# FINANCIAL SIGNALING AND INFORMATION ASYMMETRIES IN DEBT VS. EQUITY

**(THE THEORY AND EMPIRICS AMONG EMERGING AND TRANSITIONAL MARKET: PERSPECTIVE FROM PAKISTAN)**


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**Department of Business Administration**
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## Rana Shahid Imdad Akash

**REG NO: 13 - FMS/PHDFIN/F09**


A thesis submitted in partial fulfillment of the requirements for the degree of Ph.D in Finance at the Department of Business Administration, Faculty of Management Sciences, International Islamic University Islamabad, Pakistan

**Dr. Zaheer Abbas** **January, 2018**

(To be submitted to the Department of Business Administration, Faculty of Management Science , International Islamic University Islamabad at the time of Submission of Thesis by the Supervisor)

FORWARDING SHEET

The thesis entitled **FINANCIAL SIGNALING AND INFORMATION ASYMMETRIES IN DEBT VS. EQUITY** submitted by Rana Shahid Imdad Akash in partial fulfillment of Ph.D. degree in Finance has been completed under my guidance and supervision. I am satisfied with the quality of student's research work after substantial changes and allow him to submit this thesis of further process of as per IIU rules & regulations.

Date:_____ Signature:_____

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(Acceptance by the Viva Voce Committee)

Title of Thesis **FINANCIAL SIGNALING AND INFORMATION ASYMMETRIES IN DEBT VS. EQUITY**

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Accepted by the Faculty Management Science Department of Business Administration INTERNATIONAL ISLAMIC UNIVERSITY, ISLAMABAD in partial fulfillment of the requirements for the Ph.D. Degree in Finance

Viva Voce Committee

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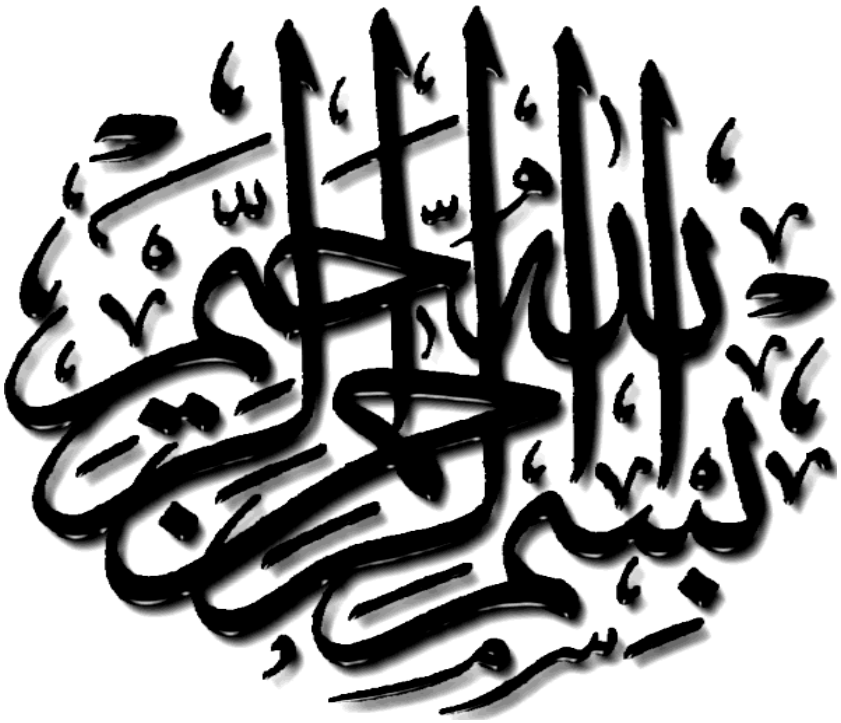
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# ABSTRACT

This study examines the relative effect of capital structure theories and the determinants to establish best understanding of the most appropriate theory to explain debt vs. equity hypothesis and the behavior of firms. The theories provide theoretical basis to compare with empirical findings of quantitative analysis. This study covers the period from the period 2001 to 2010 of listed companies of Karachi Stock Exchange, Pakistan. It is obvious that determinants of capital structure affect the choice of debt vs. equity in emerging and transitional economies. A number of econometric models from OLS to EBA are being used to identify the empirical evidences for this perspective. The results reveal that seven variables: investment growth opportunity (IGO), agency cost (AC), liquidity (CR), financial flexibility (FF), free cash flows (FCF), tax effect (DP) and interest rate (IR) have robust - signaling relationship and highly sensitive to debt vs. equity. This study explains the financial signaling and asymmetry of information risk due to debt vs. equity decisions. For the whole sample period, the study found evidence of financial signaling and information asymmetries of risk due to Debt vs. Equity decisions. There is a significant effect of the systematic risk (β), should also report about the persistence of negative effect during the sample period. There is a significant effect of the interest rate (IR). The empirical results report about the persistence of interest rate (IR) negative effect during the sample period. It is observed and resulted that increase in debt vs. equity negatively associated with the value of the firm. This proved inverse relationship among debt vs. equity and firm value variables. This showed inconsistency of prior findings as Modigliani and Miller (1958) theory that the market value is irrelevant to financial policy. The results presented that corporate corporate governance (CG) has significant effect on firm performance (FP) under transaction cost economics theory and good management theory. It is obvious from the results that corporate governance (CG) has significant effect on the firm value. In addition, it is also shown that corporate governance (CG) does have mediating and moderating effect in between the corporate financial structure (CFS) and firm value. The negative relationship shows an agency problem. Therefore, the investors do not have the equal information of the particular firm as the manager holds. Furthermore, the financial signaling and asymmetries of information hypothesis reflected that choice of debt or equity must have influence the behavior of the investor due to information asymmetries, it is seen negative and increase threaten of bankruptcy and financial distress. It is found that product and asset specificity diversification have a significant relationship with capital structure for best alignment of cost with trade off signaling and asymmetric risk. However, Extreme Bound Analysis (EBA) an econometric technique is used to analyze the variables and investigates the significant empirical findings. The empirical findings of the study have implications for risk management appropriately to reflect the effect on financial decisions in emerging and transitional economies.

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## DECLARATION

I hereby declare that the research work is my own work and no part of this thesis is copied out from any source. It is further declared that this research is entirely my personal effort made under the sincere guidance of my supervisor Dr. Zaheer Abbas. No segment of this work presented in this research thesis has been submitted in support of any other degree /qualification of this or any other university or institute of learning.

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**RANA SHAHID IMDAD AKASH**

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| ABBRIVATIONS | COMPLETE WORD |
|---|---|
| DE | Debt Vs. Equity |
| EBA | Extreme Bounds Analysis |
| EMH | Efficient Market Hypothesis |
| CG | Corporate Governance |
| MVA | Market Value Added |
| ACT | Agency Cost Theory |
| TOT | Trade Off Theory |
| POT | Pecking Order Theory |
| KSE | Karachi Stock Exchange |
| IFS | International Financial Statistics |
| TCE | Transaction Cost Economics |
| WACC | Weighted Average Cost of Capital |
| SECP | Securities and Exchange Commission of Pakistan |
| SBP | State bank of Pakistan |
| PICG | Pakistan Institute of Corporate Governance |
| EBIT | Earnings Before Interest and Taxes |
| RFR | Risk Free Rate |
| IPO | Initial Public Offering |
| MTH | Market Timing Hypothesis |
| TSE | Tehran Stock Exchange |
| GDP | Gross Domestic Product |
| SME,s | Small & Medium Enterprises |
| LSM | Least Squares Method |
| OLS | Ordinary Least Square |
| FDI | Foreign Direct Investment |
| CSP | Corporate Social Performance |

# CHAPTER 1

# INTRODUCTION

# 1. INTRODUCTION:

## 1.1 Brief Statement of the Study:

The corporate growth and development is influenced by changing and increasing patterns of the orientation of the markets. The knowledge, institutions, managerial behavior and the capital structure decisions are the key factors which are used to determine the nature of the corporate firms (Harvie and Naughton, 2000; Hovey and Naughton, 2000; Hovey and Naughton, 2007). The rapid change in economic environment, diverse business models and ownership structure evolvement cause various puzzles in the financial decisions. It is believed that the fundamental relationship of debt vs. equity with the financial and non financial factors is basic device of rapid change in the corporate sector. The financial and non financial factors determine the level of the relevant theories of the capital structure. The capital structure relevance theories emerged in the 1950s and argued that capital structure affects the firm value (Durand, 1952). However irrelevance theory proposes that capital structure is irrelevant in the determination of the firm value in an efficient and perfect market. The higher return on assets relative to cost of capital leads to higher firm value (Modigliani and Miller, 1958). Modigliani and Miller (1963) argued the optimal capital structure lies where present value of tax shield is equal to the present value of cost of financial distress. Ross (1977) added the concept of financial distress. The balance between the benefits of debt and cost of debt is used to eliminate the financial distress. The minimization of cost and advantage of the worth of the assets are concerned with the growth of a firm. The growth firms are expected positive cash flows in future. The cost of the interest of a debt and principal amount are fixed and paid from large cash flows of the firm. As a result, the higher level

of debt is considered as representative of a manager confidence and ability to pay fixed obligations in future. The payment of fixed obligations is also used to create trust in an investor due to positive expected cash flows. The trade - off between cost and benefit in trade off theory considers the influence of corporate taxes (Modigliani and Miller, 1963) and personal tax (Miller, 1977) non debt tax shield (DeAngelo and Masulis, 1980), bankruptcy cost (Baron, 1974 and Warner, 1977) on financial policy. The debt can provide the benefits by increasing the value of the firm due to tax deduction on the interest of debt. DeAmgelo and Masulis (1980) studied that depreciation, investment tax credits and depletion allowances are the non-debt tax shield that can provide corporate tax saving of debt. The debt has also the cost of bankruptcy. Baron (1974) documented the theory of bankruptcy that more debt can increase the risk of equity. It can increase the cost of equity, higher the threat of bankruptcy and cost of bankruptcy. The capital structure may be at optimal level where total risk should be minimum. The capital mix produces two type of risks, the financial risk due to use of debt or securities bearing fixed interest and non-employment of debt risk due to issuance of equity where the cost of floatation may be increased as compared to the debt composition. Thus the balance between financial risk and risk of non-employment of debt may increase market value. Trade off theory (TOT) suggested that factors representing debt benefits has positive effect on debt level and factors representing debt cost have negative effect on debt level. Trade off theory (TOT) considered that these positive and negative factors offset their effect and create optimal capital structure. The optimal capital structure can be used to produce the maximization of the shareholders wealth. Pecking order theory (POT) documented the asymmetry of information among shareholders, managers and creditors

under decisions of debt or equity. Myers & Majluf (1984) considered that insiders (managers or existing shareholders) have private and better information as compared to outside investors or creditors. Therefore, the hypothesis of optimal capital structure is rejected by pecking order theory (POT) due to asymmetry of information. It is argued that firms normally used internal funds - retained earning instead of external funds – debt instead of equity finance. The adverse selection of finance can have the asymmetric information to generate the negative signal to the market. The negative signal can create the phenomenon of under-investment and ultimately under price the securities. The adjustment of best financial policy is very costly under imperfect market and in particular in dynamic trade off conditions. However, markets are not perfect in reality. So, the landmark research of Miller and Modigliani cause a particular reaction to a rapid development of research into development of capital structure determinants and its impact on value of the firm under imperfect market. The financial decisions are made in order to increase the fundamental value of the resources. The fundamental value of corporate sectors can be reflected only in an efficient market. The theoretical underpinnings of financial management are desired to optimal financial structure, minimizing the cost of financing and ultimately maximize the value of firm. The optimal financial structure has a significant impact on capital market. There are various important factors that may have significant importance with reference to the relationship of the capital structure and the market factors – macroeconomic factors. The several studies regarding the optimal capital structure theories are based on internal structure of the company which may base on stability and smoothness of economic factors. There is a definite reason to test the impact of macroeconomic variables on capital structure. The

external factors of the companies are less considered in previous studies. The various external factors such as management planning; financing and macroeconomic variables may be significant. The changes in macroeconomic variables and micro variables have significant effect on capital structure and ultimately financial resources. The financial resources are highly sensitive to the situations of economic factors. The fluctuation and changing pattern of macroeconomic factors in Pakistan during last decade may represent the economic condition of the country. The investor's decision making of investment will lead to market situations and represent the economy of the country. The investment theories and behavior of the economy are used as a logical criterion of change in financial policy and finally market value of firms.

The investments decisions should also be improved by reducing agency cost and asymmetric behavior with the presence of good corporate governance. The studies into financial policy are concerned with corporate governance approach. Jensen and Meckling (1976) documented that debt vs. equity is a part of a corporate governance mechanism. The system that protects the rights of the shareholders is acknowledged as corporate governance mechanism. Claessens et al. (2002) argued about good mechanisms of corporate governance which is used to help through better access of financing with low cost of capital advantage. Although goodness of the corporate governance mechanism has been practiced at all times that may have best assistance to economic development. It is viewed that growing trend is subject to corporate governance. The poor governance structures of firms may face more agency problems. It is observed in the agency cost theory (ACT) concerning the principal and agent behavior of corporate governance and financial policy. At first, the agency cost theory (ACT) is

used to examine the effect of agency cost of debt which is raised from the conflict between the interest of shareholders and creditors. At second, the agency cost of equity is raised from the conflict between the interest of shareholders and managers. The managers of these firms have obtained more personal benefits due to weak governance structures. Sheleifer and Vishny (1997) supported that corporate governance make assurance to supplier of finance of their return on investment. The return on investment is the best representative of efficient resource allocation. In public limited companies, investors and shareholders do not have control over resource allocation and have limited access to decision making. The ownership and control are separated in public limited companies. The separation of ownership and control can cause conflict of interests between owners and managers. The conflicts usually arise when managers tend to forego the owner's interests and give priority to their personal interests. The personal interest of the managers leads to agency cost. The agency costs of a firm are associated with the level of its corporate governance. Core et al. (1999) explained that firms faced cost of agency problems due to weak corporate governance. Corporate governance is used to describe a process and practice of corporate entities. The process recognizes to ensure that the management and business is carried in accordance with the ethical standard for protection and promotion of stakeholder's interest. The corporate governance builds good faith, competency, trust, transparency, accountability and professionalism. The body of rules, regulations and practices dynamically evolved to match the changing environment and requirements in which firms operate.

The trust, transparency and accountability are the fundamental aspects of corporate governance. The system of fundamental aspects is used to direct and control the

responsibilities of directors and managers with the objective to set strategic aims, focusing and establishing financial policies and others. The implementation of law, rules, policies, practices can enhance the performance. The mechanism of corporate governance can eliminate and resolve the agency problems of stakeholders.

It is experienced a robust growth and great potential attracts capital of firm with best corporate governance. The changes have been observed in world economies over last decade. The changes have also taken place in Asia. The development has also affected Pakistan, which required more transparency, accountability, auditing and protection of the rights of minority shareholders. The popularity and developments in framework of corporate governance are due to increase in demand of investment capital. This is actually the acknowledgement and realization that poor corporate governance hinders the investment capital and development in economies. The dramatic changes in economies have affected capital markets. Corporate governance plays a vital role for growth in financial markets. In particular, corporate governance mechanisms are basically concerned to the prospective investors, fund's managers, government and other stakeholders. This caused shift in dynamics of financial market at global scenario. The managers can attain more private benefits where the weak corporate governance structure exists. A poorly governed firm has to bear higher agency cost. The agency cost creates the investors' lack of confidence and scarcity of funds for a firm. The agency issue arises due to lack of protection of shareholders value. The conflict of lack of shareholder's confidence ultimately results in an asymmetric behavior and reduction of firm value. A well managed firm follows high level corporate governance and thus experiences low agency costs and reduction in asymmetric behavior. The corporate framework is the

solution to produce in better management practices. Although the importance of corporate governance is widely accepted for public limited companies, there is an emerging issue of value creation by corporate governance for firms. The shareholders authorize the board of directors and managers on their behalf to run the affairs of the corporations. The corporate governance focuses on the areas of monitoring management actions, limiting managers' opportunistic behavior and proper disclosure of information to ensure transparency and value creation. That is how; the corporate governance comes into play to resolve the issues of mismanagement and poor governance. The corporate governance is the device to control the risk of agency cost and asymmetric behavior. The risk of agency cost and asymmetric behavior can also be minimized by strategic attitude of the firm. The strategic attitude of the firm is very important to control the risk, freedom of decisions and flexibility.

The corporate failures - international scandals such as WorldCom, Enron, One-Tel, Parmalat, Ansett, etc have awakened the requirement to implement practices of corporate governance not only in the developed economy but also in the emerging, transitional and developing economy as well. There are lots of examples available for poor corporate governance. It can be put attention around the world regarding to the nepotism, non-fulfillment of governance rules, irregularities in accountancy practices by mis-presentations, fraudulent practices and lack of fairness of affaires in business. The examples being practised are often named as corporate scandals at firm level or at national level i.e. scandal of the privatization of PTCL - 2006, scandal of the Taj Company and scandal of the Mehran Bank. The corporation in Pakistan is mostly under control of families by pyramidal & tunneling ownership structures. The framework of the

institutions has to be strengthened by transparency & accountability in reporting framework to improve the corporate governance system in Pakistan. The companies' ordinance 1984 required to establish Securities and Exchange Commission of Pakistan (SECP) and Pakistan Institute of Corporate Governance (PICG). The Securities and Exchange Commission of Pakistan (SECP) established under SECP Act 1997. The State Bank of Pakistan (SBP) and the Securities and Exchange Commission of Pakistan (SECP) are held responsible for the development of sound practices of corporate governance. The State bank of Pakistan (SBP) is the authority to control over monitory policy and financial system of economy. Pakistan Institute of Corporate Governance (PICG) encouraged good practices of corporate governance. The Securities and Exchange Commission of Pakistan (SECP) started operations on 1st January 1999 and March 2002. The Securities and Exchange Commission of Pakistan (SECP) issued the code of conduct to make governance good. These codes assist to recommend good governance practices. These codes faced much criticism and difficulties at initial level in enforcing and implementation. The code opens the new dimensions of corporate governance in Pakistan. The prescribed rules to corporate governance fulfillment statements should be reported and followed by the firms listed under stock exchange. The financial policy itself is a strategic choice of decision makers. The strategic choice -business strategy is based on two main concerns: product diversification and transaction cost economics (TCE). Naughton and Taylor (1994) and Jordan, Lowe and Taylor (1988) evaluated the relationship between product diversification and capital structure. Williamson (1988) and Kochhar (1996) documented transaction cost economics (TCE) have relationship of capital structure and transaction cost of debt and equity with asset specificity. In the

1980s, research was broadened regarding the financial policy in view point of business strategy approach. Barton and Gordon (1988) examined the linkage of financial structure and business strategy. The scope of the firm and business strategy implicate the diversification on financial policy. The business strategy approach is used to consider the impact of product diversification and asset specificity on financial policy. The product diversification for financial policy is actually the degree of risk diversification. The product diversification assumed that the financial policy reflects the perceived risk of a firm. The transaction cost varies with asset specificity and risk. The wider the scope of business reflected the more risk and narrow the scope of business reflected the less risk. No, doubt increase in debt level perceived sustainable when there should be a diversified business. The business strategy is actually balance between asset specificity – cost reduction and product diversification – risk reduction by the choice of financial policy. The benefits of assets specialization is used to reduce the cost by increase in economies of scale. The cost of specialization is important to increase in business risk which makes an attraction to reduce debt finance. The specialization also makes an attraction for internal finance or equity finance. The shift in specialization strategy to the diversification strategy makes reduction in risk specialization as well as benefits of specialization. The shift in business diversification from specialization of business is used to reduce risk and the cost of efficiency to make an attraction for debt finance.

## 1.2 Problem Statement of the Study:

The traditional financial theories observed as the main conclusion of corporate tax and growth determinants (Modigliani and Miller, 1958). The signaling theory, business strategy – transaction economics theory (Barton and Gordon, 1988) and corporate

governance – agency theory (Jensen & Meckling, 1976) suggested that the behavioral factors should be used to influence the financial signaling and Information asymmetries in debt vs. equity in the context of Pakistan. This study is moved beyond the traditional and conventional approach and supported the psychological dynamic. This study includes the model of financial signaling and Information asymmetries in debt vs. equity to recognize the importance of business strategy approach and corporate governance approach in the psychological perspective. The difference of perspective is helped to examine the fundamental research problem for unified understanding of the theory and empirics of debt vs. equity.

