

**MACROECONOMIC FACTORS INFLUENCING FIRM'S CAPITAL STRUCTURE:
EVIDENCES FROM PAKISTAN AND INDIA**

By

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DEDICATION

I would like to dedicate my thesis to my parents, my wife and my kids

Abstract

Capital structure is concerned with the long term financing of the firm and is recognized as an important managerial decision because of its influence on the value and riskiness of the firm. The theory of capital structure came into prominence after the landmark study of Modigliani and Miller in 1958. Since then numerous researches have been carried out to find out whether capital structure matters or not. During this time a number of factors have been identified which could influence firm financing decisions. These factors are categorized into internal factors and external factors. Initially most of the researches have focused on internal factors whereas in recent times we have witnessed the shift in focus from internal factors to external factors. During the last few decades, the macroeconomic environment has change considerably around the globe thus presenting numerous challenges for managers to run businesses successfully. Changes like integration in international financial markets, deregulation, trade liberalization, increased mobility of capital across countries have made national economies vulnerable to real and monetary shocks occurring in the global markets. Changes in macroeconomic environment are a major concern for modern managers because firm's corporate performance is strongly affected by it. Therefore, the purpose of this study is to measure the effect of macroeconomic factors on the capital structure of non-financial firms in India and Pakistan. Panel data regression (fixed effects model) was used to measure the effect of macroeconomic factors on capital structure. Data from 2004-2013 for 929 firms was collected from World Bank database, State Bank of Pakistan database and Money control database. The findings of the study revealed that macroeconomic factors significantly influence capital structure decisions of the firm. The effect of corporate taxes, real interest rates, GDP growth rates on economic leverage is positive whereas exchange rates, public debt and stock market development show a negative effect on with economic leverage. These findings are attributed to the challenging environments of Pakistan and India. Both countries are in the development phase where financial markets are not fully developed and governments' inclination to financing budget deficits through local borrowing leaves very little for the private sector borrowing. Real interest rate, corporate taxes and GDP growth rate

positively influences economic leverage thus showing firm preference for exploiting tax shield advantages. Furthermore, in comparative analysis of Pakistani and Indian firms, it was found that corporate taxes, GDP growth rates and exchange rates are significantly affect economic leverage in Pakistan whereas in India only corporate taxes is significantly influencing capital structures of listed firms. Hence, if governments in both countries provide better and stable monetary and fiscal policies, improve law and order and provide a friendly business environment then firms will greatly benefit by taking long-term financing decisions that will be influential in the growth of firms as well as overall economy. In future similar studies can be conducted involving financial firms as well as other external factors like political, technological factors etc. to measure their impact on firm leverage.

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ABBREVIATIONS

BSE	Bombay Stock Exchange
CPI	Consumer Price Index
CT	Corporate taxes
EXG	Exchange rate
GD/PD	Government debt/Public debt
GDP	Gross domestic product
GDPR	GDP growth rate
GLS	Generalize Least Squares
GMM	General Methods of Moments
IPO	Initial Public Offerings
KSE	Karachi Stock Exchange
LSDV	Least Square Dummy Variable
MM	Modigliani and Miller
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squares
PPP	Purchasing Power Parity
RBI	Reserve Bank of India
RIR	Real interest rate
ROA	Return on Assets
ROE	Return on Equity
SBP	State Bank of Pakistan
SMD	Stock market development
SMEs	Small and medium enterprises
WACC	Weighted average cost of capital

Chapter 1: Introduction

Capital structure is concerned with the long-term financing of the firm and hence, can be defined as an amalgamation of debt and equity. Decision related to capital structure is widely recognized as an important managerial decision by professionals and academic researchers because it has considerable impact on the value and riskiness of the business (Pandey, 2002). The development and integration of financial markets has led to financial innovations. These financial innovations provide an opportunity to organizations to choose from a variety of financial products available to them while making their financing decisions. In more general terms, a firm can choose from a variety of capital structures combinations but the main objective while making the financing decisions is to find a specific ratio of debt and equity that will maximize firm value (Myers, 1984).

Both debt and equity present certain pluses and minuses to the firm. Generally debt is considered to be less expensive than equity because debt holders enjoy priority in the distribution of returns and settlement of claims. Since debt holders bear less risk as compared to equity holders therefore, it is less costly. In addition to this, due to tax savings on debt use, the effective cost of debt is also much less for a firm. Based on these benefits, it would have been ideal to finance the firm with 100 percent debt but practically it is not possible for two reasons; Firstly, as we borrow the financial risk of default increases, each time we borrow we agree to pay a certain amount of interest which is a fixed cost for the business. The amount of interest must be paid regardless of the fact whether the firm has sufficient earnings to pay its interest payments or not. In case the firm has insufficient earnings to meet its interest payments then the firm is facing financial bankruptcy. Secondly, 100 percent debt financing is not possible because of debt capacity. By debt capacity we mean the maximum amount of funds that the capital markets are willing to lend you. Beyond a certain point capital markets

will stop lending to the firm because from that point onwards the expected financial risk is more than the expected return. In addition to this, borrowings may restrict managers by placing some covenants in their debt agreements to refrain them from some investments. Equity, on other hand, is costly but it does not force a firm towards bankruptcy because there are no compulsory payments to equity holders in the form of dividends. Therefore, it is up to the managers to choose their preferred method of financing considering the benefit and cost associated with each form of financing.

In financial management, capital structure is considered to be the most widely researched area. Capital structure theory came into prominence following the land mark study of Modigliani and Miller (MM) in 1958 namely the “irrelevance theorem” where they claimed that in case of perfect markets with no taxes, transaction costs and bankruptcy costs etc. firm value will remain the same irrespective of fact whether it is financed by equity or debt. The theory presented by MM sparked a controversy as to whether capital structure is important in determining and enhancing firm value or not. Since then it has continued to attract the interest of researchers and many researchers have attempted to understand capital structure with reference to its effect on firm value. The theory has certainly made progress during this time period but unfortunately even after 61 years since MM presented their theory, the capital structure puzzle remains at large. During this time period many studies have been conducted on the topic concerned but still there is no clear yes or no answer as to what amalgamation of equity and debt will maximize firm value and lowers weighted average cost of capital (WACC). However, the empirical investigations have been successful in identifying certain factors that could affect the managerial decisions with respect to capital structure and hence firm value under certain conditions.

1.1 Back ground and Rationale for Research

The role of financing decisions is influential in determining the long-term success of the firm. Capital structure and its adjustment can be affected by a number of factors both internal and external. In fact, the impact of internal factors can be managed and controlled by firm's management but at the same time it is not possible for the management to fully control macroeconomic factors (external factors) and their effect. However, the impact of both of these internal and external factors is significant and the knowledge about the extent of their influence, their level and direction allows companies to make better financial decisions that will bring financial stability and ensure sustainable growth (Mokhova & Zinecker, 2014).

Currently, the most puzzling problem being faced by corporate financial managers is measuring macroeconomic factors impact on the financing choice. Capital structure decision cannot be made in isolation. Internal as well as external factors can substantially affect borrowing decision by the firm and there is strong empirical evidence which suggests that macroeconomic factors do influence firm financing decisions. Gajurel (2006) argued that a country's monetary and fiscal policies are major macroeconomic indicators that can affect the financing decision of the firm. Monetary policy is concerned with the determination of interest rates which significantly affect firm's financing decision. Booth, Aivazian, Demircuc-Kunt and Maksimovic (2001) argued that the firm's capital structure is a combination of inflation rate, development of capital markets, liquid liabilities and economic growth rate. Their assumption was that in times of economic boom corporations tend to employ more debt hoping that adequate profits will be earned that would be sufficient to meet the maturing debt obligations. Furthermore, they added that in developing countries debt ratios decrease with increase in inflation.

Majority of the empirical literature related to capital structure have focused on firm specific elements in the developed world, particularly in the United States. Primary objective of most of these studies was to measure the behaviour of the firm while making financing decisions by analysing variables that were predominantly firm specific. However, some financial researchers like Gertler and Gilchrist, (1993), Rajan and Zingales (1995), Booth et al., (2001), Antoniou, Guney and Paudyal, (2002), Korajczyk and Levy, (2003), Sett and Sarkhal (2010), Pepur, Curak and Poposki (2016) have looked at external factors (macroeconomic) influences on borrowing decisions. It is important to highlight that internal factors like profitability, liquidity, tangibility of assets etc. are within the control of the management and external factors, on the other hand, are beyond the control of management. Therefore, it is equally important for the firm if not more to understand and measure the effect of external factors on the firm in general and financing decision in particular.

Empirically also, it has been investigated to determine whether macroeconomic factors affect capital structure decisions or not. In a study, De Jong, Kabir and Nguyen (2008) revealed that macroeconomic variables are important while making capital structure decisions. The effect of these variables on leverage was more significant in economies which were stable as compared to unstable economies. Stable economies are those economies that have a fairly constant growth in output with reasonably low and stable inflation. Unstable economies, on the other hand, are those with fluctuating growth output and with higher and fluctuating inflation level. In a similar kind of study, Fan, Titman and Twite (2012) based on a sample of 39 countries found out that macroeconomic variables do influence leverage levels of firm. They said that variables like development of banking sector, bond and equity markets are more important while measuring their effect on leverage decision. Demirguc-Kunt and Maksimovic (1999) revealed that dissimilarities in the use of debt exist across countries due to the existence of institutional differences. In addition to this, they also highlighted that

influential behaviour of certain factors on leverage of small firms is different from that on large firms. Baltaci and Ayaydin (2014) explored the significance of macroeconomic elements in explaining variations in leverage in the Turkish banking sectors concluded that leveraging in Turkish banking sector is significantly influenced by macroeconomic factors.

The external environment of a firm shapes its behaviour. Based on institutional differences (legal, economic and political) the behaviour of firms in developing countries may be different from that of developed countries. Taking this point forward Rihab (2012) based on a sample of 41 developing countries found out that institutional factors like banking sector regulation, openness of trade policy, development of financial system are major considerations while making financing decisions. However, he also acknowledges that the results of his findings prevent the generalizations of Anglo-Saxon results. Li Yue and Zhao (2009) while exploring the influence of ownership structure of firms, economic and institutional factors on financing choice of the firm concluded that macroeconomic factors significantly influence the variation in debt ratio. Furthermore, Khanna, Srivastava and Medury (2015) and Buvanendra, Sridharan and Thiyagarajan (2016) also confirmed that in the long-run macroeconomic factors do affect firm financing decision.

Apart from these, prevailing as well as expected macroeconomic conditions also play an influential part in the financial decisions of the firm. Since macroeconomic conditions directly influence macroeconomic factors, therefore, macroeconomic policies like monetary policy and fiscal policy etc. will be adjusted from time to time depending on the macroeconomic conditions prevailing in a country at that time. At the same time, the demand for financing and types of financing also varies at various levels of business cycles. During the periods of recession the adverse selection costs tends to get higher because of information asymmetries. Therefore, in such situations a firm would like to issue securities that are less information sensitive (Baker, 2009). Additionally, macroeconomic conditions also influence

the supply of capital. In periods of economic difficulties like recession lower rated firms are faced with credit crunch as supply of capital decreases (Holmstrom & Tirole, 1997). In a model labelled “flight to quality” Caballero and Krishnamurthy (2008) argued that in times of economic difficulties investors tend to invest in securities that are considered to be safe. Similarly, Levy and Hennessy (2007) argued that in tight monetary conditions managers tend to substitute debt for equity and when the conditions improve they substitute equity for debt. In other studies, Kashyab, Stein and Wilcox (1993) argued that the issuance of commercial paper increases in tight monetary conditions while bank loans decrease. Gertler and Gilchrist (1993) also experienced a decline in banks loan as monetary policy tightens. Based on empirical evidence it is widely acknowledged that economic conditions play a significant role in firm’s decision making.

Based on the findings of above mentioned studies we can infer that all these studies provide a solid ground for further research on macroeconomic factors and its influence on capital structures particularly in developing countries as they provide solid ground and justification that macroeconomic factors do affect capital structures.

The external environment is crucial to the success or failure of a business. The success of any business depends on its effective decision making and effective decision making depends upon both internal factors as well as external factors. Therefore, the focus of this research is to determine the effect of macroeconomic factors on the firm’s financing decision. Economic, monetary and fiscal policies etc. of the state are important factors that affect businesses around the world. Hence, it is important for managers to give due consideration to these macroeconomic factors while making short-term as well as long-term decisions related to the future of the business. Macroeconomic factors and its impact on financing decisions are measured in three stages. Initially, analysis of macroeconomic factors on capital structure with respect Pakistan and India is done followed by a comparative analysis of effect of

macroeconomic factors on capital structures between Pakistani and Indian listed firms and lastly an inter- industrial analysis of effect of macroeconomic factors on capital structures of listed firms is carried out.

1.2 Problem Statement

During the last few decades, the macroeconomic environment has changed considerably around the globe thus presenting numerous challenges for managers to run businesses successfully. Changes like integration in international financial markets, deregulation, trade liberalization, increased mobility of capital across countries have made national economies exposed to monetary and real shocks happening in the global markets. Although factors influencing the macroeconomic environment are beyond management's control, yet it is a major concern for modern managers because firm's performance is strongly affected by changes in macroeconomic environment. Both in Pakistan and India private sector loans as a percentage of GDP and stock market capitalization ratio has gone down considerably particularly in Pakistan in the last seven to eight years. Decline in borrowing by private sector hampers the pace of economic growth thus affecting employment levels, tax revenues for government due to lower output, reduced and uncompetitive exports products due to lack of investment in technology. Therefore, this study aims to measure the impact of macroeconomic factors (fiscal policy factors (government debt, corporate taxes) GDP growth rate, interest rates (monetary policy factor) and stock market development and exchange rates on the financing decisions of non-financial companies in Pakistan and India. All these variables are significantly important as far as long-term decision making is concerned and it will be interesting to see how these factors influence the corporate capital structure considering that both Pakistan and India are developing countries with underdeveloped financial markets, access to finance is not that easy, interest rates and inflation rates are

rising, market capitalization ratio has gone down significantly during the last six to seven years, public debt has risen considerably in both countries and depreciation of local currencies. Therefore the problem that needs to be address can be stated as;

“To what extent macroeconomic factors affect the capital structure decisions of the listed firms Pakistan and India”

1.2.1 Research Objective:

The main objective of the study is “to investigate how macroeconomic factors affect capital structure decisions of non-financial firms of Pakistan and India”.

1.2.2 Sub Objectives:

- To measure macroeconomic factors impact on the capital structure decisions of listed companies in Pakistan and India
- To analyse the comparative effect of macroeconomic factors on the financing decisions of listed companies in Pakistan and India
- To measure the extent of the inter-industrial effect of macroeconomic factors on financing decisions in listed companies of Pakistan and India.

1.2.3 Research Questions:

1. What kind of effect do instruments of monetary policy, fiscal policy, stock market development and exchange rates have on the capital structures of non-financial companies of Pakistan and India?
2. What is the comparative effect of instruments of monetary policy, fiscal policy stock market development and exchange rates on the capital structures of non-financial companies of Pakistan and India?

3. What is the inter-industrial effect of instruments of monetary policy, fiscal policy, stock market development and exchange rates on the capital structures of non-financial companies of Pakistan and India?

1.3 Uniqueness of the study

This study is unique from other empirical studies for a number of reasons; Firstly, earlier studies have predominantly focused on stock market development, corporate taxes, GDP, real interest rate and to a very limited extent on public debt. Public debt is a relevant factor particularly in developing countries like Pakistan and India as borrowings by the government significantly affects the availability of loanable funds to the private sector. Apart from public debt, exchange rate is another important macroeconomic factor that seems to have been ignored in empirical studies pertaining to capital structure. Exchange rate is an important factor to consider particularly for those firms that are involved in business with international markets and borrowing from international financial markets. When firm decides to explore international markets for business or borrow from international financial markets, they expose themselves to exchange rate risk which can significantly affect the earnings and cost of financing for such firms. Hence, exchange rate becomes an important consideration in the long-term financing decision of the firm. Generally, since exchange rates affect the value of the currency, it can influence investment activity positively as well as negatively thus influencing the demand for funds. In addition to this, exchange rates affect the economy as a whole as it affects the value of the home currency thus influencing prices, cost of production, interest rates etc.

Secondly, we have used a slightly different measure for leverage in this study. Previous studies have mostly used debt to equity ratio for measuring leverage, whereas in this

study we use the proxy of economic leverage to measure leverage. Economic leverage is measured through return on equity (ROE) divided by return on assets (ROA). The use of economic leverage benefits in the sense as it offers more meaningful insights about leverage and added knowledge to the subject under investigation. The used of debt influences ROE and ROA. When a company uses debt, its ROE gets a boost because the proportion of equity decreases when a firm uses more debt. Since interest on debt is fixed, the earnings generated from the use of additional debt have a positive influence on ROE. Firms will be encouraged to use debt as long as it has a positive impact on ROE. However, in case of decline in earnings, most of the earnings will be used to meet the cost of debt thus leaving limited earnings or no earnings to be distributed among the shareholders. As a result, the decline in earnings in the presence of debt negatively impacts ROE thus forcing firms to reduce their debt levels in order to protect their respective ROEs. Therefore, raise in the value of economic leverage means that the share of debt in total financing mix is increasing whereas a fall in the value of economic leverage means that the share of debt in total financing is decreasing.

Thirdly, majority of the studies related to the same topic have focussed on the developed economies and ignored emerging and developing economies (Fan, Wei & Xu, 2011). However, in terms of geographic size and population the world is dominated by emerging and developing economies. According to a report published by the Center of International Private Enterprise in 2008 stated that they have discovered many behavioural and institutional differences between businesses in developed markets than businesses in developing markets.

The study contributes in a number of ways. Firstly, this study adds to the already limited studies on developing economies with respect to macroeconomic factors impact on company's financing decisions. This study will give more meaningful insights with respect to

macroeconomic factors impact on company's financing decisions particularly due to the reason that the behaviour of macroeconomic factors differs significantly in developing economies from that developed economies.

Secondly, to the best of our knowledge, there is no study that has used the set of macroeconomic variables that we are using particularly in the context of Pakistan and India. Moreover, macroeconomic environment of Pakistan and India is going through challenging times as both economies are experiencing rising interest rates and inflation rates, both economies are growing with under developed financial markets and it will be interesting to see how these macroeconomic factors influence firm financing decision in the prevailing macroeconomic conditions.

Thirdly, public debt and exchange rates are two important macroeconomic factors particularly in the context of Pakistan and India and generally in developing countries that have been overlooked in empirical studies to some extent. Both countries have experience fall in the value of their respective currencies whereas the level of public debt has risen significantly during the last decade or so. Therefore, this study will provide empirical evidence with respect to the effect of exchange rates and public debt on financing decisions in particular as both rising public debt and exchange rate volatility is attributed more to developing countries and other macroeconomic factors in general in the context of Pakistan and India.

Lastly, this research study will be helpful for managers in understanding the interrelationships among these macroeconomic factors and how will they influence the financing decisions of the firm. Understanding the interrelationships among macroeconomic factors, the extent of their influence, their level and direction will allow managers to make better financial decisions that will bring financial stability.

1.4 Significance of Study

Macroeconomic environment is significant in shaping the long-term future of the firm. While focussing on the importance of macroeconomic environment for the firm, Bonomo, Martins and Pinto (2003) argued that “the macroeconomic environment interacts with the firms’ balance sheet structure in a two-way relationship. On one hand, macroeconomic environment is central in shaping the capital markets, determining what kind of contracts is feasible and enforceable. Moreover, it also affects the incentives faced by firms when selecting their financial contracts. Conversely, the firms’ balance sheet structure affects crucially as a result of macroeconomic policies thus influencing policymakers’ choices of regimes and policy rules”.

Organizations will make better long-term decisions if the economic environment is conducive and stable for business. Economic environment is basically the environment in which a firm operates and consists of macroeconomic factors like interest rates, inflation, income, productivity, employment levels, wealth etc. that influences the buying behaviour of businesses as well as consumers. Conducive economic environment will allow organization to make better financing and investment decisions that will ensure the survival of the business and increase in its firm value. Hence, capital structure decision by firms cannot be made without considering internal and external factors. Both of these factors can have a significant impact on the financing decision of the business. Internal factors are firm-specific factors and can be control by the firm whereas external factors (political, economic, technological, and social) are beyond the control of the firm. Since financing decisions are long term decisions that affect firm value and risk level, the importance of external factors cannot be ignored while making such decisions. Hence, it is essential to investigate the influence of macroeconomic variables on the financing decisions of the firm.

1.5 Structure of Thesis

Chapter 1 provides the background and rationale for research, its purpose, significance and uniqueness from previous studies, research question and objectives and justification for research.

Chapter 2 gives a brief account of background on the evolution of the capital structure theory in the last five decades or so. This chapter also contains a brief account of the macroeconomic environment and the influence of macroeconomic environment on firm decision making.

Chapter 3 provides a review of literature on macroeconomic factors and its effects on capital structure. The review of empirical literature contains studies both from developing and developed countries in order to get deep understanding of the behaviour of these variables in different conditions.

Chapter 4 provides details of the theoretical framework of the study, description of independent and dependent variables and an explanation concerning measurement of these variables in the context of this study. The chapter also provides details of capital structure theories and the important principles on the basis of which these theories are based and how they affect the firm value? In addition to this, empirical evidence and limitations of these theories is also presented in this chapter. Furthermore, this chapter also provides details about the methodology adopted for this study. Specifically, it provides details of data collection procedures, statistical tools selected for data analysis along with the justifications for doing so.

Chapter 5 provides an analysis of macroeconomic factors and its effect on leveraging. In this regard, descriptive analysis of independent and dependent variables are provided in this

chapter. In addition to this, panel data models are used on the collected data to measure the effect of macroeconomic factors on capital structure. This chapter also includes through discussion on the findings along with valid justifications from the empirical literature to provide literature support to the findings of the study.

Lastly, chapter 6 presents a summary of findings, limitations, policy implications and directions for future research.

Chapter 2: Evolution of Capital Structure Theory and Business Environment of Firm

The principle purpose of this chapter is to give a brief summary of capital structure theory and how it evolved over a period of time and highlight the relationship and importance of macroeconomic factors with firm's decision making in general and financing in particular. In the last six decades, capital structure theory has considerably evolved. During this time the theory has made significant progress (see Myers 1977; Titman & Wessels, 1988; Harris and Rajiv, 1990; Rajan & Zingales, 1995). Important variables have been identified that could affect the value of the firm. Additionally, it has also been empirically proven that the behaviour of these variables vary in different conditions which makes it even more important to understand these variables and their influence on capital structure. The following section presents a brief account of the evolution of capital structure theory.

Section 2.1 provides an overview of capital theory and its evolution, section 2.2 provides an overview of the business environment, section 2.3 explains the importance of macroeconomic environment for business and section 2.4 explains the effects of integration of financial markets on the firm.

2.1 Evolution of Capital Structure Theory

After the initial work of MM in 1958, many prominent researchers started researching in the area to get deeper understanding about capital structures and its influence on firm value. In 1960s and 1970s, the focus of majority of the researchers was on the cost/benefit analysis of debt (see Scott, 1976; Myers 1977; Kim 1978). Symmetric information and efficient markets hypotheses were the most common assumption of those studies. The primary objective of studies at that time was to analyse how firms managed to balance the

cost of financial distress and tax shield advantages when debt is used in the total financing mix.

In a study of corporate bankruptcies Baxter (1967) argued that equity cost rises with excessive levels of gearing to a point beyond which further increase in debt is disadvantageous due to increase in riskiness of the firm. With every increase in debt the probability of going bankrupt increases which leads to increase in riskiness of total earnings stream. In similar kind of studies like Scott (1976) and Kim (1978) also concluded that associated costs and benefits of borrowing from external sources are important considerations for firms while making their capital structure decisions. The research during this period was mostly related to the testing of trade-off theory (TOT) assuming that firms have in their mind certain specific target leverage ratios which they would like to achieve in order to optimize the net worth of the firm.

In the mid-70s the focus of researchers shifted to agency costs after agency theory was introduced by Jensen and Meckling in 1976. According to their theory more emphasis was laid on the “conflicts of interest between managers and shareholders and conflicts of interest between lenders and shareholders”. Conflict of interest amongst managers and shareholders is characterised by inappropriate behaviour on part of manager like investing in risky projects destroying the wealth of shareholders. One solution suggested to solve this problem is issuing debt (Jensen, 1986). Myers (1977) argued that “due to conflict of interest between managers and shareholders”; companies may even reject positive NPV projects that require new capital. According to Myers (1977) there are two possible reasons why firms will reject positive NPV projects. Firstly, existing creditors may not be willing to finance new projects due to higher risk in which case firm has to finance new projects with new or junior debt holders and new or existing equity holders and secondly, existing creditors may not be willing to reduce or write down the value of their claims. Such conditions prevent new investors from providing

finance for new projects as most of the incremental cash flows from new projects will go to shoring up the value of existing creditors.

In 1980's a substantial amount of research was carried out on the issue of information asymmetries among investors and firms. Myers and Majluf introduced Pecking Order theory in 1984. Their theory is built on the concept of information asymmetry. The concept of information asymmetry holds that insiders (managers) have more access to information regarding the future and financial health of the business than outsiders (investors). Since investors know less about the firm than managers, therefore, investors would like to be compensated in the form of higher return for taking additional risks. Also there is a cost associated with financing; comparatively debt is less expensive than equity. Hence, financial managers wish to use internally generated funds first then less costly external loans and lastly equity.

In the late 90s and early part of 2000's the focus of the researchers shifted to explore the equity timing effect on capital structure. The target of studies during this time was to find out whether firms use specific time periods to issue debt or equity. In a study, Pagano, Panetta and Zingales (1998) focused on to find out whether this positive relationship is due to higher investment needs in industrial sectors where growth opportunities are high or is it a result of owner's exploitation of sectorial mispricing. Pagano et al., (1998) concluded that the attempt to exploit sectorial mispricing appears to be more appropriate in this case. Hovakimian, Opler and Titman (2001) argued that share prices are an important consideration for firms while making their financing decision. Firms are expected to issue equity and repay debt when their share prices increase and issue debt and buy back equity when the share price decreases, suggesting that managers choose the type of financing which is more valuable for the firm at that particular time. In the year 2002, market timing theory was presented by Baker and Wurgler. According to their theory "*capital structure evolves as*

the cumulative outcome of past attempts to time the equity market". In simple words equity will be issued by the firm when market share price of the firm trading in the stock market is high and will repurchase its shares when the market share price of its stock is lower. Unlike pecking order or trade off models where a firm observe a preference for financing or target their capital structure, market timing holds that companies do not necessarily care about whether they use external loans or equity to fund their new investments, they simply select the type of financing that is considered more appropriate and valuable by the markets at that time.

