted that sales growth is negatively associated whereas asset turnover is positively linked with market to book value ratio. Hence an increase in asset
turnover will add to the market to book value ratio of cement and allied industry whereas increase in sales growth would have adverse outcomes for the market to book value ratio of cement and allied industry. This implies that the cement and allied sector companies should keep a close eye on sales and assets level to improve the market to book value ratio along with the improved activity management.

In the end it should be clear that the findings of the study do not provide with a particular homogeneous solution for every organization of the studied sectors; the findings may serve as some standard guidelines that should be considered and applied to any organization for developing and implementing the strategies as per their needs. These findings would serve as a tool to be adopted by the industry experts to establish the link between the financial indicators and the corporate performance and to quickly and timely respond to the changes and challenges raised in their respective sectors.
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