*What are the factors which will be used to determine the financial signaling and Information asymmetries in debt vs. equity in Pakistan listed companies over a period of change and transition between 2001 – 2010.*

The fundamental research problem provides two significant secondary problems.

1) The relative impact of the agency cost, transaction cost, negative signaling and asymmetric information in debt vs. equity and market value in emerging and transitional market.
2) The observed underlying relationships in key assumption of financial signaling and Information asymmetries in debt vs. equity in emerging and transitional market consistent with the theoretical and empirical evidence of economies of the developed market.

## 1.3 Significance of the Study:

The financial signaling and asymmetries in debt vs. equity can affect directly or indirectly to the behavior of investor and every economic activity at firm level. The investor behavior derived the economic activity at firm level and equity market. The behavior of market is the best representative of overall economy. The study of capital structure in the West economies and in the economy of Pakistan has used a single and narrow theoretical framework approach. In this study a multi - theoretical framework has been used to identify the key factors of financial policy of a firm. The key factors of a firm are not common as compared to previous research. It will, therefore, the study will add a broader point of view to examine the financial policy and the behavior of firms. The behavior of firm can be used to develop a linkage between standard finance theory and the behavioral finance theory. The linkage of standard finance to behavioral finance will enhance the support of the researcher for behavioral finance and its implications in the decisions of corporate finance. In the most of the corporate finance research relevant to capital structure, examined the traditional theories of capital structure. The application of signaling theory and information asymmetry theory is totally different perspective of investor concerning the investment decisions as compared to previous perspective in Pakistan. Pakistan has different institutional factors of financial policy behaving differently due to difference in orientation of market - economy. The difference in market

- economy orientation and behavioral perspective are the definite reason to prefer the transitional and emerging market - Karachi Stock Exchange (KSE) as compared to matured and developed market. The transitional and emerging market is distorted, imperfect and asymmetric. The asymmetric information's within emerging and

transitional economy lead to generate mis-presentation, agency problems and shift the psychology of investors at the same time. The negative or positive psychology should decide the financial signaling for investor in investment decisions. The financial signals are being used to create the phenomena of under-pricing and over-pricing the firm value. The firm value in transitional and emerging economies require more attention towards the financial covariates of financial policy. There is no study which closely evaluates the determinants of debt vs. equity and examination of relevant and irrelevant theories of capital structure in the context of Pakistan like Karachi Stock Exchange. The theories played a very vital role in decision making of firms. The decisions of firms operating in market - economy environment are dependent upon financial signaling and asymmetries. The signaling and asymmetric behavior is the main and significant concern of researcher and academicians in the transitional and emerging market. The existing literature of financial policy can be enriched through the prime support of behavioral application in Pakistan. Therefore, it should also be significant to enhance the empirical validity and sensitivity of debt vs. equity in the case of Pakistanis listed companies. The previous studies of financial capital structure have examined the choices of debt vs. equity without examination or consideration at the market value behavior of all Karachi Stock exchange (KSE) listed companies in Pakistan. The sensitivity of market value and debt vs. equity of behavioral context will enhance the proficiency to examine the nature of firms and market – economy of Pakistan. The study will take a rigorous approach to design the multi-disciplinary theoretical framework of debt vs. equity decisions and its link to nature of listed companies of Pakistan. The study is focused on Pakistan all corporate sectors and empirically examines the multi-disciplinary uncommon and unique factors that

determine the sources of financing. This may also justify the theory and empirics of new perspective with implications for future among transitional and emerging market. The psychological deviations are traced out to provide guideline for improvements in the value of firm in all sector of Pakistan. The study is equally important and helpful for researchers, academicians and corporate fund managers due to an innovative perspective with practical implications of debt vs. equity for future study. The study is also helpful for policy makers and government institutions while framing and implementations of new policies for corporate sector in Pakistan.

## 1.4 Potential Contribution of Study:

1. The existences of an efficient market hypothesis (EMH) is questionable due to imperfections, incompleteness and provide a support to the hypothesis of financial signaling, information asymmetries and anomalous behavior in the Karachi Stock Exchange (KSE) as the transitional and emerging market.
2. This research has justified that there is existence of contradiction in between the theoretical and empirical findings of capital structure theories in transitional and emerging market. It's due to difference in signs of the theoretical base and empirical findings of the study.
3. The proficiency of internal factors of firms is always based on macroeconomic factors which are useful to market situations and representative of economy to compose financial resources and choices of debt vs. equity.
4. The deviations through adverse selection and relative non application of theories in transitional and emerging market due to financial signaling and information

asymmetries assist as a guideline to improve the market value of the firms and the available choices of debt vs. equity.

5. The study contributed to account for the mediation effect of Corporate Governance (CG) as a solution of agency issue in between debt vs. equity and value of the firm. Hence, research can be extended to corporate social performance and debt vs. equity in emerging and transitional economy.
6. The study contributed to account for the role of product diversification and asset diversification of risk due to minimization of agency and transaction cost in a transitional and emerging market.

## 1.5 Objectives of the Study:

A number of determinants of debt vs. equity have guided the nature and direction of this work: The importance of debt vs. equity in the growth and development of firms. The transitional and emerging economy has an impact of internal, institutional developments of debt vs. equity and the development of firms due to change in the nature of market. The following motivations in the mind are used to set out to achieve of a number of objectives:

1. To examine the theoretical and empirical framework in the viewpoint of financial signaling, asymmetries and assessment of the relevance of capital structure theories for the corporate sector of Pakistan.
2. To examine the existence of agency cost and asymmetric behavior in the transitional and emerging market of Pakistan.

3. To investigate whether corporate governance affects the agency cost described under financial signaling and information asymmetries of debt vs. equity in the corporate sector of Pakistan.
4. To investigate the effect of business strategy in the transaction cost is described under the financial signaling and information asymmetries of debt vs. equity.
5. To evaluate the impact of financial signaling and information asymmetries in financing pattern and market value behavior empirics in emerging and transitional economy from corporate sector of Pakistan.
6. To study the risk of financial signaling and information's asymmetries and to propose an appropriate model of risk diversification strategy in debt vs. equity in the transitional and emerging market.

This study is used to describe the theoretical underpinning of debt vs. equity decisions and its contradiction with empirical findings. It is provided that changes in debt vs. equity have signaling effect through information asymmetry which effect market value of firms. The market value underpriced or overpriced in the market due to phenomena of financial signaling and information asymmetry. The information and agency problem have the relationship with efficient market hypothesis where market is not priced at faire market value.

# CHAPTER NO 2

# THEORETICLE FRAMEWORK

## 2.1 THEORETICAL FRAMEWORK OF THE STUDY:

The seminal research of Modigliani and Miller (1958, 1963) is inspired by Durand (1952). The Modigliani and Miller (1958, 1963) proposed irrelevance theorem, the decisions of capital structure has puzzled the researchers. The Modigliani and Miller have started to investigate the relationship between capital structure and the value of firm. They argued that firm value is not affected by capital structure choice. The subsequent researchers challenged the irrelevance theorem of capital structure and found various factors which influence the capital structure decisions. There are several major theories of capital structure which are based on different important assumptions i.e. tax shield benefits of debt, bankruptcy cost, agency cost and asymmetric information. The capital structure theories are developed to observe the behaviors of the firms. There is no unified understanding due to the conflicting group of theories with each other. Fama and French (2005) argued that stop running horse races in between the pecking order theory and trade – off theory. Barclay and Smith (2005) described that pecking order theory is incapable to explain the full array of financial policy. It does not mean that cost of information and signaling is not important in the decisions of firms. The cost and benefits are very important in the financing of firms. The studies of financial policy have serious flaws as argued by the Rajan and Zingales (1995) that there is no common set of determinants of optimal capital structure. There are basically two schools of thought. One pleads that the justified mix of debt vs. equity can have the power to control over cost of capital and maximize the firm value. The optimal capital structure is where the value of firm maximized due to increase in benefits instead of cost. The second school of thought pleads that corporate financial policy is irrelevant to firm value. The emergence and

present direction of outstanding theories and behavior of the firm is under discussion subsequently.

### 2.1.1 The Developments of Financial Signaling and Asymmetric Information:

The study of previous research is basically related to tax, bankruptcy cost and asymmetric information.

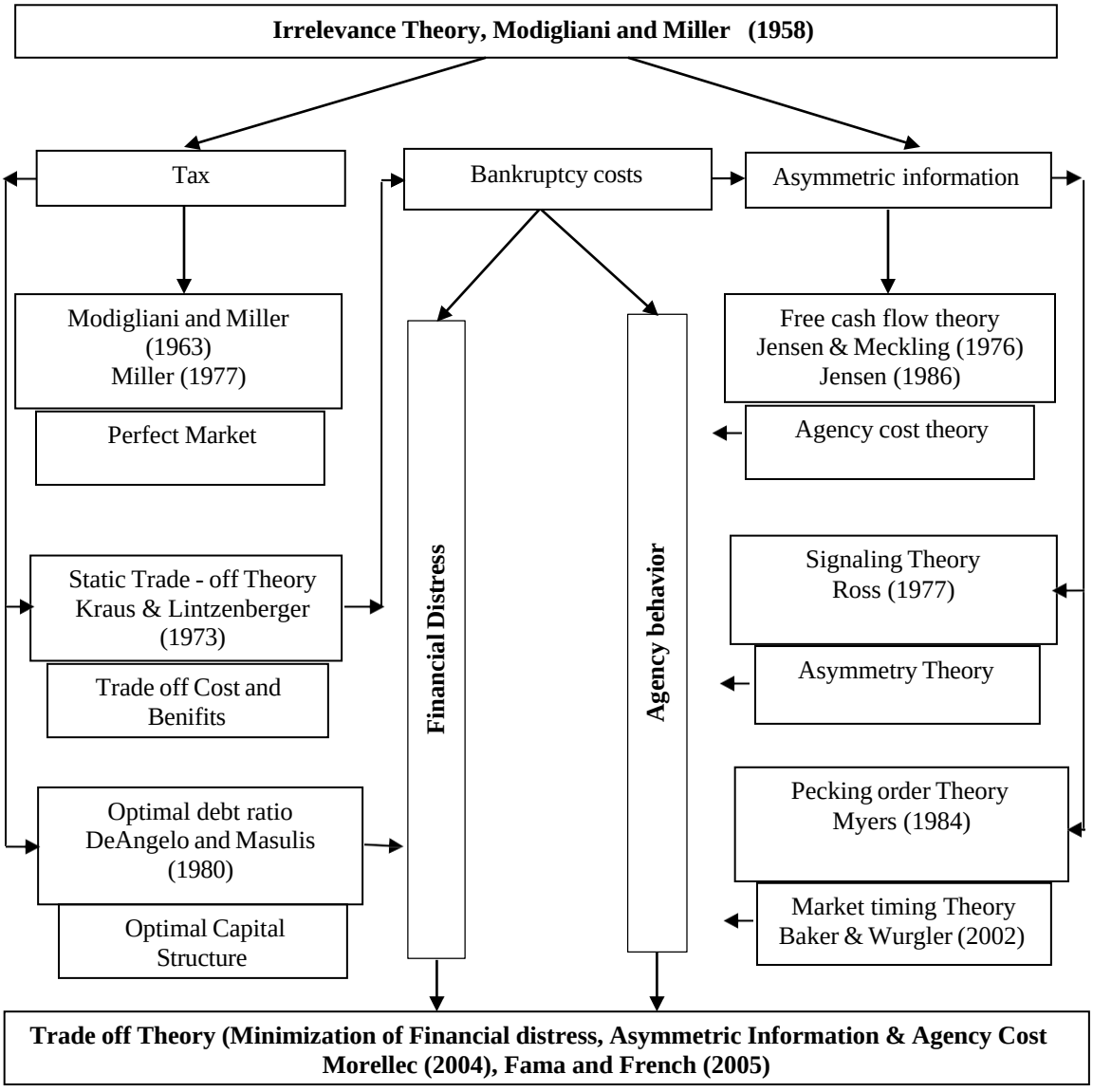


**Figure 1: The dynamic trade off - financial signaling and information asymmetries: the emergence of irrelevance theory to relevance theories.**

The literature of capital structure theories and practice is very extensive. The Modigliani and Miller (1958) proposed the model of irrelevance theory of perfect market which was relaxed due to consideration of tax shield (Modigliani and Miller, 1963). The trade off theory considers two conditions: tax shield and bankruptcy cost by Kraus and Litzenberger (1973). The questions of the fact have been trying best to answer that what are the major factors of change in capital structure. The change in the capital structure creates changes in the perception of the shareholders and debtors. The enough awareness of capital providers about the affects of change in capital structure insists them to react accordingly. This is the main concern of the theory of signaling. The capital structure and the firm value are positively associated by (Masulis, 1983). The evidence is consistent with the optimal capital structure and hypothesis of information asymmetry that brings about changes in the firm level. The signaling theory stated that asymmetric information among firms and outsiders framed the former to produce the changes in capital structure. The firm may prefer debt financing to equity financing under asymmetric information by Ross (1977), Myers & Majluf (1984) and John (1987).

On the other hand, the asymmetric information may create residual uncertainty between corporate insiders. Noe (1988) explained the relative presence of equity under pecking order effect. As the result of prevailed asymmetric information that the outsider do not keep accurate or quite enough information about the decision of the firm in future. This is the focal point to make changes in capital structure to provide signals to the outsiders regarding the financial decisions. The risk and market value relationship is related to the agency behavior and financial signaling. Jensen & Meckling (1976), Fama & Jensen (1986) documented that agency behavior, monitoring cost and conflict of

interest between bondholders and stockholder. The agency behavior may affect the decision of firm, due to changes in capital structure level and risk of a firm. The agency cost theory developed by Jensen & Meckling (1976) and Jensen (1986). The asymmetric information is used to create the agency behavior. The pecking order theory, market timing theory, free cash flow theory and signaling theory represents the assumption of asymmetric information. The difference in tax benefits and bankruptcy cost is used to create the financial distress. The financial distress and agency behavior supplied signal to the market. The financial signaling presented the ultimate objective of the firm's insiders is to increase the market value. The economists interpret the new ideology that more firm value changing opportunities when choice leverage level. The market value can be enhanced to make solution of the agency behavior or minimization of agency cost. The agency problem is associated with asymmetric information. Arrow (1985) explored that insiders of the firm have private information which are not revealed to outsiders of the firm due to hidden information ultimately created the agency problems. The insider's raised external funds by selling securities. It should lead to signaling concerned with expected value and prospects of the investment and its growth. To enhance the market value, Myers (1977), Froot et al. (1993) and Graham (1996) resulted that investment of growth firms are inversely associated to long term debt in the capital structure of the firm.

## *2.2 Traditional Theories:*

### *2.2.1 David Durand's relevance Theory: Effect of relative cost debt vs. equity on firm value.*

Durand (1952) described that the value of firm can be affected by its financial policy. There are the three key approaches as follows:

### *a) Net Income Approach:*

The debt is cheaper as compared to equity. The debts vs. equity mix, the weighted average costs of capital becomes low and make increase in the firm value. The cost of debt should be less than cost of equity and both are consistent. The overall weighted cost of capital decreases with an increase in leverage.

### *b) Net operating Income Approach:*

The more debt is used to increase the cost of equity due to higher debt risk. The higher debt burden increases the threat of bankruptcy and turn down value of firm and make increase in equity due to demand of risk premium more. Finally, debt vs. equity increases the weighted cost. The low cost of debt offset the increase in cost of equity and effects the value of firm.

### *c) Optimal Capital Structure Approach:*

The value of the firm is actually the balance between benefit of debt (lower down cost) and an increase cost of equity (lower down risk). The low cost and low risk optimize the financial policy and firm value.

## 2.2.2 Modigliani and Miller:

***Modigliani and Miller's Irrelevance Theory: The Effect of financial policy under perfect market and market value of firm.***

Modigliani and Miller (1958) described that the value of firm cannot be affected by its financial policy (debt vs. equity) under perfect market conditions. The Irrelevance theory offered the behavioral support to independence of total valuation and cost of capital from its mix of debt vs. equity. It supported the net operating income and rejected the traditional theory of optimal capital structure. The overall cost of capital and firm value

are independent to capital structure. The financial risk is increased with more debt and as a result there should also be increase in equity. The cost of equity will be lowered down due to cost advantage of debt and cost will remain the same. It should be only possible where market is perfect. The rational investors are free to buy or sell securities with no borrowing restrictions and complete information. There should be no concept of transaction cost, asymmetric information and agency cost under perfect market.

### *2.2.3 Trade off Theory (TOT):*

The trade off theory describes that an optimal capital structure is influenced by three factors taxes, costs of financial distress and agency costs. Scott (1976) described trade - off between cost and benefit with the optimal amount of debt. The debt benefit comes from the cheaper rate as compared to cost of equity. The deduction of interest payment is the reduction in cash in hands of manager. It will reduce the misuse of funds and agency cost between manager and shareholders. Jensen and Meckling (1976), Miller (1977) argued that cost comes from agency cost, the financial distress cost, bankruptcy and personal tax. Myers (1984) described the static trade off theory (STT) which is used to explain a firm follows a target debt to equity ratio and then performs accordingly. The cost and benefit associated with the debt selection sets this debt equity. These include taxes, agency cost and cost of financial distress which may increase or decrease in share prices due to doubtful situation on non-achievement of target. Modigliani and Miller theorem is based upon perfect market conditions. It was relaxed by one condition of tax adjustment that issuance of debt has benefit to increase the value of the firm due to tax shield or saving of debt interest. Modigliani and Miller (1963) identified that corporate tax have effect on the model presented that the event of tax, the choice of capital structure

has positive effect on the value of firm. The interest cost is the reason of tax deduction. Miller (1977) documented that personal tax put into question for consideration of corporate tax shield of debt can be reduced by this tax rate. DeAmgelo and Masulis (1980) reflected the effect of non-debt tax saving such as non-cash attribute e.g. depreciation, depletion allowance and tax credit on investment. He also argued that corporate tax benefit of debt should be more by expansion of the non-debt tax shield.

Finally, choice under trade – off theory of capital structure based upon the tradeoff between positive factors which can offset negative factors. Trade – off theory also argued about the optimal level of capital structure, where the firm value should be maximized. This maximization may have an impact on present value of debt tax shield. The phenomena of bankruptcy cost that may be raised due to financial distress. Kraus and Litzenberger (1973) described the trade- off theory (TOT) in the imperfect market by using bankruptcy cost and text shield. The more the text shield is used to increase firm value. The probability of bankruptcy may also increase at the same. The trade – off theory asserts that probability of bankruptcy cost overwhelm tax saving as high level of debts by firm. Therefore, the firm selects capital structure to find lowest cost of capital. Damodaran (1999) and Altman (1984) documented that the optimal capital structure is attained when benefits of tax and bankruptcy cost are equal.

## *2.3 Theories of financial signaling and asymmetric information:*

The problem of financial signaling and asymmetric information arises when the management possesses internal information of the company where investors of the company do not have full access of information of the company. Therefore the management has the choice of capital structure. This choice may provide the signals to

the market for future prospects of firm. The change in debt and equity – increase in debt may signals to the market that managers are more confident about servicing the interest expenses and debt payments. Therefore it would increase in market value of the firm by providing the positive signal of the size and future cash flows. Fama and French (1988) documented the disagreement with this notion that the more profitable firms do not need more debt. Therefore increase in debt may provide the poor signal for future prospects. It would affect the future earnings by decreasing and cash flows being used in servicing interest charges. This is the main reason to decline the amount of money which may be available for future development. Increase in equity may be used to build the perception of the investor that equity is overpriced and is going to be issued. This may provide negative signals to the market and the main reason is that investor may withdraw from the interest to buy the equity. This lack of interest ultimately reflected in decline of the market value of the firm.

### *2.3.1 Pecking Order Theory (POT):*

Myers and Majluf (1984) documented the pecking order theory (POT) postulates that firms follow hierarchy of financial decisions when establishing its capital structure. The capital structure is driven by companies financing needs for investments.