Since the Modigliani and Miller 'irrelevance principle' numerous researches have been carried out to recognize the factors that could affect capital structure. Broadly speaking these factors are categorized into firm specific and country specific factors. Based on empirical evidence firm specific factors like asset tangibility (Korajczyk & Levy, 2003; Frank & Goyal, 2009; Margaritis & Psillaki, 2010; Nguyen & Wu, 2011, Oztekin, 2015), profitability (Rajan & Zingales, 1995; Daskalakis & Psillaki, 2008; Bastos, Nakamura, & Basso, 2009; Margaritis & Psillaki, 2010; Keshtkar, Valipour, & Javanmard, 2012, Oztekin, 2015 etc.), growth opportunities (Beven & Danbolt, 2001; Daskalakis & Psillaki, 2008; Margaritis & Psillaki, 2010; Kouki & Said, 2012), firm size (Korajczyk & Levy, 2003; Margaritis & Psillaki, 2010; Nguyen & Wu, 2011; Lim, 2012) non-debt tax shields (Ozkan, 2001; Kouki & Said, 2012), influence the choice of capital structure. Though, the relationship between these factors and leverage varies in different industries and across countries. The relationship can either be negative/positive or significant/insignificant depending of the nature of the industry, time and country specifics.

Alternatively, institutional factors and market imperfections play a significant role in determination of the choice of capital structure. The efficiency of capital markets and development of banking system is critical in company's decision whether to borrow loan or

issue equity. Investors will demand higher stock returns where the capital markets are illiquid thus raising the cost of equity of businesses. High cost of equity in illiquid markets encourages firm's to use internally generate funds or borrow from the banks. This is one of the reasons behind the current focus of researchers on exploring the relationship between firm specific and country specific factors like the legal environment, development of banking system, shareholder rights and development of capital markets etc. Among many financial researchers, Rajan and Zingales (1995) were the first to highlight the significance of country characteristics on the capital structure choice. While measuring the link between firm specific variable and country characteristics, they used some institutional variables like bankruptcy law, size of capital markets etc. and found out that these institutional variables do not interact with internal (firm specific) factors simultaneously. While examining the impact of capital markets on financing choice Demirguc-Kunt and Maksimovic (1996) revealed an inverse relationship between gearing and size of capital markets. Booth et al., (2001) showed that while there is not much dissimilarity amid capital structure determinants both in developing and developed countries, much needs to be done in order to get deeper understanding on the connection between country infrastructures and capital structure choices. Fan et al., (2012) expanded the institutional variable base to include variables like corruption, inflation, political institutions, taxation etc. and argued that institutional environment and public policies are more influential in making financing decisions by the organizations than their industry affiliation. Claessens, Demirguc and Huizinga (2001) explored the importance of legal and financial development in certain countries in terms of its influence on financing patterns and risk-taking behaviour of firms. They argued that on overall basis firms are less risky in common law environments. De Jong et al., (2008) concluded that capital structure's determinants influence is not the same across countries due to variations in country specific factors.

In Pakistan and India also limited studies have focussed on the impact of macroeconomic factors on capital structures. In studies pertaining to Pakistan Ain, Jan and Rafiq (2011), Riaz et al., (2014), Memon, Rus and Ghazali (2015) and Amjed and Shah (2016) found significant effect of some macroeconomic factors like interest rates, GDP growth rates on capital structure. In studies pertaining to India Sett and Sarkhel (2010), Mishra (2011) and Handoo and Sharma (2014) also emphasized on the importance of macroeconomic factors while making financing decisions.

2.2 Business Environment

The business environment of a firm consists of its external environment in which it operates. Changes in external environment affect firms as it presents various opportunities and threats. Broadly speaking the external environment comprises of political, technological, economic, legal factors and socio-cultural factors. Since the focus of the study is on macroeconomic factors, therefore our concern is with economic environment and its influences on business decision making.

The economic environment can be sub-divided into two parts; micro and macro environment. Micro-environment consists of factors like market size, supply and demand that affects business operations and decision making. Macro environment, on the other hand, consists of factors likes exchange rates, taxes, interest rates, inflation etc. that affect the overall economy and the participants operating in that economy. In this study our focus is on the macroeconomic factors related to the macroeconomic environment of the firm.

2.3 Importance of Macroeconomic environment for business

The economic environment plays a critical role in decision making of the firm whether it is short-term or long-term. A conducive and stable economic environment will enable a firm to make effective decisions which will guarantee the long term existence of the firm. If the economic environment is not conducive then firms may be reluctant to engage themselves in long term investment or financing decisions because of higher expected risk.

Globally, the macroeconomic environment in which a firm operates has changed considerably in the last few decades presenting many challenges for managers to run businesses successfully and efficiently. The integration of financial markets, trade liberalization, deregulation, tariff free zones and increased mobility of capital across countries have made domestic economies exposed to real and monetary shocks happening in the global markets. As a result, senior management will now be more concerned about changes in exchanges rates, level of inflation, interest rates, level of competition and demand conditions as they are likely to affect national economies and firms operating within those economies (Oxelheim & Wihlborg, 2008).

Macroeconomic environment is also a source of uncertainty for the firm. The development of international financial markets has resulted in creation of new instruments to manage risk which has enabled firms not only to protect themselves from external shocks and fluctuations but also make a profit from it as well. On the other hand, lack of proper understanding of some of these instruments and transparency led to the financial crisis which affected the macroeconomic environment globally resulting in the liquidation of some firms while others were financially affected by it.

Due to globalization it is irrelevant now a days to make a distinction between national and multinational firms in the discussion of their macroeconomic exposure. Modern day

organizations are exposed to external shocks and changes in global markets irrespective of the fact whether they are domestic or multinational. Some of the firms will be directly affected as they are directly involved in business with international markets while others will be indirectly affected as the national economies will be affected by changes in global markets and therefore, firms will be affected both positively as well as negatively. A firm with all its production, sales and financing confined to the national boundaries and doing business entirely in the local currency may still be affected by external shocks like fluctuations in exchange rate, interest rates etc. Additionally, fortunes of a domestic firm that acts as a supplier to major exporters depends upon the performance of exporter. If the exporter performs well so will domestic firm and vice versa. Also local firms may face stiff competition from imported products that are of better quality and are more efficient and user friendly. The international competitiveness of major exporting firms may result in influencing general level of demand; as a result, the performance of firms that are solely serving the needs of local consumers markets may also be affected by it. So, there are numerous ways in which external environment can affect the domestic firms both positively and negatively (Oxelheim & Wihlborg, 2008).

Understanding the impact of the macroeconomic events is extremely important for the managers and this knowledge can be helpful in the management of risk. It is important for managers to understand and differentiate between different types of exposures and also to distinguish between the effects of change in its relative competitive position caused by factors that are more close at hand from the effect of changes in external environment. This distinction is helpful not only in managing risk and evaluation of sustainable profits but also for strategic management purposes. The only situation in which a firms needs not to be worried about its exposure to external environment is when it is fully compensated

immediately for the cost increases in the prices of its products but in reality such a firm hardly exists.

The increased economic and financial integration has not only increased the risk of the firms but at the same time it offers numerous opportunities for firms to expand their businesses. In the presence of increased risk and opportunities organizations are bound to developed new corporate strategies that will enable them to exploit opportunities that are on offer and manage risk. It is important to understand now that investment, financial and marketing decisions are influence by international factors. Local firms that are only confined to the local markets needs to develop strategies that will help them in coping the uncertainties generated in international markets.

Chapter 3: Literature Review

The overall purpose of this chapter is to extensively examine the empirical literature regarding macroeconomic variables and its influence on capital structure that will help in the development of our hypotheses accordingly. There are two common financing options available to an organization that is debt and equity which used together forms firm's capital structure. From literature, we found a number of factors that could affect the firm's choice of financing. One of them is the macroeconomic environment. Hence, the focus of our research is to measure the impact of macroeconomic factors on the financing decisions of the firm in Pakistan and India.

In the empirical literature many studies have attempted to investigate macroeconomic conditions impact on the financing decisions of the firm (see Gertler & Gilchrist, 1993; Booth et al., 2001; Korajczyk & Levy, 2003; Gajurel, 2006; Bokpin, 2009; Hanosuek & Shamshur, 2011; Mokhova & Zinecker, 2014). Empirical studies have concentrated on both developed countries and developing countries. The findings of these studies are varied and provide important information as to how macroeconomic conditions differ from one country to another and how they affect firm financing decisions in those respective conditions.

Most of these empirical studies have focused on GDP growth rate, interest rates, taxes, banking sector development, public debt, stock market development and market structure. However, in case of Pakistan and India we find very limited studies that have measured macroeconomic factors impact on capital structures. These empirical studies have mostly focussed on macroeconomic factors like stock market development, GDP, interest rate, taxes and stock market development but we could not find studies that used public debt and exchange rates in the context of Pakistan and India. Therefore, the macroeconomic factors that we have chosen are GDP growth rate, public debt, RIR, stock market

development, corporate taxes and exchange rates. Market structure and banking sector development were not considered in our study because most of the data with respect to these two variables were not available.

The structure of chapter is as follows; in the first part, literature review on real interest rate's impact on capital structure is given, next in section 3.2 literature review on GDP growth rate's impact on capital structure is given, in section 3.3 literature review on corporate taxes impact on capital structure is given, in section 3.4 literature review on exchanges rate's impact on capital structure is given, in section 3.5 literature review on public debt's impact on capital structure is given, in section 3.6 literature review on stock market development's impact on capital structure is presented and lastly section 3.7 presents the conclusion of literature review.

3.1 Real Interest rates

The financing cost associated with borrowing loans for a specified period of time is known as interest. But for many firms their primary concern is the prevailing rate of interest because interest rates are indexed to inflation (Myers, 1984). Credit and reinvestments risks are significantly influenced by changes in expected inflation rates. As a rule, it is expected that higher inflation rate will adversely affect debt markets as well as stock markets. Higher inflation rate will lead to higher expected rate of return by investors thus adversely affecting security prices. Moreover, overall cost of capital also increases due to which some investment projects become unprofitable thus affecting the growth rate of an economy.

Interest rates on loans can either be fixed or floating. The decision to borrow on fixed rates or floating rates depend on prevailing level of inflation rates. If inflation rates are stable or expected to rise then fixed rate of interest will be the preferred option. Conversely, floating

rates will be preferred if there is expectation that interest rates would decline in the near future. So a decision on interest rates depends on inflation rate.

In addition to this, even if a firm miscalculates expected behaviour of interest it still has some options to choose from to minimize interest cost. One of these options is the interest rates swaps where a firm can swap its fixed rate of interest for floating and floating for fixed, whatever is appropriate for the firm at that particular time (Hull, 2003).

Interest rate, an important component of monetary policy is also used as a tool to set the direction of the economy by the central bank. Changes in interest rates affect the demand for borrowing funds which may in turn lead to changes in financial market equilibrium. As a result financing channels and financial constraints to private sector may change (Madura, 2011). Rising interest rates means that there will be more tax advantages that needs to be availed thus encouraging firms to raise their leverage levels but rising interest rates is also a cause of an increase in financial risk, agency costs and bankruptcy costs making it difficult for firms to borrow. Furthermore, firm will also make an attempt to reduce financial leverage in order reduce bankruptcy costs particularly in the case when loans are borrowed on floating rates (Brigham & Ehrhardt, 2004). Rising bankruptcy costs and agency cost caused by increase in debt off sets the advantages of tax shield and may result in lowering firm value. On the other hand, declining interest rates means that there will be lower tax advantages of debt thus discouraging firms to borrow. But lower interest rates also provide an opportunity to firm to borrow funds at lower rates thus resulting in reduction in financial risk and bankruptcy costs. One argument associated with the effect of lower interest rates is that it minimizes the tax shield advantages of debt. Hence, it is not beneficial for the firm to borrow. However a firm with large capital requirements for future growth would prefer to borrow when interest rates are lower irrespective of the fact that tax shield advantages may be lower. Empirical evidence suggests that prevailing interest rates does have an influence on financing

decision of the firm. Jalil and Harris (1984) argued that how quickly a firm adjusts its capital structure hinges on firm size, stock price levels and interest rates conditions. According to Singh (1993), higher interest rate leads to decline in investment thus reducing the demand for more funds by the firm whereas lower interest rates leads to increase in investment thus increasing demand for funds by the firm. Increase in investment may entail use of more debt. Hence, there exists a connection between interest rates, debt and investment.

Interest rates significantly affect not only the demand for capital but also the pricing of securities including debt and equity capital. Rise in interest rates leads to increase in the financing cost thus resulting in surge in the cost of financial distress. Equity providers perceiving higher risk will demand more return than earlier as a result of additional risk caused by increase in debt. Higher cost of debt and equity will push the WACC upwards thus making some of the investment opportunities unattractive. The reduction in profitable investment opportunities for the firm results in decline in expected growth and profitability of the firm as well as the future productive capacity in particular and economic activity in general. Lower investment in profitable opportunities also affects the efficient utilization of retained earnings. Retained earnings are not kept in cash form but are used to earn a return for the shareholders. But in the absence of profitable investment projects cash balances are likely to accumulate and decision must be taken whether to keep this cash, resulting in a lower return for the shareholder or pay it out in the form of cash dividends. Similarly, lowering interest rates will result in lowering the cost of debt financing as well as equity financing.

Interest rates are indexed to inflation. A continuous and persistent rise in prices is known as inflation. Monetarist theory states that an increase in money supply with objective to promote growth leads to inflation in the long-run. Interest rate, a monetary policy instrument is used as a tool to adjust money supply in an economy. Lower interest rates increases money supply thus causing inflation and vice versa. The influence of inflation rates

on interest rates and firm corporate capital structure has been empirically investigated. However, findings of these empirical studies vary from one another. Camara (2012) argued that macroeconomic conditions have a strong influence over firm capital structure. In a similar study, Sett and Sarkhel (2010) found significant positive effect of inflation on firm financing choice in India. They argued that rising inflation rates leads to rise in interest rates. Hence, firms in order to exploit tax advantages of interest expense deductibility borrow more when rates increase. On the contrary, Bastos et al., (2009) argued that corporate capital structure is unaffected by changes in inflation rates. Dammon (1988) concluded that capital structure and firm value is affected by inflation. In periods of high inflation, many investors are forced to sell bonds in exchange for stock when inflation is high thus leading into lower leverage ratios. In another study, Booth et al., (2001) argued that in emerging economies debt ratios tend to decrease with increase in the level of inflation. Similarly, studies from Gajurel (2006), Pepur et al., (2016) and Ying, Albaity and Zainir (2016) also provided strong evidence of negative effect of inflation on leverage ratio. At the same time, findings of Noguera (2001) indicate that corporate capital structure and inflation is positively related.

In a study conducted on the Turkish banking sector, Baltaci and Ayaydin (2014) found out that inflation is negatively associated with corporate capital structure. In other words, it means that increase in inflation results in uncertainty in the economic situation of an economy. The uncertainty in an economy caused by increased in inflation may results in firms failing to repay their debts as interest rates rise and revenues fall. In addition to this, higher inflation may also results in wiping off the benefits of debts as cost of financial distress increases with decline in sales and poor growth prospects.

In a study on Romanian firms, Oprean (2008) concluded that in periods of higher inflation Romanian firms adjusted their capital structure by reducing the percentage of bank loans in their financing mix whereas the percentage of banks loans tend to rise in periods

when inflation rates are lower thus indicating that inflation rate has negative influence on capital structure on Romanian firms. Possible reason behind this behaviour can be the corresponding interest rates as a result of inflation. Higher inflation rate pushes the interest rates upwards thus increasing the cost of financing particularly for those firms which have borrowed loans on floating rates. Therefore, firms alter their capital structure considering the effect on cost of financing arising from the movements in inflation rates.

Rihab (2012) in a study focussing on assessing the effect of institutional factors on financing decisions in emerging economies argued that inflation rates positively affects corporate capital structure. The results of Rihab are surprisingly different from many other studies. One possible explanation for this unexpected outcome can be that since the impact of inflation on firm is ultimately due to the nature of its business and its competitive environment. Maybe the firms under investigation in this study were operating in economic environment which was considerably different from other studies in terms of level of competition and nature of their business. Also in developing countries, respective governments may provide protection to local firms in order to protect them from international firms that are technologically more advanced and financially in a better position than local firms. Therefore, in the presence of protection, local firms may not be affected to a great extent by the adversities of inflation because the competitive environment is not levelled.

In a study of seven European economies including developed and emerging economies, Mokhova and Zinecker (2014) found out mixed evidence while measuring inflation's impact on the capital structure. They concluded that except France and Greece (where the relationship is negative) there is a positive effect on capital structure even in some emerging economies they find that this association is positive which is contrary to our expectations.

In a sample of more than 15000 firms selected from 37 countries Gungoraydinoglu and Öztekin (2011) found that on overall basis inflation negatively impacts leverage. However the strength of the impact varies across countries. For instance in countries where bankruptcy procedures are more efficient and costly, this relationship tends to be negative but weaker in strength. Hence, it can be argued that in order to control the cost of distress, minimizing the costliness of bankruptcy procedures and increasing its efficiency can be used as substitute mechanisms to decrease the level of inflation.

Bokpin (2009) found out that the rate of inflation is major factor and significantly influence firm's decision to borrow particularly from external sources. While finding support for pecking order theory in his findings, Bokpin (2009) argued that in periods of higher inflation firm resorts to internal financing generated through retained earnings because the cost of external financing both short-term and long-term increases with increasing inflation rates. However, internal sources may not be enough to finance large scale capital investments projects thus affecting the growth and performance of the firm in long-run. However, Lemma and Negash (2013) finds a contrasting evidence to the one found by Bokpin (2009). Lemma and Negash (2013) found positive effect of inflation on leverage thus indicating that firms tend to borrow more during inflationary environments. This is because inflation not only increases the tax advantage of debt in real terms but also result in decrease in the real value of debt (Taggart, 1985; Frank & Goyal, 2009).

Koksal and Orman (2014) in a study on Turkish firms found positive influence of inflation on leverage. They used consumer price index as a measure of inflation which according to many experts is not a good measure for measuring inflation. The reason is that CPI is calculated only from the basket prices of 35 commonly used items; hence, it may not be a true representative measure of inflation for the whole economy. GDP deflator, on the other hand, considers the prices of all products produced in an economy in order to measure

inflation. Therefore, GDP deflator is comparatively more accurate in measuring correct inflation than CPI.

Studies from Frank and Goyal (2003), Joveer (2006) and De Jong et al., (2008) revealed that inflation has a positive effect on leverage. They elaborated that higher inflation increases the tax advantages of debt in real terms. However, these findings contradict the result of earlier empirical studies by Fan et al., (2012) and Drobetz et al., (2013) who found negative effect on leverage. In another study, Tongkong (2012) concluded that inflation insignificantly affects leverage.

In a study on Pakistani firms, Memon, Rus and Ghazali (2015) emphasized on the importance of interest rates in financing decisions and concluded that interest rates significantly affect financing decisions of Pakistani firms.

Apart from inflation there are some other factors also that influence interest rates. One of them is creditor's rights. Lenders will charge a higher rate of interest on loans provided in countries where they have fewer creditors' rights in the case of default. While analysing the influence of creditor's right on the financing decisions of the firm, Shleifer and Wolfenzon (2002) found out that there is significant effect of creditor's rights on financing decision. In case of weak creditor's rights lenders are exposed to higher risk and in order to compensate for higher risk, higher interest rates will be charge on loans provided to firms in those countries. In addition to this, particularly in developing economies, the regulation and ownership and control of the financial system by the government further complicates the distinction between bank based and market based financing. Control over the prices of securities in the market and credit programs for specific industrial as well as other sectors of the economy can significantly influence firm capital structure decisions (Anon, 2002). Bancel and Mittoo (2004) argued "that managers seek windows of opportunities to raise capital".

The findings of the study further revealed that more than 40% of the managers preferred to issue borrow when interest rates are lower. In times of undervaluation of firm's equity by the market also encourages managers to issue debt. Another important and somewhat surprising finding of the study was that from the managerial decision point of view interest rates is an important consideration when issuing debt in the local market but not when issuing debt in foreign markets. One possible explanation for this contrasting evidence can be that when firm decides to use international financial markets for financing purposes, they are exposed to exchange rate risk and apart from interest rates their primary concern is the movement in exchange rates that can have serious repercussions on cost of financing raised through international financial markets.

Empirically the relationship between interest and leverage has been extensively investigated and mostly a significantly positive effect of interest rates on leverage has been found. In other words, it means that firm's level of debt increases with a rise in interest rate and vice versa. On the face of it, it doesn't make sense as to why would a firm want to borrow more when the borrowing costs are bound to increase with the increasing interest rates? One possible explanation for this can be that since debt use offers tax shield advantages to the firm, therefore, the firm may decide to substitute the more expensive equity for the comparatively less expensive debt to exploit these tax advantages. Apart from interest rates positive impact on leverage, we also find negative impact of interest rates on leverage in literature thus indicating that firms may be hesitant to borrow when interest rates are high (Graham & Harvey, 2001).

In a separate study Eldomiaty and Tarek (2007) emphasized on the importance of interest rates and argued that it is a major determinant of the free cash flow theory. They further elaborated that interest rates are negatively related to leverage thus suggesting that prevailing and expected trends in interest rates is a crucial factor in firm's borrowing

decision. Normally, firms are anticipated to borrow when interest rates are comparatively lower but at the same time expected advantages of tax shield will also be lower.

Expecting higher growth in an economy means that stock market valuations will rise also and in order to exploit the windows of opportunity, more equity financing will be employed. Similarly Henderson, Jedadeh and Weisbach (2006) finding similar evidence argues that interest rates negatively affect firm borrowing. Therefore, it appears that firms time their debt issues. These findings are further reinforced by the results of Graham and Harvey (2001) and Drobetz, Pensa and Wanzenried (2006), where they argued that many chief financial officers claimed that they prefer to borrow only when the cost of financing is comparatively lower. Therefore, while timing issues do matter, short-term loans are preferred over long-term if short-term interest rates are lower than long-term. Henderson et al., (2006) further commented that in times of lower interest rates firms are expected to borrow more.

In another study Rubio and Sograb (2011) analyse adjustment speed of firms in Europe and found out that European firms are much quicker in moving towards their target debt ratios when the financial distress cost and interest rates are lower.

In other studies, Leland (1994), and Goldstein, Ju and Leland (2001) found out that financing decisions by firms are extremely sensitive to interest rate changes. In response Ju and Hui (2006), constructed a model that will jointly determine the optimal debt and optimal capital structure within the limits of a stochastic interest rate economy. Ju and Hui (2006) argued that the traditional models of capital structure fails to provide an adequate measure (spot rates, yield to maturity on riskless bonds etc.) of interest rates that can be helpful in determining optimal capital structure. Dew-Becker (2012) reported that firm value is affected by high term spread particularly if it is associated with lower average duration in investments. Courtois and Nakagawa (2013) emphasized on the importance of stochastic interest rates and

argued that due consideration must be given to stochastic interest rates while discussing the possibilities of default. Similarly, Wang Wang and Yang, (2013) also highlighted the importance of stochastic interest rates and its influence on investments and its associated cost of capital, that can significantly affect firm value.

Handoo and Sharma (2014) in a study on Indian firms argued that interest rates have no significant impact on debt. Antoniou et al., (2008) while focussing on German, French and UK firms found out that interest rate volatility do not affect the debt maturity of firms in Germany and France. Their conclusions are however against the predictions of tax timing theory that argues that there is a positive association between the two. In UK a significantly negative impact of interest rate volatility on debt maturity structure was found thus advocating that in times of volatile interest rates UK firms prefer to shorten their debt maturity structure.

Bokpin (2009) also found positive effect of interest rates on gearing and further revealed that firms are most likely to replace their long term loans for short term loans over equity when rates increase. On the contrary, Amjed and Shah (2016) found strong negative influence of interest rates on leverage in Pakistan.

To conclude, the findings of the majority of the empirical studies indicate that interest rates negatively affect leverage particularly in the context of developing countries. Despite the fact that treatment of interest as an expense provides tax savings and one would expect to borrow more even if interest rates increase to exploit these tax advantages. However, higher interest increases financial risk and the bankruptcy cost of the firm and may cause serious problems for the firm particularly in uncertain environments as is the case with many developing countries. Therefore, the findings of interest rate's negative impact on corporate capital structure are understandable keeping in view the financial cost of distress and

financial risk. Based on the empirical results of the studies reviewed, we also expect interest rates to negatively affect leverage.

3.2 GDP growth rate (GDPR)

Gross Domestic Product is a measure used to assess the economic performance of the country. According to Singh (1993), “*it is the money value of total goods and services produced annually in a country using exclusively the resources of a country*”. GDP growth rate is concerned with rate at which an economy grows and can be defined as a rate of change in production of goods and services that an economy experiences from one year to the next year. “GDP growth rate is driven by four important components of GDP: personal consumption, investment, government spending and exports and imports” (Mankiw, 2011). Among these drivers personal consumption is considered to be the most important driver of GDP growth rate as it involves retail sales. Increased in personal consumption back by increased in personal incomes will lead to increase in demand for products. Hence, overall productivity increases resulting in positive effect on economic growth. Furthermore, GDP growth rate is also driven by investment activities like maintaining higher inventory levels, construction etc. by the firm. Government spending is also a key driver of economic growth particularly in periods after recession and in developing countries. Lastly exports and imports, generally exports positively influences GDPR. Exports leads to increase in investment activity and overall productivity whereas increasing level of imports have a negative effect on overall productivity and thus GDPR. Moreover, GDPR is considered to be key economic indicator to measure the health of an economy as it determines the overall direction of the economy (Mankiw, 2011). A positive and increasing growth rate means that the economy is growing that will lead to increased opportunities for firms to expand their

businesses; more jobs will be created and will increase the income level of individuals as well.

A growing economy presents the firm with an opportunity to expand their business due to increased demand. Increased investment opportunities for the firm will lead to a positive impact on the need for financing by the companies to finance their growth options. At the same time a declining growth rate means that the economy is slowing down and it may enter into recession (a phase when growth rate becomes negative). In which case firms will be reluctant to commit to further new investments, hiring of new employees may be put on hold, unemployment can increase and personal incomes will decrease which will have a negative effect on the production levels thus lowering the demand for funds by the firm until the economy starts showing signs of improvement. So theoretically, it is expected that increasing growth rate will positively affect leverage whereas declining or negative growth rate will negatively affect firm's leverage.

