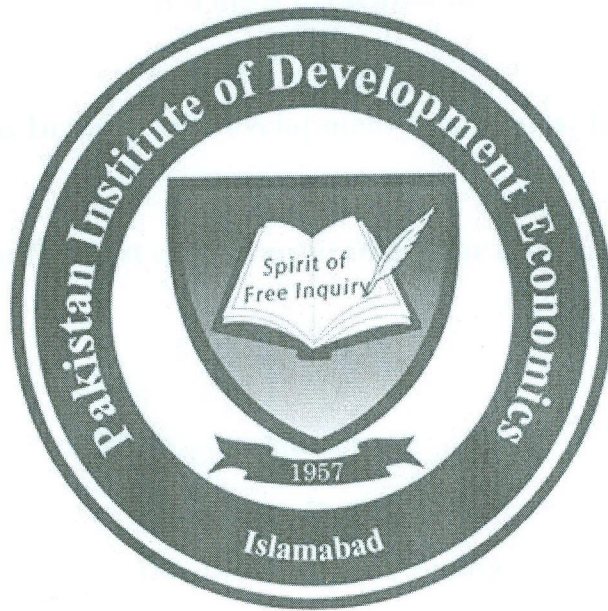


**The Impact of Debt and Liquidity Measures on
Firm Performance: Evidence from Cement
Firms of Pakistan**



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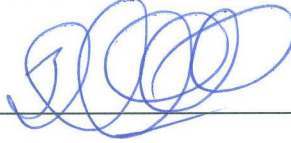
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My friend Waqar Ali supported and encouraged me whose appreciation contributed a lot to complete this thesis in given time. I am thankful to all of them.

DEDICATION

This report is dedicated to My Parents.

My Father who always offered me unconditional love

And support.

My Mother, for her motherly care and support

And who is always a source of motivation and

Strength for me.

DECLARATION

I said Muhammad Irfan Iqbal (Registration No. PIDE2017-FMBA (1.5) 06) student of MBA finance session 2017-2019, hereby undertake that, I have written this thesis entitle *“Impact of debt and liquidity measures on firm performance; evidence from cement firms of Pakistan”* by myself under the guidance of my supervisor Dr. Saud Ahmed Khan. I have read it carefully and take all the responsibilities of the mistakes.

Muhammad Irfan Iqbal

Abstract

The main purpose of the study is to investigate the impact of debt and liquidity measures on firm performance of cement industry of Pakistan. For this purpose 16 cement firms are selected and used these firms that's data is available. OX-Matrix software is used for data analysis. For this purpose secondary data have been collected from 2002 to 2017 for 16 years through annual audited reports of firms and through Business recorder. Five variables are used in which 4 variables are independent and one variable is dependent. Return on asset (ROA) is dependent variable and DER, CR, NWC and AG are independent variables of this study. Using these variables main finding of the study is DER has significant negative relation and CR also significant positive relationship with firm performance. The outcome from the regression estimations showed that debt structure has negative and significant impact on the performance. Current ratio has positive effect on firm performance while net working capital has negative effect. In sugar firms should identify alternative low risk sources of financing to swap with debt financing. Results show that low level of debt and high liquidity are instrumental in improving the performance of firms.

Keywords: Debt, liquidity, firm performance and positive negative effects

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Table of abbreviations

SPSS	Statistical package of social sciences	SWOT	Strength, weakness, opportunity and threats
OLS	Ordinary least square	LTL	Long term liabilities
GLS	Generalized least square	LDR	Loan to deposit ratio
GMM	Generalized method of movement	R&D	Research and development
ROA	Return on asset	CDR	Cash to deposit return
ANOVA	Analysis of variance	OR	Operating return
ROE	Return on equity	MPS	Market price per share
ROI	Return on investment	PM	Profit margin
ROS	Return on sale	LTD	Long term debt
ROC	Return on capital	DAR	Deposit to asset ratio
WC	Working capital	GDP	Gross domestic product
OCFM	Operating cash flow margin	KSE	Karachi stock exchange
ROCE	Return on capital employed	TA	Total asset
CR	Current ratio	QR&QUR	Quick ratio
CCC	Cash conversion cycle	NOI	Net operating income
EPS	Earnings per share	FL	Financial leverage
DER	Debt equity ratio	NWC	Net working capital
CS	Capital structure	PSX	Pakistan stock exchange
AG	Age		

Chapter 1

INTRODUCTION

1.1 Background of the study

Different authors define capital structure (CS) of firm in different ways. According to Brealey (2012) in his book “Principles of Corporate Finance” define Capital Structure (CS) is the combination of all debts and equity of the firm. Schlosser & Michel (1989), Capital Structure (CS) is a percentage of debt to whole capital of the firm. In simple words Capital Structure (CS) is the mixture of funds that firm uses (Ordinary, preferred shares and debts) to finance its overall assets Goel et al. (2015). Firms which are highly liquidity are those which use higher debt portion in their CS because in financing decisions debt is considered to be cheaper source of finance and on other hand firms which are low liquid are those which did not use debt in their CS. Firms which are more levered that bring more profit (tax shield) for the existing shareholders, on the other hand, it also brings higher risk for the equity holders as it creates agency costs and also bankruptcy cost (which include direct and indirect) (Titman S, Tompaidis S, Tsyplakov S, 2004).

Here are the two types of finances that are companies used for the fulfillment of their financial needs that companies following are the finances debt finance and equity finance. Debt is the finance the company borrows from outsiders of the company. On the other side equity finance is a finance of the company used to fulfill the needs of organization. Risk engaged with both kinds of finances however their effective implementation can bring significant benefit (Pandey, 2004).

Operating liquidity is the measure of short term solvency of the firms. It is the balance between current assets and current liabilities or balance between resources available in the form of cash or quickly convertible into cash and liabilities paid within the shorter period of time (Ware, 2015). If the firm has insufficient cash in hand firm may face risk of financial distress or firm may not avail the benefits which supplier can offer in shape of credit discount. Loss of such discount benefit increases the cost of goods which in result have an positive impact on firm performance (Ross, Westerfield and Jaffe, 2012 in their book “Corporate finance”). The organization must maintain the adequate liquidity because every stakeholder (shareholder, suppliers, employees and creditor) has a keen interest in the liquidity of the organization especially supplier before supplying goods on credit check the liquidity position of the organization carefully to avoid the risk of bankruptcy of firms (Ross et al., 2012).

Profitability is main goal of almost each business firm. Every firm wants to get maximum profit. Profit of the firm effect directly and indirectly on the firm performance. When profit of firm increases than performance of the firm is also increases. On the other sides if debt increases than both performance and profit of the firm decreases. This is a technique to evaluate the relationship between earnings and performance of the firm. Company which have low debt ratio leads to increase in profitability and performance and show negative relationship (Booth et al. 2001).

1.2 Problem Statement

The definitive aim of a firm is to increase its profit or decrease its cost. Yet, sustaining liquidity of the organization is as a main objective as well. The problem is that maximizing profits at the cost of liquidity brings serious problems to the firm. For that reason there should be a tradeoff between these two objectives of firms Gill, A et al. (2010). If management does not consider

profit than the survival of firm may not possible for long term. Further if management does not consider about liquidity, it would face the problem of insolvency and bankruptcy. For these causes working capital management should be given appropriate consideration that will ultimately impact the performance and profitability of the firm.