Firstly, firms have a preference to finance their projects through use of internal fund, i.e. retained earnings, then go for external financing means a bank loan then for public debt. At the last, goes for issue equity to finance a project. The reason for reluctance to issue equity by firms is due to asymmetric information between manager and investor. The under pricing of shares will create preference of management to debt to finance for the company investment. The over pricing of shares will create preference of management to

equity to finance for the company investment. This preference stream is based on differences in transaction costs, information announcement requirements and financial signaling effects among financing instruments. In under pricing and over pricing, the investor make their investment where the NPV positive. The transaction cost of internal funds (retained earnings) is very low. Van Horne (1995) explored that equity issues are considered as the last resort as they are associated with; a large issue costs, strict information requirements and financial signals of overpricing of the equity for investors. Moreover, pecking order theory is more important in; choice of capital structure of firms that managers are best protector of interests of shareholders. These theories are not mutually exclusive. Firms can choose target debt equity ratios that reflect the costs and benefits of debt financing put forward in the static trade-off may deviate from targets for the cause documented in the pecking order theory.

### *2.3.2 Signaling and Information Asymmetry Theory:*

Ross (1977) who developed signaling and information Asymmetry approach that a company conveys about the quality of information of the company to market due to selection of capital structure choice. There may be unequal distribution of information of company returns between management and investor. The management is assumed to better access of future prospects of the firm than the market. The distribution of higher quality may assume to use higher for overall value. The lower quality may assume to use lower for overall value. Then management can have excess to the returns but are penalized if the company goes to bankrupt. Trade off theory is used to explain that debt is used to increase investor's trust in the company because when company issues the debt, it provides a positive signal to the markets that the firm is expecting positive cash flows in

the future. The company issues the equity which provides a negative signal to the markets due to concept of overpricing in the mind of investor. The signaling factor which is already discussed it in the pecking order theory, is the issue of the mispricing or under- pricing of equity will generate the signal negatively due to concept of superior information about the firm by manager than investors, they might issue equity when it is overpriced which leads to agency problem. Stultz (1990) documented that agency issue can be solved up to some extent, if the management stake is raised the amount of debt in the capital structure. Heinkel (1982) identified that leverage and value or profitability of a company are also found positively related.

### *2.3.3 Market Timing Theory:*

Baker and Wurgler (2002) documented that the changes in capital structure are strongly and positively related to the timing of the market. The capital structure reflected the cumulative outcomes to time the equity of past attempts. It argued that new stocks are issued when the stock price is overvalued and buy back when the stock price undervalued. It is justified that macroeconomic and firm specific micro level factors influence the capital structure of the firm.

Mayer (1984) explained that the market value can be accelerated by managers due to change in stock prices. The equity is issued when it is high at price and debt is issued when equity is low at price. Frank and Goyal (2004) described that there is no empirical evidence to provide sufficient support and validation of this theory. It is also unable to define the optimal capital structure.

Lucas and McDonalds (1990) described that asymmetric information exists and stock prices turn down, the equity will be issued after release of information. Graham

and Harvey (2001) supported to Lucas and McDonalds (1990) that it is significant. Frank and Goyal (2009) reported that the adverse selection is only related with time, a negative association between debt and stock price exists. Mayer (1977) described that high book to market ratio is expected due to future growth expectations. The present value at market is used to estimate stock prices at recent. Frank and Goyal (2009) documented the relationship of the growth, adverse selection, asset value and market timing. The information misleading and collapse may result in no relationship due to wrong determination factors between leverage and stock prices.

## *2.4 Agency Theory of Capital Structure Choice:*

### *2.4.1 Agency Cost Theory (ACT):*

The agency cost theory depends on the concept of that the agent (managers) may not act in the interest of principals (owners). This misalignment may lead to loss in returns to the principals (investors). The agency cost theory is used to consider the effect of agency behavior of agent and principal on capital structure due to financial signaling and asymmetries. There should be conflict of interest between shareholders and managers and shareholders and creditors. Jensen and Meckling (1976) indicated agency cost as the monitoring expenditure of the principal, bonding expenditures by the agents and residual loss. Swanson (2003) also documented agency cost in detailed of creating and structuring contracts cost. It also includes monitoring, bonding cost and residual loss of opportunities. It should be beneficial in the absence of conflict of interest of the shareholders and mangers by separation of ownership from management. He also argued that this agency cost if finally ex-ante cost arising from incentive alignment. He given his suggestions about ex-post agency cost due to transaction drift out of alignment may

include monetary demand of principals are significant to reflect cost imposed on company as agency cost. Jensen (1986) argued that free cash flows are required for fixed payments of interest to reduce the cash position and possibility of misuse of funds and minimized agency cost of equity. Furthermore, the debt perquisites reduced excess consumption (Grassman & Hart, 1988).

## *2.5 Risk Diversification Theory of Capital Structure Choice:*

### *2.5.1 Transaction Cost Economics (TCE):*

Williamson (1988) explored that transaction cost economics approach is concerned with the governance of contractual relationship between two parties. The buy or make should depend on nature of asset and its investment decisions which are dependent on the degree of variation of asset specificity of firm. The high the asset specificity, firm will prefer equity as financing instrument at the event of liquidation, these asset have low value which cannot be reemployed easily. However debt is the preferred financing tool of general asset specificity which is more valuable and is used to produce excellent collateral and is able to retain the value in the event of liquidation. This will increase liquidity and security for more capacity to meet the scheduled debt payments. This will reduce the cost of capital and increase the debt capacity. Ronald (1937) documented transaction cost difference between market to buy and to make depend on decision on use markets. Kochhar (1996) described debt regarding to buy and equity regarding to make.

### *2.5.2 Life Stage Theory:*

Frielinghaus, Mostret and Firer (2005) documented that the basic premise of life stage of organization and the firms living organisms in a similar fashion. The set of life stages that begins in birth and ends in death. The firms can utilize more debt as they

mature. Bender and Ward (1993) described that the capital structure may be influenced by life stage of firm. The financing needs arise according to circumstances do. The life stages of the firm are used to maintain the business risk which reduces over time and to increase financial risk. Adizes (1979) explained that life stage is used to describe the typical pattern of behavior. Adizes (1996) defined the life stages as the interrelationship of flexibility and control. The result indicated that they are not influenced by chronological age, sales or number of assets.

## 2.6 Theories of Capital Structure & its Effects:

The each theory of capital structure account for the important assumptions when it considered the change in capital structure. It is concerned that choice of debt vs. equity under different assumptions provided explanation of change in the behavior of leverage and expected optimal mix of debt vs. equity. It has been indicated as follows:

| **Sr. No** | **Theories of Capital Structure** | ***Perfect Market*** | ***Tax Effect*** | ***Financial Distress Cost*** | ***Market Timing*** | ***Agency Cost*** | ***Asymmetric Information*** | ***Firm Value*** |
|---|---|---|---|---|---|---|---|---|
| 1 | **Relevance Theory** | | | | | | | Effect |
| 2 | **Irrelevance Theory** | Effect | | | | | | |
| 3 | **Static Trade Off Theory** | | Effect | Effect | | | | |
| 4 | **Pecking Order Theory** | | | Effect | Effect | Effect | Effect | Effect |
| 5 | **Market Timing Theory** | | | Effect | Effect | Effect | Effect | Effect |
| 6 | **Transaction Cost Economics Theory** | | | Effect | | Effect | | Effect |
| 7 | **Life Stage Theory** | | | Effect | | | | |
| 8 | **Signaling Theory** | Effect | Effect | Effect | Effect | Effect | Effect | Effect |

The theories of capital structure are used to determine the change in the behavior and expected theoretical underpinning of optimal capital structure. Most of the theories consider different assumptions agency cost, asymmetric behavior, financial distress cost and value maximization of firm.

## 2.7 Asymmetric Behavior – Agency Cost and Governance Structure:

In a transitional and emerging market such as such as African and Middle East countries, Abor (2008) investigated that the corporate governance and capital structure studies are limited. The corporate governance has become ever significant area of research in transitional and emerging market. Therefore, it is important that in transitional and emerging market, it is considered the best effort due to lack of empirical evidence about the effect of corporate governance on debt vs. equity and market value behavior. Jensen and Meckling (1976) documented that debt and equity is a part of a corporate governance mechanism. It is observed in the agency cost theory (ACT) concerning the principal and agent behavior of corporate governance and financial policy. At first, the agency cost theory (ACT) is used to examine the effect of agency cost of debt which is raised from the conflict between the interest of shareholders and creditors. Secondly, the agency cost of equity which is raised from the conflict between the interest of shareholders and managers.

### 2.7.1 Asymmetric Information - Agency Cost of Equity:

The agency cost arises due to asymmetric information between shareholders and managers. The asymmetric information increases with the conflict of interest between managers and shareholders. The managers decide to raise the funds – equity finance for further investment. The investments are made with the expectations of high returns. The shareholders (principals) are supposed to receive high returns and managers (agents) are supposed to deliver high return. The returns will go to the shareholders, if business goes well. The cost will be very high to achieve maximum returns and also borne by agents, if

business will go bad. The fear of high cost entirely borne by managers insists to misuse the funds of new Equity Financed.

### 2.7.2 Asymmetric Information - Agency Cost of Debt:

An agency issue arises due to the conflict among the shareholders and creditors. The debt finance is used for an investment project for extra returns. The creditors as the principals are supposed for more return on investment. The shareholders as the agents are supposed for the delivery of return on investment and utilize the benefits entirely if investment goes well. Hence, if the investment goes badly down then cost of a high return expectation entirely borne by the creditors (principals). So the debt financing is dependent upon the discipline managers while shareholders like riskier projects; however managers like less risky projects. The behavior of the shareholders as the agents mismatched with the interest of the creditors. The expected bankruptcy of the debtors is due to loss of profit. The loss of profit is used to create non performance of the loan. The fear of non performance of loan insists to creditors (principals) to push up the prices of loan as the compensation of agency cost. The existence of agency cost is used to declare the threat of bankruptcy. The declaration of agency cost of debt makes sure that it should be minimized. Finally, corporate governance and business strategy have a better role to affect the level of asymmetric behavior. The efficient and effective corporate governance is very important to protect the right or interest of shareholders, Suppliers, Customers, government and employees. It is guaranteed that firms are controlled efficiently and accountable for their all actions by Vintner (1998). To the best of our Knowledge, there is no study till date which has directly examined the relationship corporate governance and information asymmetry among listed firm of Pakistan.

## 2.8 Signaling Process:

The information Asymmetry can be eliminated due to better access of information of firm to its stakeholders. The fair or intrinsic value is attained in an efficient market situation. In particular, an asymmetric information situation, investor can under or over estimate the value of a firm. The mispricing depends upon the psychology of an investor. The psychology of an investor is actually the mirror image of financial signals.

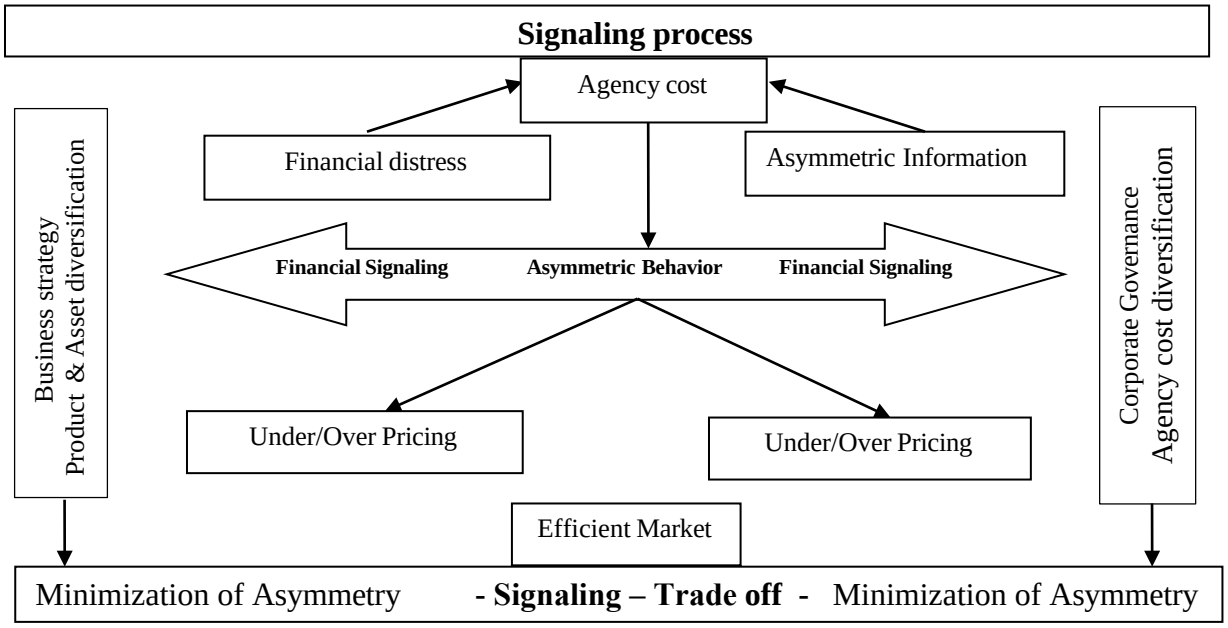


**Figure 2: The process of financial signaling and information asymmetry**

The process of financial signaling is based on financial distress and asymmetric information. The agency cost due to financial distress and asymmetric information is minimized by favorable financial signaling. However, less financial distress and asymmetric information are favorable to create trade off situation of signaling due to best incorporation of corporate governance and business strategy.

## 2.9 Corporate Governance -Trade off Between Agency Cost of Equity & Debt:

There is a controversy between the interaction of financial structure and corporate governance. The corporate governance can be preserved while taking the debt vs. equity decisions. The debt vs. equity can be used as the device of governance and protects the value creation capacity. The value creation can be made through reduction agency cost and asymmetric behavior cost. The corporate governance has the best implication to control and monitor the cost. The monitoring and controlling over the cost can be enhanced through the best selection of the auditors. The auditors validate the transparency and accountability. The corporate accountability and transparency can be improved by best regulatory measures. The regulatory measures are practiced as the corporate governance tools by the directors. The corporate governance, agency cost and asymmetric behavior are related to directors which can be reduced by best credit rating of the firm. The best credit rating may also increase the level of the protection of an investor. The protection of the investor is subject to best corporate governance and firm performance. The firm performance is associated with better monitoring and governance strength. The governance strength can be used as the quality of corporate governance, risk elimination and diversification.

## 2.10 Business Strategy – Diversification of Agency Cost of Equity and Debt:

The choice of financial policy is established by firm and varied from firm to firm. So, capital markets and managers may perceive diversification differently. The view of financial policy with reference to business strategy is not simple due to difference in

perception of the corporate managers and capital markets. The capital markets required reduction in diversification as managers required high financial incentives. So, the capital markets or the equity market is regarded as minimum diversification as compared to debt markets. The net returns are reflected through dividends or capital gains or capital growth. This is actually the balance of factor. There should be increase in debt to equity ratio concerned with degree of diversification and decrease in debt to equity ratio concerned with degree of business specialization.

The balance concerning the financial policy should be the cost of diversification and specialization and benefits of diversification and specialization. The shift in debt vs. equity brings about the comparative changes in the position and manipulation of capital supplied. Moreover, the insertion of some significant covariates, which are considerable to corporate debt vs. equity choices for best construction of a valuable research. This is being an extensive research and puzzling area in less developed and developed market economies (Swanson, Srinidhi & Seetharaman, 2003; Harris & Ravive 1991).

The wide fluctuations in economies are likely to be explained by studying the behavior of financial policy, financial signaling, corporate governance and corporate business strategy. This study is an attempt to focus on more specific situations of debt vs. equity, financial signaling, corporate governance and business strategy in the context of listed companies of Karachi Stock Exchange (KSE) in Pakistan. The manager's behavior, corporate governance processes and mechanisms, financial institution and capital markets have been changed significantly in Western economies (Durand, 1952; Modigliani and Miller, 1958). So, these changes are also being reflected in the corporate sector of Pakistan as a transitional and emerging economy.

The diversification of risk can increase the value in transitional and emerging economy. The higher the net present value means low imperfection and asymmetric behavior. The asymmetric behavior and agency problem are more dispersed in diversified firm because of efficient monitoring and transaction cost economics. The transaction cost of debt and equity is related to the asset specificity. The asset specificity is used high equity due to low collateral value and liquidation value. The general assets provide the high collateral value and more liquidation value. The high collateral value and more liquidation are used to meet the more debt payment and lowest level of cost. The low level of agency cost shareholders and managers are due to strategies of corporate governance.

The corporate governance is also related to managerial ability of unrelated diversification strategy. So, the corporate governance and diversification can be used as tool of risk mitigation of agency cost and asymmetric behavior. The alignment of agency issue and asymmetric behavior can be made through competitive advantage of corporate governance and diversification strategy.

## 2.11 The Financial Signaling & Asymmetries of Information - Costs and Benefits of Debt vs. Equity:

The asymmetric behavior, agency cost and bankruptcy - financial distresses are used to produce signals. The signals can set the criteria of financial decisions of the firms. The financial decisions are based on cost and benefits of signals due negative or positive signaling orientation. The higher the level of debt and lower the level of equity are related to the costs and benefits. The following points as conclusion of the costs and benefits are due to debt vs. equity choice:

| Signaling Debt Cost & Benefits | Signaling Equity Cost & Benefits |
|---|---|
| **1.** The tax benefits are high and signaling positively to investors.<br>**2.** The high bankruptcy cost leads to high threat and signaling negatively to investors.<br>**3.** A positive signal to investors is due to fixed cost and positive NPV.<br>**4.** A negative signal to creditors is due to high threat of insolvency.<br>**5.** The high diversification benefits are signaling less risk.<br>**6.** The high efficient costs are signaling low risk.<br>**7.** The low transaction costs with general assets are due to more collateral value and signaling positively.<br>**8.** The high transaction costs with specific assets are due to less collateral value and signaling negatively.<br>**9.** The low equity agency cost lead to less asymmetric information.<br>**10.** The high debt agency costs lead to more asymmetric information. | **1.** The tax benefits are low and signaling negatively to investors.<br>**2.** The low bankruptcy cost leads to low threat and signaling positively to investors.<br>**3.** A negative signal to investors is due to mispricing of equity.<br>**4.** A positive signal to creditors is due to less threat of insolvency.<br>**5.** The low diversification benefits are signaling more risk.<br>**6.** The low efficient costs are signaling more risk.<br>**7.** The low transaction costs with general assets are due to more collateral value and signaling positively.<br>**8.** The losses of low transaction costs with specific assets are due to less collateral value and signaling negatively.<br>**9.** The high equity agency cost lead to more asymmetric information.<br>**10.** The low debt agency costs lead to less asymmetric information. |

# CHAPTER 3

# LITERATURE REVIEW

# 3. LITERATURE REVIEW:

Several researchers have focused on financing decisions of firms while referring to different theories of capital structure. This study is applied to review that companies tend to finance the investments through optimal level of debt vs. equity. It should prevent from information asymmetry which may ultimately create an increase the level of under pricing. Information asymmetry is used to establish the perception of investors. The debt vs. equity is the governance device of the perception of investors. In the context of corporate finance, to investigate the optimal debt vs. equity is a mature field of finance research. Durand (1952) documented that cost of debt and equity could influence capital structure and value of firm. A number of hypothetical scenarios of relevance theory of Durand developed.

The seminal study of Modigliani and Miller (1958) generally known as theory of irrelevance or Modigliani and Miller - MM theory reflected that the value of the firm is not affected by the capital structure. The theory of irrelevancy of capital structure assumed implicitly about the possession of full information of the activities of firms under efficient or perfect market hypothesis. It is proved that EBIT is not having consideration where the use of debt and capital structure may also be considered as irrelevant to the market value of the firm under perfect market. The literature of the theory and practice of the capital structure is very extensive. The capital structure theory has been trying to answer this question that how it is different. The theoretical and empirical paradigm has shifted over time from standard finance to behavioral finance approach. The studies were conducted from country to regional, developed to developing, perfect market to transitional economies. The literature of the study will

support the significance of the study on debt vs. equity that how signals of the corporate business, corporate finance, finance strategy, corporate governance are related with the debt vs. equity of the firm.