Numerous researches have been carried out across the world to assess the effect of GDP on financing decisions (Bastos et al., 2009; Dincergok & Yalciner, 2011; Pepur et al., 2016). They found that GDP has a strong positive effect on leverage. Booth et al., (2001) concluded that debt ratio increases as real growth rate increases thus specifying that the demand for funds increase as growth rates increase. Increasing growth rates provides organizations with opportunities to expand their businesses. In a study on financing choice, financial constraints and macro-economic factors, Korajczyk and Levy (2003) also found positive effect of GDP on leverage.

In a study conducted on Kenyan firms, Muthama, Mbaluka and Kalunda (2013) concluded that GDP has a positive impact on long-term leverage whereas the effect is negative on short-term and total leverage ratio. This seems quite puzzling but one possible

explanation for this can be that in an economy where inflation is high, long-term loans comparatively carry less interest than short term loans. Therefore, firms desire to finance new investments with long term loans which are comparatively less expensive than short term loans when GDP is positive. Higher short term interest rates may discourage a firm to borrow more thus resulting in a decline in total debt ratio despite positive growth rates in an economy. Gajurel (2006) analysed Nepalese firms and revealed that GDP growth rate positively affects long-term loans whereas the impact on short-term and total debt is negative. The findings of both these studies point to the fact that in developing countries long-term loans are preferred over short-term loans and may even prefer the use of equity over the expensive short term loan.

In a sample comprising of 37 countries, Gungoraydinoglu and Öztekin (2011) found that despite the fact that GDP growth rate positively influences leverage, the effect is moderated in countries where bankruptcy cost are low and the relationship is weaker in countries where the bankruptcy procedures are efficiently carried out. Lower bankruptcy costs provide incentives for firm to borrow more. They further elaborated that this positive relationship is also moderated in countries where creditor rights are stronger.

Baltaci and Ayaydin (2014) while focusing on Turkish banks concluded that GDP growth rate positively effects leverage. Mokhova and Zinecker (2014) analysed seven economies of Europe and concluded that there is a varied impact of macroeconomic factors on firm financing decision across the seven countries. They found out that there is an insignificant and weak relationship between GDP and the various proxies of capital structure that were used in their study in all countries of the sample except Greece where the relationship between GDP growth rate was not only positive but also significant. One possible explanation for this exception can be that Greece is badly affected by financial crisis resulting in poor growth rates thus affecting firm's decision to borrow. Bokpin (2009)

analysed a sample of companies from 34 emerging economies and revealed a strong negative effect of GDP on leverage. Similarly, Tomschik (2016) also found negative yet strong effect of GDP on leverage. Based on a sample of small firms Cekrezi (2013) highlighted that GDP growth rate significantly influences leverage. Joeveer (2006) in a study focussing on the Eastern European economies argued that GDP growth rate positively affects leverage. In another study on European countries, Hanosuek and Shamsur (2011) too concluded a positive impact of GDP on financing decisions. Amjed and Shah (2016) also provided evidence of positive effect of GDP on leverage in Pakistan but the relationship is weak.

In a study conducted on SMEs of French and Greek firms, Daslakis and Psillakis (2008) revealed that GDP growth rates positively influences leverage whereas in the case of Greece the influence is negative and weak. They attributed two main explanations for the dissimilarities between the two countries; the differences might be due to the differences in the size and structure of financial systems in both states or due to firm specific factors.

Yan (2010) attempted to analyse firm's speed of adjustment leverage ratio under economic fluctuations for listed companies of Shanghai and Shenzhen Stock Exchange and concluded that GDP has a strong positive impact on gearing level. However, the findings of the study are in contrast with the findings of similar studies in developing countries. One possible explanation for this contrasting evidence can be that China is a leading country in terms of economic growth and their financial sector is better developed as compared to other developing countries. Availability of funds at low cost and potential of further growth in the economy is a positive sign for Chinese firms to borrow in order to finance their growth options.

Similarly, Tzang (2013) analysed a sample of listed Indonesian firms and argued that GDP growth rate significantly influences firm leverage. Furthermore, the study concluded

that by controlling GDP growth rate, firms with higher leverage ratios are able to alter their respective capital structures much quicker than firms with lower leverage ratios.

Riaz, Bhatti and Din (2014) while analysing listed manufacturing firms of Pakistan concluded that GDP negatively influence debt and the impact is statistically insignificant except for cement, textile and engineering sector where GDP growth rate is significantly related to debt. The conclusions of study are in line with most of the studies in the developing countries. Since financial markets are under developed in developing countries and are not efficient as compared to developed countries, it makes it difficult for firms to borrow considering high interest rates and fewer options for alternative modes of financing. However, despite the fact that Pakistan is a developing country, Mahmud, Herani, Rajar and Farooqi (2009) in a study on companies in Pakistan, Malaysia and Japan concluded that leverage ratios of Pakistani firms is comparatively high. One possible explanation for this unusual outcome given by the authors was that since the financial markets are not efficient and fully developed thus making it difficult for firms to raise new equities, therefore, they opt for bank loans. The conclusions of their study further reveal that GDP growth rate and capital structure is significantly related in Japan and Malaysia and the relationship is positive indicating that higher growth will lead to rise in debt ratios. In case of Pakistan the relationship is considerably weak.

Using a multiple regression model, Cekrezi (2013) analysed 53 firms from 2008-2011 concluded that GDP positively affect leverage. Bokpin (2009) also explored the impact of macroeconomic conditions on financing decisions in developing nations. For this reason data from 34 emerging economies was collected from 1990-2006. To measure the effect a seemingly unrelated regression (SUR) of panel data analysis was employed. This approach was essential in addressing various estimation issues like problems related to endogeneity and mitigating multicollinearity problems in the presence of collinearity among explanatory

variables. The outcomes of their study reveal that GDPGR is not only negatively related to leverage but the impact is also significant indicating that higher growth rates in an economy positively affects earnings of the firm. Therefore, firm's retained earnings are bound to increase which allow firms to use funds generated through internal sources first over external funds.

De Jong et al., (2008) analysed 11,485 firms from 42 countries to measure the impact of internal and country specific factors on financing decisions. The sample was equally distributed between developed and developing countries. Using firm level data and OLS technique, the findings of the study reveal that country specific factors are influential in making capital structure decisions. Furthermore, they argued that GDPGR significantly impacts gearing.

Similarly, Huang and Ritter (2009) claimed that the likelihood of issuance of debt increases with the increase in GDPGR but the same cannot be assumed for equity issuance as its relation is not clear. Drobetz and Wanzenring (2006) investigating a sample of 91 Swiss adjustment speeds of capital structure revealed that in the presence of good economic conditions and growth prospects, corporations are able to alter their financing mix much quickly. Haas and Peeters (2006) also claimed that companies are able to alter their capital structure much quickly when GDPGR is higher.

Lemma and Negash (2013) in a study on firms from 9 African countries analysed the firm characteristics, influence of institutions and industry characteristics on capital structure. Data was collected from 985 firms from 1999-2008. Seemingly unrelated regression (SUR) and generalized methods of moments were used and it was concluded that GDPGR negatively affects capital structure thus supporting the proposition that leverage ratios are expected to fall during period's higher economic growth. The main reason behind this phenomenon can

be that higher growth leads to higher earnings thus increases firm stock prices. Higher retained earnings allow a firm to finance it needs from internally generated funds whereas increase in stock prices attracts potential investors and provides an opportunity for the firm to exploit and raise funds through equity issuance.

Koksal and Orman (2014) explored the significance of firm and country specific elements that influence borrowing decisions in Turkey. The study covering a period of 13 years from 1996-2009, was based on a sample of 11,726 firms including both publicly traded as well as privately traded firms. Most of the studies on the developing countries used listed firms whereas this study included listed and non-listed firms of non-financial sector. The outcomes of their study revealed that GDP growth rate is negatively affects long-term and total leverage whereas the effect is positive on short term leverage. One possible justification for this can be that there are insufficient tangible assets relative to profitable investment opportunities available which reduces the company's ability to borrow for long-term particularly in growth environment. Therefore, with the increase in financial distress the possible high loss in value deters the firm from financing for long term. Additionally, lenders may also be reluctant to extend loans to the firm for the long term, providing them with an opportunity to review firm decisions and if necessary, alter the terms and conditions of a particular type of financing before sufficient losses have been accrued by the borrower and default is imminent (Diamond, 1991).

In a study focusing on Thai real state listed firms and their adjustment speeds to their target level, Tongkong (2012) argued that GDPR is weakly related to leverage. The conclusions of the study also revealed that there is a partial adjustment to target levels among Thai real state firms. Similarly, Cueva (2016) also found weak relationship between leverage and GDPR.

In a study involving OECD countries Song (2004) concluded that GDP growth negatively influences leverage ratios. As growth rates get higher leverage ratios fall due of close correlation between growth opportunities in an economy and firm growth opportunities. Similar results were also found in a study involving Pakistani listed firms from 2003-2009 by Ain, Jan and Rafiq (2011). Firms are inclined to use less external funds for financing when they are presented with large growth opportunities thus supporting Myers (1977) hypotheses. In addition to this, firms operating in high growth economies that are considered to be mature enough may not require large amount of funds because of their ability to raise sufficient funds from internal sources thus resulting in lower leverage levels.

Cook and Tang (2010) argued that the speed of adjustment by corporations in their respective capital structures is comparatively quicker in states that are considered to be good than bad. The results of their study are parallel to the results of Hackbart, Miao and Morellec (2006) where they claimed that companies alter their capital structures much faster when the economy is booming rather than in recessions. Hence, GDP growth rate not only significantly influences leverage but is also a vital factor affecting capital structure.

To conclude, a vast majority of empirical studies point to a positive impact of GDP growth on leverage in developing as well developed countries. However, there are also studies which indicate a negative outcome of GDP growth on leverage. Moreover, the variations in GDP growth rate-leverage relationship across countries suggests that there are other factors like nature of business, firm size, competition, economic conditions etc. that are at play. Considering the conclusions of empirical studies particularly in the context of developing economies, we also expect a positive effect of GDP growth on economic leverage.

3.3 Corporate Taxes

The irrelevance theorem of capital structure advocated that firm value will not change if we ignore corporate taxation. In other words, firm value will remain the same irrespective of the fact how the corporate pie is distributed between debt and equity because the sum of parts will always be the same. But in the presence corporate taxes, firm value will change with a variation in debt to equity ratio because the sum of parts will be different each time with changing debt to equity ratios. One of the biggest pluses of debt is that interest charge on borrowed loans is treated as a tax deductible expense. Debt eludes taxation at the corporate level whereas the equity associated dividends and retained earnings are not deducted by the firm for tax purposes. Consequently, the total profits available for payment to both external lenders and shareholders are greater when debt is used in the financing mix (Van Horne & Wachowicz, 2006).

While measuring the effect of taxes on financing decisions, researchers come across two main problems. First, it is relatively hard to detect the impact of taxes on capital structure due to insufficient variations in the statutory tax rates over a period of time. Secondly, there are possibilities that biasness may occur because firms that have relatively leverage ratios tends to have higher interest payments which results in lowering the tax base and therefore, reduces the marginal rate of taxation. Hence, spurious negative estimates are expected if the capital structure regression is based on tax rate on earnings after interest payments (see Graham et al., (1998)). Although this problem of endogeneity is clearly identified yet many researchers in the recent past have used marginal rates of taxation based on earnings after interest payments and concluded a negative effect of tax rates on the usage of debt (see e.g., Byoun, 2008; Antoniou et al., 2008).

The findings of empirical studies suggest that there is varied evidence on the impact of taxes on leverage. On one hand, the treatment of interest as an expense leads to tax savings thus encouraging firms to borrow to exploit these advantages (Hauge & Senbet, 1986). Hence, a positive effect of corporate taxes is expected on leverage. The pre-1990 literature on the effect of taxes fails to provide convincing proof on the significant connection between taxes and leverage. This surprising evidence puzzled Mackie-Mason (1990) who noted that there is general agreement among researchers that taxes must be a key consideration in making capital structure choice. He argued that there is no dispute as far as the effect of taxes on financing decisions are concerned but the possible reason for lack of sufficient empirical evidence on tax effects could be due to the fact that they were designed to test for the average effects rather than marginal effects. Mackie-Mason while using the marginal tax rates finds significant effect of corporate taxes on capital structure choice. The findings of Mackie-Mason are further supported by Graham (1996) who analysed 10000 US companies from 1980-92. The findings of their study revealed that marginal tax rates considerably vary across countries and borrowing is high for firms having higher marginal tax rates as compared to firms having lower marginal tax rates.

In a study intended at analysing the tax reforms effect on the financing choices, Givoly, Hayn, Ofer and Sarig (1992) concluded that change in US corporate taxes positively influences changes in company's capital structure.

The state of Croatia carried out tax reforms in 2001 and significantly reduced tax rates from 35% to 20%. As a result the overall effective rate of taxation decreased. In order to measure the effect of these tax reforms, Kesner-Skreb, (2001) investigated Croatian firms to measure its effect on capital structure choices. The results of the study revealed that effective tax rate is strong and positive both in its individual capacity as well as in the capacity of an interaction term with the firm size; therefore it was revealed that company's capital structure

was significantly affected by the tax reforms. In addition to this, they also identified that the effect of tax reform is declining with firm size. By using value of total assets firms were divided into four groups and separate estimations were carried out which revealed that the effect of tax reforms on the financing choice is highly significant and stronger in firms in the smallest two categories whereas it becomes insignificant and weaker for the two larger categories. Possible explanation for this can be that since large firms enjoy more tax exemptions therefore, they are less sensitive to tax reforms. The findings of study are also significant in the sense that the focus was on small and medium enterprises whereas earlier studies mostly dealt with large and listed firms. Comparatively, the bankruptcy costs of small private firms are much higher and they face distinct agency problems than firms that are publicly owned.

Similarly, in Pakistan also tax reforms were carried out in 2001 with the broader aim of improving tax collection by facilitating tax payers. Tax reforms of 2001 focussed on policy, administrative and organizational reforms. Policy reforms aimed at elimination of exemptions, universal self-assessment, simplifying tax laws, development of effective mechanism of dispute resolution and lowering the dependence on withholding taxes. The administrative reforms, on the other hand, aimed at the facilitation of tax payers, improving the effectiveness of FBR and reducing the direct contact between tax collectors and tax payers through re-engineering of manual processes for all kinds of taxes. Lastly, organizational reforms aimed at FBR re-organization on functional lines, work force downsizing and reducing the number of tiers. In a study on Pakistani firms, Memon, Rus and Ghazali (2015) concluded that corporate taxes positively influence leverage.

While studying European multinational affiliates and firms in E7 and G7 countries, Moore and Ruane (2005), Huizinga, Laeven and Nicodeme (2008) and Tomschik (2016) concluded that corporate taxes positively affect financial leverage across countries.

On the contrary, empirical studies also provides evidence that effective tax rate may have a negative impact on debt. Ayers, Cloyd and Robinson (2001) in a study on small U.S. firms found a negative impact of effective tax rate on debt. Among others, Titman and Wessel (1988) concluded an insignificant effect of effective tax rates on gearing.

In a study on measuring the impact of corporate taxation on corporate capital structure, Fama and French (1998) were unable to find positive outcome on firm value as a result of the firm decision to borrow in order to exploit tax benefits of debt. But, on the other hand, Graham (2000) concluded that the worth of the business increase with increase in leverage ratio due to considerable advantages of tax shields on debt.

Mackinlay (2012) argued that taxes do not affect the decision of the firm to use debt. However, it does influence the relative composition of debt. Mackinlay (2012) divided debt into two categories: private debt raise through bank and public debt raised through the issuance of bonds in the stock market. Increase in marginal tax rate allows a firm to substitute its private debt with public bond debt. Furthermore, rise in marginal tax rate of the company changes the relative cost after tax for both types debt and makes public bond debt desirable which is less restrictive but more expensive.

The influence of corporate taxes on capital structure is believed to be much stronger in countries where tax rates are high. From the firm's point of view differences in taxes do matter particularly when the perceived value of tax shield advantages is significantly large. Faccio and Xu (2015) argued that corporate tax is a vital factor that is considered by financial managers while making financing decisions. They further pointed to strong positive effect of corporate taxes on leverage.

Gungoraydinoglu and Öztekin (2011) analysed a sample of 15,177 firms using dynamic panel regressions and concluded that taxes are significantly important for managers

while borrowing funds. Furthermore, they find evidence that their outcomes are in line with assumptions of trade-off theory.

Fan et al., (2012) examined companies selected from 39 different countries including developed and developing to investigate how financing decisions are affected by institutional environments prevailing in respective countries. The sample of the study comprised of 36,767 firms covering a period from 1991-2006 and used General Methods of Moments (GMM) to measure the relationship. The outcomes of the study revealed contrasting yet interesting evidence. The effect of corporate taxes is significant on leverage in developed countries whereas it is insignificant in developing countries. One possible explanation for this can be that since regulation and law enforcement is weaker in developing countries than developed countries, it is easier for firms to elude taxes, hence the impact of corporate taxes on loan borrowing tends to be weaker.

On the contrary, in a study on UK's SMEs, Jordan, Lowe and Taylor (1998) said that financing decisions of UK SMEs are not influence by corporate taxation. In a separate study consisting of a sample of 3500 small UK firms, Michaelas et al., (1999) found out that corporate taxation does matter as far as short term capital structure decisions are concerned. Bauer (2004) based on sample of 74 listed Czech firms covering a period of 2 years from 2000-2001 concluded that corporate taxes positively influence leverage; however, the influence is not statistically significant.

In a study on Italian firms, Alworth and Arachi (2001) using panel data approach and marginal tax rates provided evidence that corporate taxes do affect the decision whether to borrow or not by Italian firms. However, it is important to highlight that their focus was not to explore the effect of taxes on debt ratios rather it was on the net increase of debt. It is important to mention here that tax advantages of debt heavily depends on the specific tax

laws of each country, therefore, the outcomes of tax effects in other countries cannot be generalized to all countries.

On the other hand, some of the empirical studies like Flannery and Rangan (2006) claimed that majority of the firms do not instantly alter their capital structure because of the transaction costs involved. For instance, in the presence of issuing costs that are associated with debt may deter firms to fully exploit tax advantages of debt because the advantages of additional tax may be outweighed by the issuance cost of debt.

In a study on estimating the influence of taxes, Mackie-Mason (1990) found out that corporates taxes are significantly important as far as the incremental borrowing decisions of the firms are concerned. Moreover, in a study aimed at comparing the financing policies of firms across the developed countries, Rajan and Zingales (1995) concluded that tax rates are significantly important in capital structure decisions and variation in tax rates across countries have some predictive power in explaining borrowing choices. Fama and French (2002) argued that proportion of external borrowing in the financing mix tends to rise with increase in firm size. With the increase in gearing ratios the tax benefits of debt are also likely to increase.

One major challenged that is connected with the cross-sectional determinants of capital structure is that they are unable to prove the link between financial constraints and corporate taxes. A sizeable number of recent studies concentrated on natural experiments to control for the endogeneity. For instance, Painer, Perez-Gonzales and Villanueva (2015) analysed the changes in taxation laws of Belgium and reported that large firms in particular, respond strongly to changes in tax rates. Similarly, in a study on US firms, Heider and Ljungqvist (2015) also reported a strong response from firms to increases in tax rates. Alternatively, studies from Hackbarth et al., (2006) and Bhamra, Kuehen Strebulaev (2010)

emphasized on the fact that macroeconomic risk has a significant impact on the financing decision of the business.

Korajczyk and Levy (2003) reported that counter cyclical leverage strategies are employed by firms that are financially unconstrained whereas pro-cyclical leverage strategies are employed by firms that are financially constrained. Moreover they also observed that for issue choice of unconstrained firms macroeconomic conditions are significant whereas for unconstrained firms they are not. Longstaff and Strebulaev (2014) conducted a study to explore the effect of changes in taxation rates on firm financing decision. The study included both publicly as well as privately traded firms of all sizes and analysed financial data from 1926-2009. The findings of their study showed that change in capital structure mix is a direct result of changes in corporate taxation rates. However the findings are attributed only to large firms. Furthermore, it was also found out that smaller firms that are financially constrained are much slower in adjusting their capital structure and external shocks are more influential in driving capital structure of small companies as compared to large companies.

Corporate tax shield has a positive impact on firm value provided the after tax cash flow decreases with each addition of debt in the corporate capital structure. Additionally, risk of default increases with the accumulation of debt and may result in transfer of control from owners to creditors and incurrence of dead weight costs which further reduces firm value (Frank & Goyal, 2008). Thus, the optimal debt to equity ratio decreases with a decline in tax shield advantages of debt. While analysing multinational organizations of US and Canada for tax effects, Jog and Tang (2001) concluded that tax rates significantly affects capital structure.

Similarly, Desi, Foley and Hines (2004) analysed US controlled firms concluded that higher rates of local taxes are related to higher debt to asset ratio. Firms are expected to

increase their leverage level following increase in the rate of corporate taxes or personal tax on dividend income whereas leverage level tend to decline with the increase in taxes on interest income thus indicating that corporate taxes are significantly important in making capital structure decisions.

Graham (1996) argued that taxes are important and they do influence financing decisions at the corporate level but the effect is not significant. Ashton (1991) also confirms that a small but weak relationship does exist between debt usage and tax advantages. Alternatively, De Angelo and Masulis (1980) provided proof that investment deductions, development expenses, depreciation etc. could be possible substitutes of debt in the context of its fiscal role. But in the absence of accurate proxy for measuring tax rate, it will be difficult to measure the substitution effect (Titman & Wessels, 1988).

Amidu (2007) investigated the corporate structure of banks and found out strong positive relationship between corporate taxes and leverage. Amidu argued that tax shield advantages are more in Ghana for banks as additional tax is levied on banks. Therefore, banks in Ghana have an enticement to use more debt as evidence from the fact that more than 87% of assets of banks in Ghana are financed through loans of varied maturity periods.

Similarly De Jong et al., (2008) finds that corporate taxes significantly affect leverage across the ten countries under investigation. However, the relationship was negative in eight countries whereas it was positive in the remaining two countries. Lemma and Negash (2013) also find a negative impact of corporate taxes on leverage.

In a study on Bangladeshi listed firms, Sayeed (2011) found that corporate taxes positively affect leverage. However the impact is significant only for long term borrowings. This indicates that when the effective tax rate increases, firms replaces its long-term loans

with short-term loans in order to reduce their tax burden as higher interest cost is associated with long-term loans.

Handoo and Sharma (2014) in a study on Indian firms found significant impact of taxes on long term maturity debt whereas the impact was insignificant for short term maturity debt. On the contrary, Mishra (2011) concluded that there is strong negative impact of taxes on loan borrowing in India.

Antoniou et al., (2008) analysed factors of debt maturity decisions of German, UK and French firms using panel data and Generalised Methods of Moments. They concluded that there is clear distinction between the impacts of tax rates on debt maturity across the three countries. Difference in taxation laws across the three countries could be a possible explanation for this distinction. The outcomes of their study further exhibited that there is an insignificant association between taxes and debt maturity in France and UK whereas in case of Germany corporate taxes have a significant impact on debt maturity.

Tax differentials across countries can also be an important factor to consider particularly for multinational corporations in making their financing decisions. Supporting this argument Lee and Kwok (1988) and Booth et al., (2001) highlighted that companies financing decisions could be influence by the tax differentials across countries. Shapiro (1984) while further endorsing this argument argued that multinational corporations in the absence of taxes will be indifferent to issue debt denominated in one currency or the other. But in the presence of differential taxes firms would prefer to borrow in country where the currency is comparatively weak in order to minimize its expected cost of financing (Rhee, Chang & Kovecs, 1985).

To conclude the empirical literature provides mix evidence with respect to the effect of taxes on financing decisions (see, e.g. Frank & Goyal, 2008; Antoniou et al., 2008). One of

the reasons behind this split evidence on the effect of taxes could be due to the uncertainty that revolves around the proxy for tax effects. Various proxies have been used in empirical investigations like effective tax rates, marginal tax rates etc. to measure the effect of taxes. Empirically there is no clear evidence of a good proxy that can be used to measure tax effects. Another reason for mixed evidence is that the presence of transaction costs makes it difficult for researchers to identify the effect of taxes (Hennessy & Whited, 2005). Keeping in view the empirical evidences and capital structure theory, we also expect a positive impact of corporate taxes on economic leverage.

3.4 Exchange rates

Exchange rate is a key factor that has been overlooked in empirical investigations while measuring the impact of macroeconomic indicators on firm financing choice. The globalization, deregulation and integration of financial markets provide an opportunity for modern organizations to borrow not only from national markets but also from international markets. Furthermore, globalization and reduction in barriers to international trade has provided an opportunity firms to expand their businesses beyond their national borders. Due to these changes exchange rates has become an important factor in determining firm value. Foreign exchange rate affect firms in a number of ways. Firstly, firms that are directly involved in borrowing from international financial markets are directly affected by exchange rate fluctuations (Madura, 2008). Unfavourable changes in exchange rates not only increases the value of foreign currency denominated debt but also increases the borrowing cost thus increasing the risk of default and lowering the net worth of the firm. Secondly, since exchange rates are affected by differences in domestic and foreign interest rates, therefore, domestic interest rates may increase due to unfavourable movement in exchange rates (Sanchez, 2008). This will not only increase the cost of financing for firms on new loans but

also on existing loans that are borrowed on floating rates of interests. Thirdly, it has been proven empirically that inflation rates do influence exchange rates. Depreciation in the value of home currency may be beneficial for exporting firms. In a study on US firms, Bernard and Jensen (2004) argued that a devaluation in the value of US dollar in late 1980s and early 1990s paid dividends as the US economy saw a significant rise in its exports at that time. In another study, Landon and Smith (2006) concluded that the fall in the value of Canadian and Australian currencies led to a decline in the imports of advanced technological products which may have resulted in a negative effect on productivity levels in those countries. At the same time, long term effects of devaluations are negative particularly for a country like Pakistan which is experiencing trade deficit. Unfavourable movements in exchange rates push the total value of imports expressed in local currency upwards. One of the main items in our import bill is oil that is used for the generation of electricity, running manufacturing units, transportation etc. Unfavourable movements in exchanges will increase the cost of imported oil in local currency thus leading to higher energy costs and cost of production. This will add to inflationary pressure in the economy leading to decline in purchasing power of individuals. As a result, firms will face a decline in their cash flows which may lead to bankruptcies as companies will be incapable to meet their fixed obligations (interest payments). Hence, exchange rates become a key determinant of capital structure choice particularly for those companies that are expose to foreign exchange rate risk as firms not only have to consider interest rates movements but also movements in exchange rates as well.