Amjed (2007) discovered that short term obligation and profitability have a positive affiliation but on the contrary long term debts and profitability have a negative association on firm performance. Khan et al. (2013) took into account 34 listed firms from KSE pharmaceutical and chemical sector of Pakistan. Results show that there is no effect of leverage on installment of profit of the organizations. Asad & Yousaf (2014) led concentrate to look at the 44 companies from different 5 sectors (textile, sugar, pharma, bio tech, chemical and fertilizer) were selected as sample and annual data taken from 2006 to 2011. Results demonstrate that leverage have negative effect on dividend payout patterns of firms that have been taken as a sample. Khidmat & Rehman (2014) selected the chemical sector of Pakistan and took 10 chemical firms listed in KSE out of 36 and compiled a data from last nine years (2001-2009). They founded that the solvency ratios have negative and highly significant impact on ROE, they also founded that liquidity have positive impact on ROE

Most of the research studies (Amjed 2007; Khidmat & Rehman (2014); Khan et al. (2013) and,) in Pakistan have been conducted on the firms listed in KSE and ROE have been used as an indicator of profitability and performance of the firm. This study will select cement firms listed on PSX and ROA will be used as firm performance gauge to evaluate the effect of debt and liquidity measures. Using different countries data set of different regions like (Saudi Arab, UAE, Egypt, Bahrain, Kuwait), we notice that the liquidity have the positive relationship with the firm

performance. If we use large amount of data that is used for analysis sometimes it is good sometimes it decreases the accuracy of results.

1.3 Research questions

1. What is the impact of Debt on firm performance?
2. What is the impact of Liquidity on firm performance?

1.4 Research objectives

Purpose of study is to examine the impact of debt and liquidity measures on firm performance of Pakistani Cement firms that are listed on PSX.

1.5 Significance of the study

This work is significant because all the concepts researched are commonly recognized and accepted. However, this researcher is different from previous studies conducted in the aspects that it uses recent data from PSX and also sample consist of different sector from past studies and also took larger and main firms of cement industry. Thus, the problem this study deals with is to empirically test the theoretical hypothesis regarding the relationship between liquidity and firm performance.

This topic is very helpful for every stakeholder (Suppliers, shareholders, employees and creditor etc.). As supplier of goods first verify much conscious to know about the liquidity position of a firm to which he is supplying good on credit. Employees of a firm also very much concerned about the company's liquidity position to know whether the company is able to meet its workers obligations like salaries and pension etc. So, a company needs to carry sufficient liquidity, so liquidity really affects profits and firm performance from which a much of the portion is divided into shareholders. Irine Lumatete (2009) in his thesis chapter 1 page 15 (the relationship between liquidity and profitability of firms listed at the NSE) report said that relationship between

liquidity and firm performance is very helpful and act as a guide for the financial managers and also it will be a guide for investors in decision making.

Irine Lumatete (2009) Same like the liquidity, all stakeholders are also interested in solvency ratios of companies because suppliers of goods account the solvency position and credit rating of companies before delivering goods. Just as suppliers, investors are also interested in knowing the solvency position of a firm before making investment; investors want to know how much the risky investment is in a particular firm (Irine Lumatete, 2009) chapter 1 page 15. Liquidity, Solvency and profitability are very much closer to each other because increase in one may cause decline in other.

1.6 Why cement firms?

Including cement industry in research because of its role in any country's economy (Noche and Elhasia, 2013) put the cement as the second most used element after water, (Hijazi and Tariq, 2006) says that they studied cement industry for the reason that this is a capital intensive industry and requires large finances either to start a venture or for the expansion. In a column published in Pakistani newspaper ("Cement consumption: a barometer of progress| Pakistan Today 22 Jan 2015,") Says cement a "barometer of progress" and an indicator of economic activity in a particular developing economy, it brings employment for skilled and unskilled labor as well and as the cement consumption rises this means there is more investment being done and infrastructure is being improved as well that is the indication that economy is developing. In the same column it was also written that because of energy crises the plants did not worked at their potential capacity. (Kintisch, 2008) said that this is a capital intensive industry because of the high cost of production, taxes, regulations etc. in Europe and this industry contributes to

employment and creation of one job creates two more jobs in somewhere. The fruits of it are multiplied over twenty years (Baeza, R et al. 2013).

According to “International cement review” (January, 2018) report (summary of report) Pakistan cement industry is currently operating its peak level due to which local cement manufacturers expanded and install new production capacity. Report also states that CPEC have positive impacts on cement industry under project of OBOR initiative. Report also states that, Government of Pakistan has released 2.35 billion RS for the housing and work division with construction set to start new housing scheme in Islamabad. In the Pakistan new Govt. housing scheme (Naya Pakistan housing program) of 50 lac houses increases the demand of cement industry when it starts.. We examine the current Pakistan cement industry can fulfill the current demand of cement? Same like this some other opportunities are under consideration which may include Thaliyan Housing Scheme on the M-2 Motorway interchange. So cement manufacturers are keenly observed all these opportunities especially CPEC. Pakistan’s Maple Leaf Cement Factory told the PSX that the CO had placed an order to Danish firm FLS midth for the establishment of a new cement production line with a daily capacity of 7300 tons. Same like that, Best-way Cement, a subsidiary of Best-way Group UK, the largest cement manufacturer in Pakistan, (with around 17% of the market) informed on March 2017 the Pakistan Stock Exchange that 1st will set up a brownfield cement plant with a capacity of 6000 clinker at its Farooqia site in Northern Pakistan. So all cement manufacturers trying to avail these opportunities and trying to contribute positively in Pakistani economy so, for this reason Debt financing is used by some of firms which include (Maple leaf, Power cement, Ghareebwal cement, D.G Khan, Lucky and Best way cement), these were all reason that influence me to select this sector for research data.

1.7 Organization of the study

The rest of the project is arranged in following manners; Literature review, variables, theoretical framework and hypothesis is discussed in chapter 2 whereas chapter 3 is relevant to methodology, research design and models. Chapter 4 contains results and discussion whereas; conclusion, recommendations and research gap for future are given in chapter 5.

Chapter 2

Literature review

Literature review is the part of research project in which over view the different previous research studies. In literature review discuss authors name and objective of study their research questions and their key findings. This literature review contains the previous related studies conducted on impact of debt and liquidity measures on firm's performance during the period of 2002 to 2017. Debt and liquidity have been studied by many researchers in different sectors and different era. Debt equity ratio (DER) used to check the impact of debt on firm performance. In liquidity measures using current ratio and networking capital and their impact on firm performance.

2.1 Related literature reviews

Finding the significant relationship among the liquidity ratio (current ratio, quick ratio and liquid ratio) and profitability (return on asset, return on equity and return on investment) by Ramiz ur rehman (2011). This study contains 26 companies of oil and gas among the year 2004 to 2009. Secondary data is used that ids collected from annual reports and state bank of Pakistan. Variables that are used in this paper return on asset, return on equity, return on investment, current ratio, quick ratio and acidic test ratio. Author use the linear regression in first method for analysis of ROA that is effect current ratio and ROI affects current ratio. In 2nd method of analysis ROE effects on liquid ratio but they have no effect on quick ratio and current ratio.

This paper analyzes financial leverage and operating leverage on the performance of Indian machinery firms by Goel.S, Chada.S, K.Sharma.A (2015). They use 151 firms for the purpose of analysis. They use 10 year data for analysis till 2004 to 2013. For analysis purpose regression panel data was used. Purpose of the study is to find the effect of financial leverage on operating

liquidity. These are the variables that are used for analysis cash conversion cycle, current ratio, financial leverage, sale, size, age, return on asset, operating cash flow (OCF) and operating cash flow margin (OCFM). Models that is using for assessing the effect of leverage on firm liquidity, these are the variables cash conversion cycle, current ratio, operating cash flow margin. ROA is used for assessing the effect of leverage and liquidity on firm performance.

Analyze the Iran cement industry; further they analyze the impact of variety of products on firm performance by Tabatabaien Maryam.S (2018). In this research they change their products in cement industry. They want to see the results of capital market and also estimate their performance. Here is he following variables that are used for analysis purpose acid ratio, asset turnover ratio, debt ratio and gross profit ratio. They find that the diversification of product have a good impact on firm performance. In this study 27 cement companies of Iran are selected for the time period of 2007 to 2013. All cement companies are listed in Tehran stock exchange. All the data collect from stock exchange company reports previous library research papers. SPSS and Excel is used for data analysis 5% is a significant level that is used for accepting and rejecting the hypothesis.