## 3.1 Signaling Exposure in Debt vs. Equity:

The stock markets of transitional economies are less efficient. The less efficiency, asymmetric behavior, incompleteness and firm debt have poor signaling effect on firm value. The debt vs. equity is the device to preserve the efficiency of the management. It will enhance market value of firms. Hatfield (1994) examined and classified the leverage ratio as a creature above or below industrial average. The ratio is used to issue new debt before announcement of new debt. This can be used to produce the signals in the market and have impact on the market value of firm.

In previous research, this is also evident that the debt level and industrial average cannot have any implication concerning the market. The original proposition validated and found consistent with Modigliani and Miller (1958) that leverage is not being related to the value of the firm. Modigliani and Miller challenged the relevance theory of Durand (1952). Modigliani and Miller (1958) described that the capital structure is not related to the value of the firm, but under perfect market. Swanson et al. (2003) developed the broad range of capital structure determinants including personal tax, corporate tax, bankruptcy cost, agency cost, signaling cost, ownership structure, floatation cost, macroeconomic covariates, corporate governance and government regulations. They also documented the following conditions of the perfect market: the market should be frictionless; no taxes, no transaction cost and no regulatory requirements. The security

and product market should be competitive at average cost by supplying goods of producers. The security market at the level of no bankruptcy is reflected as a price taker.

The individuals and firms can lend and borrow at same level of RFR - risk free rate. The individual must have the full access of costless information simultaneously. These individuals should be the utility maximizers in the real sense of business where the markets are imperfect. Hall, Hutchinson and Michaels (2004) explained that the efficiency in the market is question mark due to variation in institutional, market, economies and countries conditions. No doubt western economies are efficient. In the case of Pakistan where market is not being only imperfect but also misperceived and distorted with reference to some conditions. Hence, this may be portrayed that high debt firms provided more significantly negative signals and reactions as concerned to the different time options.

Chadegani et.al (2011) investigated the results and showed that there is the positive relationship between exchange rate, dividend, long term debt ratio, short term debt ratio and bank credit and negative relationship between inflation, interest rate and GDP with capital structure in TSE. The research hypotheses accepted and confirmed the relationship and have influential role of the managerial decision making towards the financial resources composition. Bokpin (2009) proposed a study model that the capitals structure choice is also affected by developments in stock market as well as the firm level characteristics. Thus the improvement in the general economy has practical view of firms considered relevant to debt vs. equity decisions. Kochhar (1997) considered the firm's competitive advantage and managerial capability to manage the finance of firms. The best management of finance is based on cost effectiveness.

The corporate governance structure can hold the cost and performance efficiency with different strategic assets to settle financial policy matters which effect value of the stock market etc. The management of the company decides about financing decision to reach the optimal market value of stocks. The maximization of shareholders value is possible by optimal efficiency and selecting appropriate risk for the company.

Niu (2008) proposed theoretical and practical preview of financial structure and its covariates to draw an attention towards theories of capital structure. Tse (2007) analyzed that capital structure is not homogeneous and works as a signaling device of firms. Elldomiaty (2008) showed that robustness and significant signaling effects of covariates i.e financial flexibility and rate of interest on market value of firm and systematic risk existence. Harris and Raviv (1990) proposed static and dynamic models regarding to the role of debt and investors behavior. The generation of usefulness of information to monitor the management and efficient operating decision implementation. Ross (1977) developed a theory that the values of firms will lift up with leverage, since rise in leverage lift up to the market's perception of value in the mind of stakeholders.

Akerlof (1970) used the lemons market for used cars that how sellers of good quality cars can use a warranty to signal quality to buyers who cannot otherwise distinguish between good cars and lemons. He explored the tools to examine the economic impact of asymmetric information. He discussed the economic models which presented that trust is important. Informal unwritten guarantees worked as preconditions for production and trade. These guarantees provided indefinite reflection at particular point where the business will suffer. The good quality from bad is inherent and very difficult to distinguish in the business world. The more explanation is required by

economic institutions. It may be one of the more important aspect of uncertainty for signaling in the market. The corporate governance can control over signaling through confidence and trust.

Heinkel (1982) tried to process the market and its true position. The positive net present value can be created while debt vs. equity due to strong information of cash flows random walk than outsiders. The firms issued equity at overvaluation to proceeds signals to imitate lower value, must select underpriced debt and overpriced equity vice versa. There should be credit risk is positively correlated to value of firm. Klein (2002) provided empirical findings that the firm's negative signals of risks exposure shifted over time and leads to mis-presentation and mispriced the value of firms. The risks exposure deviations are different from debt or equity to managers and investors. Bradford (1987) prescribed that managers and owners at new issuance reduce the investment due to mispricing the shares. He also analyzed the changes caused due to announcement of new issuance effect the market value of firms. It can be compared before and after the value of firm. Welch (1989) presented the mispricing or under pricing process where IPO can have signaling cost and imitation expense. So, it is accepted and confirmed that firms used to issue an extensive amount of equity after IPO.

## 3.2 Micro – Firm Level Asymmetric Sensitivity in Debt vs. Equity:

It is very difficult for investors or economists to agree about asymmetric risk. The asymmetric risk can be priced in the value of firm because it cannot be avoided. It can be tolerated by return premium. The rational investor can receive higher return to eliminate the higher level of asymmetric risk. The level of capital structure should be selected as the total asymmetric risk to the minimum level. The asymmetric risk arises

due to the use of debt or fixed interest bearing securities. The asymmetric risk can have the earning variability of equity shareholders. If a firm avoids using debt in its capital structure, it may raise the asymmetric risk of non-employment of debt capital. Therefore a firm needs a trade-off between the asymmetric risk and non-employment of debt capital asymmetric risk which will enhance the market value. The more the market value is actually the level of optimal capital structure. The optimal capital structure is a mature field of research in finance. Durand (1952) described that cost of debt and cost of equity have impact on the decisions of capital structure and firm value. Harris and Raviv (1990) described the dynamic and static modeling to identify the role of debt regarding the investors as to generate useful information for the monitoring of management, effective implementation and choosing the efficient operations. Ross (1977) developed that the value of firms will rise with leverage in a cross section, since leverage increases to increase the perceived value of market. Akerlof (1970) discussed that the economic models of trust are important. The informal unwritten guarantees are performed for production and trade as preconditions. The guarantees supplied indefinite image at specified point in business will suffer.

Mayer's and Majluf (1984) stated that firms utilized their inside financial resources i.e. retained earnings, avoid outside financing i.e. bank loan or debt and the last resort is equity to finance their projects. The trade-off -theory (TOT) which explained debt and factor affecting the tax shield and cost of bankruptcy. According to POT that firm normally large amount of profits used as internal resources to finance but dynamics may shift due to asymmetric information in outside investor (external financing), insider

investors (external financing), creditors (debt financing) and shareholders (equity financing).

Buferna (2005) resulted that significant positive change in coefficients is being expected in the independent factors if trade off theory (TOT) holds. It may be little support of the theory of asymmetries of information that is used to predict a significant positive change. Heinkel (1982) concluded a financial signaling modeling of firms is tried to justify its trueness or exact position in market. The debt vs. equity choices is being device to supply future positive net present value (NPV) of cash flows. The insider's information concern to random walk of future positive cash flows but not as to outsider's information.

It can be obtained by overvaluation of securities and there may be a loss from undervaluation of the other. This will high value of firm being used to send out poor or false signals to imitate when a firm shares lower value. It may issue more debt under pricing and less equity when overpricing or vice versa. The value of firm and risk of credit have positive correlation. Klein (2002) presented asymmetric information and decisions of debt vs. equity of Market timing hypothesis (MTH) of financial structure.

The signaling risk of firm changes over time. This signaling risk is concerned to asymmetric information and value of firm mispriced. Bharath (2009) established that asymmetric information considerations at firm-level are significant to attribute volatility in stocks, return on stocks and insider trading intensity. Shah (1994) analyzed the firm's common stock risk, expected cash flows; asymmetry due to changes in leverage, capital flows, and dividends. Moreover, rise in leverage may assist to control but inability to define information asymmetry.

Barton and Gordon (1988); Jordon et. al and Lowe et. al (1994) developed that debt to equity may reflect asymmetric risk in the perception of decision makers or investors. The managers may have less signaling risk perception. The broader the scope of business proceeds the higher the signaling risk. The narrower the scope of the business lesser the asymmetric risk.

Carpentier (2006) described the effect the valuation due to long-term changes in financial structure. He examined that there is no significant association between value and leverage of the firm. The tests employed for the irrelevance proposition to asses changes in capital structure do not affect firm value. This should make an assessment to control for reversion of the target debt by trade off theory. This reflects similarity in results.

Krause (2006) developed a framework that losses have effect on future performance. This is used to describe three categories of capital. Financial institution is entitled to minimum requirements of the capital within considerable time but companies may not face such kind of regulation. The theoretical approach is being associated with liquidity, characteristics of assets and required capital. This single setting is used to face the problem of the requirements. The cost considerations are signified to sustain the optimization of asset and financial structure.

Al-Ajmi et al (2009) suggested that a firm's capital structure has positive relation with profitability, growth opportunities, size, and institutional ownership. The capital structure has negative relation with tangibility, family ownership, government ownership, and liquidity business risk and dividend payment. This reviewed two classical theories of financial structure e.g. tradeoff theory and pecking order theory. The cost of capital is

used to serve as corporate competitive advantage. It is also needed that factors have the potential to influence capital structure can be used to minimize the cost of capital. Eckbo and Norli (2005) documented that initial public offerings - IPO stocks are significant to greater liquidity and lower level of leverage. The seasonality of firms can be compared to size of firm and ratio of book-to-market. The average return of portfolio is low but IPO stocks occurred for 5 years to buy and hold strategy. The IPO stocks have greater returns.

Cai and Zhang (2010) showed that negative effect on firms is greater and strong concern. This is actually to have more leverage ratios, more likelihood of default, and more severe in financial constraints. This may be intended to high leverage ratio which leads to less investment in future.

The results found are consistent with Myers' (1977) who examined the theory of debt overhang is used to more leverage. The less investment in future is reducing the value of firm. Adrian and Shin (2008) explored that the financial system is used to make a shift in asset price made as shift in net worth. The financial intermediaries of firms make adjustments in the size of balance sheets of firms. The leverage at market-to-market has strong procyclical and aggregate consequences in the behavior. The changing patterns of dealers are used to make an adjustment for the aggregate balance sheets of intermediaries and measure the risk. The liquidity tends to make changes in the particular balance sheet of the financial intermediaries.

Tsyplakov (2008) examined the speed of adjustment to target ratio of leverage. The speed of adjustment is more rapid in small firms than in large firms. This financial deficit - net external funds lift up has poor impact on financial structure in small firms than to large firms. It is also reported that firms tend to lift up equity may enhance in their

stock prices. It is used to produce a trend which may be high in the small firms than in the large firms. The effect of investment frictions on leverage dynamics is examined by cross-sectional analysis of firms. The evidence supported that small firms have more volatility in their nature. The small firms required more time-to-build. It may be used to identify the observed dissimilarities in the dynamics of leverage in small firms than to large firms. Huynh and Petrunia (2008) described that there is a significant negative association of age and leverage. The age and size have significant strong negative impact on growth of firm. The leverage may have little concern to economic significance. There is a conditional element in between age and size which is used to impact on significance of growth of the firms. Reinhard and Li (2010) investigated that existing financial structure can be used to target adjustment models to realize adjustment of financial structures to an unobservable target. The behavior of target adjustability is used to support the trade-off theory (TOT) and against the pecking order theory (POT) to highlights that previous models can be highly misleading.

Vaaler et al. (2008) reported a multi-level theoretical framework to understand the credit risk and financial structure. The financial structure of country-level covariates related to economic and institutional theories. This may be a link to agency theory and transaction cost theory. The credit risk and financial structure have similar relationships in emerging economies as in Asia. Eldomiaty and Azim (2008) examined the covariates of financial structure and strategies to shift in long term debt and short-term debt financing. This proposed that the theories of capital structure e.g. tradeoff, pecking order, and free cash and partial adjust to three heterogeneous systematic risks. The sensitivity analysis indicated that firms adjust short term debt and long-term debt according to their

level of systematic risk. There may be free cash flow theory significance relative to risk of firms. The pecking order theory signified low level of risk.

## 3.3 Macro Level Asymmetric Sensitivity in Debt vs. Equity:

The transitional and emerging countries require special focus to financial factors which support at level of economy. The asymmetric behavior in transitional economies is very high as compared to developed market. Hassan et al (2011) documented that a level of voluntary disclosure and measure of estimated β - beta have negative correlation with each other. This analyzed that corporate voluntary disclosure practices and β - beta - systematic risk have association for a sample of listed companies in Egypt. A negative relation is shown between corporate voluntary disclosure practices and estimated β – beta. This is found consistent with modeling predictions of information dissimilarities and economic consequences theories of increased disclosure. These results reflect voluntary information which seems less preferable in order to decrease the risk perception. This may act as an incentive due to increase in public disclosure. Dastgir (2003) documented the structure of capital which includes preferred stock, long-term debt and common stock. The decision of appropriate and desirable part of liabilities and equity is used as most significant issue in determining structure of the capital. The liabilities and equity may have effect directly on value of stock market. The determination of amount of capital leads to decision about source of finance and method of finance. The financing need should lead towards the decision of financial policy of a company. The company should adopt the financial policy which should be used to create highest market value of the stock at market and economy. Kohher (2007) explored highest market value for given financial resources to obtain optimal level of maximum efficiency and selected

appropriate level of risk of the company and market. There are various theories of optimal capital structure to find the basic truth about the optimal capital structure and cost of capital. Harris and Raviv (2002) described that reduction in cost of financing can enhance the market price of the share. Modigliani and Miller (1958) investigated critically financial structure aiming to provide logical justification to extract the characteristics of the factor that may have effect on capital structure. The tradeoff different tax and other financial benefits with debt against financial distress cost can be used to find financial structure optimal.

Jensen and Meckling (1976) described that financial distress cost, agency cost and bankruptcy cost can be used to establish trade - off theory. The taxes can be underlined by trade- off theory to start gradual movement of target debt to value ratio. This will create the equilibrium between advantages (tax cost) and disadvantages (bankruptcy cost and financial distress) at optimal choice of the capital structure. Chadegani et.al (2011) investigated the impact of macroeconomic and firm factors of financial structure of companies listed to Tehran Stock Exchange (TSE). The initial data between 2001-2008 of Tehran Stock Exchange are used seemingly unrelated regression equations. The results represent a positive relationship among exchange rate, dividend, long term debt ratio, short term debt ratio and bank credit and negatively associated to inflation, interest rate and GDP of financial structure in TSE. The hypotheses accepted and confirmed the association of economic factors and financial structure; the economic factors influence the manager's choice to financial resources composition. Bokpin (2009) proposed that macroeconomic development and choices of financial structure of firms to a sample of 34 transitional and emerging market of different countries from 1990-2006 to analyze that

bank credits have significant role in predicting choice of capital structure of firms. The GDP, per capita income and choice of financial structure have negative significant relationship. The inflation has positive significant impact on choice of short debt and equity. The developments of stock market have insignificant impact on choice of financial structure. The expectation regarding increase in interest rates may influence positive impact on firms. This may provide long term debt as substitute to short term debt vs. equity. The asset tangibility (AT), return on equity (ROE), return on asset (ROA) and Tobin's Q are the predictors of financial structure. Kochhar (1997) developed that there is a linkage of competitive advantage of firms and a capability of financial management. The empirical results provided that firms may suffer due to decrease in performance and increase in cost due to inability to follow the governance structure to deal with transaction of potential supplier of funds. The strategic assets acted as competitive advantage of financial policy to affect the value of firm in market. The management would have to decide regarding financing and ultimately to optimal value of stock. The management may make the possibility to optimal efficiency of governance and selection of appropriate level of risk of firm.

Niu (2008) established a theoretical and practical based preview of financial structure and its factors. Firstly, framed an attention to different theories of financial structure. Hence, it is suggested that seven different covariates of practical aspect showed a positive association of asset tangibility, size and leverage. It is concluded a negative linkage of leverage with opportunities of growth, degree of liquidity and volatility. This also reflected a positive and negative association of profitability and tax respectively. Gertler and Hubbard (1993) documented that equity is used to provide firms with a

cushion against aggregate fluctuations. The aggregate risks can also be share with creditors by minimizing the choice that a recession can push into financial distress. The equity finance reduces the spread that firms insulate against aggregate risks due to tax bias. This can proceed the prediction regarding dividends which may vary with macroeconomic conditions. Lamont (1995) explained a model of corporate debt overhang can be used to create multiple equilibrium in which economic activity is determined by expectations. The corporate financial structure has impact on macroeconomic performance by debt overhang. The debt overhang occurred when debt debtors make new investments. The benefit of new investments goes to already existing creditors than to the new investors. The economy is in booming debt overhang may not bind due to return on investments which is very high. The economy is stagnant to debt overhang which may bind due to return on investments which is very low. In conclusion the debt can create multiple expectation equilibrium and economic activity can be determined by animal's spirits.

Ju and Ou-Yang (2006) established an optimal capital structure approach. The capital structure and debt maturity used to determine in an environment of a stochastic interest rate. The empirical findings matched and consistent with model yields leverage ratio. The interest rate in long run is the key factor of optimal financial structure and debt maturity. The volatility in interest rate and firm assets value may correlate to play an important role in determining maturity of debt. Michaelas et al. (1999) investigated financial structure of small & medium enterprises (SME, s) in United Kingdom (U.K). The financial structure theories in review to conclude propositions of theories may concern the debt level of small business. This employed many of regressions on financial

panel data to test hypothesis. The most of the capital structure determinants presented in finance theory may be relevant to small sector of business in United Kingdom (U.K). These factors have an effect on short term debt and long term debt in small firms in the United Kingdom (U.K). This presented that capital structure is time and industry dependent. The maturity structure of debt raised by small and medium enterprise (SME, s) is influenced by time and industry. In economic recession, short term debt ratios in SME, s may increase and decrease during market place improved. The changes in economic growth pattern have positive relationship with long term debt. Lemma and Negash (2013) presented the role of institutions, industry and firm characteristics, macroeconomic conditions and the financial structure of firms. The legal, financial institutions and the level of the income of a country may be operated by firm. The economy growth rate and inflation influenced the choice of capital structure. This is also influenced by industry and firm characteristics. This signified the role of the probability of bankruptcy, transaction cost, agency cost, tax and asymmetry of information, finance to access and timing of the market which is associated in decisions of the capital structure of firms. Mahmud and Qayyum (2003) provided that the different stages of corporate and economic environment factors are the key factors of capital market development, firm and industry. The growth, size, fixed asset ratio, operating leverage, profitability and dividend policy are the firm specific factors. Japan and surprisingly Pakistan reflected a more leverage ratios towards total debt to capital ratio amount to exceed 70 percent. It is about 50 percent in Malaysia. There is a conservative financial management practice in Malaysia because of lack of competition in market. The developed market status may precede Japanese companies to high gearing. The underdeveloped market status may

precede Pakistani companies to high gearing forced to debt as opposed to issue new equity. A good economic policy may require capitalization of market and government spending reorientation from consumption to saving - investment in capital stock physically. The micro credit can be used as powerful anti-poverty tool for self- employment to generate income. The high interest rates in Pakistan may insist to take steps to be taken by government following legal and judicial reforms. This may be allowed foreclosing on collateral in the case of loans unpaid to avoid lengthy court proceedings. It may be revealed by analysis of the rights of creditors impact on capital structure of firms. The legal and judicial reforms appeared negatively with long term debt to capital ratio and debt to equity. Doukas et al (2011) found that a perceived capital market may be favorable. The indication of timing of market and adverse selection of cost of equity – asymmetric information are caused due to important frictions. This can have importance to issue high debt to hot – debt market period than to cold-debt market periods. The debt issuance in hot – debt market can produce alternatives to measure and control other effects i.e. structural shifts of debt market, the ratio of book to market, industry, size, price earnings ratio, tax, adjustments of cost and market situations regarding debt based on credit rating of debt. It is described that the firms with equity adverse selection of more (less) debt where market situations considered as to hot - cold. The evidence provided that the hot-debt market effect the financial structure. The issuance in hot -debt market may not rebalance dynamically to leverage within the range of choice of optimal capital structure. Matemilola et al (2013) described unobservable firm's specific effects by employing the least squares method (LSM). The unobservable effects documented i.e. marginal skills and marginal ability. The measure of marginal

skills and marginal ability which is borrowed from theory of management to show the relationship between ability of managers or skills of managers. It can be used as a practice for efficiency of financial structure of firms. The mis-specification may occur due to firm specific factors i.e. marginal skills and marginal ability. These factors have significant relationship with capital structure decisions. The low level of debt advised the manager to increase in debt level. Ahmad and Abdullah (2013) investigated optimal level of debt to maximize the value of the firms. The result estimators reflect the single threshold of debt ratio level 64.33 percent impacts on firm's value. The addition in debt beyond the threshold may not increase in value of the firms. The appropriation in debt level should maximize the stockholders and firms value. More level of debt could proceed to a debt overhang and insolvency to microeconomic level of the firms. This may cause vulnerability in financial system of the firms. It should lead to financial catastrophes. Harris et al. (1994) produced the consequences of financial liberalization. The financial reforms have an impact on investment decisions and credit allocation. The effect may differ due to change in type of firms. The results showed that shift in administrative to market dependent credit allocation can increase borrowing costs of small firms particularly. This should be beneficial at the same time to provide widened access to finance. Artikis and Nifora (2012) investigated that the risk premium of market, the size, and the idiosyncratic factors momentum had a statistically significant positive association to equity returns. The level of leverage and factors to value risk had a statistically significant negative association with equity returns. This is concluded that leverage factors contained information contents to establish risk factors. The leverage is priced as a risk factor by constructing a leverage factor contains significant information

content. This is smaller in magnitude but still considerable portion to the size and value of risk factors.