One strong view to emerge from the empirical literature with respect to exchange rates impact is the focus on the fact that most of the financial crises are propagated by the currency mismatches of assets and liabilities by agents within an economy. Based on this argument it is widely accepted that in the presence of foreign currency denominated debt, devaluation in local currency leads to a significant decline in investment (Sanchez, 2008).

The reason is that devaluation increases the value of external debt and hence may increase risk levels. As a result, potential investors will be reluctant to invest in a high risk economy. In a study based on exchange rate effects on firm values Krugman (1999) agreed that the financial position of exporting firms (the competitiveness effect) improves with devaluations of domestic currency but also highlighted that the increased mismatch between foreign currency denominated liabilities and assets expressed in local currency as a result of devaluations offsets this effect. As a result the level of indebtedness increase for firms with foreign currency denominated debt thus affecting the net worth (net worth effect) of the firm.

In a study using firm level indicators, Harvey and Hoper (1999) argued that the Asian financial crises were greatly aggravated by the effect of exchange rate on company's balance sheet. Bleakley and Cowan (2002) and Forbes (2002) studied the effect of exchange rates on balance sheets. In these studies they established that during the periods of currency devaluations, the possession foreign currency denominated debt was linked with further investment. Conversely, Forbes (2002) also highlighted that more indebted firm's experienced lower growth in profitability after big depreciations. In other related studies Calvo (2001), Cavoli and Rajan (2005) and Eichengreen (2005) found that weak exchange rates had a negative effect on output in the aggregate demand which may lead to widespread bankruptcies.

As far as emerging economies are concerned, researchers and analysts agree that the main cause of financial fragility is the heavy dependence on foreign currency debt by firms (Calvo, 2001; Frankel 2005). Many emerging economies of East Asia and Latin America experienced significant currency depreciation of home currencies in the late 1990s and early 2000s that resulted in turning firm's foreign currency loans and other liabilities into crippling debt burdens. Hence, many firms particularly from the financial sector were unable to service

their debts leading them to widespread bankruptcies, triggering financial crisis and recession not only in domestic economy but its affects were also experienced in foreign economies.

Furthermore, in the empirical literature, there is a general disagreement amongst economists with respect to the role of exchange rate regimes are concerned in shaping currency mismatches in company's balance sheets. Economists supporting the flexible regimes are of the view that the commitment on part of the authorities to defend the peg reduces the fluctuations in exchange rates and exchange rate risk and provides an opportunity to private sector firms to borrow more in foreign currency (see Schneider & Tornell, 2004; Goldstein & Turner, 2004).

Under fixed exchange rates or pegged regimes, currency volatility is limited to a preannounced range by the central authority of the state thus reducing exchange rate risk (Dooley, 2000). As a result, firms' finds encouragement in borrowing in foreign currency to benefit from comparatively lower interest rates on foreign currency debt while expecting that government would protect them from losses in the event of large depreciations by managing the peg. Another argument associated with fixed rate regimes is that borrowers do not expect any major devaluation to occur under fixed exchange rate regimes and therefore ignore or undermine the associated risk of exchange rate while borrowing in foreign currencies. There is strong evidence in support of these views and many researchers and economist agree that fixed exchange rate regime did play a role in almost all financial crises since 1994 as the evidence suggests that firms heavily depended on unhedged foreign currency borrowing in the years leading up to the crises (Kamil, 2012).

The main outcome of this line of thinking is that floating exchange rates would be beneficial for firms particularly for those firms where management is more cautious towards

currency exposure thus decreasing financial fragilities related to currency mismatches in firms of private sector.

On the contrary, Berrospide, Purnanandam, and Rajan (2008), analysed Brazilian firms after the collapse of fixed exchange rates in 1999 concluded that the regime change did not result in a significant change in the hedging behaviour and currency composition of debt. In sample of developing economies, using bank level data from 1990-2000, Arteta (2005) found that currency mismatches are consistently associated with floating exchange rate regimes in these economies. Therefore, the point that exchange rate regimes reduce or worsen the financial fragilities of firms as a result of encouragements to borrow in foreign currency is far from settled.

Eichengreen and Hausmann (1999) and Eichengreen, Hausmann, and Panizza (2005) disputed this view and argued that the inability of the developing economies to borrow funds from international financial markets is the main reason behind currency mismatches leading to an increase of foreign currency debt by firms which they are unable to hedge and thus exposes them to currency risk. Additionally, the adoption of floating exchange rates will also worsen the currency mismatches because risk premium on domestic interest rates is directly associated with stability of local currency. Domestic interest rates are expected to rise making financial hedging even more expensive due to volatility in exchange rates associated with floating exchange rate regimes thus encouraging firms to borrow in foreign currency and benefit from lower interest rates (McKinnon & Pill, 1999). Based on the limited empirical and theoretical assumptions of exchange rate theories we expect that exchange rates to have a negative impact on corporate capital structure.

3.5 Public Debt

Public debt is the debt owned by the government and includes both domestic debt as well as foreign debt. Governments resort to borrowing when their expenditures exceed their incomes and are facing budgetary deficits. Governments can meet the budgetary deficits by increasing the existing rates of taxes or imposing new taxes or it can do so through borrowing internally or externally or both. Since borrowing through treasury bills, issuing securities and loans from commercial banks to the government are considered to be the safest financial instruments, therefore, the interest rates associated with it is much lower than public borrowing (Riberio, Vaicekauskas, Lakstutiene, 2012). Borrowing from internal sources (domestic) is beneficial for two main reasons; Firstly, it helps in stimulating investments and private savings and secondly, it helps in strengthening financial markets as it provides depth and liquidity to financial markets considering the size and capacity of government borrowing. On the negative side, a broad expansion in domestic debt poses serious negative implications for private investment and also affects economic growth and fiscal sustainability. Internationally, public debt is considered to be an important macroeconomic indicator as far as the image of the country in international markets is concerned. Since government borrowings comprises mostly of issuing securities in local markets (domestic debt) and loans from international financial institutions (foreign debt), the interest rates, their terms and conditions and the accumulative cost of debt financing (internal and external) has a major influence on the economy, future of business enterprises and the social welfare of not only present but future generations as well. Borrowing by government from internal sources reduces the availability of funds to the private sector which is vital for economic development. Private sector is influential in creating and providing revenue to the government in the form of taxes. Therefore, it is important to manage public debt efficiently. If public debt exceeds beyond a certain limit then it affects economic growth because a

significant proportion of budget will be allocated for the payment of interest on the amounts borrowed rather than spending it on developmental projects.

Government spending plays a central role in economic development of an economy. Since private sector does not have the capacity particularly in developing countries where saving rates are low and limited capital stocks, government spends heavily on the development of infrastructure and the generation of economic activity in an economy. The role of government spending gets even more crucial when the country is trying to get out of recession because in the periods of economic recessions the ability of private sector to generate funds is limited and therefore, cannot influence economic activity to such a level that will get the economy out of recession. Only state has the capacity to inject funds into the economy to improve liquidity and ultimately economic activity.

The level of debt owned by the government directly affects interest rates and economic activity positively as well as negatively thus affecting the investment and financing decisions of the firms. Increases in government debt generally results in decline in net national savings and therefore, pushes up the interest rates. As interest rates rise, the level of investment and growth in capital stock in an economy falls leading to lower productivity. The main reason behind lower productivity is the lack of productivity improvement innovations due to slower pace of capital accumulation. The decline in productivity levels and investments leads to a fall in demand for external sources of financing by the firms. Also the rising interest rates as result of increase in government debt increases financing cost for the firms making it difficult for firms to borrow at such high rates considering the higher level of risk involved (Engen & Hubbard, 2004).

Since government debt can significantly influence interest rates and affect economic activity in an economy, it is therefore possible that it may affect the long term investment and

financing decisions of the firm. Theoretically, as well as empirically it has been discussed that in long run increase in government borrowing has a negative impact on economic growth and it reduces private consumption that ultimately leads to drop in sales volume of firms and also affect their future growth potentials (Engen & Hubbard, 2004).

Moreover, increase in level of government debt can also lead to increase in inflationary pressure in an economy particularly in developing countries where the central banks are not as independent as in advance economies in setting up their respective monetary policies. Consequently, the inflationary pressure significantly influences interest rates prevailing in an economy and reduces the purchasing power of individuals. Higher inflation rates also pushes the production costs upwards thus declining private consumption and the scale of investment in the long run.

High levels of government debt can adversely affect the rate of investment and economic growth. The most common adverse effects of high debt levels are “debt overhang” and “crowding out”. Debt overhang is a kind of situation where the proportion of debt gets higher than the repayment ability of the state. In such a situation the anticipated costs of debt servicing will depress further foreign and domestic investment (Krugman, 1988; Sachs, 2002; Karagol, 2002). The second adverse effect of high debt level is the crowding out effect; a situation in which a country uses higher proportion of its foreign capital to service its debt thus leaving very little capital for growth and investment. The costs of government debt servicing can lead to crowding out expenditure on public sector investment. As a result total investment in an economy declines (Karagol, 2002).

In addition to this, borrowing by the government can significantly crowd out investment in the private sector as private sector faces stiff competition from the government for private savings particularly in developing economies where saving are comparatively

much lower than developed economies. As a consequence, increase in demand for limited funds in the domestic financial markets pushes interest rates upwards. This increases the cost of financing particularly for private sector as borrowing at these high rates may not be viable for private sector to finance their growth. In a study on Sub-Saharan countries, Christensen (2005) found out that domestic debt had a significant crowding out effect on the private sector credit.

However, there are some studies like Pattillo, Poirson and Ricci (2002) which were unable to provide evidence of a significant crowding out effect. At the same time, studies from Clements (2003) and Chowdhury (2004) provides evidence that economic performance and level of investment is significantly reduced by debt service obligations and debt burden.

In a study on high and low government debt economies Berben and Brosens (2007) argued that in countries where the scale of government debt is considered to be high, private consumption falls with increase in government debt. However, private consumption is not influenced by rise in government debt in countries where government debt is considered to be lower. Furthermore, Aiyagari and Mcgrattan (1998) point out that private consumption and optimum debt levels are closely related to each other. Increases in government debt levels can be sustained as long as there is consistent growth in private consumption. In case of lower than expected growth in private consumption can have serious implications on the economy as far as increase in debt levels are concerned. Therefore, it is important to manage government debt efficiently otherwise it will have significant negative effect on the economy.

Ismihan and Ozkan (2012) while emphasizing on handling public debt with care argued that financial development of an economy may be significantly affected by government debt particularly in countries where financial depth is limited and the pace of financial development is slow. However, government debt can also be beneficial. There

seems to be a positive impact of public debt on growth of an economy. Economic growth can be enhanced through productivity growth and capital accumulation if government debt is managed efficiently and kept to reasonable levels (Chowdhury, 2001). Because in developing economies which are in the initial phases of their development have limited stocks of capital as well as limited opportunities for investments. Financing productive projects with external borrowing creates macroeconomic stability in the country (Burnside, 2000). Furthermore, external debt is also considered as capital inflow that positively influences economic growth, investments and domestic savings (Eaton, 1993).

Empirically, the influence of public debt on capital structure has been investigated. Government debt positively affects capital structure in emerging markets and negatively in developed markets (Mokhova & Zinecker, 2014). Similarly in a study on developing countries Dincergok and Yalciner (2011) also found positive impact of government debt on firm leverage. Whereas a study by Ying et al., (2016) concluded that public debt has no influence on capital structure. This result for developing economies is quite surprising in the sense that increase in government debt increases interest rates as well as inflation rates. Therefore, firms will be reluctant to borrow at higher rates considering the possibility of decline in private consumption caused by not only increases in interest rates but also inflation rates. One possible explanation for this can be that most of the central banks in emerging economies are not as independent as in developed economies; therefore government can influence central banks in setting up the monetary policy for political gains. However, such a strategy may prove beneficial in short run for firms but the long term effects of such measures may be counter-productive for the economy.

To conclude, governments around the world borrow to meet their budgetary deficits. However, the extent to which government borrows may affect borrowings by the private sector particularly in developing economies where private savings are comparatively much

fewer than those in developed countries. Since Pakistan and India are developing economies where government resort to borrowings both internally and externally, therefore, we expect that public debt will have a negative effect on economic leverage.

3.6 Stock Market Development

Development of an economy is significantly influenced by the development of its stock market. Efficient stock markets not only provide an opportunity to increase domestic savings but also help in increasing the quality and quantity of investments. Economic growth can be positively influenced by efficient stock markets because stock market provides an opportunity for growing firms as well as establish firms to raise funds at a comparatively lower cost. Apart from this, the existence of efficient markets provides an alternative for firms to raise debt and reduces the dependence on banks for external financing. Furthermore, development of stock markets, liberalization and integration of financial markets have resulted in financial innovation and firms now have variety of options to choose from to meet their immediate financing needs.

In a study based on analysing the efficiency of stock markets, Baumol (1965) termed the functioning of a stock market as an “act of magic” that allows individuals to finance long term investments, many of whom may have made these funds available for a short period or would like to withdraw whenever they require. The basic purpose of the stock markets is to mobilise individual’s savings in an efficient and effective manner and if it is successful in doing so then it may help in increasing the savings rate. For instance, if stock markets are efficient in allocating savings to high yielding investment projects, then the percentage return to savers increase. This will make savings more attractive, hence more savings will be channelized to the corporate sector. Since stock market acts as an additional source of external financing therefore, their existence in an economy improves the liquidity position in

that economy and also has a positive impact on improving the quality of financial reporting as corporations listed on stock market has to meet a certain criteria before they get listed. This result in increased investors' confidence and ensuring the transmission of valuable financial information to all stakeholders is beneficial particularly for creditors and the presence of stock markets makes lending less risky to firms that are listed (Grossman, 1976; Grossman & Stiglitz, 1980). In the absence of efficient financial markets companies will not be able to structure their financial packages optimally (Demirguc-Kunt & Maksimovic, 1996).

Empirical proof on the impact of development of stock markets on the capital structure is rather ambiguous. Access to developed and efficient stock markets could influence corporate debt to equity ratios in a number of ways. One possible effect can be the substitution of outside equity for debt leading to a decline in debt to equity ratio. Another possible effect can be that a closely held company may offer its shares in public by replacing outside equity with inside equity and will not affect debt ratios. Additionally, developed stock markets through improved information quality and corporate governance may result in lowering the cost of raising capital both debt and equity.

Majority of the empirical literature is dedicated to exploring how firm's external financing decisions are influence by the development of stock markets (Rajan & Zingales, 1995; Levine & Zervos, 1998; Demirguc-Kunt & Maksimovic, 1999). The significance of development of stock market cannot be overlooked as it helps in improving the quality of information, monitoring and corporate control of the firm. The information costs are comparatively low in large and more liquid markets which provide an incentive to firm to make public more information about the firm. Additionally, liquid markets not only facilitate trading but also helps in reducing the liquidity risk.

Stock markets also play an effective role in complementing banks in a given economy. With the development of stock markets, level of debt financing as well as equity financing increases by companies (Demirguc-Kunt & Maksimovic, 1999). Development of stock markets not only highlights the extensive use of equity markets to raise capital but also has a positive impact on the use of bank loans by firms (Demirguc-Kunt & Levine, 1996). The banking sector and non-financial intermediaries are much more developed in countries where stock markets are developed than countries where they are underdeveloped; indicating that stock market also has a positive effect on the development of banking sector in particular and financial sector in general. As a result, the ratio of bank loans rises with development of stock markets.

In a study on investigating the link between the financing choices of the firm and development of stock market across the selected 30 countries from 1980-91, Demirguc-Kunt and Maksimovic (1996) found that stock market development negatively affect leverage whereas they found positive impact of banking sector development on leverage. They further added that in the case of developed financial markets in the sample further development will lead to a substitution of equity with debt.

In contrast, in case of developing financial markets they reported that leverage ratios of large firms tends to increase as the market develops though development of stock markets do not have major impact on small firms. The reason is that small firms demand for external financing is lower than large firms due to their limited capacity. Even if they do require external funds, the size of borrowing is not that much that it would need to access stock markets to generate the needed funds. In addition to this, small firms may not be listed as they are unable to meet the strict regulations of getting listed on stock exchange. Lack of necessary information about the firm makes it more risky thus incapable to raise funds through external sources.

In more recent empirical studies, Gajurel (2006), Dincergok and Yalciner (2011) and Tomschik (2016) found out positive impact of stock market development on firm leverage whereas Sett and Sarkhel (2010) found negative effect on leverage in India.

Empirically, most researches on the influence of stock market development on firm's leverage are limited to developed countries whereas there are few studies on developing countries. Antoniou et al., (2002), argued that stock market development do affect firm leverage. Abor, Adjasi and Biekpe (2005) examined the determination of capital structure in a dynamic setting by firms in Ghana. In their study they used banking, stock market and macroeconomic indicators to determine how financing decisions are made by firms in Ghana. The results of their study revealed that for listed firms, stock market of Ghana is an important source for raising long-term capital to meet firm's financing needs.

While emphasizing on the significance of stock market for raising external funds, Yartey (2002) highlighted that the average listed firm in Ghana relies heavily on external financing generated through stock markets to finance a large proportion of its growth in assets. The reliance on internal finance for growth is very limited in Ghana. The result may indicate the presence of trade-off theory and firms in Ghana may target a capital structure which they want to achieve. Another possible explanation for this can be that the funds available through internal sources may be insufficient to meet the financing needs of the business, hence business resorts to external debt.

Rajan and Zingales (1998) emphasized on the significance of financial markets particularly for industries in countries with greater external financing needs. A firm dependent on external funds for growth would have a better chance if the financial markets are developed. The variety of options available to firms to raise funds in developed financial markets will provide an opportunity to the firm to take advantage of firm's better position in

the market and issue equity. Since stock markets provide improved information quality and listed firms are considered to be less risky, therefore, potential investors are expected to respond positively to equity issue offered by the firm. As a result, it is also expected that the development of markets would lead to decline in leverage ratios.

Didier and Schmukler (2013) analysed the Chinese and Indian market in order to find out to what extent firms in these markets uses financial markets to raise funds for their requirement and growth. The outcomes of their study suggest that since 1990s the activity in financial markets has expanded much less than what the aggregate figures suggest. There is evidence that fewer firms raise capital and even fewer firms are attracted towards raising funds through the stock market. A possible explanation for this can be that both Chinese and Indian economies are developing economies and their financial markets may not be as developed and efficient as in the developed countries. Therefore, firms may not find it beneficial in terms of cost, efficiency and access to raise funds through the stock market.

Additionally, the behaviour of firms that are involved in bond and equity issues is entirely different from other publicly listed companies and grows much faster than firms that are not involved in bond and equity issues. Stock markets provide an easy and cheaper access to external funds with varying maturity time periods and financial flexibility. Therefore, growing firms can better exploit these opportunities and can grow even further at a better rate. Alternatively, firms that do not use stock markets for external financing have very limited options at their disposal like bank borrowing which is comparatively more costly and offer very limited financial flexibility.

In a separate study Lagoarde-Segot (2013) explored how effective the development of stock markets are in improving the funding conditions of companies in developing countries. Their findings revealed that the massive increase in valued traded on the Tunisian stock

exchange had led to market congestion, lower efficiency thus increasing costs and increased internal integration. Furthermore, the development of stock market and international integration were not enough to provide an easy access to local firms to raise funds.

While considering market imperfections and insufficient choice for firms in selecting external financing instruments, Ngugi Murinde and Green, (2002) found that stock markets strongly affect firm leverage. Similarly, in a study involving listed firms from Pakistan, Ain et al., (2011) concluded that stock markets positively affect the debt choice of listed firms.

Bokpin (2009) and Amjed and Shah (2016) while analysing emerging economies and Pakistan respectively to measure the impact of macroeconomic development on capital structure of companies argued that development of stock markets are insignificant in predicting the financing patterns of the firms. Development in stock markets should increase the efficiency of the markets thus lowering the cost of financing and provide easy access to firms to exploit stock markets to meet their financing needs. Since most of the stock markets in the emerging economies are not fully developed and efficient as in developing countries, therefore, the cost of financing may be higher.

Lemma and Negash (2013) concluded that the influence of stock market development on leverage is sensitive to how liquidity is measured. Market size and liquidity negatively affect with short-term leverage and positively affect long-term leverage.

It is important to understand that markets are not perfect around the world and it is the respective context in which the participants operate influence the financing decisions. In this regard, studies from (Subrahmanyam & Titman, 1999; Mutenheri & Green, 2003; Mohtadi & Agarwal, 2004) provided mixed evidence given the differences associated with level of development in the concerned countries.

To conclude, stock market plays a critical role in the financing decisions of the firms. A developed and efficient financial market not only reduces the cost of financing but also provides access to companies to raise capital from outside sources. Empirically we find evidence that developed stock markets positively influence the financing decisions of the firm both in developed economies as well as developing economies. However, there are some studies like Bokpin (2009) which argue that stock markets are insignificant in shaping the financing behaviour of the firms particularly in developing economies where the financial markets are underdeveloped and less liquid. Hence, based on the empirical evidence examined so far we also expect a positive impact of stock market development on corporate capital structure.

3.7 Conclusion

Despite the fact that the macroeconomic environment consists of complex relationships, there are few variables whose analysis will provide valuable information with respect to the impact of macroeconomic environment on firm's performance is concerned. Among these variables are interest rates, exchange rates and inflation rates. Changes in these variables reflect on changes in aggregate demand, GDP, monetary policy and others.

The impact of macroeconomic factors on capital structure has been extensively investigated in empirical studies. Empirical evidence with respect to influence of interest's rates on capital structure decisions is mixed. Many studies point to a negative effect of interest's rates on firm leverage. At the same time there are studies that point to a positive impact on leverage. The strength of the relationship also varies from weak to statistically significant. Tax advantages, inflation rates, cost of financial distress, creditors' rights are important factors to consider that influence capital structure decisions of businesses.

GDP growth rate also has mixed empirical evidence. There is evidence of positive as well as negative impact of GDP on leverage. Moreover, significance of the relationship also varies irrespective of the fact whether the studies were related to developed or developing countries. The nature of business, size of the business, economic and political conditions were identified as major factors that could influence GDP growth rate-leverage relationship.

Most of the empirical studies point to a positive effect of corporate taxes on leverage. However, empirical evidence with respect to negative effect of corporate taxes is limited. Tax shield advantages, tax reforms are major factors that affect the linkage between corporate taxes and leverage.

Governments around the world borrow to meet their budgetary deficits. However, the extent to which government borrows may affect borrowings by the private sector particularly in developing economies where private savings are comparatively much less than those in developed countries. Empirical evidence as far as the influence of public debt is concerned is rather mixed. There is evidence of positive relationship as well as negative relationship in developing as well as developed countries.

Financial markets are instrumental in meeting the financing needs of the firm. Developed and efficient financial markets not only reduce the cost of financing but also provide access to firms to raise funds. Empirically, there is evidence of positive effect of stock market development on company's capital structure. However, there is also evidence of negative impact as well as no impact.

Lastly, modern organizations are exposed to exchange rate risk as most of them are directly or indirectly affected by variations in exchange rates. The ability of the organization to borrow in foreign currencies under fixed as well as floating rate regimes has been empirically investigated. Most of the researchers agree that currency mismatches exposes firms to

financial fragilities and thus makes it very difficult for the organization. Negative exchange rates particularly in developing countries where exchanges rates are not stable significantly affects the financial position and borrowing capacity of the firm as movements in exchange rates also affects domestic interests rates.

Chapter 4: Data and Methodology

The chapter aims to provide information about ways in which data was collected and the methodology that we used for empirical analysis in the following chapter. Variety of databases was used for data collection. Data related to firm level variable (economic leverage) was collected from State Bank's database and Money control database of Pakistan and India respectively, whereas data concerning macroeconomic variables was collected from State Bank's database, World Bank database, Reserve Bank of India (RBI) etc. The data set comprised of two countries i.e. Pakistan and India covering the period from 2004 to 2013. In total, we have 929 firms from both countries with a total of 9290 observations.

This chapter also provides details about the variables used and how they were measured for this study. The dependent variable is economic leverage whereas the variables representing macroeconomic environment are real interest rate, GDP growth rate, public debt, exchange rates, corporate taxes and stock market development.

The model used to measure the impact and the methodology used in this study is also presented in this chapter. Since data contained elements of both cross-sectional and time series, hence, panel data technique is employed. Fixed effects model is used to estimate the empirical model. The decision pertaining to the use of fixed effects model is based on the conclusions of Hausman test.

Section 4.1 the conceptual framework and relevant theories of capital structure, section 4.2 explains the nature of data that was collected for each variable; Section 4.3 provides information about study sample. Section 4.4 explains the advantages and disadvantages of Panel data. Section 4.5 describes the empirical model, variables and their measurement methods.

4.1 Conceptual Framework-Theories of Capital Structure

The foundation of capital structure theory was laid by MM's "irrelevant theorem" in 1958 in which they claimed that capital structure does not matter. Before the irrelevance theory we couldn't find any relevant and authentic theory on capital structure. From the time when the MM theory was introduced, many researchers have attempted to explore capital structures and presented their theories as to how managers make their financing decisions. In the literature, we find four notable theories apart from the irrelevance theorem of MM. However, since our theory is built on the assumption of TOT and POT, therefore these theories are discussed in detail in the following section.

4.1.1 Trade-Off Theory

Contrary to the Irrelevance proposition, TOT presented by Kraus and Litzenbeger (1973) holds that an optimal capital structure does exist that can help maximize firm value. "*Optimal capital structure is achieved by trading off the costs and benefits associated with debt*" (Kraus & Litzenbeger, 1973). The objective of this trade-off is to maximize firm value. Trade-off theory starts from MM's irrelevance proposition. When the effect of taxes is added to the MM irrelevance proposition, debt becomes advantageous as tax shields can be exploited. Since interest charged on debt is deducted before the calculation of tax therefore, firm can exploit tax advantages of debt. Higher the percentage of debt in total financing mix, higher will be the tax savings (Modigliani & Miller, 1963; Frank & Goyal, 2011). But at the same time, debt is associated with a cost that is cost of financial distress; a situation in which a firm cannot meet its financial obligations or faces difficulty in meeting its financial obligations. The probability of experiencing severe financial difficulties will be low for a company having lower leverage ratio as compared to a company having higher leverage ratio (Peirson et al., 2003). A small amount of debt issued by such company will add to the cost of

financial distress thus outweighing the subsequent tax savings as a result of it. Consequently, firm value will rise, however, further increases in the proportion of debt increases the chances of financial distress and the expected cost of financial distress. The result of these expected increases in cost of distress will be that it will erode the advantages of tax and soon a point will come beyond which firm value starts to decline (Brealey & Myers, 2004).