The main purpose of the study is to analyze the effect of liquidity on firm financial performance by Demirgunes.K (2016). Different researchers used different method for analyzing data on this industry such as structural break unit root test, multiple structure co-integration tests, dynamic ordinary least square and boost strap causality test. Profitability is dependent variable and growth and liquidity are independent variables. These are variables that are used for data analysis.

Basic purpose of the research to check the effect of liquidity management on the firm profitability of cement industry of Kenya by Njuguna.T(2015). Basically the purpose of the

study is also to analyze the liquidity management efforts done by the managers for minimizing the liquidity risk and increase the firm profitability. Descriptive statics, regression test for coefficient model, ANOVA is used for analysis of variance all the process done by using SPSS. Whole process is applied on Kenya cement industry that is register in the country. Seven companies are selected and secondary data is taken from financial reports that used for the analysis purpose.

The main aim of the study is to find the relationship between liquidity and the profitability of firm by Amjad.S and Bibi.N(2019). Relationship between liquidity and profitability is examined 50 listed manufacturing companies of Pakistan stock exchange. Panel data is used from 2007-2011 for this purpose seven variables are used, two profitability dependent variables (ROA) and net operating income) and five independent variables (cash gap in days, current ratio, market, assets, capitalization, and sales). Here liquidity and profitability are two main variables that used regression analysis for results that tells us factors effecting the liquidity and profitability of the firm. Current ratio has a significant positive relationship with profitability on the other side ROA has negative relation with cash gap days. Further gap log results of sale and assets have positive relation.

Finding of study is about the financial performance of Indian cement industry. They tell us about Indian cement industry that has an important role in Indian economy. Indian cement industry is the 2nd largest cement industry in the world. In this paper they tell us about the Indian cement industry performance and key factors effecting the cement industry by using statistical method ANOVA by Kasthuri.v. and veukatacham.R.Dr (2016). For the analysis purpose they use 10 year data from 2007-2016.this study contain the secondary data collected from annual reports of the firms to analyze or check the relationship between financial performances of the cement

industry. This paper uses ANOVA test that analyze the variance of current ratio, liquidity ratio, net profit ratio and debt equity ratio. Current ratio has a positive effect on profitability of the firm, on other side liquidity; net profit and debt equity ratio have also an impact of cement industry.

Finding of study tells us about how liquidity effects the profitability of the firm in cement sector by Jangua A. Rasool, Asghar .A, Munir.U, Raza.A(2016). This study contains secondary data that is collected through annual reports and Pakistan stock exchange. Twenty firms are selected for analysis purpose over the period of time 2008-2015. Correlation and regression are the two static techniques that are used for data analysis. Correlation is used for analysis of liquidity and profitability. In this research paper four variables are used for analysis profitability (ROA) is a dependent variable, on other side liquidity ratios (current ratio, quick ratio and liquidity ratio) are independent variables. This study shows variables have significant and positive relation with each other. At last all variables have effects on each other.

The main purpose of this study is to manage the liquidity of cement sector that are listed in Kenya Nairobi security exchange by Nizigiyimana .A(2014). In this study they tells us about management of liquidity, factors that affect the liquidity and also discuss relationship between liquidity and profitability of the cement sector of Kenya. Three top cement sector are selected and use the secondary data that is taken from annual reports and Nairobi security exchange during the time period of 2008-2012. Profitability and liquidity are main indicators of research in which different variables are used such as current ratio, quick ratio, cash conversion cycle and return on capital employed. All the data analyzed by using SPSS software. Findings of the study show correlation and regression are significant effect and also have a positive relationship with each other.

This study find out the use of debt and their effects on firms performance of commercial banks in Kenya by Kajirwa H.Isabwa(2015). This survey conduct on eleven commercial banks that's sample size of data is five year from 2010-2014. All data collected from annual reports, publish documents, books of accounts and Nairobi security exchange that is analyzed by using SPSS. Analyzing the data correlation and regression models are used to find the firm performance and the effect of liquidity on firm performance. Return on asset (ROA) is dependent variable used for the profitability or performance measure. Debt equity ratio (Debt) is independent variables that is used for calculating debt and equity portion in the firm and also check the effects of debt on firm performance. Conclusion of the study is debt has negative effect on firm performance. Commercial banks switch an alternative for debt financing where interest rate is low.

Purpose of study that discuss the Pakistani cement industry financial performance by Naz.F and Ijaz.F(2016). Basically financial performance tell us about the financial health of an organization that is calculated by using MS excel and SPSS by using different statistical techniques one sample t-test, normality, descriptive statistics and regression. Return on investment (ROI) is dependent variable and liquidity, leverage, cash conversion cycle, asset utilization and profitability are independent variables. For the measurement of financial health of organization they use different financial ratio that are current ratio, quick ratio, debt equity ratio, total asset turnover, gross profit, net profit, debt to asset ratio and cash collection period ratio. For the analysis of data 9 year data from 2006 to 2014 is taken from Pakistan cement industry. For this purpose 18 companies are selected that listed in Pakistan stock exchange. All the parameters that are used for analysis have positive relation with dependent variable only leverage has inverse relation with dependent variable.

Main aim of the study is to analyze the profitability of micro property business that are exist in India from Podile Dr.V, janardhanrwa.N and Hema venka siva sree (2017). These studies discuss the manager interest and also owner interest for their business. We can check the profitability of the firm by using profitability ratios that are further categorized in profitability related to sale, investment and expenses. This whole process is done for only finding the profitability margin. This study use secondary data that is collected from annual reports, trade accounts and profit and loss account of Nagas. This study use 10 year data that contains 2007 to 2016. Mainly this study use profitability ratio for the analysis purpose further profitability ratio categorize in profitability relating sale, investing and expenses. They use chi-square test for the formation of hypothesis. Return of capital employed, profit, cost and operating expense have the same and positive effect on profitability. On the other side return on share's holder equity and selling expense have opposite effect and negative relation on profitability during the study period.

This paper tells us about the characteristics of cement industry of Pakistan by Hijazi S. Tahir, Yasir B. Tari(2006). Cement industry analysis contains 16 firms that are listed in Pakistan stock exchange for the time period of 1997 to 2001. They use the regression model in pooled data that is available for analysis. In this study four independent variables are use; these four variables are tangibility of asset, size of the firm, growth of the firm and profitability of the firm. Leverage is one dependent variable that compares with independent variables. Leverage basically a debt that is use for financing that is use for acquiring asset in organization. In this study we examine the size of the firm and profitability of firm has negative relation with leverage. Tangibility of asset and growth of firm have positive relation with leverage.

This study tells us about liquidity and capital structures performance on the cement industry of Pakistan by Zeb.A, Iqbal.M(2016). Liquidity and capital structure plays an important role in firm

performance and their profits. Fifteen cement sector are selected for analysis that's data is taken from Pakistan stock exchange and companies annual reports for the time period of 2008-2014. capital structure of the firm contains all kind of debt ratio. Debt ratio has a negative effect with firm financial performance. Some other ratios that identify the liquidity measures have positive relationship with the financial performance of cement sector. In this study 4 variables are used two dependent variables (ROA, ROE) and two independent variables (EPS, NI). further they categories into different ratio liquidity ratios categories in current ratio and quick ratio; capital structure ratios categories in debt equity ratio and debt ratio etc. for the analysis purpose. This study use different statistical techniques like regression and correlation for data analysis. Capital structure has negative effect on firm performance and liquidity has positive effect on the firm financial performance. Finding of the study tell us about the mangers capabilities to reduce and manage the debt utilization.