## 3.4 Market Conditions and Dynamics of Firm Value in Debt vs. Equity:

The transitional market requires higher focus on financial determinants. The financial factors which support market value of firm in transitional market. The transitional economy has more phases of incompleteness in transitional and emerging stage. The less efficient and incomplete markets have weak signaling effect on market value of firm. Park and Jang (2013) described that leverage - debt is a source to decrease in present value of cash flows of future and the firm performance. Huynh and Petrunia (2008) documented that the age and size have significant negative impact on growth of the firm. The recent theories regarding dynamics of firm focused on the significant role of financial factors as determinants of growth of the firm. Moreover, the leverage has the little impact on significance of economy and produced conditionality of size and age. The size and age are associated with growth of the firm. Stanley (1981) showed that the existing research is unable to provide an absolute answer to the question of determination of optimal capital structure. The recent literature reflected the developments in models of capital structure and cost of capital. There are various issues of financing decisions. These are most relevant to empirical and a theoretical phenomenon's regarded as integration or segmentation of markets.

Simerly and Li (2000) explained the capital structure and corporate strategy. Their study supported that competitive environment may moderate the association of financial structure and economic performance. The financial managers practiced how to craft a financial structure to enhance the wealth of shareholders. This may tend that how can

capital structure choice and the ability of firms to compete. The financial structure is affected by the dynamics of the environment. Thomsen and Pedersen (2000) provided that the ownership of financial investor are associated with maximum shareholder value (market-to book ratio), profitability - asset returns and low level of sales growth. It is proposed to support that large family owners, institutional investor, banks, government and firms have significant implications for corporate strategy of business and performance of the organization. The impact of ownership concentration is dependent on owner identification. Leary and Roberts (2005) suggested that the shocks on leverage is persistent which is observed in previous literature. The empirical findings that a dynamic rebalancing capital structures made costly adjustment. The adjustment costs have significant implications of corporate financial structure as previous empirical results. It is confirmed that financial behavior is consistent. The adjustment cost may rebalance the leverage to sustain an optimal capital structure range. The adjustment cost may be different due to shocks of leverage. Miao (2005) demonstrated that the competitive equilibrium output price of capital structure and industry dynamics is very important to interact the financing and production decisions. This can influence the stationary distribution and survival probabilities of firms. The firms can finance investment, entry and exit decisions. This is entitled to idiosyncratic risk shocks of technology. The financial structure decisions can be tradeoff between the tax shield benefits of debt, bankruptcy and agency costs. Strebulaev (2007) documented that the capital structure of dynamic economy may be different from the optimal level of capital structure at the time of readjustment. The firms adjust the financial structure infrequently in the presence of frictions. The standard interpretation of outcomes tends to reject the

underlying model. Hutchinson (1995) presented that the owner-manager can manage the control of the firm. The investment and financing strategies can be selected to control the cost of capital of small firms. The equity aversion, optimum capital decision is made in the shape of a decreased demand of debt financing. The owner-manager can select level of equity. The debt cannot be fully increased to the potential limit consistent with maximization of the value. Chaganti and Damanpour (1991) provided the evidence that institutional ownership and family shareholding can moderate the association between institutional ownership outsiders and capital structure. The literature of ownership assumed that ownership does not make an interaction to have an impact on the strategy and performance of the firm. The size of outside institutional ownership has a significant impact on financial structure of the firms. It is suggested that the presence of insider and outsider coalition can have interaction to influence the conduct of the firm. Majumdar and Chhibber (1999) drafted about the corporate governance mechanism. This mechanism may work where the supply of loan is privatized. This examined the association between debt capital and performance. The existing literature reflected positive relationship but in particular this study reflected significant negative relationship Kochhar (1997) posited that strategic assets are life blood of firms to sustain competitive advantage. The firm specific of strategic assets tend that there can be financing through equity and less specific assets tend that there can be financing through debt. In suitable governance structures of firms can increase performance and decrease costs. In unsuitable governance structures of firms, the firms can suffer due to enhancement in costs and reduction in performance. Chowdhury and Chowdhury (2010) showed a strong positive correlation and influence of debt-equity on the value, different sizes, industries and

growth. This is an attempt to empirical support of the argument of Modigliani & Miller (1958). The Modigliani & Miller (1958) reflected the effect of debt vs. equity on value of firms in their capital structure theory. The financial researchers and economist made efforts to produce new ideology around the MM theory. The Modigliani & Miller model is still in vague. Hatfield et al. (1994) examined the hypothesis and classified leverage of firms as being above or below to the industrial average prior to announcement of issuance of debt. This has an impact on returns for shareholders of the market. The issuance of debt is used to move the industrial average from the level below. The market will react more positively than the firm is moved away from the industrial average. The tax shield substituted to debt for unique interior optimal capital structure decision.

## 3.5 Asymmetric Risk Diversification- Corporate Governance in Debt vs. Equity:

Swanson et all (2003) developed a broad range of capital structure determinants including personal tax, corporate tax, bankruptcy cost, agency cost, signaling cost, ownership structure, floatation cost, macroeconomic variables, corporate governance and government regulations and also documented the following conditions of the perfect market that the market should be frictionless; no taxes and no transaction cost and no regulatory requirements. Shah (1994) established that intra – firm information has a significant impact to change the financial structure. The shift in leverage is conceptualized in a different way qualitatively. The rise in leverage supports to have lower risk and do not have deviations in future expected cash flows of firm. The fall in leverage support have the same risk and deviations in lower future expected cash flows of firm. Moreover, the high leverage established to control but showed inability to define

asymmetric information. Rocca (2007) researched a controversy in empirical findings

that is attributed to a poor interaction of financial structure and corporate governance. In fact debt vs. equity is the device of governance which can make preservation of corporate governance efficiency to protect its capability of value creation. A theoretical framework can have the better understanding of financial structure, corporate governance and market value behavior. It can propose a role model of moderation effect and mediation effect of the corporate governance. Fernando et al (2010) developed a research of audit quality, size of client and cost of financial structure. The auditor sizes, auditor specialization of industry and auditor tenure are associated negatively to cost of financial structure of clients firms. The corporate governance can have the best implication to control the cost of financial structure. It is signified only in small firm that cost of financial structure can be reduced as reduction in cost of equity by the best selection of the auditors. Ghazali (2010) performed a research on ownership structure (OS), corporate governance (CG) and corporate performance (CP) in Malaysia by using regression analysis. The corporate governance covariates are associated to corporate performance significantly. The ownership covariates as named that the substantial shareholding by government and foreign ownership are significantly associated to Tobin's Q. The corporate transparency and accountability can be enhanced through regulatory measures. Bradly and Chen (2011) evaluated that the limited liability and indemnification they serve the interest of shareholders instead of self-interest. The firms that provide indemnification and limited liability may result in higher credit ratings and lower yield spreads by directors. The corporate governance and the agency cost related to directors will reduce the cost of capital and due to credit rating cost of debt will be reduced. Dbouka and Ismailb (2010) examined that corporate governance can be an effective tool of internal control to contain

incentives of managers by choice of SEO issuance that may not serve for the interests of shareholders. This financial capital raised may also be invested in value-destroying projects. Brown and Lee (2010) explored that an association of the strength of governance and grants concerning the abnormal equity are less negative with reference to the pre-Enron period and post-Enron period. It may have consistent with firms efficient equity-granting choices after the corporate governance practices mandatory as by the Sarbanes–Oxley Act of 2002. Salva (2003) conducted a study on foreign listings, corporate governance, and equity valuations by using event study and univariate analysis. This study performed analysis on 25 countries. Finally, it found significant relationship between corporate governance and equity valuation, abnormal returns due to listing and corporate governance Cziraki et.al (2014). Kim (2006) explored a research by using data from 1991 to 1998. This research has concluded that family ownership concentration has significant positive association with productivity, high debt reliance negative related with productivity performance. Huang, Wang and Zhang (2009) concluded a study to determine the effect of CEO ownership and shareholder right on cost of equity and managerial ownership which may lead to lower cost of equity. Omran et al (2008) performed a research to evaluate that the ownership concentration may have to respond as poor legal protection of investors. This seems not to have impact significantly on firms' performance. Gillan (2006) conducted a research on a recent development in corporate governance and covered the topics of the role of antitakeover measures, board structure, capital market governance, compensation and incentives, debt and agency costs, director and officer labour markets, fraud, lawsuits, ownership structure, and regulation.

Lai (2011) investigated that interest has a significant positive relation with investment opportunities regarding the equity firms at all. This is poor due to Big four auditors or a greater proportion of debt maturity in the next year regarding the total debt. Additionally, the more levered firms are in view of the fact that the lenders may constantly monitor the financial position of borrowers. Drakos and Bekiris (2010) performed an analysis and indicated that the managerial ownership is dealt independently; this may have impact on positive value of firm and positive consideration due to more managerial ownership. Ghayad (2008) conducted a study on corporate governance and global performance of Islamic Banks that a firm having the foundation of Islamic principles can affect the performance concerned to insider covariates which are quantitative in nature - financial ratios although by the insider covariates which are qualitative in nature - managerial covariates. Wilks (2004) concluded that unique and competitive strategy can be used to measure performance which required a supplement of contextual information of the business and situation of the business. Wruck and Wu (2009) found that new interaction can drive the positive stock price at announcement where placements deficient new relations - non-events. The investors with relations attaching to the issuer are added to achieve directorships as an element of the placement. The new relations are allied to stronger profits of post placement and performance of the stock price. In general, the private placements are used to create value where it is associated to better monitoring and governance strength. Hearn (2011) found that universally recognized governance mechanisms evidenced that a mixed impact and high levels of director as owner may increase under pricing as compare to the founders. Anderson and Gupta (2009) suggested that high market value of firm matched to the

corporate governance of operating to the market – common combinations of countries as civil combinations of countries. Sun and Tong (2003) concluded that low ownership concentration of firms showed the low profitability, less control of the firm and industrial characteristics. The disparity of controlling and ownership rights indicated to have low profits. Shah et al (2009) concluded that managerial ownership, ownership concentration, audit committee and board independence are necessary to produce quality of corporate governance and risk avoidance. Bhagat and Bolton (2008) suggested that board members and CEO-Chair separation has positive significant relation to a better simultaneous and successive operating performance. Valenti, Luce and Mayfield (2011) explored that earlier negative shift in performance of a firm was in significant association to a fall in the aggregate number of directors and a less number of external directors.

## 3.6 Asymmetric Risk Diversification - Business Strategy in Debt vs. Equity:

The research of diversification is very much considerable while taking choice of debt vs. equity. It is most significant to empirical review of diversification and debt vs. equity. It is theoretically suggested that diversification may be beneficial to increase in value or decrease in value. Williamson (1970) suggested that diversified firms can control over imperfections of outside capital markets. Myers and Majluf (1984) indicated that high degree of asymmetries can be used to overcome through positive net present value. The managers can create more efficient internal capital market through diversification. The diversification should be helpful to reduce asymmetries of information. The problem of under-investment can also be solved through diversification and low level of asymmetries of information. The problem of utilization of more debt capacity can only be possible through industrial diversification. Lewllen (1971) provided

evidences that the reduction in earnings volatility within different type of industry by portfolio of two negative streams of earnings can be used to produce high debt capacity of business. The high debt capacity of business can increase in tax shield to help in increase in earnings. The earnings can be used to enhance value of the firms. Sheilfer and Vishnay (1992) predicted the high degree of optimal debt capacity at similar degree of volatility of cash flows. This situation can only be possible by selling assets to firms that have lowest degree of liquidity problem. Tecee (1980) argued that better economies of scale can be created by multiproduct of firms. Harris et al. (1982) discussed that the asymmetries of information are dispersed highly in diversified firms and due to high monitoring cost of decentralized management. It is resulted that diversified firm should be lowest value as compared to their domains - lines of business. Lang and Stulz (1994) showed that single industry firm is highly valued at capital markets as compared to diversified firm. It is also indicated that results are unable to depict the effect by industry and diversification harms performance. Williamson (1988) documented transaction cost economics (TCE) have relationship with capital structure and transaction cost of debt and equity with asset specificity. The high asset specificity will prefer to equity due to low level of collateral and problem of liquidation of asset easily. The low asset specificity means general assets will prefer to debt due to high level of collateral and more liquidation of asset easily. The general assets have the capacity to meet debt payments due to high liquidity. The high liquidity provided high level of collateral. The high level of collateral resulted in more debt capacity and lowest level of cost of capital. Jensen and Meckling (1976) argued about the existence of agency cost theory that there exist a conflict of interest of shareholders and managers. The debt can also be used to reduce the

conflict of interest of shareholders and managers. The managers have ability to realize unrelated diversification strategies. The shareholders should realize that the managers take strategic decision due to opportunistic grounds. Stulz (1990) suggested that volatility in flows of cash can increase the chances of over or under investment. The chances of over or under investment can have reduction in value of firm at all degrees of debt capacity. The diversification can be used as a tool of increase in flows of cash and reduces asymmetric information, agency cost due to decisions of managers. Li and Li (1996) predicted that diversication can be a bad strategy tool with the prospective of growth due to freedom in choice to make new investments. The diversification can be used to make alignment and adjustment to capital structure for maximization of value of firms. Rumelt (1974) and Barton and Gordon (1988) described that unrelated diversification strategy developed by firms have highest debt capacity to utilize. Taylor and Lowe (1995) extended the work of Barton and Gordon (1988) found results same as by Barton and Gordon. Kochhar and Hit (1998) developed that equity is more preferable where related diversification due to high degree of asset specificity and debt is more preferable where unrelated diversification due to lowest degree of asset specificity. Rocca et al. (2009) argued that there is significant negative association between related diversification strategies and capital structure due to synergy of business and shared resources. There is significant positive association between unrelated diversification strategies and capital structure due to financial synergy of business. The diversified firms maintained speed of adjustments towards optimal capital structure. Moreover, related diversified firms slowly moved to adjust their capital structure and unrelated diversified firms fastly moved to adjust their capital structure. Barton and Gordon (1987) suggested

understanding the strategy compliment financial paradigms and decisions of capital structure. Kochhar (1997) pointed out that the linkage of capital structure, strategic assets and firm performance where the firm having competitive advantage and its financial management capability. The different strategic assets can act as competitive advantage of financial policy. The financial policy can have direct effect on the value of firm. Jordon et al (1998) and Lowe et al (1994) developed that the factor which are relevant to product diversification and asset specificity with reference to influential impact on capital structure of diversification of products. The choice of debt to equity may reflect risk in the perception of investors or decision makers. The managers should perceive lesser risk; the broader the scope of business; the higher the risk; the narrower the scope of the business. A diversified business is used to sustain the high debt level. The choice of capital structure has balanced specialization (cost reduction) and diversification (risk reduction). Coase (1937); Williamson (1988) documented about the transaction cost and stated that the use of finance choice depend upon the nature of the asset because asset specificity is used to create variation in transaction cost in the event of liquidation. The high asset specificity of breakup value of physical asset in the event of bankruptcy should be small. The debt cost should be high due to lack of control by the creditors over the asset management to cover the transaction cost. It may discourage the firms to use the debt due to high debt cost. Therefore, equity finance should be used as governance device by increasing direct control which may decrease the transaction cost of debt. The general asset specificity of breakup value of physical asset in the event of bankruptcy should be high. The debt cost should be low due to increase of control by the creditors over the asset management to cover the transaction cost. It may encourage the

firms to use the debt due to low debt cost. Therefore, equity finance should not be used as governance device by decreasing direct control which may increase the transaction cost of debt. The transaction cost economics is balanced cost and benefits with the use of general asset to specific asset while decisions of capital structure choice. The specific assets may be used to increase benefits due to technology enhancement as well as product quality but cost of using may less deployable as compared to general asset. The re sale value of specific asset may be low as compared to general asset. Then there must be high transaction cost and asymmetric information. Moreover, the research contributes to the previous literature by an examination of the mediating and moderating role of corporate governance and product and asset diversification. The governance structure and diversification can have an impact on information asymmetry and under pricing.

## Hypotheses of the Study:

The following hypotheses have been proposed and developed for further testing based on theoretical framework and literature review of the previous studies:

**H1:** The asymmetric information and agency behavior are negatively associated with debt vs. equity.

**H2:** The financial distress cost and the bankruptcy cost are negatively associated with debt vs. equity.

**H3:** The risk of financial signaling and Information asymmetries are negatively associated with debt vs. equity.

**H4:** The risk of financial signaling is negatively associated with the firm's market value behavior.

**H5:** The risk of asymmetric information is negatively associated with market value behavior.

**H6:** The agency costs in the product diversification of risk are positively associated with debt vs. equity and market value.

**H7:** The transaction cost in the asset diversification of risk is positively associated with debt vs. equity and market value.