Bankruptcy cost is another cost that is associated with debt. The associated cost of financial difficulty both direct and indirect leads to the control of a company being handed over to the lenders. Direct costs incurred during liquidation process involves mainly of fees paid to parties such as accountants, lawyers etc. Indirect costs are related to factors like lower operating efficiency, the effect of loss in sales and managerial costs associated with the time devoted to avert failure. In case of direct costs, the impact of bankruptcy costs on firm value is clearly evident. If a firm issues debt that is comparatively less risky then the probability of default increases in which cases direct bankruptcy costs will be sustained. *“The probability of bankruptcy cost will depend on its business risk and its financial leverage, but at any given level of business risk, the higher the firm’s leverage the higher will be bankruptcy costs”* (Van Horne & Wachowicz, 2006).

Agency cost is also a major cost linked with the cost of debt. Agency costs *“arise from the conflict of interest between firm’s stakeholders and because of ex post asymmetric information”* (Jensen & Meckling, 1976). Therefore, adding the effect of agency costs to the TOT means that company’s capital structure is determined by trading-off the tax shield advantages of debt with the bankruptcy and agency costs associated with debt against the agency cost associated with equity.

In the financial literature, different proxies have been used to test TOT. They include tangibility of assets, firm size and profitability. According to TOT all these proxies lead to an

increase in firm level leverage. Since for loan security tangible assets can be used, therefore, higher collateral value of assets will lead to higher leverage levels by the firm (Frank & Goyal, 2009; Nguyen & Wu, 2011, Oztekin, 2015). Similarly profitability also has a positive influence on debt. Profitable firms preferred debt to exploit tax advantages (Bokpin, 2009; Dincergok & Yalciner, 2011). Also in models pertaining to asymmetric information like Ross (1977), leverage levels of firms tends to be high for firm that are profitable. In the financial literature firm size has been commonly used as an alternative for bankruptcy costs. The likelihood of large firms going bankrupt is less as compared to a small firm because large firms have higher value of fixed assets. Hence, the ratio of debt in the total financing mix is comparatively high for large firms than small firms as firm size positively affects leverage.

4.1.1.1 Empirical Evidence of TOT

Scott (1976) while finding support for trade-off theory argued that optimal capital structure is achievable assuming that investors are indifferent to risk and the market of plant assets are imperfect. According to him firm value is a function of expected future earnings of the firm plus the liquidating value of its assets. Kim (1978) while finding support for optimal capital structure makes an important distinction between optimum capital structure and debt capacity of the firm. According to Kim debt capacity does not mean 100 percent debt financing. Debt capacity means the maximum amount of debt allowed by capital markets for a firm to borrow. So a firm reaches its debt capacity before the 100 percent mark. Optimal capital structure becomes irrelevant if firm reaches its debt capacity first because then obtaining optimal level of debt is not possible. Optimal capital structure is possible only when optimal level of debt is less than the debt capacity. In a study, Huang and Ritter (2009) while finding support for TOT argued that US firms are moving towards their target capital structure. In case of deviation from target capital structure, US firms on average take 3.7

years to move back to their target leverage. However in UK the time it takes to reach their target capital structure is much quicker once deviation occurs (Ozkan, 2001). In another study Cook and Tang (2010) argued that companies move faster towards their target capital structure in countries where economic conditions are comparatively stable than unstable countries. Graham and Harvey (2001) while interviewing Chief Financial Officers of various organizations concluded that more than 80% of CFOs target their leverage ratios. Similarly Antoniou, Guney and Paudyal (2008) and to some extent Guner (2016) also concluded that firms target their leverage levels.

On the other hand, Haugen and Senbet (1978) while challenging TOT argued that theoretically it is not possible that the tax savings achieved through the use of debt can be completely offset by the bankruptcy costs which are comparatively insufficient in magnitude. They further elaborated that conceptually the associated cost of liquidating assets of unprofitable firm are different from the costs of altering its capital structure and both these costs have no relationship with capital structure. Myers (1984) argued that balancing the cost and benefit of debt helps a firm achieve desired level of leverage but the overall structure of leverage is unclear.

4.1.2 Pecking Order Theory (POT)

POT presented by Myers and Majluf in 1984 assumes that organizations follow a hierarchy or pecking order of financing sources to finance their new and existing investments. Initially “firms prefer to use internally generated funds to finance their investments. If internal funds are not sufficient then firms go for low cost debt” and if the firm fails to borrow enough funds to finance its investment then as a last resort firm will use equity to finance its investments. POT is different from TOT as it does not offer any optimal capital structure that maximize firm value rather it shows the liking for internal funds over external

funds (Van Horne & Wachowicz, 2006). The theoretical foundations of POT is based on concept of information asymmetry which means that managers possess more inside information than investors who are outside about their firm's asset values, risks and prospects. The theory highlights the relationship between financing, investment and information asymmetry. Since information asymmetry influence the choice of capital structure, therefore, information asymmetry positively influence leverage (Bas, Muradoglu, & Phylaktis, 2009). Generally, firms are reluctant to disclose its information to the market, perhaps due to the fact that releasing information may give competitors an advantage; they are likely to borrow funds with lower level of information asymmetry. Since lenders (outsiders) lack complete information about the borrowing firm, they will push the borrowing rates upwards to compensate for the additional risks brought through with insufficient information about the borrower. Therefore, to minimize the financing costs, preference is given to internal funds followed by low risk debt and lastly external equity.

POT also highlights the issue of adverse selection cost associated with external financing. Adverse selection was initially proposed by Akerlof (1970) commonly known as Akerlof lemon, highlighted in his study the reasons behind the substantial decline in the prices of used cars as compared to new ones. Buyers of used cars have comparatively less information about the used cars than the sellers. Since buyers do not have enough information about the performance of the car and how well it is maintained, their best guess will be that it is an average car. Hence the price of the used cars fall on the perception developed over insufficient information that used cars are not well maintained or their performance is not up to the mark. In order to compensate for the possibility of buying an Akerlof lemon buyers look for discounts. Here the seller knows about the problem with the car but the buyer doesn't. Similar is the case with firms. Managers comparatively have more information about the financial health of the business and its true value than outsiders. Costs

associated with adverse selection tend to rise for debt when lenders know the mean of borrower's investment but not the variable (Stiglitz & Weiss, 1981). In addition to this, Myers and Majluf (1984) also confirm that adverse selection cost of equity issue are larger than that of debt issue. Therefore issuing equity in such scenario is never optimal. Since market imperfections exist in markets, problems related to getting adequate information can lead to adverse selection problems for external financing. While comparing the three sources of financing available to an organization, internally generated funds is considered to be the only source that does not have adverse selection cost. Moreover, the adverse selection cost associated with debt is comparatively less than equity. Since the risk premium of adverse selection is high on equity, therefore, outside investors consider equity riskier than debt. Due to higher risk on equity, outside investors on equity demand a higher return. From the manager's point of view, internal funds are favoured over debt and debt is favoured over equity.

On the contrary, Ross (1977) claimed that variations in capital structure can be considered as a signal of private information. Hence, outsiders consider the preferred choice of financing by the firm as a signal for information from insiders. Increasing debt levels may signal good firm quality and strong financial health. Firm managers issue more debt and commit to higher cash flows when the bankruptcy costs are considered to be significantly low. For firms whose financial health is not that strong, it is difficult for them to issue more debt. However, due to signalling problems and information asymmetry associated with external financing, an order is followed in selecting the financing choice.

In the empirical literature, proxies like tangibility of assets, profitability and firm size are used to test pecking order theory (Korajczyk & Levy, 2003; Bokpin, 2009; Hanousek & Shamshur, 2011). Since tangible assets have collateral value they alleviate problems caused by information asymmetry, therefore, asset tangibility is expected to have a positive influence

on leverage. At the same time, profitability tends to negatively affect leverage. As Myers and Majluf (1984) argued that funds generated internally are preferred over external funds therefore, a negative relationship is expected between profitability and leverage. Large firms are expected to have stable earnings as they are diversified into different industries, products and markets. Stable earnings reduce the chances of asymmetric information problem. Such firms have better reputes in the debt markets and are better known which leads to lower cost of information when borrowing as compared to small firms.

4.1.2.1 Empirical evidence of Pecking Order Theory

In the empirical literature we find mixed evidence on POT. Studies from Shyam-Sunder and Myers (1999), Lemmon and Zender (2010) and Guner (2016) found support for POT. Autore and Kovacs (2005) reported that “*we provide evidence in favour of a multi-period pecking order in which time varying adverse selection costs can make equity issues optimal (even for firms with sufficient debt capacity). We find that time-varying adverse selection costs are directly related to firms’ preference for internal over external funds and for debt over equity financing*”. Similarly Mayer and Sussman (2005) argued that large and profitable firms favour to use debt over external equity to finance their projects. De Jong, Verbeek and Verwijmeren (2011) finds support for POT and argued that the theory is more accurate in predicting and describing firm’s behaviour. Frank and Goyal (2003), found limited support in their study for pecking order theory. They claimed that a vast majority of net equity issues are interrelated to finance shortfall than net debt issues. Similarly Fama and French (2002) argued that most of the decisions taken by the firm are against the principles of POT. For instance, according this theory, in terms of preference, equity financing is the last resort for the firm, yet Fama and French (2005) revealed that every year most firms issue equity to a certain extent.

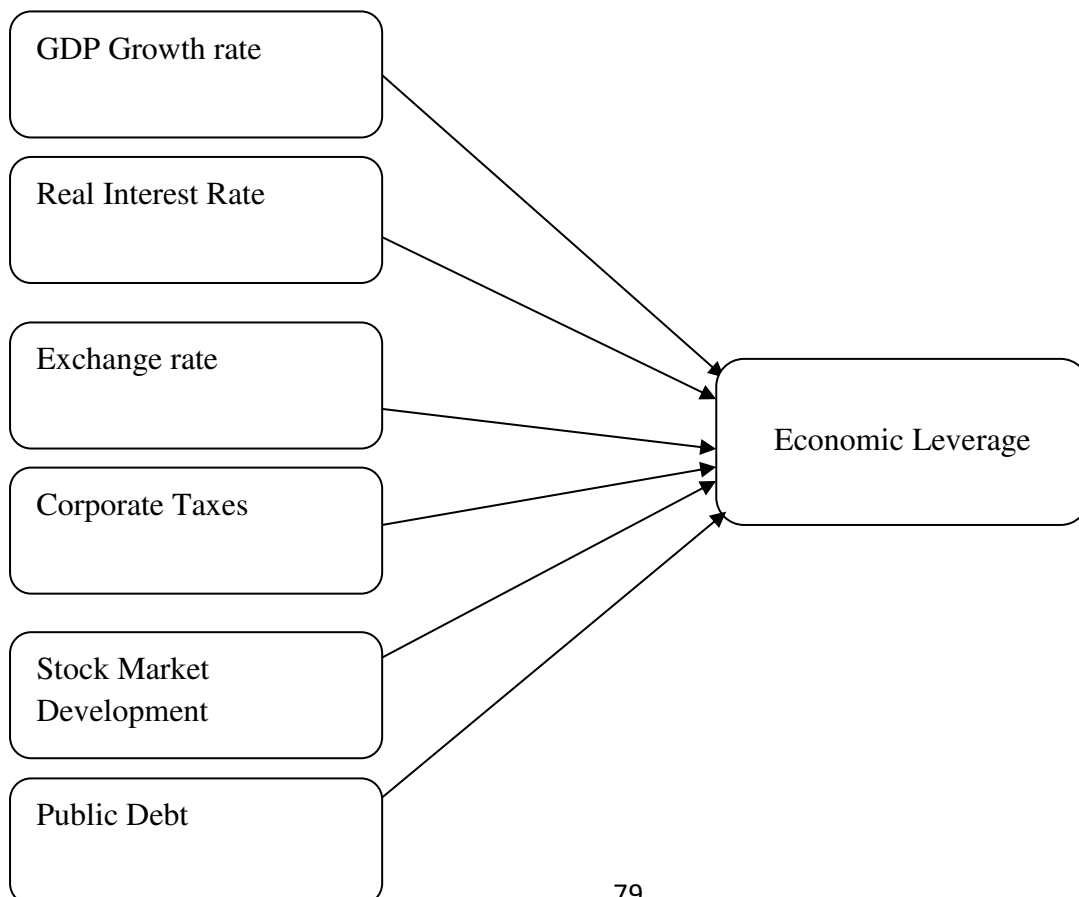
Helwege and Liang (1996) also concluded that POT lacks support in the presence of empirical evidence on firm's decisions to borrow external funds. They further explained "that firms do not appear to tap the capital markets because of a shortfall in internal funds -the size of the deficit measured in a number of ways and has no predictive power for the decision to obtain external funds."

Based on the theories of capital structure the framework used to measure macroeconomic factor's impact on capital structure decisions is given below;

Theoretical Framework

Independent Variables

Dependent Variable



Hypothesis

H₁ GDP Growth rate does not cause economic leverage

Empirically this relationship was analysed by *Booth et al. (2001)*

H₂ Interest rate does not cause economic leverage

Empirically this relationship was analysed by *Singh (1993)*

H₃ Exchange rate does not cause economic leverage

Empirically this relationship was analysed by *Bleakley and Cowan (2002)*

H₄ Corporate tax does not cause economic leverage

Empirically this relationship was analysed by *Moore and Ruane (2005)* and *Huizinga, Laeven and Nicodeme (2008)*

H₅ Stock market development does not cause economic leverage

Empirically this relationship was analysed by *Gajurel, (2006)* and *Dincergok & Yalciner (2011)*

H₆ Public debt does not cause economic leverage

Empirically this relationship was analysed by *Mokhova and Zinecker (2014)*

4.2 Data

The main focus of the study is to analyse the influence of macroeconomic factors on economic leverage of listed firms in Pakistan and India. The reason for restricting the study to

only countries is twofold; firstly, relevant data was mostly available for both countries and secondly, Pakistan and India share a number of similarities, such as both countries started their economic journey back in 1947. There are cultural as well as geographic similarities between the two countries. Both Pakistan and India are experiencing rising inflation and interest rates and fall in value of their respective currencies. Both countries are growing and their growth rates peaked in 2007. Moreover, the focus only on KSE and BSE is due to the fact that both these stock exchanges are operating in the business and financial hubs of their respective countries and the performance of these stock exchanges is mostly followed to determine the economic performance of their respective economies. For this study secondary sources were used to collect annual data pertaining to variables used in the study. Variety of databases was used for this purpose. Data related to public debt, stock market development, GDP and real interest rates (lending rates and GDP deflator) for both Pakistan and India was collected from the World Bank database. Since Indian economy is much larger than that of Pakistan, size disadvantages may have been an issue for Pakistan as well as firms listed on the KSE to draw meaningful comparisons. To overcome this problem public debt and stock market development was analysed as a percentage of GDP. This helped in eliminating the size disadvantages and making the comparisons more meaningful. Data concerning exchanges rates was collected from SBP and RBI for both Pakistan and India respectively.

Lastly, data concerning effective rates of taxation (corporate taxes) and economic leverage of individual firms was collected from SBP database and Money control database for both Pakistan and India respectively. SBP each year publishes the financial statements of all listed companies of KSE. The database comprises of financial statements as well as analysis of key performance indicators. Each listed company is bound to submit its financial statements to KSE which are available to be used by all stakeholders for their respective needs. SBP also uses company data from KSE for publishing financial statements and

presenting analysis of key performance indicators in their database. Since SBP uses data from KSE therefore, the financial data presented in their database is authentic and reliable. Money control database, on the other hand, provides financial statements data and analysis of key performance indicators of Indian firms. The database provides more than fifteen years of firm-level financial data of firms listed on both the National Stock Exchange (NSE) and BSE. Since the focus of our study is on the BSE therefore, only companies listed on BSE were considered.

Data for the study was collected annually from 2004-2013 covering a period of 10 years. The reason for using ten years data was that for majority of firm's financial data beyond ten years was not available. Money control database provides company's financial data of Indian listed for the last 15 years but in their database, financial data beyond 10 years was missing or not available for majority of the firms. Apart from that, 10 years' time long is enough to draw valid statistical conclusions based on the methods used in this study.

4.2.1 Transformation of Variables

Many statistical applications used for data analysis are based on two common assumptions: (a) variable data is normally distributed and (b) homogeneity of variance that is variable variance remains the same over the observed range of some other variable. Depending on the violation of assumption and nature of analysis, violation of these two assumptions can lead to committing a type I or II error (Osborne, 2010). Both parametric and non-parametric tests get benefit if data is distribution is normal and the results of the analyses are more meaningful and accurate (Zimmerman, 1995, 1998).

If data is not distributed normally or the variances of the variables are not equal then various transformations can be applied to equalize the variances of the variables and normalize the distribution of data to fulfil the basic assumptions. There are a number of

techniques available that can be used for data transformations. Among them are adding constants, taking log values, square roots, Box-Cox transformation etc.

Data for economic leverage and corporate taxes was not normally distributed as it was positively skewed. Therefore, before applying statistical procedures, it was necessary to transform these variables in order to meet the basic assumptions that is variables are normally distributed and the variances of the variables are homogeneous. Some of the values of these two variables were negative and since we cannot take logs or square roots of negative values, therefore, it was necessary to handle these negative values first in an appropriate manner. One technique that is commonly used by researchers or statisticians to handle negative values is to add a constant (normally the minimum value) value to the data before taking a log of the data (Wicklin, 2011). Hence, log transformations were applied after handling negative values. Negative values were handled by adding a constant value which was the minimum value in the series of the concerned variable.

4.2.2 Missing Values

During the course of data collection, it was found out that some of the variable data was missing for some firms. In the literature, there are variety of options available that could be used to handle missing data. One such technique is known as complete case analysis where only those cases or items are considered for which complete information is available and the cases or items with incomplete information is deleted. The basic assumption of complete case analysis is that complete cases represents the population and eliminating the items or cases with incomplete information may not affect the overall findings of the study. However, in the presence of comparatively higher proportion of missing values may make it difficult for the researcher to decide as the missing information may significantly influence the findings and may not be representing the population (Pigott, 2001).

The second approach to handle missing data is known as available case analysis where all available data is used to estimate the parameters of the model. The approach uses various subsets of data to examine different aspects of the problem. The approach helps in minimizing the loss of data that occurs in case of complete case analysis where only those cases are considered which has complete information. Available case analysis provides better estimates than complete case analysis (Kim & Curry, 1977). The method also has a number of problems. For instance, the sample size varies for each variable and there is no guarantee that the resulting correlation is positive and definite (Hothorn & Everitt, 2011). Haitovsky (1968) argued that the findings of available case analysis are inferior to complete case analysis when there is strong correlation among variables.

Third approach to handling missing data is single value imputation where a researcher retains all items or cases for review by filling in the missing values with some probable values like the mean value of the observed variable. According to this method the researcher replace all missing values with mean value which helps the researcher to consider all cases for review. The advantage of this technique is that the overall mean of the observed variable remains the same and the researcher is presented with an opportunity to consider all cases for review. Also it is one of the easiest ways of handling missing data. On the other hand, there is no doubt that replacing the missing values with the mean value keeps the overall mean of the variables same but it leads to a decrease in the variance of these variables (Little, 1992). There are two common reasons for this underestimation in the variance of the observed variables. Firstly, the strategy to replace missing values with mean value does not take into account the variation that is expected to be there if these variables were observed. Secondly, the uncertainty that exists in data may not be adequately reflected when missing values are included in the sample size which increases the sample size but results in smaller standard errors. Also there is increased possibility of biasness in the calculation of variances and

standard errors when mean imputation is applied because under no conditions unbiased results can be produced using mean imputations (Piggot, 2001).

Another common approach to handling missing data is the multiple imputations. According to this method several possible estimates are generated for each missing value resulting in several complete data sets. The data sets are randomly generated and the researcher then analyses these data sets in order to obtain the possible estimates for the missing the values. The procedure is that in each data set a possible value is estimated for the missing value. Depending on the number of data sets, estimated value from each data set is taken and combined together to get an average value which will ultimately be put in place of the missing value in the original data set. The estimated value is considered to be an unbiased estimate of the missing value because it is imputed from a number of randomly generated data sets.

In this study five separate complete data sets were generated to find possible estimates for the missing values. The data sets were then analysed and the possible estimates for each missing value was combine together to get and average value. The average value generated through this process was put in place the missing value in the original data set. The reason behind generating only 5 data sets is that it helps in generating an unbiased estimate. Schafer (1997) while addressing the issue of how many data sets are required for multiple imputations concluded that $m = 5$ completed data sets generally results in unbiased estimates.

4.3 Sample

The sample comprised of all listed non-financial firms of KSE and BSE. The distribution of companies across various industrial sectors varies significantly in both countries. Since Indian economy is comparatively larger in size than the Pakistan economy,

the sectorial distribution of industry is much more diverse than that of Pakistan. BSE is divided into 30 different industrial sectors whereas there are only 12 industrial sectors in KSE. Industrial sectors included in KSE are textile industry, food manufacturing and retailing, Cement, Sugar, Auto and parts manufactures, paper and board products, Chemicals and Pharmaceuticals, transport and communication, power and energy. Textile industry includes spinning, weaving, finishing textiles and made-up textiles, power and energy sector comprises of power generation, petroleum, oil drilling etc. To make a meaningful comparison while measuring the effect of macroeconomic variables on economic leverage for listed firms in Pakistan and Indian, it was necessary to select only those industrial sectors which are common in both KSE and BSE. Hence, KSE was used as a benchmark for the selection of industrial sectors to be considered for this study. The properties of firm included in each industrial sector in KSE were applied on BSE as well. For instance, in BSE power generation, fuel, and oil drilling are separate sectors whereas in KSE they are group together under one head that is fuel and energy. So power generation, fuel and oil drilling of BSE were clubbed together under one head namely fuel and energy. Similar reorganizations were also carried out in others sectors of BSE where necessary to make them similar to KSE.

Since the focus of the study was only on listed firms, therefore, only those companies were considered that remained listed for 10 years on both KSE and BSE. Firms that remained listed for less than 10 years were removed from the final sample.

The final sample for this study comprised of a total of 929 firms i.e. 595 firms from BSE and 334 firms from KSE. In the Indian sample out of the 1436 firms only 595 were selected. The reason being that we selected only those firms that remained listed for the entire 10 year period and for whom data was available. Since only 595 firms were fulfilling this criteria therefore from India only 595 firms were selected as the remaining firms were newly

listed after 2004, delisted or data was not available. The breakdown of selected firms into various industrial sectors of both KSE and BSE is given below.

Table 4.1 Breakdown of selected firms from various industrial sectors

Industry	KSE(Pakistan)		BSE(India)	
	Selected	Total	Selected	Total
Textile	154	158	149	411
Cement	20	20	26	119
Sugar	31	32	34	61
Auto and Parts	22	22	68	156
Fuel and Energy	26	28	36	201
Food	16	18	27	79
Transport & Telecommunication	13	13	29	83
Paper	9	9	34	92
Pharma and Chemicals	43	43	192	234
Total	334	343	595	1436

4.4 Panel Data Regression

Panel data regression was used to measure the effect of macroeconomic factors on economic leverage. Panel data presents several benefits for treatment of economic problems. They are: *“Panel data provide more informative data, more variability, degrees of freedom, efficiency and less collinearity among explanatory variables. Panel data offers large number of data points to the researcher which is extremely important when using financial data that is published annually”* (Hsiao, 1986). Panel data is useful in *“detecting and measuring effects that cannot be observed in pure time series or pure cross section data”* (Baltagi, 1995). Panel data not only help us in constructing and testing more complex behaviour models but it also imposes fewer restrictions than in a purely time series data. Panel data is also useful in minimizing the biasness that could result if we aggregate individuals or companies into wide aggregates and is also effective in reducing the missing variable problem.

In general, depending on the nature of data there are two common methods that is fixed effects and random effects that are used to estimate panel data regression.

4.4.1 Fixed Effects Method

In fixed effects models, individual intercept may differ because every cross-sectional or individual may have their own certain unique characteristics. Considering these differing intercepts, one is allowed to use dummy variables. The “*fixed effects model using dummy variables is known as the least-squares dummy variable (LSDV) model*” (Gujarati, 2004). A dummy variable is the one in which we are allowed to take different group-specific approximations for the constants for every individual firm. “Fixed effects model is more effective when the individual specific intercept is correlated with one or more regressors. One common disadvantage of LSDV is that the model consumes a lot of degrees of freedom particularly in the case when the number of cross-sectional units, N , is very large, in which case N dummies needs to be introduced (but suppress the common intercept term)” (Gujarati, 2004).

4.4.2 Random Effects Method

Random effects differs from fixed effects based on the fact that random effects assumes that intercept of each firm is randomly drawn from much bigger population having constant mean value. In this model, specific assumptions are needed regarding the distribution of the random component. Advantages of random effects are, “*it is economical in degrees of freedom, as we do not have to estimate N cross-sectional intercepts. We need only to estimate the mean value of the intercept and its variance. Random effects are appropriate in situations where the (random) intercept of each cross-sectional unit is uncorrelated with the regressors*” (Gujarati, 2004).

Fixed effects estimator is considered to be better than the random effects estimator because “the former is the GLS estimator and the latter is actually a limited case of the random effects model, as it corresponds to the cases where variation in individual effects is relatively large. The fixed effects model assumes that each firm differs in its intercept term, whereas the random effects model assumes that each firm differs in its error term” (Asteriou & Hall, 2007).

In a balanced panel like ours, one may expect that fixed effects model is more suitable whereas a random effect is appropriate in situations where the numbers of observations of the cross-sectional units are limited. However, to choose the appropriate estimation technique, a specification test proposed by Hausman (1978) in the name of Hausman test was employed. The Hausman test is “an important test in order to identify whether the assumption of unobserved and observed explanatory variables are correlated. Hausman test is based on the idea that under the hypothesis of no correlation, both OLS and GLS are consistent but OLS is inefficient, while under the alternative OLS is consistent and GLS is not” (Bas, 2009). In a given panel data set, Hausman test considers whether random effects is more appropriate or fixed effects..

Table 4.2 Hausman Test

Hausman Test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	102.34550	6	0.0000

Since the Chi-Sq. Statistic is significant, therefore, fixed effects model was selected for study.

Apart from the above, another reason for the using panel data regression was that in the empirical literature we find very limited studies on capital structures that used panel data for analysis. Most of the financial studies using panel data regression have focused on dividends. Studies by Michaelas et al., (1999), Bas et al., (2009) and Mokhova and Zinecker (2014) are some of the few studies that have used panel data while testing capital structures. So there is need for further studies on capital structure involving panel data in order to get more accurate inferences considering the possible advantages offered by panel data.