This study tell us about the debt financing and their effects on banking sector. Basically two types of financing debt financing and equity financing; debt financing provided by outsider of an organization while equity financing is provided by organizations finance. Main focus of the study is to check the debts effects on firm performance by Harelimana J.Bosco(2017). For the analysis purpose 6 year secondary data from 2010-2015 is collected from banks official websites that are easily available for everyone. Different statistical techniques correlation and regression are used for data analysis. Correlation is used for checking the debts negative effect on firm performance. Regression is used for time series data for checking the cross section fix effect of the data. Different ratios are used for checking the debt effect on firm performance. For this purpose they use loan to deposit ratio, loan to asset ratio, debt ratio and debt to equity ratio. All

the analysis process is done through SPSS by using correlation and regression statistical techniques. This shows the significant positive relation with performance of banking sector.

Basically the aim of study to check the debt effect on organization profitability, because debt has an important role in organization governance by Kabewar M. (2012). This study contains panel data of 2240 companies of France. This study uses the time period 1999-2006 of French companies that are not listed in French stock exchange. This study contains three profitability ratios and debt ratios this study proves debt has no effect on firm profitability. In this study profitability use as a dependent variable and growth opportunity, tax, tangibility and debt are explanatory variables. For explanatory variables mostly econometricians use OLS and GLS, but it is not useful for the data that is taken for analysis. This study use GMM (generalized method of movement) model for analysis this is best method for the analysis of data that is collected. Results according to descriptive study shows small enterprise has inverse relation with size of the firm profitability and large enterprise has almost stable relation with firm profitability. According to correlation results debt has negative relation with profitability of firm in this analysis negative relation is very small that is not considerable. in this study growth has positive and tangibility has negative relation with firm profit.

Basic purpose of the study to check the effect of liquidity on firm financial value by Abed ali A.A (2014). This study tells us the value of stock that is available in a firm and their effects on their profitability. This study contains 65 companies' data that are listed in Iraq stock exchange. This study consists of 5 year time period data 2008-2012. In this study statistical correlation method is used for data analysis. Profitability, leverage, age, size and operation income are used for dependent and independent variables. This study show firm value and stock liquidity has

positive relation more the firm liquidity has more the firm value. Liquidity has also positive effect on firm profitability.

This paper tells us about liquidity and its effects on firm productivity in Sri Lanka by Thuraisingam R. (2015). This study contains 45 firms that are selected from Sri Lankan stock exchange. For data analysis five year data is used that's time period is 2008 to 2012. Secondary data is used for data analysis that is collected Sri Lankan stock exchange and companies financial reports. Correlation, regression and descriptive statistical techniques are applied by using SPSS. ROE and ROA are used as dependent variable and current and quick ratios are used as independent variables. Results shows liquidity has minimum effect on the productivity of the firm.

This study gives an experimental examination of the effect of obligation structure on the execution of Nigerian cited firms by Chuke E.N, Okpara I.I and Oyakhiromhe B.A (2016). This study consists of 43 firms 12 year data that's time period is 2001-2012. All the data collected gathered from secondary sources like as annual reports and Nigerian stock exchange. This study contains three computations (pooled OLS, Fixed and random effects). Regression is used for data analysis in this study. Firm performance (ROA) is a dependent variable and debt, size and age are independent variables. This study shows debt has negative effect on firm performance. These results are analyzed Nigerian firms.

This study tells us the effect of liquidity on firm profit by Chukwunweike V. (2014). This study contains 4 firms that are used for analysis. All data gathered by using secondary sources like as annual reports and accounts of selected companies. Four variables are used in data analysis ROA (return on asset) is dependent variable and C.R (current ratio), QUR (quick ratio), ROCE (return

on capital employed) are independent variables; purpose of study to check the relationship between dependent with independent variables. Statistical method correlation is used for data analysis that's significant level is 10 percent. For measuring liquidity CR, QUR and ROCE are used. Result of this study is current ratio has positive relation with firm profitability, quick has no significant effect and ROCE has also not any positive correlation with firm profitability.

This paper tells us about W.C (working capital) and their effects on firm performance by Wesley N.O, Musiega M.G and Douglas DR.M (2013). This study tells us how working capital affects the corporation performance. For the purpose of analysis 20 manufacturing companies are taken for the time period of 5 years 2007-2011. Working capital is very important variable to govern an organization. Main focus of W.C is to check the organizations financial condition for meeting their current and future obligations. Here are list of variables that are used in company analysis ROE is dependent variable, ACP (average collection period), APP (average payment period), CCC (cash conversion cycle) are independent variables and sale of firm, size of firm, debt ratio, and current ratios are control variables that are used for data analysis by using KMO test, correlation and regression statistical techniques. All the data that is taken for analysis is taken from company annual financial reports and Nairobi security exchange. In this study correlation is used for checking the auto correlation in the given data and regression is used that tells us effect of W.C on firm performance.

Main purpose of the study to investigate the effect of capital structure on firm productivity of Pakistan cement industry by Ameen .A, shazadi .K (2017). Eighteen cement manufacturing companies selected that are register in (Karachi stock exchange) KSE. 10 year time period 2006-2015 is taken for data analysis. Secondary panel data is used for data analysis. Data is analyzed by using Eviews 9 by using statistical techniques correlation and regression. Five variables are

used in this study in which ROA, ROE used as dependent variable and DER, DR, ICR (interest coverage ratio) are taken as independent variables. Finding of study shows that long term debt has negative relation with ROA and ROE. Short term debt has positive relation with ROE. Because long term debt is not good for organizations health it decreases the profit of firm and increases the liabilities.

This study contains OL (operating liquidity), FL (financial leverage) and their effects on firm performance by Goel .U, chadha .S and Sharma .A (2015). This study consists of 151 machinery firms that are register in India. 10 year time period 2004 to 2013 is selected by using companies' annual reports for data collection purpose. For analysis purpose two statistical techniques cross sectional and time series are selected by using Eviews and fixed effect regression. In this study CCC, CR, OCFM are used as a proxy of OL (operating leverage), D/A (debt to asset) is used as a proxy of leverage and Age, size, CFO (operating cash flow) used as control variables and ROA is used as dependent variable for data analysis. Results of the study shows OL and FL have significant relation with each other. If company acquire more debts than company need more liquid assets to run their current operations. Liquidity and leverage are used for allocating finances for the firm, because long term has negative relation on the performance of an organization.

This study tells us about the firm profit is affected by solvency and liquidity by H. bin Yousaf (2017). For a big organization more liquidity is required that is good for organization health because liquidity is used for fulfill the short term needs of organization. Solvency is a long term finance that is used for fulfill the long term organization obligation. For this purpose 116 firms data is taken that is collated form secondary source company annual reports for the time period of 2012 to 2015. Five variables are used in which ROA, ROE two dependent variables and

current ratio, quick ratio and cash ratio are three independent variables. In this study 2 statistical techniques correlation and descriptive statistics are used correlation tells us the relation between liquidity, solvency and profitability. While descriptive statistics tells us the effect of liquidity and solvency on firm profitability. Finding of this study liquidity use the quick ratio that have positive relation with profitability and current ratio has insignificant and also negative relation with profit of the firm.

This study tells about the effects of liquidity on firm profitability that is selected from KSE 100 index for analysis by Ismail et. R (2016). This study contains 64 non-financial companies that's time period is 2006 to 2011 are selected. In this study secondary data is used that is gathered from state bank and companies financial reports and KSE website. In given data 4 variables used in which ROA is dependent variable and CCC and current ratio , quick ratio are independent variables. All the data analyzed using correlation, descriptive statistics and regression statistical techniques by using Eviews. Finding of the study by using correlation increase in CCC and C.R are the indicator of good performance of the company. Current ratio has positive relation while quick ratio and cash ratio has insignificant relation with firm performance. Cash conversion cycle has also positive relation on firm performance.