**H8:** The agency behavior in good corporate governance is positively associated with debt vs. equity and market value.

***Model of the Study***

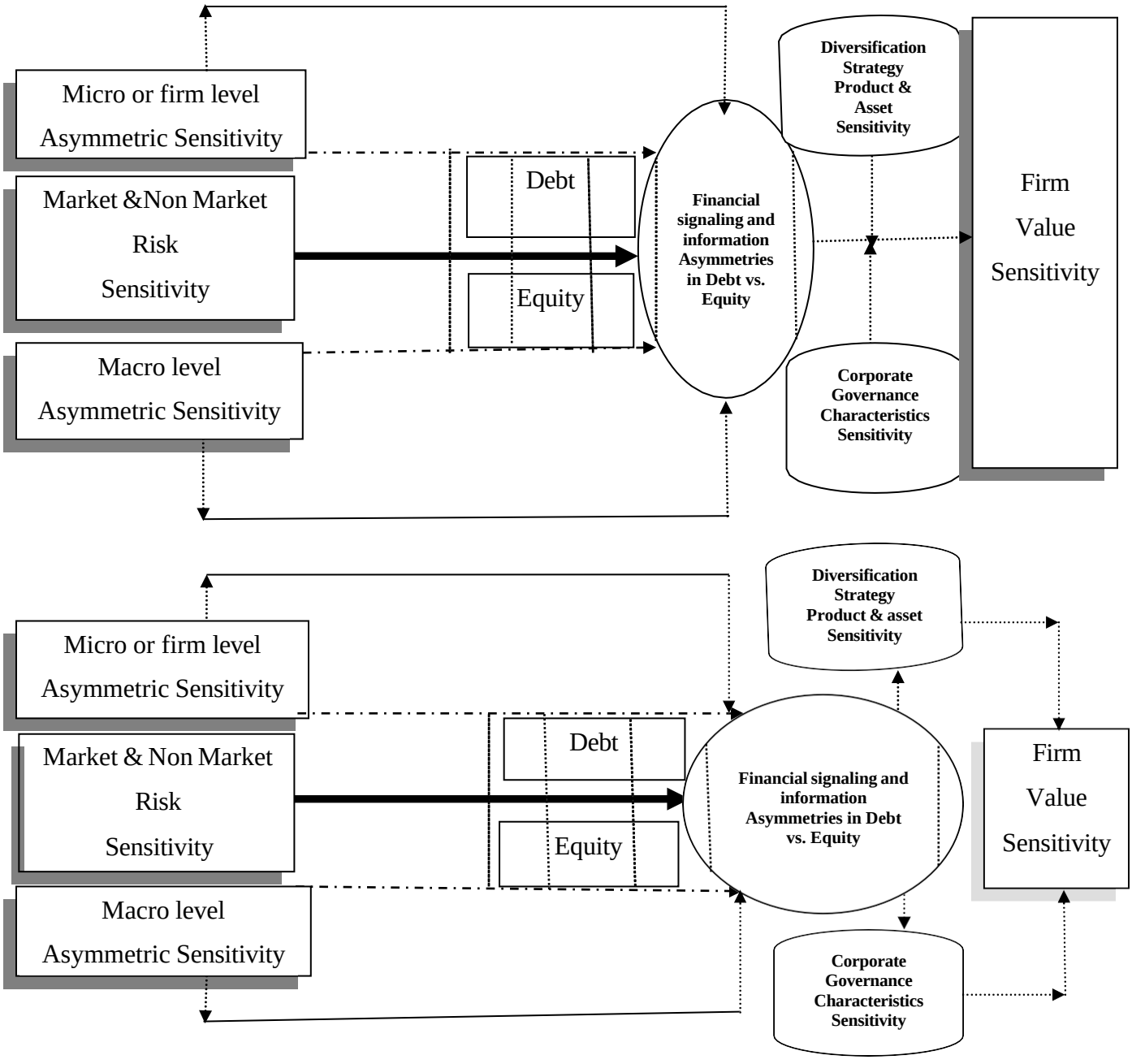


**Figure 3:** ***"Model of Financial Signaling and Information Asymmetries in Debt vs. Equity"***

# CHAPTER NO 4

# DATA AND METHODOLOGY

# 4. DATA AND METHODOLOGY:

This chapter of the study contains the research methodology used for empirical testing and it describe the information regarding to its sample size, variables used, instruments, methods of data collection, econometric modeling and tools of data analysis used for further process.

## 4.1. Data Collection:

In particular, the research depends on the non-financial listed companies' data for the period of 2001 - 2010. The quantitative secondary data is collected from non- financial listed companies' balance sheet analysis of the Karachi Stock Exchange (KSE).Pakistan. The Treasury bill rate (TB) – interest rate (IR) data regarding sample companies of Pakistan is collected from International Financial Statistics (IFS) resource which is published by International Monitory Fund (IMF). The data of market values of firms is collected from the website of business recorder. This research focused on the all non-financial listed companies' balance sheet analysis of the Karachi Stock Exchange (KSE).Pakistan. The selection criterion regarding the inclusion of the firms in the sample of this study is based on availability of the complete data balanced panel.

### 4.1.1 Population:

The listed companies on Karachi Stock Exchange, Pakistan are used as population of the study.

### 4.1.2 Sample:

Due to non availability of data of all companies, only 326 firms of non financial companies included as a sample size of the study. The data of seventy companies is

selected for exposure of product and asset diversification of signaling and information asymmetries.

## 4.2 Research Variables and Proxies:

The use of debt vs. equity finance has important implications for firm. The increase in debt finance, shareholders are able to increase control over investment. The firm earns more return from interest due on debt; there should be increase in returns as documented by Gerhardt and Brigham (2006). The Firer et.al. (2004) described debt and equity relativity of capital structure which a firm utilizes to finance its operational activities. As previously mentioned according to the theory of trade off: debt provided tax shield benefits but leverage the bankruptcy. The financing decisions are considerable regarding the value of the firm in the market. According to the agency theory that the value of the firm in the market and debt vs. equity are associated to each other. The critical review of the deviations the value of the firm in the market and debt vs. equity is being used to make solution of the key agency issue of the shareholders and creditors and shareholders and managers. Frank and Goyal (2003) established that the situation in future is based on previous and past situations regarding to the later cause of difference in debt ratio depends on value of market or value of book. Fama and French (2000) put into question that concerning to the irragulation raise due to difference of debt ratios. The pecking order theory and trade off theory applied book value of debt than the market value cause to ambiguity where the predictions may be increase in market value of debt. Mayer (1977) also observed that the book value of debt is relevant to the value of asset as compared to the market value. The debt book value is used which is consistent to

literature in previous research of non-financial listed companies of Karachi Stock

Exchange. Pakistan by Shah and Hijazi (2004).Taggart (1977) concluded that the choice of book value and market value, debt is actually the payment of interest charges are being used for tax savings which are not supplied by debt market value at once issued (Banerjee et. al., 2000).Therefore, debt value in the market is irrelevant for this study. This study is used a different methodology as compared to relevant studies of debt vs. equity as Booth et.al. (2001) and Hatfield et.al. (1994).

## 4.3 Modeling and Hypothesis:

The section (1) presented relevant proxies, expected direction and empirical justification for micro or firm financial covariates of debt vs. equity. It has been presented in summarized form as under.

### 4.3.1 Section 1: Micro or firm asymmetric behavior in Debt vs. Equity, Theory /Hypothesis and Examples:

| ***Covariates of Debt Vs. Equity*** | ***Theory /Hypothesis*** | ***Literature justification of variables*** |
|---|---|---|
| *Asset tangibility* | A greater amount of fixed assets is used to increase in debt or equity due to the collateral value. A positive relation should lower the asymmetric behavior and agency problem. Where collateral prove unsupportive – relationship should be negative. | (Martin & Scott, 1974;Jensen & Meckling,1976;Schmidt, 1976; Myers, 1977; Scott, 1977; Smith & Warner, 1979; Ferri & Jones, 1979; Grossman & Hart, 1982; Myers & Majluf, 1984; Stulz & Johnson, 1985; Harris & Raviv,1991;Rajan.&Zingales,1995;Ghosh.et.al.,2000);Shah and Hijazi, 2004). Nivorozhkin (2004) |
| *Size* | A larger firm can have more debt issuance capacity & lower risk of bankruptcy. The less asymmetric information may reduce chances of undervaluation of firm shares encouraging large firms to use equity financing. | (Gupta, 1969; Toy et al., 1974;Schmidt, 1976; Scott, 1977; Ferri & Jones, 1979; Kim & Sorensen; 1986; Titman & Wessels, 1988; Chung, 1993; Homaifar et al., 1994; Rajan &Zingales, 1995; Ozkan, 2001; Ghosh et al., 2000; Shah & Hijazi , 2005).Chang et.al (2013) |
| *Growth* | A positive growth related to low asymmetric information due to high gearing as net present value positive. | (Jensen and Mekling ,1976 Myers, 1984; Titman & Wessels, 1988; Haris & Raviv, 1990; Rajan & Zingales, 1995 Shah and Hijazi 2005) |

| | | |
|---|---|---|
| *Profitability* | A positive profits cause to issue more debt, reducing burden of tax. It should produce positive signal and less asymmetric behavior. | (Toy et al., 1974; Martin & Scott, 1974; Schmidt, 1976; Carleton & Silberman, 1977; Marsh, 1982; Long & Maltiz, 1985; Titman & Wessels, 1988; Harris & Raviv, 1991; Whited, 1992; Rajan & Zingales; 1995; Ghosh, 2000; Ozkan, 2001;Shah & Hijazi , 2005). Chang et.al (2013) |
| *Investment growth Opportunities* | A positive growth options of the firm: The higher the growth opportunities may utilizing investment required debt or equity due to low asymmetric behavior. | (Myers, 1984; Titman & Wessels, 1988; Haris & Raviv, 1990; Lasfer, 1995; Rajan & Zingales, 1995; Ozkan, 2001; Hovakimian et al., 2001). |
| *Bankruptcy risk* | The risk of bankruptcy as a proxy for the cost bankruptcy. It is the direct tool of financial distress. | (White & Turnbull, 1974; Warner, 1977; Myers, 1977; Marsh, 1982 ; Castanias, 1983). |
| *Agency costs* | The control of management on costs, it is indirect measure increase efficiency will reduce agency cost to deploy its assets. | (Grossman & Hart, 1982; Jensen, 1986; Stulz, 1990; Maloney et al., 1993; Wruck, 1994; Ang et al., 2000). |
| *Uniqueness* | There is an integral association of specialized products and debt vs. equity | (Titman, 1984; Titman & Wessels, 1988). |
| *Financial flexibility* | The association of retention ratio, It should create a target debt-equity ratio, in the pecking order theory. It should lower the asymmetric behavior. | (Marsh, 1982; Pinegar & Wilbricht, 1989; Opler, 1999). |
| *Liquidity position* | The association of liquidity of assets should increase the use of debt due to low asymmetric behavior. | (Prowse, 1990; Ozkan, 2001). |
| *Timing effect* | The association of prices of stock prices and equity issuance. A positive relation reflects low asymmetric behavior. | (Bodenhammer, 1968; Baxter & Cragg, 1970; Bosworth, 1971; Brealey et al., 1977; Taggart, 1977;Lucas & McDonald, 1990; Hovakimian et al., 2001). |
| *Transaction costs* | The transaction costs of issuance or retiring debt on the choice of financial structure. It should lead to asymmetric cost and agency problem | (Martin & Scott, 1974; Marsh, 1982; Fisher et al., 1989; Gilson, 1997) |
| *Free cash flow* | A positive relation lower agency cost and asymmetric behavior of free cash flows. | (Jensen & Meckling, 1986) |

| | | |
|---|---|---|
| *Relative tax effects* | A direct estimation of non-debt tax savings on total assets. A proxy for debt tax shields. It should lower the financial distress. | (Modigliani & Miller, 1963; Toy et al., 1974; Scott, 1976; DeAngelo & Masulis, 1980; Titman and Wessels, 1988;Lasfer 1995; Walsh & Ryan, 1997) |

**4.3.1.1 Direction of the Effect & Empirical Findings of Micro & Firm Level asymmetric behavior in debt vs. equity:**

| ***Covariates*** | ***Measure (proxy)*** | ***Theoretical Findings*** | ***Empirical Findings*** |
|---|---|---|---|
| *Asset Tangibility* | TG (Fixed assets/Total assets) | Positive | Positive<br>Negative |
| *Size* | SZ (LN of Total assets) | Positive | Positive<br>Negative |
| *Growth* | GR (LN of Total Sales) | Positive | Positive<br>Negative |
| *Profitability* | PF (EBT/ Total assets) | Positive | Positive<br>Negative |
| *Investment growth Opportunities* | Market-Book Ratio MB (Share price/Book Value) | Positive | Negative |
| *Bankruptcy risk* | BRt (F.Charges – EBIT/ S.D of earnings) | Negative | Negative |
| *Agency costs* | AC (Sales/Total assets) | Negative | Negative |
| *Uniqueness* | SESt - Selling Expenses over Sales | Positive | Positive |
| *Financial flexibility* | REAt (The expected effect of retained earnings ratio' as a proxy for the retention rate) | Positive | Negative |
| *Liquidity position* | CR (Current Ratio) | Positive | Negative |
| *Timing effect* | PE (Price/Earnings ratio). | Positive | Positive |
| *Transaction costs* | DPRt (Dividend Payout Ratio). | Negative | Negative |
| *Free cash flow* | FCFt (Free cash flows) (Net Income + Depreciation) | Positive | Negative |
| *Relative tax effects* | TE (Depreciation / Total asset) | Positive | Positive |

The efficiency in liquidity position (Lee et al. 2000 and collateral value (Frank and Goyal, 2003) can decrease the asymmetric behavior and agency cost. It can turn down financial distress and negative signaling on market value of firm. A positive signal can affect the firm and market behavior of investment.

### 4.3.2 Section 2: Macro asymmetric behavior, Theory /Hypothesis and Examples:

| ***Macrocosmic Covariates*** | ***Theory /Hypothesis*** | ***Literature justification of variables*** |
|---|---|---|
| *Money supply* | Money supply is the increasing levels of goods and services price ultimately inflation that will reduce the purchasing power. It should increases the retained earnings to reduce the financial leverage or debt. | (Drobetz et al., 2007). |
| *Inflation rate* | Inflation rate is the increasing levels of goods and services price to reduce the purchasing power. Inflation rate has influence on management decisions of financing to increases the retained earnings to reduce the financial leverage. | (Drobetz et al., 2007). |
| *Interest rate* | Increase in interest rate will cause increase in investor and creditors expected rates. Since financial managers are seeking to achieve the lowest cost sources of financing to increase in interest rates and cost of financing to eliminate this way of financing. | (Bokpin, 2009). |
| *Exchange rate* | Exchange rate can be effective on the capital structure of those companies which use foreign funds. Increasing the exchange rate will lead to decrease in cash and increases interest expense and finally increases the debts ratio. | (Fanelli and Keifman, 2002). |
| *Industrial production* | The increase in industrial production improves strength of cash flows and earnings ultimately to GDP and it leads to reduction in the debt to equity ratio. | (Bokpin, 2009). |
| *Reserves* | The increase in reserves improves strength of cash flows and earnings ultimately to GDP and it leads to reduction in the debt to equity ratio. | (Bokpin, 2009). |
| *Gross Domestic Product* | Gross Domestic Product (GDP) is the total monetary value of goods and services produced in a given year. Based on literature review, the increase in GDP improves cash flows and earnings and it leads to reduction in the debt to equity ratio. | (Bokpin, 2009). |

#### 4.3.2.1 Direction of the Effect & Empirical Findings of Macroeconomic Variables:

| ***Covariates*** | ***Measure (proxy)*** | ***Theoretical Findings*** | ***Empirical Findings*** |
|---|---|---|---|
| *Money supply* | MS (M2) | Negative | Negative |
| *Inflation rate* | IF (CP Index) | Negative | Negative |
| *Interest rate* | IR (T-bill rate-6M) | Negative | Negative |
| *Exchange rate* | ER (Dollar rate) | Positive | Positive |
| *Industrial production* | IP (IP Index) | Negative | Negative |
| *Reserves* | RE(Gold+Forex) | Negative | Negative |
| *Gross domestic product* | GDP (GDP Deflator) | Negative | Negative |

### 4.3.3 Section 3: The Theory Hypothesis and Examples of Firm Value:

| Firm Value Covariates | Theory /Hypothesis | *Literature justification of variables* |
|---|---|---|
| *Return on Asset* | The profits of a firm generated relative to its investment in assets. It is an indicator of whether a firm's assets are under or over utilized. It's a measure of efficiency. The high efficiency lower down the asymmetric behavior. | Firer et al., (2004). Cziraki et.al (2014) |
| *Return on Equity* | Investors return derives as a result of investing in firm.Net profit after tax over total equity includes all costs - cost of debt and taxes. Shareholders will continue to stay as they receive good returns. The high efficiency lower down the asymmetric behavior. | Firer et all., (2004) Bardia, (2008) Cziraki et.all (2014) |
| *Operating Profit Margin* | Profit derived from sale prior to operational costs. It is an indication of efficiency. A positive relation of debt vs. equity represents lowest level of asymmetric and agency cost. | Firer et all., (2004) Cziraki et.all (2014) |
| *Earnings Per Share* | Net profit on per share. The price earnings ratio provides an indicator of what the market is prepared to pay for a share based on the quality of the future earnings of the firm. The higher earnings represent lowest asymmetries. | Firer et all., (2004)Stem, (1970) Cziraki et.all (2014) |
| *Tobin Q* | This is the ratio between market value of equity plus book value of total debt to book value total assets. It is an indication of efficiency. | Bhagat and Bolton (2008) |
| *Market Value Added* | This is the difference between market value per share and book value per share. It is an indication of efficiency. A positive relation with debt vs. equity reflects low asymmetric information. | Taggart (1977), Frank and Goyal (2003) |

#### 4.3.3.1 Direction of the Effect & Empirical Findings Firm Value and Debt Vs. Equity:

| ***Covariates*** | ***Measure (proxy)*** | ***Theoretical Findings*** | ***Empirical Findings*** |
|---|---|---|---|
| *Return on Asset* | ROA (Net profit after tax/Total assets) | Positive | Negative |
| *Return on Equity* | ROE (Net profit after tax/Total equity) | Positive | Negative |
| *Operating Profit Margin* | OPM (Operating profit) | Positive | Negative |
| *Earnings Per Share* | EPS (Net profit after tax/Total No of shares) | Positive | Positive |
| *Tobin Q* | TNQ ( Market value of equity + book value of total debt/ book value total assets) | Positive | Negative |
| *Market Value Added* | MVA (Market value per share/Book value per share) | Positive | Negative |

### 4.3.4 Section 4: Market & Non Market Risk, Theory /Hypothesis and Examples:

| Risk Covariates | Theory /Hypothesis | *Literature justification of variables* |
|---|---|---|
| *Non Market sensitivity and risk* | The bankruptcy probability is estimated or forecasted on basis of accounting ratios prior to the occurrence of the event. It is a proxy of financial distress. | (Altman., 1968, 1984, Eidleman., 1995). |
| *Market sensitivity and risk* | A systematic risk represents the market risk behavior. This is determinant of signaling and sensitivity of the market. | (Sharp and Linter,1964,1965) |

**Altman (1968)** documented Z-Score to make prediction of bankruptcy. The Z score may serve as predictor of probability of bankruptcy in a specified period of time. The balance sheet and income statements values may be used to enhance the strength of the firm. Z - Score is a linear combination in which five weighted coefficients of accounting business ratios are used to anticipate the bankruptcy. The Beaver William (1966) researched and this was used to initialize basically the constructs of the Altman (1968). The t-test was applied first time to predict bankruptcy of paired matched sample of firms by Beaver William (1966, 1968). Z- Score of weighted coefficient of ratios is calculated in the context of listed companies Pakistan.