4.5 Model

To measure macroeconomic factor's impact on the financing decisions of listed firms in Pakistan and India, the following model is used.

4.5.1 Model 1

$$LEV_{it} = \alpha_0 + \beta_1 GDP_{it} + \beta_2 RIR_{it} + \beta_3 CT_{it} + \beta_4 EXG_{it} + \beta_5 PD_{it} + \beta_6 SMD_{it} + \mu_{it} \dots\dots\dots (1)$$

Where α = Intercept, β = Slope, i stands for i th cross-sectional unit and t for the t th time period, LEV_{it} = Leverage, GDP_{it} = Annual growth rate, RIR_{it} = Real interest rate, EXG_{it} = Year end exchange rate, CT_{it} = Corporate Taxes, SMD_{it} = Stock Market development, PD_{it} = Public debt, μ_{it} = Error term

4.5.2 Model 2

For finding out the difference between the effects of macroeconomic factors on the financing decisions of listed in Pakistan and India, a comparative analysis was carried out. Since we were interested in analysing whether there is significant difference between the effects of macroeconomic factors on financing decisions in both countries or not, a regression

equation involving a dummy variable was used. The model used for comparative analysis is given below.

$$LEV_{it} = \alpha_1 + \alpha_2 D_{it} + \beta_1 GDP_{it} + \beta_2 (GDP_{it} D_{it}) + \beta_3 RIR_{it} + \beta_4 (RIR_{it} D_{it}) + \beta_5 EXG_{it} + \beta_6 (EXG_{it} D_{it}) + \beta_7 CT_{it} + \beta_8 (CT_{it} D_{it}) + \beta_9 SMD_{it} + \beta_{10} (SMD_{it} D_{it}) + \beta_{11} PD_{it} + \beta_{12} (PD_{it} D_{it}) + \mu_{it} \dots\dots\dots (2)$$

Where α = Intercept, β = Slope, $D_{it} = 0$ for Pakistan, 1 otherwise, i stands for i th cross-sectional unit and t for the t th time period, LEV_{it} = Leverage, GDP_{it} = Annual growth rate, RIR_{it} = Real interest rate, EXG_{it} = Year end exchange rate, CT_{it} = Corporate taxes, SMD_{it} = Stock Market development, PD_{it} = Public debt, μ_{it} = Error term

For Pakistan

$$E(LEV_{it} | D_{it} = 0, GDP_{it}, RIR_{it}, EXG_{it}, CT_{it}, SMD_{it}, PD_{it}) = \alpha_1 + \beta_1 GDP_{it} + \beta_3 RIR_{it} + \beta_5 EXG_{it} + \beta_7 CT_{it} + \beta_9 SMD_{it} + \beta_{11} PD_{it} + \mu_{it} \dots\dots\dots (2.1)$$

For India

$$E(LEV_{it} | D_{it} = 1, GDP_{it}, RIR_{it}, EXG_{it}, CT_{it}, SMD_{it}, PD_{it}) = (\alpha_1 + \alpha_2) + (\beta_1 + \beta_2) GDP_{it} + (\beta_3 + \beta_4) RIR_{it} + (\beta_5 + \beta_6) EXG_{it} + (\beta_7 + \beta_8) CT_{it} + (\beta_9 + \beta_{10}) SMD_{it} + (\beta_{11} + \beta_{12}) PD_{it} + \mu_{it} \dots\dots\dots (2.2)$$

α_2 is the differential intercept and $\beta_2, \beta_4, \beta_6, \beta_8, \beta_{10}, \beta_{12}$ are the differential slope coefficients indicating by how much the slope coefficients of India that receives the dummy value of (1) differs from that of Pakistan.

The multiplicative form of D_{it} enables us to distinguish between Pakistani and Indian slope coefficients, just like the introduction of dummy variable in additive form enabled us to distinguish between Pakistani and Indian intercepts.

Thus if the “differential intercept coefficient α_2 is statistically insignificant, we may accept the hypothesis that the two regressions have the same intercept, that is, the two regressions are concurrent. Similarly, if the differential slope coefficient β_2 is statistically insignificant but α_2 is significant, we may not reject the hypothesis that the two regressions have the same slope, that is, the two regression lines are parallel” (Gujarati, 2004)

4.6 Measurement of Variables

4.6.1 Independent Variables

Real Interest rate (RIR): RIR was measured as nominal interest rate - inflation. Nominal interest rate (lending rate) is the rate which a bank charges on loans to the private sector. Nominal interest rates available on World Bank database was used in this study. Inflation can be measured through two common methods i.e. GDP deflator and Consumer Price Index (CPI). In this study GDP deflator was used to measure the rate of inflation because GDP deflator takes into consideration prices of all products produced during the year whereas CPI is restricted to a fixed basket of goods. Therefore, it is more appropriate to use GDP deflator for measuring inflation.

GDP Growth Rate (GDPR): Annual growth rate was used to measure GDPR.

Exchange rate: The exchange rate between US dollar versus Pakistani rupees and US dollar versus Indian rupees was used to measure of exchange rate. Data concerning exchange rates was collected from SBP and RBI. In this study the exchange rates are expressed in US Dollars.

Corporate Taxation: In the empirical literature we find two common methods that are used to measure corporate taxation i.e. effective tax rates and marginal tax rates (MacKinlay, 2012). Since the focus of this study was to estimate the effect of macroeconomic variables on debt levels, therefore we used effective rates of taxes rather than marginal rates

of taxation. The reason behind this is that marginal rates of taxation are effective in explaining the incremental changes in debt rather than debt levels. Furthermore we did not use annual corporate tax rates because in Pakistan annual corporate tax rate was 35% from 2004 till 2013. Since there was no variation in tax rates therefore it not only would have violated the assumption of ordinary least squares of “variation in the X” but also no variation in the independent variable would have made it impossible for us to calculate the value of β_2 and therefore β_1 . As our focus was on debt levels therefore, effective tax rates was used and was calculated by dividing tax expense with profit before taxation * 100.

Stock Market Development: Market Capitalization ratio was used to measure the development of stock market. Market capitalization of listed firms as %age of GDP was used to calculate market capitalization ratio. The expression in GDP helped us in overcoming issues related to size of the economies. Data related to market capitalization ratio was collected from the World Bank database. Another variable that is commonly used to measure the development of financial markets is banking sector development. However, this variable was not used in this study as complete data was not available with respect to banking sector development for both countries.

Public Debt: Public debt was measured in terms of Government debt to GDP Ratio. Government debt as a percentage of GDP was used to overcome the issues related to size disadvantages. India comparatively has more Government debt than Pakistan when we look at their actual values but actual debt values may not be meaningful for our analysis as size of Indian economy is much greater than that of Pakistan. Therefore Government debt as percentage of GDP was used to make it more meaningful and realistic. For public debt also data was collected from World Bank database.

4.6.2 Dependent Variable

Economic Leverage: Leverage has been defined through different methods in empirical literature. Debt to equity ratio, total leverage, short-term leverage and long-term leverage are some of the common methods used to measure leverage. However, in this study we have used a different measure of leverage. Leverage in this study was measured by dividing ROE with ROA. ROE was measured by dividing net profit with owner's equity * 100 whereas ROA was measured by dividing net profit with total assets * 100.

Since we are employing panel data regression and regression analysis being the most common method used in empirical financial studies, several aspects need to be considered during the regression analysis, such as multicollinearity, heteroskedasticity etc.

4.7 Multicollinearity

The term multicollinearity relates to a condition when there is a correlation among independent variables. Originally the term multicollinearity meant “the existence of a perfect linear relationship among some or all of the independent variables of a regression model” (Gujarati, 2004). “A regression for variable k involving independent variables X_1, X_2, \dots, X_k will be considered perfectly linear if the condition given below is satisfied:

$$\lambda_1 X_1 + \lambda_2 X_2 + \dots + \lambda_k X_k = 0$$

where $\lambda_1, \lambda_2, \dots, \lambda_k$ are constants such that all of them are not zero simultaneously.

However, in modern times, multicollinearity is considered and used in a much wider context to include the case of perfect collinearity as shown in the above equation as well as the case of X variables that are correlated to each other but not perfectly as follows:

$$\lambda_1 X_1 + \lambda_2 X_2 + \dots + \lambda_k X_k + v_i = 0$$

Where v_i is the stochastic error term.

The adverse effect of multicollinearity is that the estimated regressions coefficients (β_1, β_2, etc) will have large sampling variability i.e. the standard errors are quite large. Consequently, when the coefficients are tested, the t-statistics will be small, which infers that there is no linear relationship between the affected independent variables and the dependent variable. In some cases this inference will be wrong” (Gujarati, 2004).

Since multicollinearity is predominantly a sample phenomenon multicollinearity can be detected by following some rules of thumb as there is no exclusive method to detect multicollinearity. They are: 1) “high R-square but few significant t ratios, 2) Higher pair-wise correlations among regressors, 3) examination of partial correlations, 4) auxiliary regressions, 5) Eigen values and conditional index, 6) tolerance and variance inflation indicator etc.” (Gujarati, 2004).

The problem of multicollinearity can be addressed in a number of ways. They include dropping variable and specification bias, adding new data, combining time series and cross sectional data, transforming variables etc.

Montgomery, Peck and Vining (2012) identified a number of sources that could lead to multicollinearity among the independent variables. They include: 1) model specification, 2) constraints on the population or model being sampled, 3) The methods of data collection employed, 4) an over determined model etc.

Table 4.3 Correlation Matrix of variables

	LEV	TAX	EXG	PD	GDPR	RIR	SMD
LEV	1.000						
TAX	0.212	1.000					
EXG	-0.062	0.173	1.000				
PD	-0.007	-0.167	-0.656	1.000			
GDPR	0.029	-0.163	-0.649	0.611	1.000		
RIR	-0.012	-0.1	-0.306	0.603	0.331	1.000	
SMD	0.004	-0.163	-0.717	0.524	0.729	0.455	1.000

Table 4.4 Variance Inflation Factors of independent variables

<i>Variable</i>	<i>VIF</i>
Exchange rate	0.156
GDPR	0.145
Stock Market development	0.045
Public debt	0.103
Real Interest rate	0.248
Corporate Tax	0.954

Table 4.4 shows the variance inflation factors of the explanatory variables used in this study. Variance inflation factors were calculated on the basis of partial correlation where each independent variable was correlated with the rest of the independent variables. The values of variance inflation factors of the all explanatory variables indicate that multicollinearity is not an issue that needs to be addressed in this study.

4.8 Panel Unit Root Test

Before applying regression analysis it is important to find out whether time series variables are stationary or not i.e. whether they have unit roots or not. The existence of unit roots can affect the results.

Table No 4.5 Panel root test

Variables		<i>Levin, Lin & Chu t*</i>	<i>Im, Pesaran and Shin W-stat</i>	<i>ADF - Fisher Chi-square</i>	<i>PP - Fisher Chi-square</i>
GDPR	<i>Statistic</i>	-26.11	-8.86	2097.15	1881.73
	<i>Prob</i>	0.00	0.00	0.00	0.35
SMD	<i>Statistic</i>	-60.15	-32.85	4359.78	5124.23
	<i>Prob</i>	0.00	0.00	0.00	0.00
PD	<i>Statistic</i>	-43.23	-16.33	2793.37	3730.02
	<i>Prob</i>	0.00	0.00	0.00	0.00
RIR	<i>Statistic</i>	-46.58	-30.91	4169.85	4134.90
	<i>Prob</i>	0.00	0.00	0.00	0.00
EXG	<i>Statistic</i>	-82.83	-24.58	3788.90	2342.45
	<i>Prob</i>	0.00	0.00	0.00	0.00
TAX	<i>Statistic</i>	-24654.10	-613.03	4811.23	5355.64
	<i>Prob</i>	0.00	0.00	0.00	0.00
EL	<i>Statistic</i>	-254.67	-42.11	3738.72	4157.60
	<i>Prob</i>	0.00	0.00	0.00	0.00

Results from the above table indicate that data values of all variables are stationary as they are no unit roots.

4.9 Heteroscedasticity

“One of the most important assumptions of the classical linear regression model is that the variance of each disturbance term u_i , conditional on the chosen values of explanatory variables, is some constant number equal to σ^2 . This assumption is of homoscedasticity, or equal variance and can be expressed in the following equation:

$$E(u_i^2) = \sigma^2 \quad i = 1, 2, \dots, n$$

If the conditional variances are not constant then there is heteroscedasticity and can be expressed in the following equation:

$$E(u_i^2) = \sigma_i^2$$

Heteroscedasticity may not cause the OLS coefficient estimates to be biased but it may cause biasness in the standard errors and the estimates of variance of the coefficients” (Gujarati, 2004). The standard errors and variances may not be true as they may be below or above the true population variance. Therefore, the used of heteroscedastic data in regression analysis may give unbiased estimated as far as the relationship between the predictor variable and the outcome is concerned but the inferences and standard errors from data analysis are suspect and due to biased standard errors, inferences and results can go possibly wrong.

There are various sources that can cause heteroscedasticity. They are:

- 1) The presence of outliers
- 2) Skewness in data
- 3) Poor data collection techniques. Improved and efficient techniques can reduce σ_t^2
- 4) Incorrect transformations
- 5) Incorrect functional form.

There are number of techniques that can be used to detect heteroscedasticity. For instance, the nature of the problem sometimes helps us in identifying whether heteroscedasticity will be encountered or not. Secondly, graphically presenting the data can also help us in identifying heteroscedasticity. Apart from these test like part test, white test, Glejser test, Breusch-Pagan test, Goldfeld-Quandt test etc. can also help us in detecting heteroscedasticity.

Cross-sectional data is likely to experience the problem of heteroscedasticity as compared to time series data. “The reason is that in cross-sectional data one commonly deals with a member of population at a given point in time such as industries, firms etc. Additionally, these members may vary in size. In time series data since one collects data for the same entity over a particular time period, variables tend to be of similar order and magnitude” (Gujarati, 2004).

4.9.1 Generalized Least Squares

“Ideally we would like to devise the estimating scheme in such a manner that observations coming from populations with greater variability are given less weight than those coming from populations with smaller variability. Unfortunately the usual Ordinary Least Squares (OLS) method does not follow this strategy and therefore does not make use of the information contained in the unequal variability of the dependent variable. It assigns equal weight or importance to each observation. But a method of observation, known as Generalised Least Squares (GLS), takes such information into account explicitly and is therefore, capable of producing estimators that are BLUE (Best Linear Unbiased Estimator)” (Gujrati, 2004).

Generalized Least Squares is a method in which OLS estimates are applied after the original variables are transformed in a way that satisfies the assumptions of a classical model. The resulting estimates from this procedure are known as GLS estimators and these estimators are regarded as BLUE.

White test was used to test for heteroscedasticity. In addition to this, GLS estimators with cross-sectional weights were used to handle issues of heteroscedasticity. Table 4.5 shows the coefficients, standard errors and t-statistics of explanatory variables before performing the white test and applying GLS weights whereas Table 4.6 shows the coefficients, standard errors and t-statistics of explanatory variables after applying the GLS cross-section weights.

Table 4.6 Treatment for Heteroscedasticity: *Results before the application of GLS cross-section weights*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.191	0.185	11.786	0.000
TAX	0.096	0.011	8.533	0.000
RIR	0.012	0.003	3.705	0.000
GDPR	0.027	0.006	4.215	0.000
EXG	-0.012	0.001	-11.32	0.000
PD	-1.464	0.237	-6.164	0.000
SMD	-0.360	0.059	-6.093	0.000

Table 4.7 Treatment for Heteroscedasticity: *Results after the application of GLS cross-section weights*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.516	0.109	13.885	0.000
TAX	0.022	0.005	4.482	0.000
RIR	0.006	0.001	3.450	0.001
GDPR	0.023	0.005	4.679	0.000
EXG	-0.009	0.001	-9.543	0.000
PD	-0.884	0.161	-5.486	0.000
SMD	-0.146	0.019	-7.795	0.000

In Table 4.6 Panel regression analysis indicate that all explanatory variables have a significant impact on the dependent variable whereas in Table 4.7 the regression analysis after the application of GLS estimators also indicate that all explanatory variables has significant impact on with the dependent variable. This shows that heteroscedasticity is not an issue here as the significance and type of relationship does not change even after catering for issues pertaining to heteroscedasticity. However, the standard errors and t-values are different. Moreover the difference in standard errors and t-values could have led us to making wrong inferences from the analysis. Therefore, after addressing the issue of heteroscedasticity through the application of GLS estimators the regression estimates present more accurate estimates of the relationship between the dependent variable and the explanatory variables.

Chapter 5: Data Analysis

The chapter aims analyse and comment on the impact of macroeconomic factors on financing decisions of the firms listed in KSE and BSE. In this regard panel regressions were applied on the selected data to answer the research questions that were posed at the start of the research. Secondary data was used and data was collected from SBP, RBI, World Bank Database, Money control database.

Section 5.1 presents the descriptive analysis of variables, section 5.2 presents results of panel regression, Section 5.3 provides empirical results of Pakistan and India separately as far as macroeconomic factors impact on choice of capital structure is concerned and lastly, section 5.4 presents inter-industrial comparison of KSE and BSE with respect to macroeconomic factors impact on choice of capital structure.

5.1 Descriptive Statistics

5.1.1 Descriptive Statistics of Variables

Table 5.1 provides information about variable's descriptive attributes in this study. Mean value of economic leverage is 18.3 whereas the median value is 30.30. Standard deviation which shows the dispersion from the mean is 1.10. The skewness value for economic leverage is 1.79 which is greater than 1 reflecting that the distributed is positively skewed. The mean value of corporate taxes is 25.32 whereas the median value is 25. Standard deviation from mean in case of corporate taxes is 1.03. The skewness value for corporate taxes is 1.05 which is greater than 1 reflecting that the distribution is positively skewed. The mean value of GDP is 6.44 whereas the median value is 6.60. Standard deviation from mean in case of GDP growth

Table 5.1 Descriptive Statistics (Combined data)

	LEV	TAX	GDPR	SMD	PD	RIR	EXG
Mean	18.3	25.32	6.44	0.59	0.69	2.78	0.02
Median	30.30	25.00	6.60	0.54	0.67	3.40	0.02
Maximum	87.7	380.8	10.30	1.47	0.84	7.90	0.02
Minimum	0.00	-69.00	1.60	0.14	0.55	-8.1	0.001
Std. Dev.	1.10	1.03	2.62	0.34	0.08	4.00	0.005
Skewness	1.79	1.05	-0.21	0.83	0.29	-1.21	-0.26
Kurtosis	5.29	2.86	1.86	3.63	2.17	3.82	-1.27
Jarque-Bera	6989.45	1714.24	570.13	1228.43	392.57	2522.06	2395.01
Probability	0.000	0.000	0.000	0.000	0.000	0.000	0.000

rate is 2.62. The skewness value for GDPR is -0.21 which reflects that the distribution is normal but slightly negatively skewed. Mean value of stock market development is 0.59 whereas the median value is 0.54. Standard deviation from mean in case of stock market development is 0.34. The skewness value for stock market development is 0.83 which shows that the distribution is slightly skewed on the positive side. Mean value of public debt is 0.69 whereas the median value is 0.67. Standard deviation from mean in case of public debt is 0.04. The skewness value for public debt is 0.29 which reflects that the distribution is normal. Mean value of RIR is 2.78 whereas the median value is 3.40. Standard deviation from mean in case of RIR is 4.0. The skewness value for RIR is -1.21 which reflects that the distribution is normal but slightly negatively skewed. Mean value of exchange rate is 0.0175 whereas the median value is 0.0171. Standard deviation from mean in case of exchange rate is 0.004. Skewness value for exchange rate is -0.26.

Furthermore, analysis of mean and median values of the variables indicate that data for economic leverage, real interest rates and GDPR is left skewed as the mean value is less than the median. This means that much of the data is bunched up towards the right hand side with a long tail stretching towards the left. On the contrary, data for public debt, stock market development and corporate taxes is right skewed as the mean value is greater than the

median. This means that much of the data is bunched up towards the left hand side with a long tail stretching towards the right.

5.1.2 Descriptive statistics – Pakistan

Table 5.2 provides information about the descriptive analysis of variables with respect to Pakistan including firm level information of firms listed on the KSE. The table shows that the mean value of economic leverage is 19.2 whereas the median value is 32.1. The value standard deviation which shows the dispersion from the mean is 0.90. The skewness value for economic leverage is 2.15 which is greater than 1 reflecting that the distributed is positively skewed. The mean value of corporate taxes is 39.44 whereas the median value is 13.86. Standard deviation from mean in case of corporate taxes is 1.18. The skewness value for corporate taxes is 0.46 which is within the acceptable range of normal distribution. However the distribution

Table 5.2 Descriptive statistics (Pakistan)

	LEV	TAX	GDPR	SMD	PD	RIR	EXG
Mean	19.2	39.44	4.51	0.26	0.61	0.18	0.0137
Median	32.1	13.86	4.40	0.21	0.61	0.90	0.0132
Maximum	84.3	380.52	7.70	0.46	0.68	7.90	0.0171
Minimum	0.00	-58.37	1.60	0.14	0.55	-8.1	0.0011
Std. Dev.	0.90	1.18	2.16	0.11	0.04	4.99	0.0028
Skewness	2.15	0.46	0.08	0.70	0.08	-0.27	0.031
Kurtosis	7.45	1.71	1.57	2.14	2.73	1.87	-1.94
Jarque-Bera	5317.24	349.05	288.47	379.04	13.82	219.11	299.31
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00

is still slightly skewed. The mean value of GDPR is 4.51 whereas the median value is 4.40. Standard deviation from mean in case of GDPR is 2.16. The skewness value for GDPR is 0.08 which reflects that the distribution is normal. The mean value of stock market development is 0.26 whereas the median value is 0.21. Standard deviation from mean in case of stock market development is 0.11. The skewness value for stock market development is

0.70 which shows that the distribution is slightly skewed on the positive side. Mean value of public debt is 0.62 whereas its median value is 0.61. Standard deviation from mean in case of public debt is 0.04. The skewness value for public debt is 0.08 which reflects that the distribution is normal. Mean value of RIR is 0.18 whereas its median value is 0.90. Standard deviation from mean in case of RIR is 4.50. The skewness value for RIR is -0.27 which reflects that the distribution is normal but slightly negatively skewed. The mean value of exchange rate is 0.0137 whereas its median value is 0.0132. Standard deviation from mean in case of exchange rate is 0.0028. The skewness value of exchange rate is 0.031 which reflects that the distribution is normal but slightly positively skewed.

Additionally, analysis of mean and median values with respect to Pakistan indicate that data for economic leverage and real interest rates is left skewed as the mean value is less than the median. This means that much of the data is bunched up towards the right hand side with a long tail stretching towards the left. On the contrary, data for GDP growth rates, stock market development, exchange rates and corporate taxes is right skewed as the mean value is greater than the median. This means that much of the data is bunched up towards the left hand side with a long tail stretching towards the right. In case of public debt the mean and median value is almost identical which means that data is symmetrical.

5.1.3 Descriptive Statistics – India

Table 5.3 provides information about the descriptive analysis of variables with respect to India including firm level information of firms listed on the BSE. As we can see from the table, the mean value of economic leverage of Indian listed firms in BSE is 24.4 whereas the median value is 28.7. The value of standard deviation which shows the dispersion from the mean is 1.19. The skewness value for economic leverage is 1.65 which is greater than 1 reflecting that the distributed is positively skewed. The mean value of corporate taxes is 17.36 whereas the median value is 28.05. Standard deviation from mean in case of corporate

taxes is 0.90. The skewness value for corporate taxes is 1.51 which is greater than 1 reflecting that the distribution is positively skewed. Mean value of GDPR is 7.53 whereas the median value is 8.20. Standard deviation from mean in case of GDPR is 2.21. The skewness value for GDP growth rate is -0.40 which reflects that the distribution is normal but slightly negatively

Table 5.3 Descriptive Statistics (India)

	LEV	TAX	GDPR	SMD	PD	RIR	EXG
Mean	24.4	17.36	7.53	0.78	0.74	4.23	0.0213
Median	28.7	28.05	8.20	0.70	0.74	4.70	0.0221
Maximum	87.7	1600	10.30	1.47	0.84	7.20	0.0241
Minimum	0.00	-69.00	3.90	0.53	0.67	-0.7	0.0171
Std. Dev.	1.19	0.90	2.21	0.27	0.06	2.27	0.0020
Skewness	1.65	1.51	-0.4	1.46	0.33	-0.77	-0.99
Kurtosis	4.53	4.43	1.63	4.51	1.74	2.86	0.76
Jarque-Bera	3271.18	2752.60	620.74	2665.11	503.33	595.42	1361.91
Probability	0.00	0.00	0.00	0.00	0.00	0.00	0.00

skewed. The mean value of stock market development is 0.78 whereas the median value is 0.70. Standard deviation from mean in case of stock market development is 0.27. The skewness value for stock market development is 1.46 which shows that the distribution is slightly skewed on the positive side. Mean value of public debt is 0.74 whereas its median value is also 0.74. Standard deviation from mean in case of public debt is 0.06. The skewness value for public debt is 0.33 which reflects that the distribution is normal. Mean value of RIR is 4.23 whereas its median value is 4.70. Standard deviation from mean in case of RIR is 2.27. The skewness value for RIR is -0.77 which reflects that the distribution is normal but slightly negatively skewed. The mean value of exchange rate is 0.0213 whereas the median value is 0.0221. Standard deviation from mean in case of exchange rate is 0.0020. The skewness value for exchange rate is -0.99 which reflects that the distribution is slightly negative skewed.

Analysis of mean and median values with respect to India indicate that data for economic leverage, GDP growth rates, corporate taxes, exchange rates and real interest rates is left skewed as the mean value is less than the median. This means that much of the data is bunched up towards the right hand side with a long tail stretching towards the left. On the contrary, data for stock market development is right skewed as the mean value is greater than the median. This means that much of the data is bunched up towards the left hand side with a long tail stretching towards the right. In case of public debt the mean and median value is almost identical which means that data is symmetrical.

5.2 Empirical Results: Model 1

Since collected data contained both elements of time series data as well as longitudinal data therefore, panel data regression using fixed effects model was used to measure macroeconomic factors impact on capital structures of listed firms in Pakistan and India. The analysis was carried out in three steps. In the first step, macroeconomic factors impact on capital structures was estimated by using the combine data of Pakistan and India. In the second step comparative analysis of macroeconomic factors and its impact on capital structures between listed firms in Pakistan and listed firms in India was carried out. Lastly, an inter-industrial analysis of macroeconomic factors and its impact on capital structures of listed firms in Pakistan and India was done. In all three steps fixed effects model was used for estimation.