This study tells us the effect of capital structure on the organization performance by Javed.T, younas.W, Imran.M (2014). Capital structure is an important element in a firm structure. This study contains 63 non-financial firms that are listed in Karachi stock exchange. 5 year data that's time period 2007 to 2011 is selected, all data gathered through secondary sources by using state bank of Pakistan issued balance sheets of companies. Return on asset (ROA), return on equity (ROE), return on sale (ROS) are used as a dependent variables and debt over asset(DTA), equity over asset(EQA) and long term debt over asset(LDA) are used as independent variables. Data

used in this study use multiple regression models for data analysis. This study shows the mix results of capital structure and firm performance during the data analysis because 26 sectors are selected large amount of data is taken. When this study use ROA is dependent variable than capital structure has positive relation with firm performance. When ROE is dependent variable than debt on asset and long term debt have negative relation with ROE. When ROS is dependent variable than debt to asset and equity on asset has also negative relation on firm performance.

Basic purpose of study is to investigate the effect of leverage on profitability of firm in India by Patel J.B (2014). This study consists of 29 years previous data that's time period is 1986 to 2014. This study contains 7 variables in which 4 variables are dependent and 3 variables are independent. Return on asset, return on equity, earning per share and return on capital employed are dependent variables and operating leverage, financial leverage and combined leverage are independent variables. All the data analyzed by using statistical techniques correlation regression and descriptive statistics though SPSS software. Finding of the study is operating leverage, financial leverage and total leverage has positive relation with return on equity, return on capital employed and earning per share. While operating leverage and total leverage has positive relation with ROA and DFL has negative relation.

This study elaborates the effects of liquidity of firm productivity by Waleed .A, Tismau Pasha .A, Akhtar .A (2016). This study covers the Pakistani banking sector that is listed in Pakistan stock exchange. Secondary data is used that is collected from annual reports of banks for the time period 2010 to 2015. All the data analyzed by using OLS latest statistical technique Eviews. ROE, ROA, ROI, EPS, NPM and TobinQ are dependent variables and current ratio, liquidity ratios are used as independent variables. For the results of data analysis six techniques are used. 4 models show positive results and two models shows negative results.

This study discuss the capital structure and also discuss the impact on firm performance Cole .C, Yan .Y, Hemley .D (2015). Most of the previous studies results show negative relation of capital structure with the performance of firm. Capital structure uses LTD to TA, LTL to TA and TD to equity these are used to check the firm performance most of the results show negative relation. In this study 4 dependent variables (MPS, ROA, OR, and PM) and 1 independent variable (LTL to TA) are used for data analysis. This study uses simple regression because 1 independent variable and 4 dependent variables. In this study analysis shows capital structure has negative relation with ROA and OR in all the firms of different sectors that are selected for analysis purpose. After the study we analyze different sectors has different relation of capital structure on firm performance. In industrial sector its shows positive, energy sector has negative and health sector show no effects on firm performance.

This study explains the banking sector and also tells us the effect of liquidity on firm performance banking sector by Bwacha C.R, Xi Jing (2018). In 2008 financial crises baking sector of most of the world effected badly. This study contains 50 largest banks consists in different geographic areas of the world like Asia Africa North America. This study used secondary data of last 10 years that's time period is 2008 TO 2017. All the secondary data collected from banks annual reports. Five variables are used 3 independent variables that indicate liquidity and two variables indicate performance of the banks. (LDR, DAR and CDR) loan to deposit, deposit to asset and cash and cash equivalent ratios are used as independent proxy variables for liquidity measures while ROE and ROA used as dependent proxy variables for performance measurement. When ROE is used as dependent variable than DAR has significant results with ROE while DAR has no significant effect with ROA, because at the time of financial

crises bank used liquid assets that's why LDR and CDR has no significant effect with ROE. This study proves liquidity has no significant effect with profitability in banking sector.

Purpose of the study is to investigate the strength, weakness, opportunity and threats of Pakistan cement industry by Ali.N, Anwar.M, Jaffar.A(2015). After the independence of Pakistan on 4 companies is here in Pakistan with the passage of time they feel the need to increase the cement industry. After denationalization of private sector in 1977-88 many cement companies start their production. Now currently more than 20 cement companies are working in Pakistan. Now some companies export their cement in different countries that is excess from domestic needs. For analyzing the cement sector SWOT analysis is selected. Strength is a thing that becomes an organization strong. Weakness is a thing that decreases the company production, their GDP, R&D, not availability of funds. Opportunity is a thing, if company adopts it; they increase their production, sales, exports their excess cement, full fill local needs. Threats are a thing that decreases the company value. Per capita income, high interest rates, different rates in different geographic areas. Finding of the study cement sector of Pakistan grows gradually day by day. Pakistani cement industry shows positive trend in future if the industry capture their vision that is good for cement sector. Govt. has great need to reduce the taxes on cement industries that's effect on prices going decrease.

Finding of study is governance of firm and also tells us the effects on firm performance by Farhan.A, Obaid.S.Normala, Azlan.H (2017). This study contains secondary data of all public listed companies of UAE security market. 127 companies of 12 different sectors are selected for data analysis. In this study 2 dependent variables, 6 independent variables and some control variables are used for data analysis. Finding of study shows board independence show negative relation with firm performance of UAE companies. Audit committee meeting and financial

expert ratios has no effect on firm performance. Accounts committee incentive and accounts committee independence has negative effect on firm performance.

2.2 Research Gap

There are many studies found that are few critical reviews are here that have impact of debt and liquidity measures on firm performance. Cole .C, Yan .Y, Hemley .D (2015) discuss the impact of capital on firm performance. Pakistani researcher explains the effect of financial leverage and operating liquidity on firm performance of energy and pharmaceutical sector (Akhter.et.al 2012). Pakistani research paper that tells us about the effect of liquidity on firm profitability Karachi stock exchange 100 index by ismial.R 2016. Purpose of the study is to investigate the effect of capital structure on firm productivity by Ameen.A, shazadi.k 2017. This study tells us about liquidity and capital structures performance on the cement industry of Pakistan. Zeb.A, Iqbal.M(2016). Purpose of this study is to investigate the impact of debt and liquidity measures on firm performance evidence from cement sector of Pakistan that are listed in Pakistan stock exchange. All previous research rounding around KSE, previous studies are done before the formation of PSX. This study uses Pakistan stock exchange as their research purpose and use OLS by autometrics technique for the analysis of data. No one researcher can use this method for research in cement sector of Pakistan.

2.3 Hypothesis of study

Ho = Null hypothesis is not rejected above .05 level of significance

H1 = Null hypothesis is rejected when data less than .05

Chapter 3

Research Methodology

This chapter explains the methods that are used in this research project. This chapter includes the targeted population, sample size, time horizon, statistical techniques, research design, variables and their definitions and also tells the method of measurement.

3.1 Purpose of study

Purpose of the study is to investigate the impact of debt and liquidity measures on firm performance. In this study 2 approaches are used 1st is inductive approach and 2nd is deductive approach. By using inductive approach we real the old theory and try to find someone new. While deductive approach is more use full for the qualitative study because Khidmat and Rehman (2014) and Akhter S. (2012) also use this approach for their study.

3.2 Research design useful

In research design deductive approach is used because all the data available in numerical farm. Numerical data is used for data analysis by using quantitative approach.

3.3 Population

Population of the study contains 16 cement firms that are listed on Pakistan stock exchange.

3.4 Sample

Sample of 16 cement firms taken that are listed in Pakistan stock exchange. We take only those firms that's data is easily available. 16 cement firms are selected that's 16 year annual data is collected for sampling.

3.5 Collection of data

For the research, method of collection of data is very simple because secondary data is used that's time period is 2002 to 2017. All the data that is required is easily available in business recorder and companies annual financial reports. 16 year quantitative data of cement firms is collected for analysis purpose. List of cement companies obtained from Karachi stock exchange, age of companies is taken from companies annual reports, current assets, current liabilities, net working capital, total asset and total sales are taken from annual reports.