#### 4.3.4.1 Direction of the Effect & Empirical Findings of Risk Covariates:

| ***Risk Covariates*** | ***Measure (proxy)*** | ***Theoretical Findings*** | ***Empirical Findings*** |
|---|---|---|---|
| *Non Market sensitivity and risk (Financial distress)* | $Z-$ Score | Negative | Negative |
| *Market sensitivity and risk Systematic risk - (β)* | *(β)* | Negative | Negative |

### 4.3.5 Section 5: Corporate Governance Variables, Theory /Hypothesis and Examples:

| Covariates | Theory /Hypothesis | *Literature justification of variables* |
|---|---|---|
| *Ownership concentration* | The large shareholdings become the managers to cause serious asymmetries and agency problems for minority of shareholders. | Shleifer& Vishny (1997),Johnson et.al (2000), Laporta et al.(1999,2002) Morck et al (2000),Chen et.al (2006),Sun and tong, (2003) and Wei et.al(2005) |
| *Institutional ownership* | The confidence of general public and others lenders will increase – resulting in favorable borrowing. Less asymmetry. | Demsetz (1983), Demsetz and Lehn (1985), Shleifer and Vishny (1986). Short Keasey (1997) Short Keasey and Duxbury(2002) |
| *Board size* | The number of members in board. The relationship between board size and capital structure is mixed (positive and negative). In case of positive represents low asymmetric risk. | Pfeffer and Salancick (1978), Berger (1997),Yermack (1996), Rosentein (1990), Rosenstein and Wyatt (1997), Abor & Biekpe (2007), Wen (2002),Jensen (1986),Anderson (2004) |
| *Board independence* | The association between board independence and capital structure is positive. Low risk. | Kam C.Chan and Joanne Li (2008). |
| *Audit committee independence* | The audit committee independence and capital structure is positive. Low risk | Klein (2000), Kam C. Chan and Joanne Li (2008) |
| *CEO duality* | Asymmetries and Agency problem will exist due to CEO/Chair duality. | Fama and Jensen (1983), Daily and Dalton (1997), Fosberg (2004).Abor and Biekpe (2007). |
| *Shareholders activism* | The confidence and trust of the investor will increase due to board independence and audit committee independence. | Kam C.Chan and Joanne Li (2008). Shah, A.Z.S., (2010) |

#### 4.3.5.1 Direction of the Effect & Empirical Findings of Corporate Governance:

| ***Determinant*** | ***Measure (proxy)*** | ***Theoretical Findings*** | ***Empirical Findings*** |
|---|---|---|---|
| *Ownership concentration* | Shares owned by top – 10 shareholders/Total no of shares outstanding. | Positive<br>Negative | Positive<br>Negative |
| *Institutional ownership* | Shares owned by institutional owners /Total no of shares outstanding. | Positive | Positive<br>Negative |
| *Board size* | No of Board members | Positive | Positive |
| *Board independence* | Non-executive directors/Total no of directors in board. | Positive | Positive<br>Negative |
| *Audit committee independence* | Non-executive directors in audit committee/Total no of directors in audit committee | Positive | Positive |
| *CEO duality* | Whether CEO and Chairman the same person. | Negative | Negative |
| *Shareholders activism* | No of meetings attended by more than 70% directors/Total no of meetings due to required by independent board and audit committee. | Positive | Positive |

### 4.3.6 Section 6: Business Strategy Information, Theory /Hypothesis and Examples:

| Determinants | Theory /Hypothesis | *Literature justification of variables* |
|---|---|---|
| *Product -1* | Single Product: Very low degree of product diversification. Very High risk. | (Rumelt, 1974; Barton and Gordon, 1988;Lowe et al. 1994 and Jordan et al(1998) |
| *Product -2* | Dominant Product: Low degree of product diversification. Low risk. | (Rumelt, 1974; Barton and Gordon, 1988;Lowe et al. 1994 and Jordan et al(1998) |
| *Product -3* | Related Products: High degree of product diversification. High risk. | (Rumelt, 1974; Barton and Gordon, 1988;Lowe et al. 1994 and Jordan et al (1998) |
| *Product – 4* | Unrelated Products: Very High degree of product diversification. Very low risk. | (Rumelt, 1974; Barton and Gordon, 1988;Lowe et al. 1994 and Jordan et al(1998) |
| *Asset -1* | Very General Assets: Very low degree of asset specificity. Very low risk due to high collateral and liquidity. | (Vilasuso & Minkler, 2001). |
| *Asset -2* | General Assets: Low degree of asset specificity. Low risk due to collateral and liquidity. | (Vilasuso & Minkler, 2001). |
| *Asset -3* | Specific Assets: High degree of asset specificity. Very High risk due to low collateral and liquidity. | (Vilasuso & Minkler, 2001). |

#### 4.3.6.1 Direction of the Effect & Empirical Findings Business Strategy Information:

| ***Determinant*** | ***Measure (proxy)*** | ***Theoretical Findings*** | ***Empirical Findings*** |
|---|---|---|---|
| *Product –1* | Product – 1: Very low degree of product diversification and very high business risk. | Negative | Negative |
| *Product -2* | Product – 2: Low degree of product diversification and high business risk. | Positive | Positive |
| *Product -3* | Product – 3: High degree of product diversification and low business risk. | Strong Positive | Strong Positive |
| *Product – 4* | Product – 4: Very high degree of product diversification. Very low risk. | Very Strong Positive | Very Strong Positive |
| *Asset -1* | Asset -1: Very low degree of asset specificity is tradable and deployable asset in bankruptcy. | Positive | Positive |
| *Asset -2* | Asset -2: Low degree of asset specificity is less tradable and deployable asset in bankruptcy. | Negative | Negative |
| *Asset -3* | Asset -3: High degree of asset specificity is least tradable and deployable asset in bankruptcy. | Strong Negative | Strong Negative |

## 4.4 Methodology:

The methodology is used to examine the effects of change of Financial Covariates in the Debt vs. Equity. The studies of the covariates of debt vs. equity are typically depends upon model equations analyzed by applying the robust ordinary least square (OLS) and Extreme bounds analysis (EBA).

$$\mathbf{Y_{ct} = \alpha_t + \sum_{f=1}^{n} \delta_{nc} X_{ntc} + \mu_{tc}} \text{----------(1)}$$

Where t = 1,….., 10 c = number of the firms in each group

The requires change in debt vs. equity is estimated as $\mathbf{Y_{ct} = \Delta\ D/E = (D/E_t - D/E_{t-1})}$

### 4.4.1 Modeling Micro Firm level Asymmetries Covariates:

**Model – 1:**
Model – 1 is a model to consider the effect of fourteen time-varying Micro covariates.

$$\mathbf{Y_{ct} = \alpha_t + \delta Micro\ Covariates + \mu_{tc}} \text{----------(2)}$$

Covariates of Micro level on the Debt Vs. Equity.

$$\mathbf{Y_{ct} = \alpha_t + \sum_{f=1}^{n} \beta_{nc}} \text{(Micro Financial covariates)}_{\mathbf{ntc}} \mathbf{+ \mu_{tc}} \text{----------(3)}$$

Where, for the model as defined above,

$\mathbf{Y_{ct}}$ = Debt Vs. Equity response for company *c* in year *t* (t =1,..,10).

$\mathbf{FC_{nct}}$ = Time-varying micro financial covariate *f* (f=1,..,14)

for company *c* in year *t* (t =1,..,10).

$\boldsymbol{\beta}$ = Intercepts and parameter coefficients for change

$\boldsymbol{\mu_{tc}}$ = random error term for *c* - company in year *t*.

This can be stated in an expanded form as follows:

$$\mathbf{Y_{ct}} = \alpha_t + \beta_1\text{(Asset tangibility)} + \beta_2\text{(Size)} + \beta_3\text{(Growth)} + \beta_4\text{(Profitability)} + \beta_5\text{(Investment Growth Opportunities)} + \beta_6\text{(Bankruptcy Risk)} + \beta_7\text{(Agency cost)}$$

$+ \beta_8$(Uniqueness)$+ \beta_9$(Financial Flexibility)
$+ \beta_{10}$(Liquidity Position) $+\beta_{11}$ (Timing Effect)$+ \beta_{12}$(Transaction Cost)
$+ \beta_{13}$ (Free Cash Flows) $+ \beta_{14}$ (Relative tax Effect)$+ \mu_{tc}$

**Where**

$\mathbf{Y_{ct}}$ = Debt vs. Equity
**TG** = Asset Tangibility
**SZ** = Size
**GR** = Growth
**PF** = Profitability
**IGO** = Investment Growth Opportunities
**BR** = Bankruptcy Risk
**AC** = Agency Cost
**UQ** = Uniqueness
**FF** = Financial Flexibility
**LP** = Liquidity Position
**TE** = Time Effect
**TC** = Transaction Cost
**FCF** = Free Cash Flows
**RTE** = Relative Tax Effect
$\mu_{tc}$ = Error term

### 4.4.2 Modeling Macro level Asymmetries Covariates:

**Model – 2:**

Model – 2 is a model to consider the effect of seven time-varying macroeconomic financial covariates of the Debt vs. Equity.

$$\mathbf{Y_{ct} = \alpha_t + \delta Macroeconomic_{tc} + \mu_{tc}} \text{ ----------} (6)$$

Financial Covariates of macroeconomic and the Debt vs. Equity.

$$\mathbf{Yt_c = \alpha_t + \sum_{f=1}^{n} \beta_{nc}} \text{ (Macroeconomic Financial covariates) } \mathbf{ntc + \mu_{tc}} \text{ ----------} (7)$$

Where, for the model as defined above,

$\mathbf{Y_{ct}}$ = Debt Vs. Equity response for company *c* in year *t* (t =1,..,10).

$\mathbf{FC_{nct}}$ = Time-varying macroeconomic financial covariate *f* (f=1,..,7)

for *c*-company in year *t* (t =1,..,10).

$\beta$ = Intercepts and parameters coefficients of change

$\mu_{tc}$ = random error term for *c*- company in year *t*.

This can be stated in an expanded form as follows:

$$Y_{ct} = \alpha_t + \beta_1(\text{Money Supply}) + \beta_2(\text{Inflation}) + \beta_3(\text{Interest rate}) + \beta_4(\text{Exchange rate}) + \beta_5(\text{Industrial production}) + \beta_6(\textbf{Reserves}) + \beta_7(\text{Gross Domestic Product}) + \mu_{tc}$$

**Where**

$Y_{tk}$ = Debt vs. Equity
**MS** = Money Supply
**IF** = Inflation Rate
**IR** = Interest Rate
**ER** = Exchange Rate
**IP** = Industrial Production
**RE** = Reserves
**GDP** = Gross Domestic Product
$\mu_{tc}$ = Error term

### 4.4.3 Modeling Firm Value Financial Covariates:

**Model – 3:**

Model – 3 is a model to consider the effect of Six financial covariates of the Firm value.

$$Y_{ct} = \alpha_t + \delta\ MVA_{tc} + \mu_{tc} \text{ ----------(8)}$$

Where, for the model as defined above.

$Y_{ct}$ = Market value response for company *c* in year *t* (t =1,..,10).

$FC_{nct}$ = Time-varying market performance as financial covariate *f* (f=1,..,1)

for *c*-company in year *t* (t =1,..,10).

$\beta$ = Intercepts and parameters coefficients of change

$\mu_{tc}$ = random error term for *c*- company in year *t*.

Financial Covariates of Debt Vs. Equity and the Market value.

$$Y_{ct} = \alpha_t + \beta_1(\text{Market performance}) + \mu_{tc} \text{ ----------(9)}$$

$Y_{ct}$ = Debt Vs. Equity

Where Independent Covariates**:**

| | |
|---|---|
| **$MVC_{ct}$** | = Market Value Covariates |
| **ROA** | = Return on Assets |
| **ROE** | = Return on Equity |
| **OPM** | = Operating Profit Margin |
| **EPS** | = Earnings per share |
| **TQ** | = Tobin Q |
| **MVA** | = Market Value Added |
| **$\mu_{tc}$** | = Error term |

### 4.4.4 Modeling Market & Non Market Risk Financial Covariates:

**Model – 4:**

Model – 4 is a model to consider the effect of two time-varying financial risk covariates of on the Debt Vs. Equity.

$$\mathbf{Y_{ct} = \alpha_t + \delta\ RISK_{tc} + \mu_{tc}} \text{ ---------- (4)}$$

This can be stated in an expanded form as follows:

$$\mathbf{Y_{ct} = \alpha_t + \beta_1}(\text{Z.Score}) + \mathbf{\beta_2}(\text{Systematic risk}) + \mathbf{\mu_{tc}} \text{ ---------- (5)}$$

Where subscript where t 1..... 10 is time and k number of firms in each group respectively, $\mathbf{Y_{tc}}$is independent variable and which is measure of financial policy (debt vs. equity). $\beta_1$, $\beta_2$, $\beta_3$, $\beta_4$, $\beta_5$ are independent variables. Where $\beta_1$ is measure for Z.score which is used to represent the operational risk of the firm and $\beta_2$ is measure of systematic risk. The **Altman (1968)** Z-Score is used calculate the probability of survival of a firm for one year and future.

$$\mathbf{Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + .6X_4 + .999X_5}$$

**Whereas**

$\mathbf{X_1}$= (Working Capital/Total Assets)

$\mathbf{X_2}$= (Retained Earnings/Total Assets)

$\mathbf{X_3}$= (Earnings before Interest and Tax/Total Assets)

$X_4$= (Market Value of Equity/Total Liabilities)

$X_5$ = (Sales/Total Assets)

The model applied is based on univariate analysis used to estimate the level of significance of accounting ratios at once at a time. The discriminate analysis by Fisher (1936) made to fit well the Altman (1968). At preliminary, Altman (1968) presented that Z - score 72% precise to forecast bankruptcy two years prior to the occurrence of the event with type II error 6% (false positive). Altman (2000) documented that Z - score 80% to 90% precise to forecast bankruptcy one year prior to the occurrence of the event with type II error 15% to 20% (false positive). It can be classified that firm may be bankrupt or may not go to bankruptcy. Zones of discrimination of Z-score can be defined as Z > 2.99 – It will be in safe zone, 1.81 < Z < 2.99 – It will be in gray zone, Z > 1.81 – It will be in distress zone. The continuously compounded rate of returns is estimated as follows

$$R_t = \ln (P_t / P_{t-1})$$

$R_t$ = Return on year t

$P_t$ = Closing value of index on year t

$P_{t-1}$= Closing value of index on year t - 1

**Ln** = Natural log.

Beta which is proxy for Systematic risk can be calculated by using the following formula

$$\beta_{tc} = \text{Cov im} / \delta_2 m$$

**Cov im** =Cov (Security return, Market return)

$\delta_2$ =Variance of Market return

### 4.4.5 Modeling Corporate Governance Financial Risk Diversification Covariates:

**Model – 5**

Model – 5 is a model to consider the effect of Corporate Governance financial covariates on Debt vs. Equity:

$$\mathbf{Y_{ct} = \alpha_t + \delta\ Corporate\ Governance_{gct} + \mu_{tc}} \text{ ----------} (10)$$

Financial Covariates of Debt Vs. Equity and the Market value.

$$\mathbf{Y_{ctij} = \alpha_t + \sum_{g=1}^{7} \beta_{gct}}\ (\text{Corporate Governance})\ \mathbf{gct + \mu_{tc}} \text{ ----------} (11)$$

Where, for the model as defined above,

$\mathbf{Y_{ct}}$ = Debt Vs. Equity response for *c*- company in year *t* (t =1,..,10)

***gct*** = time-varying corporate governance covariate *g* (*g* =1,.., 7) for company *c* in year *t* (t =1,..,10)

$\boldsymbol{\mu_{tc}}$ = random error term for *c* - company in year *t*

It can be presented in an expanded form as follows:

$$\mathbf{Y_{ct} = \alpha_t + \sum_{i=1}^{7} \beta_{tic} + \beta_1}\ (\text{Ownership concentration})\ \mathbf{gc + \beta_2}\ (\text{Institutional shareholding})\mathbf{gc}$$
$$\mathbf{+ \beta_3}\ (\text{Board Size})\mathbf{gc + \beta_4}\ (\text{Board independence})\ \mathbf{gc + \beta_5}\ (\text{Audit committee independence})\mathbf{gc}$$
$$\mathbf{+ \beta_6}\ (\text{CEO/ Chair duality})\ \mathbf{gc + \beta_7}\ (\text{Shareholder Activism})\mathbf{gc + \mu_{tc}}$$

**Where**

- $\mathbf{Y_{tk}}$ = Debt vs. Equity
- **OC** = Ownership concentration
- **IO** = Institutional Ownership
- **BS** = Board Size
- **BI** = Board Independence
- **ACI** = Audit Committee Independence
- **CD** = CEO Duality
- **SHA** = Share Holder's Activism
- $\boldsymbol{\mu_{tc}}$ = Error term

#### 4.3.5.1 Modeling Mediation of Corporate Governance Covariates:

**Model – 5.1:**

$$\mathbf{MVC_{ct} = \alpha_t + \beta_1} \text{ (Debt Vs. Equity)} \mathbf{+ \mu_{tc}} \text{ ---------- (12)}$$

$\mathbf{MVC_{ct}}$= Market value response for company *c* in year *t* (t =1,.., 10).

$\boldsymbol{\beta_1}$= Coefficients of time-varying Debt Vs. Equity

$$\mathbf{CG_{ct} = \alpha_t + \beta_1} \text{(Debt Vs. Equity)} \mathbf{+ \mu_{tc}} \text{ ---------- (13)}$$

$\mathbf{CG_{ct}}$= Corporate Governance response for company *c* in year *t* (t =1,.., 10).

$\boldsymbol{\beta_1}$= Coefficients of one time-varying Debt Vs. Equity

$$\mathbf{CG_{ct} = \alpha_t + \beta_1} \text{(Firm Value)} \mathbf{+ \mu_{tc}} \text{ ---------- (14)}$$

$\mathbf{CG_{ct}}$ = Corporate Governance response for company *c* in year *t* (t =1,.., 10).

$\boldsymbol{\beta_1}$ = Coefficients of one time-varying Firm Value**.**

#### 4.3.6 Modeling Business Strategy Dummy Risk Diversification Covariates:

**Model – 6:** The Model - is built on the basis by including business strategy dummy variables. It is used to examine the impact of financial variables and product diversification together with asset specificity on financial policy. The theories are hypothesized that product diversification is positively impact on financial policy and asset specificity is negatively impact on capital structure.

$$\mathbf{Y_{ct} = \alpha_t + \delta Business\ Diversification_{dct} + \mu_{tc}} \text{ ---------- (15)}$$

Financial Covariates of Business Strategy and the Debt Vs. Equity.

$$\mathbf{Y_{cijk} = \alpha_t + \sum_{i=1}^{7} \beta_{tic} + \sum_{j=1}^{4} \beta_{tj}} \text{ (Product Diversification) } \mathbf{tjc + \sum_{k=1}^{3} \beta_{tk}} \text{ (Asset Specificity) } \mathbf{tkc + \mu_{cijk}} \text{ ---------- (16)}$$

Where, for the model as defined above,

$\mathbf{Y_{cijk}}$ = Debt Vs. Equity response for company *c* in year *t* (t =1,..,10) with product type *j* (j=1...4), and asset type *k* (*k* =1,..3).

**P** = non-time varying dummy variables for the fixed factor product type for company *c*

**A** = non-time varying dummy variables for the fixed factor asset type for company *c*

**β** = intercepts and parameters coefficients for change

$\mu_{cijk}$ = random error term for *c* - company in year *t* with product *j*, and asset type *k.*

The seven non-time-varying dummy variables with four levels of product diversification and three levels of asset specificity. It can also be expanded as follows:

$$\mathbf{Y_{cijk}} = \alpha_t + \sum_{i=1}^{7} \beta_{tic} + \beta_1 (\text{Product})_1 + \beta_2 (\text{Product})_2 + \beta_3 (\text{Product})_3 + \beta_4 (\text{Product})_4 + \sum_{K=1}^{3} \beta_{tk} (\text{Asset Specification})_{tkc} + \mu_{cijk}$$

Where, for the model as defined above,

$\mathbf{Y_{cijk}}$ = Debt Vs. Equity response for company *c* in year *t* (t =1,..,10).

*A to D* = Coefficients of non-time-varying product dummy variables for company *c*. Product -1 is a reference dummy variable.

$$\mathbf{Y_{cijk}} = \alpha_t + \sum_{i=1}^{7} \beta_{tic} + \beta_1 (\text{Product})_1 + \beta_2 (\text{Product})_2 + \beta_3 (\text{Product})_3 + \beta_4 (\text{Product})_4 + \beta_1 (\text{Asset})_1 + \beta_2 (\text{Asset})_2 + \beta_3 (\text{Asset})_3 + \mu_{cijk}$$

Where, for the model as defined above,

$\mathbf{Y_{cijk}}$ = Debt Vs. Equity response for company *c* in year *t* (t =1,..,10).

*Q to S* = Coefficients of non-time-varying product dummy variables for company *c*. Product -1 is a reference dummy variable. Asset -1 is a reference dummy variable.

$$\mathbf{X_{cijk}} = \alpha_t + \sum_{i=1}^{7} \beta_{tic} + \sum_{j=1}^{4} \beta_{tj} \text{ (Product Diversification) } \mathbf{tjc} + \sum_{k=1}^{3} \beta_{tk} \text{ (Asset Specificity) } \mathbf{tkc} + \mu_{cijk}$$

Where, for the model as defined above,

$\mathbf{X_{cijk}}$ = Market Value response for *c*- company in year *t* (t =1,..,10) with product type *j* (j=1...4), and asset type *k* (*k* =1,..3).

$$\mathbf{X_{cijk}} = \alpha_t + \sum_{i=1}^{7} \beta_{tic} + \beta_2 \text{ (Product) } 1 + \beta_2 \text{ (Product)} 2 + \beta_3 \text{ (Product)} 3 + \beta_4 \text{ (Product)} 4 + \beta_5 \text{ (Asset)} 1 + \beta_6 \text{ (Asset)} 2 + \beta_7 \text{ (Asset)} 3 + \mu_{cijk}$$

$\mathbf{X_{cijk}}$ = Market Value response for company *c* in year *t* (t =1,..,10) and *Q to S* are Coefficients of non-time-varying product dummy variables for *c*. Product -1 and Asset -1are reference dummy variable. The hypothesis or the classifications of the covariates in existing empirical findings have examined the different combinations of covariates and results found mixed. It is very considerable that existing literature found lack of robustness to account for that covariates are sensitive.