The structure of empirical results is as follows; first analysis of macroeconomic factors and its impact on capital structure with respect Pakistan and India is given. In the second part, a comparative analysis of macroeconomic factors and its effect on capital structures between Pakistani and Indian listed firms is given and lastly inter- industrial analysis of

macroeconomic factors and its impact on capital structures of listed firms in Pakistan and India is given.

Table 5.4 Panel Regression Analysis (Dependent Variable Economic Leverage)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.516	0.109	13.885	0.000
TAX	0.022	0.005	4.482	0.000
RIR	0.006	0.002	3.450	0.001
GDPR	0.023	0.005	4.680	0.000
EXG	-0.009	0.001	-9.543	0.000
PD	-0.884	0.161	-5.486	0.000
SMD	-0.146	0.019	-7.795	0.000
R-squared	0.628	F-statistic		15.082
Adjusted R-squared	0.586	Prob(F-statistic)		0.000
S.E. of regression	0.874			

Partial adjustment model to control for Endogeneity

$$LEV_{it} = \alpha_i + \beta_1 GDPR_{it} + \beta_2 RIR_{it} + \beta_3 CT_{it} + \beta_4 EXG_{it} + \beta_5 PD_{it} + \beta_6 SMD_{it} + LEV_{it-1} + \mu_{it} \dots (3)$$

Table 5.5 Partial Adjustment model for controlling endogeneity (Dependent variable Economic Leverage)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.863	0.289	9.901	0.000
GDPR	0.017	0.005	3.268	0.001
RIR	0.005	0.002	2.124	0.034
TAX	0.015	0.004	4.076	0.000
PD	-1.121	0.177	-6.344	0.000
EXG	-1.039	0.153	-6.803	0.000
SMD	-0.093	0.026	-3.515	0.000
LAGILEV	0.160	0.046	3.467	0.001
R-squared		0.678	F-statistic	16.724
Adjusted R-squared		0.637	Prob(F-statistic)	

To control for endogeneity the original model was partially adjusted. In the adjusted model the lag of the economic leverage (dependent variable) was used as an explanatory variable. The outcome of the partial adjustment model is almost similar to the original model that is GDPR, RIR and corporate taxes have a strong positive influence on economic leverage

whereas exchange rates, public debt and stock market development have a strong negative influence economic leverage.

Results from panel regressions given in Table 5.4 show that the explanatory variables (stock market development, real interest rate, public debt, corporate taxes, GDPR and exchange rates) significantly affect economic leverage (dependent variable). The panel model was estimated by assigning estimated generalized least squares with cross-sectional weights where a single observation of each firm constituted a cross-section. The t-values of the independent variables indicate that all independent variables are important for the model. Significant effect of macroeconomic factors on economic leverage can be attributed to variation in macroeconomic factors. Also one of the assumption of the ordinary least squares is that values of independent variable (X) must not be same. If there is no variation in the values X then the standard deviation will be zero due to which it will be impossible to calculate the value of β_2 and therefore β_1 (Gujarati, 2004).

5.3.1 Factors of monetary policy and its influence on firm's capital structure

Both real interest rate (RIR) and GDPR have a positive effect on economic leverage. The effect of RIR and economic leverage is also positive, which shows that firms borrow more when interest rates increase and vice versa. Coefficient value of RIR is 0.006 which means that a one percent increase in RIR increases economic leverage by 0.006. The t-value of RIR is 3.450 and its corresponding p-value indicates that real interest rates significantly affect economic leverage. On the face of it, it is hard to understand as to why a firm would want to borrow more when interest rates go up. There are a number of possible explanations for this surprising phenomenon. Firstly, since interest is treated as an expense, firms have the opportunity to exploit tax savings by employing more debt in their respective financing mix. As the interest rates decrease so does the tax savings which forces firms to reduce their

leverage levels as it is not as beneficial as it was before. Also due to these tax shield advantages firm may decide to substitute the more expensive equity for the comparatively less expensive debt to exploit these tax advantages. Empirically Bokpin (2009) also finds positive impact of interest rates on leverage and argued that firms are most likely to substitute long-term debt for short-term and debt over equity when interest rates rise. The reason being that increase in interest rate leads to increase in financial risk and beyond a certain point it outweighs the benefit of debt, hence, firms substitute high risk debt for low risk short term debt or low risk equity.

Additionally, interest rate as a monetary policy tool is used to control money supply. During times of rising interest's rates, there is a tendency on part of profit making banks to increase the supply of loans to private sector. Improvement in supply of loanable funds is a positive sign for firms that are in need of funds despite the fact that interest cost have gone up. There can be a number of reasons for doing so. Firms having cash flow problem will borrow irrespective of the fact that interest rates are high. Secondly, the needed funds for particular projects may provide comparatively more benefits even if funds are borrowed at higher rates. As a result, leverage levels of firms are expected to rise. Hence, it might be possible that both in Pakistan and India lending rates have gone up which have led to rise in borrowings by the private sector as a result of additional supply of loans made available to the private sector.

GDPR also has a positive effect on economic leverage. The coefficient value of 0.023 means that a 1% increase in GDPR increases economic leverage by 0.023%. The t-value of GDPR is 4.680 and its corresponding p-value indicates that GDPR significantly affects economic leverage. Furthermore, we can say that firms listed on KSE and BSE tend to increase the level of economic leverage when GDPR increase and decrease when GDPR decrease. The possible explanation for this phenomenon can be that with increasing GDP

growth rate there are plenty of investment opportunities on offered to the firms. Firms in order to exploit profitable opportunities offered in the market are likely to borrow more to finance their new investments from external sources if they have insufficient funds from internal sources. On the other hand, in periods of declining growth rates there are limited opportunities to invest and economic conditions also may not be conducive thus forcing firms to reduce their leverage levels and not to commit to new investments. Empirical studies from Korajczyk and Levy (2003) Muthama et al. (2013), Baltaci and Ayaydin (2014), Amjed and Shah (2016) also found positive impact of GDP on leverage. Similarly, Gajurel (2005) concluded that firms choose to fund new investments with long-term loans rather than using the expensive equity in developing countries. While finding out a positive effect of GDP on leverage, Gungoraydinoglu and Öztekin (2011) argued that firms prefer to borrow more when the creditor rights are not that strong and bankruptcy costs are low and procedures less efficient as is the case with developing countries. Since Pakistan and India are developing countries weak regulations may encourage firms to borrow more. Furthermore, Daslakis and Psillakis (2008) also found positive effect of GDP on leverage. They argued that better and efficient financial systems not only reduce the cost of financing but makes it easy for firm to borrow thus encouraging firms to borrow.

GDP growth rate is indirectly related to monetary policy as rise in growth rates positively influences demand for money thus affects the supply of money in circulation. Furthermore, in order reduce unemployment and stimulate growth, through central banks governments set expansionary monetary policy by lowering down interest rates. As result firms are provided with an opportunity to use low cost funds to exploit possible investment opportunities. Growth rates are expected to rise when the central bank sets an expansionary monetary policy and more investment opportunities will be created. As a result leverage

level of firms is expected to rise because lower interest rates provide an incentive to firms to borrow and invest in these profitable investment opportunities.

5.3.2 Factors of Fiscal policy and their effect on the choice of capital structure in Pakistan and India

From Table 5.4, it is apparent that corporate taxes positively effects economic leverage. The coefficient value of 0.021 indicates that a one percent increase in corporate taxes increases economic leverage by 0.021%. The t-value of corporate taxes is 4.481 and its corresponding p-value indicates that corporate taxes significantly affect economic leverage. In other words, we can say that firms listed on KSE and BSE tend to increase the economic leverage levels as the rate of corporate taxes increase in order to further exploit tax shield advantages offered by debt and decrease economic leverage when corporate tax rates decrease because of decline in tax shield advantages of debt.

In our findings, we find evidence of TOT. Firms from time to time adjust their capital structure considering the changes in tax rates which advocates that they have a target debt ratio in the minds which they would like to as tax rate changes. Firms in order to exploit tax advantages employ more debt. Empirical studies on taxes and its effect on leverage by Bauer (2004), Moore and Ruane (2005), Huizinga, Laeven and Nicodeme (2008), Gungoraydinoglu and Öztekin (2011), Sayeed (2011), Wendels, Stein and Stoter (2012) and Memon et al., (2015) concluded that corporate taxes positively effects leverage. Graham and Harvey (2001) claimed that most of the CFO's of large regulated and dividend paying firms considered tax advantages of interest deductibility as major factor in their decisions to borrow external funds. The influence of corporate taxes is much stronger in countries where interest rates are high as there will be more tax advantages to exploit. Longstaff and Strebulaev (2014) argued that there is sufficient proof that change in capital structure is a direct result of changes in

corporate taxation rates. Moreover, Loney (2015) while finding positive effect of taxes on leverage explained that firms use debt financing to shield a portion of their earnings from taxes levied by the government on firm profits. Therefore rise in taxes provides more incentives to the firms further protect their earnings from government taxation. The use of debt in this regard is considered to be a valuable instrument for the firm because interest payments are deducted before the calculation of income taxes. This means that having a higher percentage of debt, the less will be the amount of taxes to be paid as fewer earnings will be subject to taxation. Another reason for positive influence of taxes on leverage is that increase in taxes reduces the effective cost of debt thus encouraging firms to borrow more. Pakistan and India also has comparatively high interest rates which may encourage firms to borrow in order to benefit from tax shield benefits arising from interest deductibility.

From Table 5.4 we can see that public debt negatively affects economic leverage. The coefficient value of -0.884 shows that a one percent increase in public debt decreases economic leverage by 0.884%. The t-value of public debt -5.486 and its corresponding p-value indicates that public debt significantly affect economic leverage. A possible explanation for this outcome can be that both in develop and developing countries governments borrow internally as well as externally in order to finance their budget deficits. Since expected revenues are less than expected expenditures, governments are forced to borrow to meet their expenditure targets. In order to do so governments resorts to internal as well as external borrowing. In particular when government decides to borrow internally it leaves little funds available to the private sector to meet their financing needs. Lending institutions prefer to lend to the government because they get a higher return on the loans extended to the government. Therefore, firm level leverages are expected to decline with the rise in public debt.

Furthermore, Pakistan and India are developing economies where the per capita income is low as compared to other countries. As a result savings which is the primary source of loanable funds in an economy will be limited. Borrowing by the government from local market to meet their budgetary constraints leaves very little funds to be borrowed by the private sector thus resulting in decline firm level leverage.

Empirically, Mokhova and Zinecker (2014) in a study aimed at analysing the effect of macroeconomic variables on firm's financing choices with specific focus on monetary and fiscal policy factors found that public debt negatively impacts leverage. Private sector debt falls in countries where government debt increases (Berben & Brosens, 2007). As a result economic performance and level of investment is significantly reduced by debt service obligations and debt burden on part of the government (Clements, 2003; Chowdhury, 2004).

5.3.3 Influence of stock market development and exchange rates on capital structure

From Table 5.4 we can see that exchange rates negatively affect economic leverage. The coefficient value of -0.009 indicates that a one unit increase in exchange rate reduces economic leverage by 0.009. The t-value of exchange rates is -9.542 and its corresponding p-value indicates that exchange rates significantly affect economic leverage. A possible explanation for this outcome can be that increase in exchange rates not only puts pressure on the value of home currency but also adds to inflation. The negative effect of exchange rates increase is even more if the economy is suffering from trade deficit i.e. imports are more than exports which leads to a rise in the cost of production as expensive imported products or inputs add to the cost of the producer thus affecting the purchasing power of individual customers in the presence of rising inflation. This results in decline in the revenues of the businesses which forces firms to lower their leverage levels to keep their costs down and

avoid bankruptcies. Apart from this rising exchange rates makes it expensive for firms to borrow from international financial markets thus discouraging firms to borrow.

Harvey and Hoper (1999) argued that negative movements of exchanges significantly affected the level of indebtedness of firm particularly if it is expose to exchange rate risk. Calvo (2001), Eichengreen (2005) and Cavoli and Rajan (2005) argued that weak exchange rates effects output of the firms, as a result, companies find it difficult to meet their debt obligations thus leading to widespread bankruptcies. The findings of these studies further elaborated that many emerging economies of East Asia and Latin America experienced significant currency depreciation of home currencies in the late 1990s and early 2000s which resulted in turning firm's foreign currency loans and other liabilities into crippling debt burdens. As a result of it many firms particularly from the financial sector were unable to service their debts, leading them to widespread bankruptcies thus triggering financial crisis and recession not only in domestic economy but its affects were also experienced in foreign economies.

Depreciations affect the borrowing capacity of the firm because the cost of debt particularly for foreign currency denominated debt increases with the depreciation of home currency. As a result profits decrease which leads to decline in output (Ahmed, Gust, Kamin & Huntley, 2002).

Lastly, stock market development also negatively affects economic leverage. Coefficient value of stock market development is -0.146 which indicates that a 1% increase in stock market development decreases economic leverage by 0.146%. The t-value of stock market development is -7.794 and its corresponding p-value indicates that stock market development negatively impacts economic leverage. A probable explanation for this negative effect can be that both Pakistan and India are developing countries and the financial markets

may not be as efficient as they are in the developed world. Therefore access to finance may be not easy for every firm and the cost of financing may also be higher thus discouraging firms to borrow.

Empirical studies from Demirguc-Kunt and Maksimovic (1996), Sett and Sarkhel (2010) and Lemma and Negash (2013) also found negative effect of stock market development on leverage. Bokpin (2009) argued that development in stock markets should increase the efficiency of the markets thus lowering the cost of financing and provide easy access to firms to exploit stock markets to meet their funding needs. Since most of the stock markets in emerging economies are not fully developed and efficient as they are in developed countries, therefore, the cost of financing may be higher.

From the theoretical perspective negative effect of exchange rates and stock market development is understandable as investors tend to use currency exchange rates and stock markets as hedging tools and also acts as alternative tools for investments. Investors generally maintain a diversified portfolio to minimize risk and rotate their investments among currencies, commodities and stock markets. If the returns of commodities like gold are attractive then investors will withdraw their investments either from the stock market or from the foreign exchange market or both to exploit attractive returns offered by investment in gold and if returns of foreign exchange markets are higher then funds will be directed towards the foreign exchange market. These opportunities tend to rise regularly in the financial markets and investors rotate their investments accordingly.

The regression results from Table 5.4 show that the R-square is 0.6277 which means that approximately 62.77 percent of variation in the economic leverage is caused by the explanatory variables i.e. corporate taxes, real interest rates, stock market development, public debt, GDP growth rate and exchange rates. The standard error of

Table 5.6 Expected and Actual relationship of macroeconomic variables with economic leverage

<i>Independent Variables</i>	<i>Expected relationship with dependent variable</i>	<i>Actual relationship with dependent variable</i>	<i>Hypothesis Results</i>	<i>Consistent with theory</i>
Corporate taxes	Positive	Positive	Rejected	Trade-off theory
Real interest rate	Negative	Positive	Rejected	
GDP growth rate	Positive	Positive	Rejected	Pecking Order Theory
Exchange rates	Negative	Negative	Rejected	
Public debt	Negative	Negative	Rejected	
Stock Market development	Positive	Negative	Rejected	

regression also known as the standard error of estimate is a measure which tells us how well the estimated model fits data. Standard error of regression shows how far the observe values are from the fitted regression line. A smaller value is preferred over a higher value because it indicates the closeness of the observed values to the fitted line. From the table we can see that the standard error of regression is 0.874 when means that the average distance of observe values (data points) from the fitted regression line is about 0.874% body fat.

The F-Statistic and Prob (F) is a measure of model’s significance. If the value of “F” is significant then it means that the variables used in model are significant as a group. The F-value in this case is significant which means that the model used in this study is significant.

5.4 Speed of Adjustment

To calculate the annual change of the gap between the actual capital structure and target capital structure we used the following equation.

$$EL_{i,t+1} = \lambda EL_{i,t}^* + (1 - \lambda)EL_{i,t} + \mu_{i,t+1}$$

where EL is economic leverage, LEV^* stands for target capital structure, λ is the speed of adjustment and $\mu_{i,t+1}$ is the error term.

The speed of adjustment is 0.840 i.e. 84% per annum. It means that firms in Pakistan and India close the gap between target and actual capital structure at a rate of 84 percent per year.

5.5 Short-run/Long-run relationship between macroeconomic factors and capital Structure

In long-run, financing decisions are more sensitive to changes in macroeconomic variables as compared to short-run. Since capital structure decisions are predominantly long-term, therefore, changes in macroeconomic factors favourable or unfavourable will have a significant influence on firm long-term capital structure decisions. The stability of these

Table 5.7 Short-run Long-run relationship between macroeconomic variables and capital Structure		
	Short-run Coefficients	Long-run Coefficients
<i>GDPR</i>	0.017	0.108
<i>RIR</i>	0.005	0.028
<i>TAX</i>	0.015	0.096
<i>PD</i>	-1.121	-7.009
<i>EXG</i>	-1.039	-6.496
<i>SMD</i>	-0.093	-0.581

*long-run coefficients were calculated by dividing short-run coefficients with coefficient value of LagLev(0.160)

macroeconomic factors is critical for the long-term survival of the firm. If the macroeconomic environment remains stable then firms will be able to make quality long-term decisions. Therefore, policy makers must ensure to stabilize these macroeconomic factors in long-run so that firms can take long-term financing decisions with ease and confidence.

5.6 Empirical Results: Model 2

Table 5.8 presents the comparative influence of macroeconomic factors on the financing decisions of Pakistan and India. The t-value of differential intercept is statistically significant thus suggesting that the intercept of both countries is different. The coefficient values of India are calculated by summing the coefficients of tax and tax*dum given in table 5.9. From table 5.8 we can see both in Pakistan and India corporate taxes has a positive influence on economic leverage. Coefficient value of corporate taxes is 0.0132 and 0.0427 in Pakistan and India respectively. The comparative coefficient values of the corporate taxes indicate that one percent change in corporate taxes brings more variation in economic leverage in India than in Pakistan. Therefore corporate taxes are more influential in India than in Pakistan with respect to their effect on economic leverage. The corresponding t-values of corporate taxes for both Pakistan and India indicate that corporate taxes significantly affect economic leverage. It shows that advantages of tax shields gained through the use of debt are key to making financing structure decisions. In order to exploit tax savings leverage level of firms are expected to rise with increase in tax rates and decline with decline in taxes. Therefore, listed firms in Pakistan and India adjust their capital structure to the changes in rates of taxation. In a study on developing countries Amidu (2007) and Sayeed (2011) concluded that for companies in developing countries corporate taxes are important for companies to consider while making their financing decisions. Moreover, they found strong positive effect of taxes on leverage. Our findings are consistent with findings of many empirical studies including Moore and Ruane (2005), Huizinga et al., (2008), Gungoraydinoglu and Öztekin (2011), Sayeed (2011), Wendels et al., (2012) where they also find significantly positive effect of corporate taxes on leverage. Furthermore, the t-value of dummy variable (tax*dum) given in table 5.9 is significant which means that effect of corporate taxes on economic leverage is different in Pakistan from that of India.

Table 5.8 Panel Regression Analysis with respect to Pakistan and India (Dependent Variable: Economic Leverage)

<i>Pakistan (DUM=0)</i>			<i>India (DUM=1)</i>		
Variable	Coefficient	t-value	Variable	Coefficient	t-value
C	3.0975	4.7017	C	0.6990	3.4292
TAX	0.0132	2.3295	TAX	0.0427	5.7022
EXG	-1.4700	-6.8509	EXG	-0.0651	-0.8052
SMD	0.4954	1.7420	SMD	-0.0237	-1.0400
RIR	-0.0001	-0.0366	RIR	-0.0004	-0.1132
PD	-0.3802	-0.7694	PD	-0.1746	-1.2321
GDPR	0.0392	4.8052	GDPR	0.0014	0.5004
R-Square	0.6700	Ad. R-Square	0.6300	Std. Error	0.8590
F-statistic	18.3960	Prob(F-statistic)	0		

Table 5.9 Regression Results: Slope Coefficients and Differential Slope Coefficients

Variable	Coefficient	t-value
C	1.5613	5.5227
TAX	0.0132	2.3295
TAX*DUM	0.0295	2.6643
EXG	-1.4700	-6.8509
EXG*DUM	1.4049	7.2821
SMD	0.4954	1.7420
SMD*DUM	-0.5191	-1.7750
RIR	-0.0001	-0.0366
RIR*DUM	-0.0003	-0.0474
PD	-0.3802	-0.7694
PD*DUM	0.2056	0.3575
GDPR	0.0392	4.8052
GDPR*DUM	-0.0378	-3.8575

Both in Pakistan and India, the relationship between exchange rates and economic leverage is a negative. The coefficient value of exchange rates is -1.4700 and -0.651 in Pakistan and India respectively. The comparative coefficient values of exchanges rates for both Pakistan and India indicate that exchange rates are more influential in Pakistan than in India with respect to their effect on economic leverage. One of the possible reasons for this can be that in Pakistan exchange rates have remain volatile during the last ten years or so than in India. During the last decade Pakistani currency has lost value by more than 74%

whereas in same the time Indian currency lost only 28% of its value. The decline in value of Pakistani rupees and Indian rupees has led to inflation and increase in production cost thus affecting the revenues of the business and companies have to adjust their capital structure in order to avoid bankruptcies. Furthermore, devaluation of home currency raises domestic interest rates and also increases the cost of foreign currency denominated debt thus making it tough for firms to borrow new funds despite the fact, that firms can exploit more tax savings with increase in interest rates. But the potential cost of bankruptcy outweighs the benefits of tax savings, hence, firm reduce their leverage levels when exchange rates go upwards and vice versa. The corresponding t-values of exchange rates for both Pakistan and India indicate that the impact of exchange rates on economic leverage is significant. Harvey and Hoper (2001) concluded that negative movements of exchange rates affect the level of indebtedness of the firm. Calvo (2001), Eichengreen (2005) and Cavoli and Rajan (2005) argued that weak exchanges rates can lead to bankruptcies as firms find it tough to meet their debt obligations. Furthermore, the t-value of the dummy variable ($exg*dum$) given in table 5.9 is significant which means that effect of exchange rates on economic leverage is different in Pakistan from that of India.

In table 5.8 we can see that stock market development positively affects economic leverage in Pakistan whereas it is negative in India. The coefficient value of stock market development is 0.4954 and -0.0237 in Pakistan and India respectively. The comparative values of coefficient of stock market development for both Pakistan and India show that stock market development is influential on economic leverage in Pakistan then in India. The corresponding t-values indicate that both in Pakistan and India, stock market development has a statistically insignificant relationship with economic leverage. One possible explanation for this contrasting evidence can be that Indian economy has grown at a better rate than that of Pakistan. High growth rates present numerous profitable opportunities to firms to exploit

thus increasing their earnings. Therefore, the comparatively high growth rate in the Indian economy may have enabled Indian listed firms to exploit profitable opportunities available in the market thus increasing their internally generated funds. The rise in internally generated funds results in lowering the dependence on external funds thus resulting in a negative relationship. In contrast, the Pakistani economy grew at a lower rate particularly from 2007 onwards where the growth rate was negligible as the economy was averaging a growth rate of 1.5 to 2 percent (Source: World Bank). Lower growth rate reduces the number of profitable investment opportunities in an economy thus affecting the ability of the firm to internally generate funds. As a result, firms are expected to borrow from external sources to meet their financing needs. The positive effect on leverage in Pakistan is supported by empirical studies from Antoniou et al. (2002), Ngugi et al., (2002), (Gajurel, 2006) and Segot (2013) whereas the negative effect in India is supported by empirical studies from Demirguc-Kunt and Maksimovic (1996), Sett and Sarkhel (2010) and Lemma and Negash (2013).

The impact of RIR on economic leverage is negative in Pakistan and India. The coefficient value of real interest rates is -0.0001 and -0.0004 in Pakistan and India respectively. The comparative coefficient values of RIR in Pakistan and India indicate that real interest rates are slightly more influential in India than in Pakistan with respect to their influence on economic leverage. Although, financial theory states that rising interest rates encourage firms to borrow to exploit tax savings but the perceived cost of financial distress may have outweighed the advantages of tax savings thus discouraging firms to borrow in periods of rising interest rates. Our findings are in line with those of Graham and Harvey (2001), Weisbach (2004) and Drobetz et al., (2006) where they also concluded that interest rates have a negative effect on debt. They further elaborated, firms borrow more when interest rates are low and vice versa. Furthermore, the t-value of the dummy variable ($rir*dum$)

given in table 5.9 is insignificant which means that effect of real interest rates on economic leverage is not different in Pakistan from that of India.

The impact of public debt on economic leverage is negative as far as listed firms of KSE and BSE are concerned. The coefficient value of public debt is -0.3802 and -0.1746 in Pakistan and India respectively. The comparative coefficient values of public debt indicate that public debt is more influential in Pakistan than in India. Rise in borrowing by the government leaves very little for the private sector to borrow to meet their funding needs. Additionally, the supply of funds in the local markets channelized through domestic savings is limited in developing countries and a decision on part of the government to borrow from local markets to meet their budgetary constraints increases the demand for funds. As a result interest rates increase which may make it difficult to borrow at these high rates.

The corresponding t-values of public debt for both Pakistan and India point to an insignificant relationship between public debt and economic leverage. Our findings find support in literature with study from Mokhova and Zinecker (2014) where they also concluded with a negative effect of public debt on corporate capital structure. Additionally, the t value of dummy variable (pd*dum) indicate that the effect of public debt on economic leverage is not different in Pakistan than from India.

GDPR positively affects economic leverage in Pakistan as well as in India. Coefficient value of GDPR is 0.0392 and 0.0014 in Pakistan and India respectively. The comparative coefficient values of GDPR rate suggest that GDPR is more influential in Pakistan than in India. A possible explanation for this can be that both economies are growing. Rise in growth rate leads to more investment opportunities thus increasing the demands for external funds. The t-values of GDPR in Pakistan suggest that GDPR significantly affects economic leverage whereas in India it is insignificant. Many empirical

studies including Korajaczyk and Levy (2003), Muthama et al., (2013), Baltaci and Ayaydin (2014) support our findings as they also concluded with a positive effect of growth rate on leverage. Furthermore, the t-value of dummy variable GDP*dum indicate that the effect of GDPR on economic leverage in Pakistan is different from that of India.