3.6 Data analysis method

In this research time series data is collected by using secondary sources of data. Data is analyzed by using OLS auto metrics technique. All the process is done by using method of estimation OLS (ordinary least square). Software that is used in this study is OX-Matrics6. This software select automatically the model that is best for data that is entered, in the given data analysis results shows p-values, t-values, error term, arch effect, normality testing, heteroscedasticity and mean value of data.

3.7 Variables of the study

In this portion of study 5 variables are used for further results of the data. In this study one dependent variable (ROA), 3 independent variables (DER, CR, NWC and AG).

3.8 Dependent variable

Firm performance is dependent variable in this study it is used for estimating the firm performance. ROA is an indicator of firm performance in this study, while it is used for estimating the firm profitability. For estimating the firm profitability ROA, ROE and ROI is used but in this study we will use ROA as a proxy variable for measuring the firm performance.

3.9 Independent variables

Independent variables that are used in this study are debt equity ratio, current ratio and net working capital ratio. Debt equity ratio DER is used for measuring the debt financing portion and equity financing portion within the organization. Debt is a finance provided by outsiders like banks, financial institutions and insurance companies while equity finance company himself use their finance at the time of need when its financial condition is good. Debt equity ratio is used for calculating the debt and equity effects on firm performance. Current ratio (CR) it is for measuring the liquidity of firm, either a firm in a condition to pay their short term obligation or liabilities by using their current asset, because these current asset and current liabilities only for fulfilling the current obligation of companies. Net working capital (NWC) is basically used for operational liquidity, because liquid asset are required to fulfill the operation needs of working time period. AG is also independent variable that effect firm performance with increasing the age of the organization. AG is not a liquidity measure variable. It is a control variable.

3.10 Variables of this study

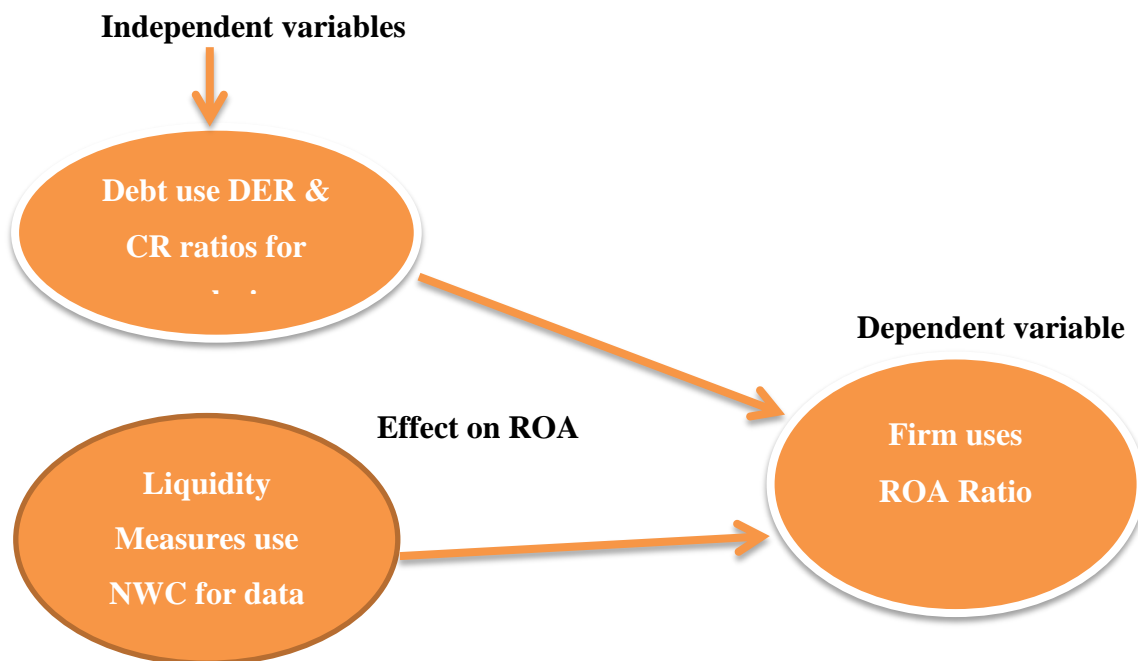
Variables	Description of variables and their formulas
ROA	Net Profit / Total Asset
DER	Total Debt / Total Equity
CR	Current Assets / Current Liabilities
NWC	Net Working Capital / Net Asset
AG	Current Year - Year of Incorporation

1. ROA is a total return that a company gets after utilizing all their resources. We can get ROA by dividing net profit on total asset.

2. DER debt equity ratio tells us how much portion of debt financed and equity finance is utilized for the financing of companies' assets. DER ratio obtained by dividing total debt on total equity.
3. CR current ratio is obtained by dividing total current assets on total current liabilities. Current ratio tells us the current portion of asset and liabilities that are used for fulfilling the current needs of a company.
4. NWC net working capital we can get by dividing net working capital on net assets. Net working capital is a portion of capital that is required to fulfill the current operation of an organization.
5. AG age is calculated by subtract current year on company year of incorporation. Sometime age of company effects their earning.

3.11 Frame work of variables

In this section we will show how theoretically show the frame work variables.



3.12 Model Equation

In this model debt equity ratio (DER), liquidity measures (CR, NWC and AG) are independent variables and firm performance (ROA) is dependent variables that are used for data modeling.

Model	Equation
Model 1	$ROA_t = \alpha + \beta_1 DER_t + \beta_2 CR_t + \beta_3 NWC_t + \beta_4 AG_t + e_t$

This is the equation that is used for checking the effect of debt and liquidity measures on firm performance. ROA_t Show the total returns of assets at the time T, because T is used for time series data for the given time period. $\beta_1 DER_t$ in this independent variable beta is a coefficient of DER that shows the positive and negative effect on firm performance (ROA). Same as $\beta_1 DER_t$, $\beta_2 CR_t$, $\beta_3 NWC_t$, $\beta_4 AG_t$ shows positive and negative effects on firm performance at given time period at time T. Alpha shows constant value in given data and e_t shows error term at time.

Chapter 4

Data analysis results and interpretation

Results are here by analyzing the data by using OLS auto metrics method and also adding the constant variable. Sometime its value is significant and sometime insignificant.

4.1 Attock cement

Attock cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
CR	.0462608	.01532	3.02	.0092
Constant	.0379345	.03113	1.22	.2432

In the given tables different values are show that is collected by using OLS auto metrics technique. Data shows CR coefficient positive significant value that shows CR has positive relation with dependent variable ROA. If CR value increases than ROA values is also increase. In this study CR indicates liquidity of the firm and ROA indicates firm performance. In results mean value of ROA that tells us the average price of ROA in 16 year Data analysis. Constant is a variable that comes from constructing the model equation. In these results we show the constant because it comes each data analysis. When we select automatic data selection method constant variable not available because it has not significant value that's why automatic method selection model skip the constant value.

Attock cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.4361
Arch effect test	.5274
Normality test	.7627
Hetero test	.5242
Hetero-x test	.5242
Reset test	.2906

This table shows the test applied in data analysis and also shows the p-values. These are the p-values on the basis we reject or don't reject the null hypothesis. F-values show that it follows the f-distribution. Ho is level on which null hypothesis is accepted above the .05 level of significance. H1 is a level where null hypothesis is rejected that's value is less than 0.05 level of significance. First test is autocorrelation its p-value is .4361 that is more than .05 we don't reject the null hypothesis. Arch effect test p-values is .5274 this value is also greater than 0.05. Ho null hypothesis is also not rejected because its value is greater than 0.05. Normality test applied for testing either data is normally distributed or not normally distributed. Normality test value .7627 that is greater than 0.05 levels. Ho will accept because data is normally distributed. Ho null hypothesis of normality is "the distribution is normally distributed". H1 the distribution is non-normal. Hetero test value also greater than 0.05 null don't reject. There is no heterocidiscity. There is no autocorrelation and heterocidiscity so we can say that residuals are independent and identical distributed.

This explanation is used for all tables of all cement industry data tests result.

4.2 Bestway Cement

Bestway cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
DER	-0.04189	0.01509	-2.78	0.0157
CR	0.1615	0.05509	2.93	0.0117
Constant	0.01842	0.06628	0.278	0.7853

Results show DER and CR values are significant but DER coefficient value and t-value is negative that explains the debt ratio is more than equity ratio that shows the negative relationship with firm performance while CR indicates liquidity measurement that has positive relation with firm performance. More debt is not good for the health of an organization. Constant value is also positive but is insignificant value that has no effect on data analysis results. Mean value ROA explains the average value firm performance.

Bestway cement applied test and its P-values

Test applied	P-values
Autocorrelation test	0.7390
Arch effect test	0.7777
Normality test	0.6311
Hetero test	0.1908
Hetero-x test	0.3175
Reset test	0.8203

4.3 Cherat Cement

Cherat cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
Constant	0.1789	0.04056	4.41	0.0007
CR	-0.1474	0.03954	-3.73	0.0025
NWC	0.2767	0.1088	2.54	0.0244

Cherat cement data analysis results shows that constant, CR and NWC have significant values. Constant and NWC have positive effect on firm performance but CR has negative effect on firm performance. Constant is significant and positive effect on ROA when constant value increases than firm performance also increases. CR ratio has negative effect on ROA because current liabilities are more than current assets. NWC is also a positive effect on firm performance, positive NWC shows that more assets are available to fulfill the firm needs that have positive effect on firm performance. Mean value of ROA explains the average value of firm performance or return on asset.

Cherat cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.4291
Arch effect test	.1815
Normality test	.3256
Hetero test	.2340
Hetero-x test	.3738
Reset test	.1125

4.4 Dandot Cement

Dandot cement test results affected ROA

Variable Name	coefficient	Standard Error	t-value	p-value
Constant	-0.1947	.02894	-6.73	.0000
CR	.20026	.07172	2.79	.0144

In the given results it shows that constant has significant and negative values it explains the negative effect on firm performance. CR is also significant and positive relation on firm performance because current ratio consists of current asset and current liabilities here the organization is in a position to pay off the all obligation of the firm that's why current ratio is positive effect on firm performance (ROA). Means vales of ROA show that average return on asset of the given time period. ROA value is negative that show firm goes into loss.

Dandot cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.2323
Arch effect test	.6273
Normality test	.3318
Hetero test	.5256
Hetero-x test	.5256
Reset test	.6222

4.5 Dewan Cement

Dewan cement test results affected ROA

Variable Name	coefficient	Standard Error	t-value	p-value
CR	.00419315	.0008875	4.72	.0003
Constant	-0.121246	.02650	-4.58	.0004

Dewan cement data analysis results show that CR and Constant affect the ROA dependent variable. But CR has positive values and it effects positively on ROA, while constant has significant but negative effect on ROA. Means value of ROA is also positive.

Dewan cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.1865
Arch effect test	.7140
Normality test	.3247
Hetero test	.7003
Hetero-x test	.7003
Reset test	.0097

4.6 DG Khan Cement

DG khan cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
CR	.0150257	.007041	2.13	.0542
Constant	.0243718	.01832	1.33	.2082

DG khan cement results show that CR value is significant and have positive effect on firm performance or dependent variable because firm is in a position to pay off their current obligations. On the other side constant variable value has no effect on ROA because it has insignificant value. Automatrix data analysis method used only those variables that have significant values. Constant is necessary in data analysis that why we show constant in our analysis. Means value of ROA is average value of return on asset of analyzed organization.

DG khan cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.1236
Arch effect test	.5049
Normality test	.1219
Hetero test	.3254
Hetero-x test	.3254
Reset test	.5903

4.7 Fecto Cement

Fecto cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
DER	-0.171933	0.03218	-5.34	0.0001
NWC	-0.252428	0.03226	-7.82	0.0000
AG	0.00633491	0.003931	1.61	0.0000
Constant	0.0953630	0.1248	0.764	0.4596

Result of Fecto cement that DER, NWC, AG and constant variables results. All variables have different results that are clearly show in the given table. In the given table DER and NWC have negative effect on ROA. DER explains the debt equity ratio that tells us debt ratio is more than equity ratio more debt is not good for organization health. Firm has more liabilities than their assets available. NWC is also negative effect on firm performance because firm has more liabilities than their asset required to fulfill their current obligations. AG is significant and it has positive relation on firm performance. Constant is significant and positive relation on ROA.

Fecto cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.9706
Arch effect test	.5426
Normality test	.5675
Hetero test	.6748
Hetero-x test	.6748
Reset test	.6368

4.8 Fauji Cement

Fauji cement test results affected ROA

Variable Name	coefficient	Standard Error	t-value	p-value
CR	.156385	.02550	6.13	.0000
Constant	.0727679	.01759	4.14	.0010

In the given results it shows that constant has significant and positive value it explains the positive effect on firm performance. CR is also significant and positive relation on firm performance because current ratio consists of current asset and current liabilities here the organization is in a position to pay off the all obligation of the firm that's why current ratio is positive effect on firm performance (ROA). Mean value of ROA show that average return on asset of the given time period.

Fauji cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.4032
Arch effect test	.3007
Normality test	.4358
Hetero test	.2544
Hetero-x test	.2544
Reset test	.3921

4.9 Flying Cement

Flying cement test results affected ROA

Variable Name	coefficient	Standard Error	t-value	p-value
Constant	-0.142452	0.04055	-3.51	0.0049
CR	0.020632	0.007408	3.79	0.0030
AG	0.00596045	0.001844	3.23	0.0080

Flying cement data analysis results show that CR and Constant affect the ROA dependent variable. But CR has positive values and it effects positively on ROA, while constant has significant but negative effect on ROA. AG is a control variable that has also positive values that affect the ROA positively. When age of organization increases firm value increases. Means value of ROA is also positive. It shows average firm ROA on asset value.

Flying cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.7633
Arch effect test	.9778
Normality test	.7030
Hetero test	.0493
Hetero-x test	.0642
Reset test	.0158

4.10 Garibwal Cement

Garibwal cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
Constant	-0.563261	0.2081	-2.71	0.0191
CR	0.104776	0.04138	2.53	0.0263
AG	0.0103237	0.003990	2.59	0.0238

Garibwal cement data analysis results show that CR and Constant affect the ROA dependent variable. But CR has positive values and it effects positively on ROA, while constant has significant but negative effect on ROA. AG is a control variable that has also positive values that affect the ROA positively. When age of organization increases firm value increases. Means value of ROA is also positive. It shows average firm ROA on asset value.

Garibwal cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.8150
Arch effect test	.7837
Normality test	.0789
Hetero test	.2476
Hetero-x test	.3875
Reset test	.3927

4.11 Kohat Cement

Kohat cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
Constant	0.268047	0.02200	12.2	0.0000
DER	-0.0919279	0.01299	-7.08	0.0000

Kohat cement results shows that the effects of Constant and DER. Constant is significant and positive relation on ROA. DER has negative effect on ROA because company borrows more debts than their equity. More debts are not good for organization with the increase in organization debts profit volume of an organization going down. Profit of the firm or performance of the firm has inverse relation with each other. Mean value of ROA is also shown in the table. R square shows the effect of independent variables on dependent variable ROA.