Based on the individual analysis of firms listed in KSE (Pakistan) and BSE (India), we conclude that macroeconomic variables in Pakistan and India influence economic leverage of firms differently. In case of Pakistan corporate taxes, GDP growth rates, stock market development, exchange rates significantly affect economic leverage whereas in case of India only corporate taxes have a significant impact on economic leverage. Furthermore, exchange rates, stock market development, public debt and GDP growth rates are more influential with respect to their effect on economic leverage as compared to India whereas corporate taxes and real interest rates are more influential in India as compared to Pakistan with respect to their impact on economic leverage.

5.7 Comparative analysis of macroeconomic factors and its impact on firm capital structure in selected sectors of KSE and BSE

In this section, inter-industrial comparison among selected sectors of KSE and BSE was carried out to measure the impact of macroeconomic variables on the capital structure choices. Theoretically, the effect of macroeconomic environment varies from industry to industry. Some industries may be more affected by changes in macroeconomic environment while others may be less affected by these changes. Hence, it was necessary to measure the individual effect of macroeconomic factors on the financing decision in the selected industrial sectors of KSE and BSE.

5.7.1 Industrial Sector analysis of KSE, Pakistan

Table 5.10 presents panel regression analysis of various industrial sectors of KSE considered for this study. In the paper industry the effect of corporate taxes, exchange rate and public debt on economic leverage is negative whereas the effect of real interest rate, GDPR and stock market development on economic leverage is positive. Moreover, the impact of corporate taxes, GDPR, exchange rate on economic leverage is statistically significant. The R-square value of 0.804 means that 80.4% of the change in economic leverage is caused by selected macroeconomic factors in the paper industry.

In case of transport and telecommunication sector GDP growth rate, exchange rate, public debt and stock market development significantly affect economic leverage whereas the remaining macroeconomic variables have an insignificant effect on economic leverage. Furthermore, the effect of corporate taxes, GDP growth rate, public debt and stock market development on economic leverage is positive whereas the effect of RIR and exchange rate is negative. In case of firms listed in the transport and telecommunication sector, the R square value of 0.535 means that 53.5% of the change in economic leverage is caused by the macroeconomic variables used in this study.

In case of fuel and energy sector we find a statistically significant effect of corporate taxes, GDPR and exchange rate on economic leverage. In the fuel and energy sector the effect of corporate taxes, RIR, GDPR and stock market development on economic leverage is positive whereas the effect of exchange rates and public debt with economic leverage is negative. The value of R-square for fuel and energy sector is 0.687 which means that 68.7% change in economic leverage is caused by the macroeconomic factors used in this study.

In the auto and parts sector we find statistically significant effect of corporate taxes, GDPR and exchange rates on economic leverage whereas the effect of remaining macroeconomic factors is not significant. Moreover, the effect of corporate taxes, real interest rates, exchange rates and public debt on the dependent variable economic leverage is negative whereas in case of GDPR and stock market development it is positive. The value of R-square in case of auto and parts sector is 0.869 which indicates that 86.9% change in economic leverage is caused by the macroeconomic factors used in this study.

In the cement industry we find only significant effect of GDPR and exchange rates on economic leverage whereas the remaining macroeconomic variables have an insignificant effect on economic leverage. In the cement industry, the effect of corporate taxes, RIR, stock market development and GDPR on economic leverage is positive whereas the effect of exchange rates and public debt with economic leverage is negative. The value of R-square is 0.827 which shows that 82.7% change in economic leverage is caused by the macroeconomic factors used in this study.

In the pharmaceuticals and chemicals industry corporate taxes, GDPR and exchange rate significantly affect economic leverage. Additionally, there is a positive effect of corporate taxes, RIR, GDPR and stock market development on economic leverage whereas in case of exchange rates and public debt the effect on dependent variable is negative. The value of R-square in case of pharmaceuticals and chemicals industry is 0.751 which indicates that 75.1% change in economic leverage is caused by the macroeconomic factors used in this study.

In the food sector we find statistically significant effect of GDPR and exchange rate on economic leverage. The effect of corporate taxes, exchange rates and public debt on

economic leverage is negative whereas in case of RIR, GDPR and stock market development it is positive. The value of R-square is 0.741 which means that 74.1% change in economic leverage is caused by macroeconomic factors used in this study.

In the sugar sector we find a significant effect of GDPR and exchange rates on economic leverage whereas the effect of corporate taxes, real interest rates, public debt and stock market development on economic leverage is not significant. The effect of corporate taxes, RIR, GDPR, stock market development is positive whereas in case of exchange rates and public debt it is negative. The value of R-square in sugar sector is 0.831 which means that 83.1% change in economic leverage is caused by the macroeconomic factors used in this study.

In the textile industry we find a statistically significant effect of corporate taxes, exchange rates, stock market development and GDPR on economic leverage only. The remaining macroeconomic variables exhibit an insignificant effect on the dependent variable. As we can see from the table there is a positive effect of corporate taxes, GDPR and stock market development on economic leverage whereas in case of real interest rates, public debt and exchange rates it is negative. The value of R-square in textile sector is 0.749 which means that 74.9% change in economic leverage is caused by the macroeconomic factors used in this study.

Table 5.10 Industry-wise influence of macroeconomic variables on capital structure choice of listed firms in KSE, Pakistan

<i>Variable</i>		<i>Paper</i>	<i>Transport and T.Com</i>	<i>Fuel and Energy</i>	<i>Auto and Parts</i>	<i>Cement</i>	<i>Pharma and Chem</i>	<i>Food</i>	<i>Sugar</i>	<i>Textile</i>
C	Coefficient	0.925	0.165	1.174	0.401	0.958	1.229	1.242	1.259	0.777
	SE	0.161	0.113	0.174	0.139	0.383	0.197	0.210	0.360	0.095
	P-value	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000
TAX	Coefficient	-0.055	0.052	0.038	-0.023	0.001	0.021	-0.026	0.039	0.027
	SE	0.016	0.035	0.016	0.010	0.012	0.008	0.022	0.021	0.007
	P-value	0.002	0.163	0.023	0.028	0.865	0.015	0.227	0.065	0.000
RIR	Coefficient	0.001	-0.002	0.001	-0.002	0.002	0.004	0.001	0.001	-0.002
	SE	0.002	0.002	0.003	0.003	0.003	0.002	0.004	0.005	0.002
	P-value	0.681	0.809	0.746	0.562	0.574	0.071	0.722	0.704	0.438
GDPR	Coefficient	0.022	0.016	0.052	0.037	0.069	0.053	0.052	0.079	0.024
	SE	0.005	0.006	0.007	0.008	0.010	0.004	0.009	0.012	0.006
	P-value	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EXG	Coefficient	-0.004	-0.008	-0.010	-0.006	-0.012	-0.010	-0.009	-0.016	-0.006
	SE	0.001	0.000	0.001	0.001	0.001	0.001	0.001	0.002	0.000
	P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PD	Coefficient	-0.409	1.366	-0.846	-0.027	-0.340	-0.897	-1.085	-0.516	-0.033
	SE	0.322	0.260	0.383	0.324	0.748	0.390	0.471	0.753	0.229
	P-value	0.058	0.000	0.059	0.642	0.688	0.022	0.009	0.337	0.534
SMD	Coefficient	0.491	0.576	0.337	0.592	0.468	0.301	0.711	0.839	0.480
	SE	0.123	0.078	0.016	0.118	0.171	0.102	0.163	0.218	0.080
	P-value	0.056	0.000	0.061	0.002	0.026	0.015	0.007	0.071	0.000
R-square		0.804	0.535	0.687	0.869	0.827	0.751	0.741	0.831	0.749
S.E		0.410	0.855	0.596	0.358	0.625	0.481	0.492	0.613	0.663
F-Stat		22.030	7.105	16.890	49.310	35.140	24.590	20.060	38.610	26.040
P-value		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

The effect of exchange rates on economic leverage is significant and negative in all industrial sectors of Pakistan. A possible explanation for this can be that Pakistan is suffering from trade deficit for last so many years. Our imports mainly comprise of oil, inputs to be used in the production of goods etc. Oil is used for transportation and generation of electricity. Hence, depreciation in exchange rates increases firm's cost as a result of increase in transportation and energy costs. Moreover, if a firm has borrowed a loan from international markets then the borrowing costs also go up thus reducing the capacity of the firm to borrow. In an attempt to show that devaluation can be contractionary, Saibene and Sicouri (2012) argued that assuming nominal price rigidities and credit constraints on the borrowing capacity of firms, a decline in the value of local currency increases the cost of debt borrowed in a foreign currency. As a result borrowing capacity as well as profits of the firm tends to decrease and triggering a drop in investment and output levels.

Stock market development except textile industry has an insignificant effect on the dependent variable. A possible explanation for this can be that most of firms may not find the KSE as an efficient market through which funds can be raise or the access may not be easy. Hence they possibly rely on commercial banks rather than stock market to generate funds from external sources.

Interest rates also have an insignificant effect on economic leverage in all the industrial sectors of KSE. It is surprising considering that interest expense provides tax shield advantages to the firm, still for the majority of firms it is not a key factor while making their capital structure decisions. A possible explanation for this can be that stock issues are not very common in Pakistan; hence the only option left with firms is to borrow from financial institutions to meet their financing needs.

GDPR also has significant effect on economic leverage in all industrial sectors of KSE. It is assumed that for almost all firms listed in the selected sectors GDPR is a key factor as far as financing decisions are concerned. Huang and Ritter (2009) argued that leverage level of firms rises as GDP growth rate increases. They further elaborated that increase in GDPR leads to increase in investment opportunities in an economy thus forcing firms to borrow to exploit these opportunities.

5.7.2 Industrial sector Analysis of BSE, India

Table 5.11 present panel regression analysis of various industrial sectors of BSE considered for this study. In the paper industry the effect of corporate taxes, exchange rates and public debt on economic leverage is significant whereas the effect of other macroeconomic variables is not significant. Moreover the effect of corporate taxes, RIR and GDPR on economic leverage is positive whereas in case of exchange rates, public debt and stock market development it is negative. The R-square value of 0.423 means that 42.3% change in economic leverage is caused by macroeconomic factors in the paper industry of India.

In case of transport and telecommunication sector GDP growth rates and exchange rates have significant effect on economic leverage whereas the rest of the macroeconomic variables used in this study have an insignificant effect on economic leverage. Furthermore, the effect of public debt, RIR, exchange rates and GDPR on economic leverage is positive whereas the effect of corporate taxes and stock market development on economic leverage is negative. In case of companies listed in the transport and telecommunication sector of BSE, the R square value of 0.562 means that 56.2% change in economic leverage is caused by the macroeconomic factors used in this study.

In case fuel and energy sector we find a statistically significant effect of corporate taxes, public debt and exchange rates on economic leverage whereas the rest of the variables used in this study has an insignificant impact. In the fuel and energy sector the effect of exchange rates, corporate taxes, stock market development and public debt on economic leverage is positive whereas the effect of RIR and GDPR on economic leverage is negative. The value of R-square in case of fuel and energy sector is 0.434 which means that 43.4% change in economic leverage is caused by the macroeconomic factors used in this study.

In the auto and parts sector we find only significant effect of corporate taxes and exchange rates on economic leverage whereas the effect of remaining macroeconomic factors is not significant. Moreover, the effect of corporate taxes, real interest rates, GDPR and public debt on the dependent variable economic leverage is positive whereas in case of stock market development and exchange rates it is negative. The value of R-square in case of auto and parts sector is 0.358 which indicates that 35.8% change in economic leverage is caused by the macroeconomic factors used in this study.

In the cement industry we find only statistically significant effect of corporate taxes, public debt and economic leverage whereas the remaining macroeconomic variables have an insignificant impact on economic leverage. In the cement industry the effect of corporate taxes, GDP growth rates, exchange rates, public debt and stock market development on economic leverage is positive whereas the effect of RIR on economic leverage is negative. The value of R-square in case of cement industry is 0.406 which shows that 40.6% change in economic leverage is caused by the macroeconomic factors used in this study.

In the pharmaceuticals and chemicals industry we find no statistically significant effect of macroeconomic factors on economic leverage. The effect of corporate taxes, real

interest rates, GDP growth rate, exchange rates and public debt on economic leverage is negative whereas it is positive in case of stock market development. The value of R-square in case of pharmaceuticals and chemicals industry is 0.368 which indicates that 36.8% change in economic leverage is caused by the macroeconomic factors used in this study.

In the food sector we find significant effect of RIR and public debt on economic leverage. The effect of corporate taxes, real interest rates and GDP growth rates on economic leverage is positive whereas in case of exchange rates, public debt and stock market development it is negative. The value of R-square for food sector is 0.526 which means that 52.6% change in economic leverage is caused by the macroeconomic factors used in this study.

In the sugar sector we find significant effect of corporate taxes, real interest rates, GDP growth rates and public debt on economic leverage whereas the effect of the rest of the variables used in this study is not statistically significant. The effect of corporate taxes, stock market development and public debt on economic leverage is positive whereas in case of real interest rates, GDP growth rates and exchange rates it is negative. The R-square value in case of sugar sector of 0.336 means that 33.6% change in economic leverage is caused by the macroeconomic factors used in this study.

Table 5.11 Industry-wise influence of macroeconomic variables on capital structure choice of listed firms in BSE, India

	<i>Paper</i>	<i>Transport and T.Com</i>	<i>Fuel and Energy</i>	<i>Auto and Parts</i>	<i>Cement</i>	<i>Pharma and Chem</i>	<i>Food</i>	<i>Sugar</i>	<i>Textile</i>
<i>Variable</i>	<i>Coefficient</i>	<i>Coefficient</i>	<i>Coefficient</i>	<i>Coefficient</i>	<i>Coefficient</i>	<i>Coefficient</i>	<i>Coefficient</i>	<i>Coefficient</i>	<i>Coefficient</i>
<i>C</i>	2.023	-0.916	-0.058	0.522	-0.697	0.426	1.542	3.742	1.086
	1.041	0.862	0.187	0.211	0.687	0.138	0.678	1.724	0.243
	0.003	0.071	0.089	0.027	0.512	0.000	0.004	0.031	0.000
<i>TAX</i>	0.204	-0.035	0.189	0.061	0.063	-0.010	0.069	0.035	0.055
	0.047	0.028	0.030	0.019	0.097	0.011	0.045	0.063	0.021
	0.000	0.238	0.000	0.002	0.044	0.367	0.105	0.583	0.009
<i>RIR</i>	0.007	0.015	-0.003	0.008	-0.003	-0.002	0.015	-0.078	0.001
	0.009	0.016	0.003	0.007	0.009	0.002	0.008	0.019	0.004
	0.613	0.230	0.371	0.305	0.717	0.475	0.016	0.001	0.841
<i>GDPR</i>	0.009	0.036	-0.001	0.003	0.011	-0.001	0.004	-0.094	0.008
	0.011	0.016	0.003	0.006	0.009	0.002	0.008	0.019	0.005
	0.303	0.010	0.678	0.591	0.442	0.669	0.161	0.000	0.148
<i>EXG</i>	-0.011	0.024	0.002	-0.007	0.003	-0.001	-0.004	-0.012	-0.004
	0.497	0.405	0.082	0.001	0.310	0.059	0.334	0.128	0.126
	0.028	0.000	0.008	0.000	0.983	0.154	0.260	0.621	0.006
<i>PD</i>	-0.980	0.155	0.427	0.122	1.327	-0.196	-1.019	2.079	-0.410
	0.559	0.695	0.143	0.332	0.462	0.108	0.363	0.016	0.186
	0.011	0.983	0.003	0.676	0.007	0.058	0.001	0.000	0.121
<i>SMD</i>	-0.162	-0.166	0.008	-0.028	0.042	0.009	-0.124	0.232	-0.078
	0.222	0.249	0.045	0.101	0.134	0.038	0.150	0.370	0.066
	0.149	0.085	0.693	0.597	0.457	0.944	0.560	0.603	0.123
<i>R-square</i>	0.423	0.562	0.434	0.358	0.406	0.368	0.526	0.336	0.524
<i>S.E</i>	1.111	0.996	0.642	0.784	0.987	0.825	0.936	1.168	1.076
<i>F-Value</i>	5.618	9.803	5.874	4.642	5.160	5.080	8.258	4.460	9.512
<i>P-Value</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Lastly, in the textile industry we find a statistically significant effect of corporate taxes, public debt, exchange rates, stock market development on economic leverage. The remaining macroeconomic factors exhibit an insignificant effect on the dependent variable. As we can see from the table there is a positive effect of corporate taxes, real interest rates, GDP growth rates and economic leverage whereas in case of exchange rates, public debt and stock market investment it is negative. R-square for textile sector is 0.524 as far as textile industry is concerned which means that 52.4% change in economic leverage is caused by the macroeconomic factors used in this study.

In India also we find insignificant impact of stock market development on economic leverage in selected industrial sectors except textile. This proves one point that in developing countries stock markets are inefficient as compared to developed countries in terms of cost and access thus discouraging firms borrow from the stock markets.

Interest rates also has weak impact on economic leverage in the selected industrial sectors of BSE except food.

GDP growth rates in India have an insignificant impact on economic leverage in all selected industrial sectors except transport and telecommunication and sugar. A possible explanation for this can be that Indian economy has shown phenomenal growth in the last few years or so. Firm profitability is expected to increase in presence of such impressive growth rates thus enabling firms to use their retained earnings for further financing instead of borrowing external loans. Bokpin (2009) also concluded that since increases in GDP growth rates positively affect earnings of the firms therefore, firms prefer to use retained profits over debt.

Public debt also has a significant impact on economic leverage in most of selected industrial sectors of BSE. However the effect is positive in some sectors while negative in

others. In pharmaceutical and chemicals, paper, food and textile it is negative which means that rise in public debt leads to decline in leverage levels of firms listed in these sectors. In a study on developing countries, Mokhova and Zinecker (2014) found a negative impact of public debt on corporate capital structure. On the other hand, government needs to develop infrastructure for industries before private sector can come in and invest in those industries. Without government investment in infrastructure, private sector does not have the capacity to do so on their own. Therefore, in order to develop infrastructure governments resort to borrowing encouraging private sector to invest. Additionally, most of the projects are run on public private partnership in which case public debt level as well as borrowing by private increases to finance such projects. Dincergok and Yalciner (2011) in a study on developing countries also found positive effect of government debt on corporate capital structure.

To conclude both in Pakistan in India macroeconomic variables has a varied influence on the financing decisions of the firm operating in the selected industrial sectors. Some industrial sectors are more affected by these macroeconomic variables while others are less.

Chapter 6: Conclusion

This chapter aims to summarise the main findings, provide policy implications and highlight the limitations of the study as well as suggestions for further research in this area. The main objective of this research was to measure the effect of macroeconomic variables on capital structure decisions of listed firms in Pakistan and India. Data was collected from various databases including World Bank, SBP, RBI, money control database etc. To the best of our knowledge we believe that no prior study with the set of variables that we used in this study was conducted before in Pakistan and India. Additionally, this study further adds to the limited amount of research on capital structure that used panel data regression as a model for estimation.

This chapter follows the following structure: section 6.1 presents the main findings of the study, section 6.2 presents the study limitations, section 6.3 present policy implications and section 6.4 discusses the prospective avenues for future research in the area.

6.1 Summary of main findings:

Findings of the study are divided into three parts. First, we analysed macroeconomic factor's impact on capital structure of listed firms in Pakistan and India using data collectively. We found significant effect of corporate taxes, RIR, GDPR, exchange rates, stock market development and public debt on economic leverage. It means that these macroeconomic factors are important in the context of their impact on the capital structure decision of the firm. Furthermore, we found out that the effect of corporate taxes, real interest rates, GDPR and economic leverage is positive whereas as in case of exchange rate, public debt and stock market development, it is negative.

Next we did a comparative analysis of macroeconomic factors and their effect on capital structure decisions of firms between KSE (Pakistan) and BSE (India). The results from Pakistan indicate that only corporate taxes, GDP growth rate and exchange rate significantly affect economic leverage whereas in India only corporate taxes significantly affect economic leverage. In Pakistan corporate taxes, real interest rates, GDP growth rates, and stock market developed positively affect economic leverage whereas exchange rates and public have a negative impact on economic leverage. In India corporate taxes and GDPR have a positive effect on economic leverage whereas exchange rates, public debt, stock market development and RIR have a negative effect on economic leverage.

Lastly, we performed inter industrial analysis of Pakistan and India as far as the impact of macroeconomic factors on capital structure decisions is concerned. We found out that the effect of corporate taxes with economic leverage was significant in paper, fuel and energy, auto and parts, pharmaceuticals and chemicals and textile sector. In case of real interest rate the effect was insignificant in all selected industrial sectors of KSE. In case of GDP growth rate the effect was significant in all selected industrial sectors of KSE. In case of exchange rate also the effect was significant in all selected industrial sectors of KSE. In case of public debt it was significant only in transport and telecommunication sector. Lastly, in case of stock market development it was significant in transport and telecommunication and textile sector.

In India, the effect of corporate taxes and economic leverage was significant in paper, fuel and energy, auto and parts, cement and textile sector. In case of real interest rates it was significant only in food and sugar sector. In case of GDP growth rate it was significant in transport and telecommunication and sugar sector. In case of exchange rate it was significant in paper, transport and telecommunication, fuel and energy, auto and parts and textile sector. In case of public debt it was significant in paper, fuel and energy, cement, food, sugar and

textile sector only. Lastly, in case of stock market development it was significant only in textile sector.

Since we aimed at analysing the effect of macroeconomic factors on capital structure decisions of the firm, we can conclude on the basis of our findings that all macroeconomic factors do affect the financing decisions of the firm.

6.2 Recommendations

Based on our findings, it is recommended that governments in both countries should take necessary steps to provide stable and conducive economic environment that will help firms to make effective long-term decisions. The reason being that local market cannot develop unless and until there is macroeconomic stability and sound legal environment that protects property rights. Hence, government has an important role to play here and is not limited to providing a stable macroeconomic environment. It is also important that an institutional framework be provided that promotes and protects the rights of investors. If investor's rights are protected then investors will be encouraged to use financial markets for investment purposes.

Capital markets can be further developed by carrying out some necessary reforms like pension reforms, tax reforms and financial liberalization that will help in increasing the size of the capital markets in both Pakistan and India. The creation of pension funds in particular can greatly help in increasing the base of institutional investor. Moreover, protection of the interest of the minority shareholders through corporate governance reforms can greatly enhance the base of foreign and institutional investors and tax reforms related to the tax treatment can make securities issuance and investment even more attractive to investors and

issuers thus increasing the market size as a result of increase in demand and supply of securities.

For the development of underdeveloped bond markets government in both countries should help create rating agencies that will be beneficial for investors in providing independent credit risk assessment. Credit risk assessment is a key factor in the development of local bond market.

Additionally for corporate managers it is important to understand the influence of macroeconomic environment on firm performance. Globalization and integration of financial markets have made domestic economies exposed to real and monetary shocks happening in the global markets. Therefore, managers must keep an eye on exchange rates, interest rates level of inflation as they can severely affect the corporate performance of a firm.

From corporate planning perspective, it is important for managers to distinguish between policy and non-policy generated macroeconomic shocks and real and monetary disturbances. The distinctions in both these areas will be of immense help to managers in forecasting because generally it is the source of the shock that determines its impact and duration.

Managers must also determine their exposure to these macroeconomic shocks because in the financial markets certain financial instruments have been developed that not only will protect firms against these macroeconomic shocks but also will help the organizations to make a profit from them as well. However, proper understanding of these instruments is extremely important as lack of proper understanding may lead to financial losses.

It is imperative for managers to understand the interrelationships among variables also. A change in one variable like exchange rates may bring changes in interest rates and

inflation rates as well. If exchange rate goes upwards then imported products will be become expensive. The increase in input prices will lead to increase in the production costs and ultimately sale price of the final product. As prices increase so will be the rate of inflation.

6.3 Limitations of the Study

One major limitation of the study was the availability of data. Data for a number of firms particularly with respect to India was either unavailable or available but was not complete. Another limitation of the study was that financial information for listed firms was available to us only. Therefore, we were unable to use non-listed firms in our study as they might have also given us more useful insights with respect to macroeconomic factor's impact on capital structure decisions. In any economy majority of the firms are small and medium size which are not listed on the stock exchange. The inclusion of such firms could have enriched our findings and made them more generalizable particularly in the context of Pakistan and India.

6.4 Policy Implications

This research concludes that macroeconomic variables play an important role as far as financing decisions of the firms are concerned in both countries. Tax rate increases provides an incentive to borrow to exploit tax shield advantages, developed stock market provides access and efficient loans to the private sector, stability of exchange rate is important for firms.

Interest rates are important as far as economic development and growth is concerned, lower interest rates and controlling inflation will encourage firms to borrow and invest in opportunities available in the market. Uncertainties in the economic environment can lead to

lower borrowing by the firm. Therefore, government should set monetary and fiscal policy with the aim to stabilize the economy and promote economic growth.

Government should also restrict their borrowings from the market to allow private sector to take advantage from the additional funds that will be available in the market. Government should also take necessary steps to stabilize exchange rates as exchange rate significantly influences inflation and interest rates which in a way affects economic growth. For the mitigation of exchange rate risk the development of derivative markets could be influential in managing exchange rate risk.

Furthermore, emphasis should be placed on the development of stock markets as it not only a cheap and easy access to finance for firm but is also used as barometer for assessing health and performance of an economy. To enhance the size of capital markets and make it more attractive for investors, it necessary to carry-out necessary reforms like tax reforms, financial liberalization and pension reforms to increase size of market. Steps should be taken to develop the underdeveloped bond market that will be critical in meeting the financing needs of the firm.

6.5 Future Research

In this research we measured of macroeconomic factors impact on capital structure decisions of the non-financial listed firm in KSE and BSE. Therefore, in future research we can measure macroeconomic factors impact on the firms listed in financial sector as empirical literature provides no such evidence as far as exploring the effect of macroeconomic factors on capital structure decisions in the financial sector is concerned. Financial institutions are more expose to the macroeconomic variables used in this study as government borrow from local financial institutions, exposure to foreign currency is much more etc.

Additionally, it will also be interesting see how other external factors like technological factors; political factors and socio-cultural factors influence the capital structure decisions of the company. Firm prefer to operate in stable and safe environment. The pace of technological change may be an important factor particularly for high-tech companies involved in huge research and development programs as factor that could affect firm leverage.

Lastly, our focus was on listed firms only whereas in future the study could be expanded to non-listed firms in order measure the effect of macroeconomic factors on financing decision of the firm. In any economy, the proportion of small and medium enterprises (non-listed) is comparatively high and analysis of such firms will provide more meaningful insights as far as the behaviour of the firm while making financing decisions in the presence of these macroeconomic factors.

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