Kohat cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.1264
Arch effect test	.4685
Normality test	.0691
Hetero test	.0984
Hetero-x test	.0984
Reset test	.1893

4.12 Lucky Cement

Lucky cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
CR	0.0734985	0.01884	3.90	0.0018
NWC	-0.456716	0.1830	-2.50	0.0268
Constant	0.00699864	0.02288	0.306	0.7646

Lucky cement data analysis results shows that constant, CR and NWC have significant values. Constant and CR have positive effect on firm performance but NWC has negative effect on firm performance (ROA). NWC explains the liquidity of firm, results shows negative effect that company is not in a position to fulfill the company working capital requirement. Constant is significant and positive effect on ROA when constant value increases than firm performance also increases. CR ratio has positive effect on ROA because current liabilities are less than current assets that's why CR has positive effect on ROA. Mean value of ROA explains the average value of firm performance or return on asset.

Lucky cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.9836
Arch effect test	.1817
Normality test	.7750
Hetero test	.9298
Hetero-x test	.6015
Reset test	.0498

4.13 Maple Leaf Cement

Maple leaf cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
Constant	-0.158667	0.06554	-2.42	0.0309
DER	-0.0601352	0.005687	-10.6	0.0000
AG	0.005542	0.001202	4.61	0.0005

Maple leaf cement shows the results of constant, DER and AG are those variables that affect the dependent variable ROA. Constant and DER values are significant and negative that shows the negative effect on firm performance. DER ratios negative value shows that more debts are taken from outsiders than the equity. More debt has negative effect on firm performance. AG also has positive effect on firm performance as the age of organization increases than the firm performance also increases. Mean value of ROA shows the average value of return on asset during the analyzed period of time.

Maple leaf cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.5566
Arch effect test	.7677
Normality test	.4476
Hetero test	.2930
Hetero-x test	.4062
Reset test	.3822

4.14 Power Cement

Power cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
DER	-0.0548054	0.01063	-5.15	0.0003
NWC	-0.237478	0.1072	-2.22	0.0487
AG	0.00585113	0.002564	2.28	0.0434
Constant	-0.0440066	0.08042	-0.547	0.5952

Power cement results shows DER and NWC values are significant and negative impact on ROA. DER has negative effect on firm performance. DER ratios negative value shows that more debts are taken from outsiders than the equity. More debt has negative effect on firm performance. NWC has negative effect on firm performance (ROA). NWC explains the liquidity of firm, results shows negative effect that company is not in a position to fulfill the company working capital requirement. AG is also significant and positive effect on firm performance. As the age of an organization increases firm value also increases. There is no effect of constant on firm performance because constant value is not significant. Auto matrix method of data analysis use only those variables that has positive or negatives on firm performance and its p-value is significant. ROA coefficient value is negative that shows return on asset is less than total investment on assets. R square shows the impact of dependent variable on independent variable. Mean value of ROA explains the average value of firm performance or return on asset.

Power Cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.5021
Arch effect test	.8834
Normality test	.4692
Hetero test	.6559
Hetero-x test	.6559
Reset test	.1475

4.15 Thatta Cement

Thatta cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
DER	-0.242403	0.06715	-3.61	0.0041
AG	0.0130322	0.005495	2.37	0.0370
Constant	-0.105957	0.1476	-0.718	0.4879

Thatta cement results shows DER and AG effects the ROA or firm performance. DER has negative effect on firm performance. DER ratios negative value shows that more debts are taken from outsiders than the equity. More debt has negative effect on firm performance. In given results constant value is also negative but it is insignificant. Data analysis results shows only significant values, but we show here only for results. Constant has no effect on ROA in data analysis .R square shows the impact of dependent variable on independent variable. Mean value of ROA explains the average value of firm performance or return on assets.

Thatta cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.8080
Arch effect test	.2686
Normality test	.9860
Hetero test	.1000
Hetero-x test	.1301
Reset test	.2549

4.16 Pioneer Cement

Pioneer cement test results affected ROA

Variable Name	Coefficient	Standard Error	t-value	p-value
Constant	0.144615	0.01635	8.85	0.0000
DER	-0.002945	0.0009546	-3.09	0.0104
NWC	0.240600	0.05783	4.16	0.0016

Pioneer cement results shows that constant and NWC values are significant and positive effects on firm performance. NWC ratio positive effect on ROA shows more liquid assets are available to fulfill the working capital requirements. Assets are more than liabilities of an organization. Constant is significant and positive relation on ROA. Constant variable value increases than ROA value is also increases. DER ratio has negative effect on firm performance. DER ratios negative value shows that more debts are taken from outsiders than the equity. More debt has negative effect on firm performance. Mean value of ROA explains the average value of firm performance or return on asset.

Pioneer cement applied test and its P-values

Test applied	P-values
Autocorrelation test	.3645
Arch effect test	.1661
Normality test	.2165
Hetero test	.5925
Hetero-x test	.7240
Reset test	.6825

These are the data analysis results that are shown in above table.

Chapter 5

Conclusion and recommendation

Profitability is main goal of almost each business firm. This is a technique to evaluate the relationship between earnings and investments made to acquire such earnings. In previous studies debt equity ratio have both positive and negative effect on firm performance. Ravivathani thuraisingam (2015) tells us liquidity has no significant effect on firm profitability. Liquidity has very little effect on firm performance or profitability. Norvaisiene R. 2012 tells us debts have negative effect on firm profitability but if an organization manage their debts firm earn more profit. Many researchers investigate and give the results more financial debts have negatively relation with firm performance. Both kind of firm either financial or non-financial also has a negative effect on firm profitability. In some countries more debts reduce the firm's liquidity. Working capital effects the firm performance sometimes positive effect some time negative effect.

Finding of this research is that is conducted on cement firms of Pakistan that tells us current ratio shows positively effect on return on asset. Current ratio indicates the liquidity of firm that is positively effect on firm performance. Current ratio shows in these result current assets are more than current liabilities. NWC also indicates the mix effect on firm performance according to data that is analyzed by using OLS auto metrics technique. In this study only take those variables that are significant values. All the DER values in data show negative relationship with return on asset or firm performance. More debts are negatively effect on firm performance. Equity debt is better than the debt borrowed from outsiders. According to results AG (age) is also significant positive effect on ROA. An NWC and constant variable sometimes positive and sometimes negative value, these variables shows the mixed effect on firm performance ROA. Net working

capital mix effect show that net profit after tax is less than the total assets utilized to earn profit; more assets are used but profit ratio decrease. Negative networking capital sometimes shows that firm has more liabilities than their assets that are used to fulfill the company requirements.

For researchers who have a willing to pursue this area of the study, I recommend them extend their scope so that they can be expanded to investigate debt level in different context such as analyzing the impact of debt level on cost of capital and its impact on firm performance. They use different variables return on investment (ROI), return on sale (ROS), return on equity (ROE) by using as dependent variables and size, age, operating cash flow margin, cash conversion cycle and some other independent variables can use for further analysis by using OLS. Recommendation of the study firm use equity debts, if a firm uses more debts than equity firm needs to utilize their debts in a better way to earn and maximize their profits or firm performance.

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List of companies used in data analysis

CEMENT FIRMS USED FOR SAMPLE DATA		
SR#	Symbol	Name of firm
1	ACPL	Attock Cement (Pakistan) Limited
2	BWCL	Bestway Cement Limited
3	CHCC	Cherat Cement Company Limited
4	DGKC	D.G. Khan Cement Company Limited
5	DNCC	Dandot Cement Company Limited
6	DCL	Dewan Cement Limited
7	FCCL	Fauji Cement Company Limited
8	FECTC	Fecto Cement Limited
9	FLYNG	Flying Cement Company Limited
10	GWLC	Gharibwal Cement Limited
11	KOHK	Kohat Cement Limited
12	LUCK	Lucky Cement Limited
13	MLCF	Maple Leaf Cement Factory Limited
14	PIOC	Pioneer Cement Limited
15	POWER	Power Cement Limited
16	THCCL	Thatta Cement Company Limited