Chakrabarti (2001) investigated that most of the different relevant studies showed negative signs of parameters coefficients and also positive signs of parameters coefficients with less or more almost similar covariates. The question is this that how we can deal with this issue where there is no theoretical justification for a combination of covariates, parameter coefficients sign. The theoretical justification may be valid to a specific country or a group of countries. It may not be valid to all countries due to poor goodness of fit and panel analysis. Hence, sensitivity of covariates and the robustness of the outcomes are big phenomena to make results of the existing literature are question mark and its reliability.

## 4.5 Extreme Bounds Analysis (EBA):

The measurement of the time effect can be examined for each of the variables which vary from each other. The results reliability of the prior literature, particularly results robustness and sensitivity is a big phenomenon.

The extreme bounds analysis (EBA) is used for sensitivity analysis. This EBA can be used to avoid the pitfall of selective reporting. This also proceeds by direct incorporation of previous information's and followed a system to test the fragility of the estimation of signaling parameters coefficients. The EBA established by Leamer (1978, 1983, 1985) where further extension was made by Granger and Uhlig (1990). The EBA is used to investigate the upper bounds and lower bounds for highly significant variables of relevance from the given explanatory variables of potential combinations.

The EBA has power of reporting and assessing sensitivity of the estimated results where change in parameters of the model. Hussain and Brookins (2001) documented that EBA is more reliable as compared to previous studies due to its practice of reporting and assessing. This power of EBA validates the degree of reliability of the estimators. Leamer and Leonard (1983) identified that the ambiguity of inference about the coefficient reduced due to extreme values of coefficients. The statically significant relationship measured to be robust between estimation of coefficient of dependent variables and explanatory variables. There is no change in the reflection of sign when explanatory variables may not be the same.

### 4.5.1 Extreme Bounds Analysis Methodological Issues:

Xaviar X.Sala-I-Martin (1997) argued that a specific covariates coefficient of a growth regression of model design of panel data is not an optimistic criterion. The panel data is

caused number of statically theoretical problems. The signaling coefficient of covariates density role is unique to resolve this issue by selection of coefficients robustness and fragility. So, Leamer,s EBA is very useful to resolve this big phenomenon of classical econometric practices. Duthham, J. Benson (2010) established the sensitivity and validity of explanatory covariates in hypothesis and conditioning information sets can be evaluated through EBA. Moreover, the parameters alerts where the associated covariates included or excluded in regression construct. It is obvious that at factual the required and desired covariates are sensitive regarding the minor shifts in the model due to their sensitivity in behavior. It is actually the matter of fact of great concern to ascertain that which sensitive value of parameter is reliable and valid for justification of policy making. The simple regression of panel data coefficients or parameters is objectionable ultimately economic research pursuits to policy making. In this regard, doubtfulness of fulfillment of ultimate aim, the research endeavourers become more reliable and valid for a futile activity justification.

### 4.5.2 Bayesian Solution to the Signaling and Sensitivity of Coefficients:

Bayesian econometric technique is an alternative of signaling parameters coefficients of simple regression. The parameters coefficients in simple regression may not be best representative and useful for interpretation. The Leamer (1978, 1983 and 1985) and Leamer & Herman (1983) developed Bayesian econometric technique - Extreme Bounds Analysis (EBA). Levine & Runlet (1992) and Levine & Zervos (1993) showed the usefulness of Extreme Bounds Analysis (EBA).A seminal research by Sala – I – Martin (1997) documented a research of Governance related to 140 countries of data period ranging 1962 to 1992 by employing 2 millions of regression equations. The EBA is

theoretically justified and convincing regarding the best representative and useful for interpretation. The estimations complexity of results may insist to avoid the common researcher of use of EBA. There is no reliable and plausible way out available in econometric software's regarding the Extreme Bounds Analysis (EBA). The interest of EBA may insist the researchers to develop programme of EBA. The available option of programming in E-views 5 is scripted by the author. Ordinary Least Square (OLS) is based on EBA can be used to apply the log linear model where parameter $\beta_{2ji}$ is used for interpretation of financial signaling and sensitivity.

$$\mathbf{Y = \beta_{1}I_{ji} + \beta_{2ji}\, M + \beta_{3ji}\, Z + \varepsilon_{ji}}$$

Where Y is debt and equity indicator, I is the set of interest variables which are being always included in regression and commonly referred to in the literature. The M are the variables of interest and statically significant in this study. These are the basic proxies of theories of capital structure and included in the results. The Z are the subset which is choice from a pool of variables. These variables identified from past studies as important explanatory variables that have significant effect the dependant variables. These variables are asset tangibility (AT), Size (SZ) and Profitability (PF).The $\varepsilon_{ji}$ is the random error term.

The choice of covariates M based upon the extent it related with I or M. The M covariates incorporated in regression model to result the range of corresponding values of parameter $\beta_{2ji}$ for financial signaling and sensitivity behavior. This study is used to focus the measure of the significance of $\beta_{2ji}$. A huge number of regressions for estimation of $\beta_{2ji}$ for each interest variable should be employed to find the highest $\beta_{2ji}$ and lowest $\beta_{2ji}$ at a specific level of significance. The significance of extreme values with same sign can

be inferred as the result is robust otherwise fragile. The Null Hypothesis $\mathbf{H}_0$ can be interpreted for $\boldsymbol{\beta 2ji = 0}$ at 5% level of significance. The rejection of the $\mathbf{H}_0$ at 5% level of significance used to confirm the theory that $\mathbf{H}_1{:}\boldsymbol{\beta}_{2ji} \neq 0$ where $\boldsymbol{\beta}_{2ji}$ is non-trivial and non-zero. Null Hypothesis: $\mathbf{H}_0{:}\boldsymbol{\beta}_{2ji} = 0$ Alternative Hypothesis: $\mathbf{H}_1{:}\boldsymbol{\beta}_{2ji} \neq 0$. The extreme upper bounds can be calculated by $\boldsymbol{\beta}_{2ji\text{-}m}$ plus two standard deviation - $\mathbf{2\delta}$. The standard formula $\mathbf{(\beta_{2ji\text{-}m} \pm 2\delta)}$ is used to calculate the upper bounds. It covered the 96% limits and $\mathbf{(\beta_{2ji\text{-}m} \pm \delta)}$ 68%at 5% level of significance to estimate parameters $\boldsymbol{\beta}_{2ji}$. The parameters $\boldsymbol{\beta}_{2ji}$ more than equal to 50% cases are statically significant at 5% level of significance and standard formula reflected the $\mathbf{(\beta_{2ji\text{-}m} \pm 2\delta)}$ which covered 96% bounds limits where $\boldsymbol{\beta}_{2ji\text{-}m}$ is significant and of identical sign at extreme bound referred to as robust otherwise fragile. Therefore, results can be interpreted as robust or contrarily as fragile. However, EBA ensured the range of value of parameters $\boldsymbol{\beta}_{2ji}$ robustness of the variables. A large value is relatively variance coupled with smaller mean absolute value may tend to higher probability of fragility.

It's not important that mainly the signaling coefficients are statically significant at 5% level of significance due to increase in probability of reverse sign of upper and lower bounds. Secondly, the problem of use of extreme bounds related with missing of economic theory for application of upper bound and lower bounds limits. Actually, there may be problem of parameters values which do not touch or occurred outside the bounds sometime. Particularly, someone who is interested to incorporate original bivariate model of $\boldsymbol{\beta}_{2ji}$ by missing the M covariates in model of the study.

### 4.5.3 EBA - Modified Approach:

The modified approach of EBA employed to test the sensitivity and approximates how robustness occurred in dependent variable relevant to the variety of the explanatory variables. The modified approach of EBA is used to search the maximum and minimum bounds to estimate the upper bound and lower bounds from series of parameter coefficients $\beta_{2ji}$ or coefficients of M combination which is used to satisfy the condition for selection criteria of coefficients robustness. The base $\beta_{2ji}$ is used to estimate signaling parameter coefficients of particular regression of covariates of interest. It is used to describe that the signaling coefficients must be statically significant at 5% level of significance and do not to reflect the opposite sign. The parameters $\beta_{2ji}$ **at 50%** of significance are used to obtain by incorporation of M variables combinations. The higher $\beta_{2ji}$ is used to estimate maximum upper bound $(\beta_{2ji-m} \pm 2\delta)$ and the lower $\beta_{2ji}$ is used to estimate minimum lower bound. The upper and lower bounds which are used to maintain identical in sign will inferred to result in robust otherwise fragile. The modified EBA can have the support of Leamer methodology of upper and lower extreme bounds. It also considers the entire distribution by Sala-i-Martin Extreme Bounds Analysis (EBA).

### 4.5.4 Classical – Conventional and Bayesian Methods:

The use of Bayesian methods can eliminate signaling parameter ambiguities. The conventional modeling may cause serious problem of reliability of a signaling parameter used in the particular research. So, Bayesian methods can be made more justified and valid for the specification of trend covariates and uncertainty in the sign of parameters respectively. The stability in parameter of model can be enhanced through only by the

use of EBA. It is fairly remarkable to observe that the conformity among Bayesian methods (EBA) outcomes due to the nature of the EBA procedure. EBA exposed results as fragile where data is multicollinear.

It is somewhat unusual that data does not suffer more by this kind of econometric problem. Granger and Uhlig (1990) developed further extensions to reduce the more probability of irrational extreme bounds of the model. Chakrabarti (2001) obtained sensitivity and robustness of the covariates of foreign direct investment (FDI) where the proclaimed superior outcomes by employing EBA as yet it opposed to classical econometric techniques. The association of dependent covariates and independent covariates regarding the robust due to statically significance of estimated parameter coefficient and established the same sign when set of explanatory covariates may change. It can be acknowledged better that EBA procedure employed can tackle the problem of outliers related to the financial signaling sensitivity and validity of asymmetries of information. EBA have the potential to enlarge the search and standard in reporting. EBA can make extraction of reliable result in this research of financial signaling and asymmetries of information in debt vs. equity. It is only the reason to investigate financial signaling and asymmetries of information in debt vs. equity as a point in question to find the truth which is not a preconceived and ideological idea of research that's why the EBA is used. EBA can have only the power to remove the stance of subjectivity in the field of financial signaling and asymmetries of information in debt vs. equity research. It is also worth to note that the variables of financial signaling and information asymmetry have helped to create an agency model. The agency model has helped to explain the impact of debt vs. equity on investor behavior and market value.

# CHAPTER 5

# RESULTS AND DISCUSSION

# 5. RESULTS AND DISCUSSION:

This chapter covers the detailed analysis of data with implication of financial signaling and asymmetries of information. This includes descriptive statistics, correlation analysis, multicollinearity, robust regression and extreme bound analysis (EBA). MS Excel, Stata and Eviews software's have been used for analysis to achieve the result of study. The theoretical modeling of this particular study expressed in previous chapter can be used to capture the dynamic support of results to enhance the validity and reliability. The results and discussion is used to find the empirical findings of financial signaling and asymmetries of information in debt vs. equity in transitional and emerging market.

## 5.1 Micro or Firm Level Signaling and Asymmetric Covariates:

The behavior of the data can be observed by descriptive statistics as reflected in Table 1. The standard deviation showed that the asset tangibility (TG) deviated from mean value with .226705. size (SZ) .1721145, growth (GR) 0.105615, profitability (PF) 0.0410315, investment growth opportunities (IGO) 0.849512, bankruptcy risk (BCR) .821506, agency cost (AC) 0.722696, uniqueness (UQ) .43161, financial flexibility (FF) 0.379796, liquidity position (LP) 0.715047, timing effect (TE) 3.057693, transaction cost (TC) 0.037246, free cash flows (FCF) 3.057694 and relative tax effect (RTE) 0.251339 showed the volatility. This volatility can be hedged to mitigate the risk exposure. The descriptive statistics of all fifteen variables have been presented in table 1. The average annual change in percentage in debt vs. equity showed high average change of 0.014297 per year with standard deviation is 0.071752. The asset

tangibility (TG) showed the .410827 change per year which is significantly high, size

(SZ) 0.321916 change, growth (GR) 0.284609, profitability (PF) 0.130419, investment growth opportunities (IGO) 0.720474, bankruptcy risk (BCR) -0.23257, agency cost (AC) 1.05881, uniqueness (UQ) 0.844422, financial flexibility (FF) 0.784772, liquidity position (LP) 1.059235, timing effect (TE) 5.035715, transaction cost (TC) 0.39439, free cash flows (FCF) 1.756837 and relative tax effect (RTE) 0.15332 reflected low average change within one year.

**Table 1: Descriptive Statistics (10 - Year Summary)**

| Variable | N | Minimum | Maximum | Mean | Median | Std. Deviation |
|---|---|---|---|---|---|---|
| ***DE*** | 3260 | -0.915562 | 0.668571 | 0.015713 | 0.014297 | 0.071752 |
| ***TG*** | 3260 | 0.081144 | 0.816568 | 0.410827 | 0.037617 | 0.226705 |
| ***SZ*** | 3260 | 0.065035 | 0.657168 | 0.329165 | 0.021169 | 0.1721145 |
| ***PF*** | 3260 | -0.937442 | 0.824824 | 0.041315 | 0.027101 | 0.130419 |
| ***GR*** | 3260 | -0.974654 | 0.995342 | 0.105615 | 0.102902 | 0.284609 |
| ***IGO*** | 3260 | -2.921053 | 2.980212 | 0.720474 | 0.548064 | 0.849512 |
| ***BCR*** | 3260 | -3.997739 | 3.949717 | -0.23257 | -0.04144 | 0.821506 |
| ***AC*** | 3260 | 0.087251 | 3.995336 | 1.05881 | 0.976174 | 0.722696 |
| ***UQ*** | 3260 | 0.068754 | 2.977143 | 0.844422 | 0.925833 | 0.431612 |
| ***LP*** | 3260 | 2.832347 | 3.993421 | 1.059235 | 1.516069 | 0.715047 |
| ***FF*** | 3260 | 0.019853 | 0.190909 | 0.784772 | 0.013214 | 0.379796 |
| ***TE*** | 3260 | 0.888182 | 8.857143 | 5.094388 | 4.021541 | 1.436254 |
| ***FCF*** | 3260 | -7.081512 | 16.843123 | 1.756837 | 0.566654 | 3.057693 |
| ***RTE*** | 3260 | 0.249572 | 0.994464 | 0.153328 | 0.035715 | 0.251339 |
| ***TC*** | 3260 | 0.003567 | 0.988895 | 0.39439 | 0.004582 | 0.037246 |

Table 2 presented correlation among financial factors and debt vs. equity . The results revealed that there is no significant relationship among financial variables and debt vs. equity. The correlation coefficient between financial variables and Debt vs. Equity showed week relationship. LP, UQ, TE, FCF, RTE, TC and DE are negatively correlated. Whereas TG, SZ, PF, GR, IGO, BCR, AC, FF and DE are positively

correlated. The correlation coefficients are -0.00041, -0.0005, -0.00065, -0.05456, -0.00411, -0.00036 respectively for LP, UQ, TE, FCF, RTE, TC.

The coefficients for TG, SZ, PF, GR, IGO, BCR, AC and FF are 0.048785, 0.048274, 0.001278, 0.007104, 0.133809, 0.006, 0.004589 and 0.000425 respectively. This study is used to estimate financial signaling and asymmetric information determinants of debt vs. equity. The results indicated that determinants are relatively significant cited in previous literature.

**Table-2: Correlations among Variables**

| Variable | *DE* | *TG* | *SZ* | *PF* | *GR* | *IGO* | *BCR* | *AC* | *UQ* | *LP* | *FF* | *TE* | *FCF* | *TE* | *TC* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ***DE*** | 1 | | | | | | | | | | | | | | |
| ***TG*** | -0.048785 | 1 | | | | | | | | | | | | | |
| ***SZ*** | 0.048274 | 0.877461 | 1 | | | | | | | | | | | | |
| ***PF*** | -0.001278 | -0.02109 | -0.0087 | 1 | | | | | | | | | | | |
| ***GR*** | 0.007104 | -0.00397 | 0.00494 | 0.01497 | 1 | | | | | | | | | | |
| ***IGO*** | -0.133809 | -0.02401 | -0.0252 | -0.0023 | 0.00014 | 1 | | | | | | | | | |
| ***BCR*** | -0.0006 | -0.03136 | -0.0461 | -0.01903 | -0.0003 | 0.00057 | 1 | | | | | | | | |
| ***AC*** | -0.004589 | -0.09038 | -0.0104 | 0.06168 | -0.0116 | -0.0171 | -0.0441 | 1 | | | | | | | |
| ***UQ*** | -0.04794 | -0.08962 | -0.0822 | -0.02563 | 0.63263 | -0.0035 | 0.04703 | -0.0693 | 1 | | | | | | |
| ***LP*** | -0.00041 | 0.005887 | 0.03303 | 0.02064 | -0.0079 | -0.0002 | -0.0074 | 0.02422 | -0.0051 | 1 | | | | | |
| ***FF*** | 0.000425 | -0.04398 | -0.0579 | -0.0257 | -0.0069 | 0.00329 | 0.01792 | -0.0714 | 0.02488 | -0.00075 | 1 | | | | |
| ***TE*** | -0.00065 | 0.016258 | 0.01683 | 0.00195 | 0.00236 | -0.1218 | 0.00010 | -0.0088 | -0.0057 | -0.00178 | -0.061 | 1 | | | |
| ***FCF*** | -0.05456 | 0.29595 | 0.29352 | 0.06780 | -0.0006 | -0.0024 | -0.0518 | 0.03570 | -0.0377 | 0.00760 | -0.062 | 0.0001 | 1 | | |
| ***RTE*** | 0.00411 | -0.01603 | -0.0986 | 0.15145 | -0.00787 | -0.0002 | -0.0005 | -0.0054 | -0.009 | -0.01846 | -0.007 | -0.0015 | 0.0281 | 1 | |
| ***TC*** | -0.00036 | -0.03197 | -0.0384 | 0.00257 | 0.00166 | 0.00037 | -0.0007 | -0.0076 | 0.00659 | 0.00132 | -0.006 | 0.0014 | 0.0039 | 0.014 | 1 |

**Multicollinearity Statistics:**

| Statistic | TG | Size | PF | GR | IGO | BCR | AC | UQ | LP | FF | TE | FCF | RTE | TC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **$R^2$** | 0.785 | 0.785 | 0.036 | 0.407 | 0.034 | 0.009 | 0.057 | 0.416 | 0.004 | 0.017 | 0.019 | 0.110 | 0.057 | 0.002 |
| **Tolerance** | 0.215 | 0.215 | 0.964 | 0.593 | 0.966 | 0.991 | 0.943 | 0.584 | 0.996 | 0.983 | 0.981 | 0.890 | 0.943 | 0.998 |
| **VIF** | 4.641 | 4.644 | 1.037 | 1.686 | 1.036 | 1.009 | 1.061 | 1.712 | 1.004 | 1.017 | 1.020 | 1.124 | 1.061 | 1.002 |

The signs of coefficient are observed negative or positive while analysis. The

negative signs of coefficients are used to estimate the existence of asymmetries and vice

versa. Asset tangibility is negatively and significantly associated with debt vs. equity. The result contradicts the (Meckling, 1976 and Ross, 1977) version of tradeoff- theory that debt vs. equity composition should increase with more asset tangibility. It supports the pecking order theory (Myers and Majluf, 1984) due to asymmetric information and agency issue. The profitability is significantly negative and financial flexibility is significantly positive as prescribed in pecking order theory. The change in debt vs. equity is reflects a positive relative tax effect and bankruptcy risk is negatively significant as prescribed in trade off theory.

The size (SZ) of the firms is positively and significantly associated with debt vs. equity. The results are consistent with (Rajan and Zingales. 1995) that less information asymmetries in the case of large firms, suggests new equity will not be underpriced thus large size firms can issue more debt vs. equity.

The growth is positively and significantly associated with debt vs. equity. This suggested that firms can utilize more debt than equity for new investments. The new investments required internal resources as well as debt. Moreover, the positive impact found between growth and debt by Shah and Hijazi, 2005.

The positive investment growth opportunities (IGO) imply more capital to maintain the financial flexibility. The IGO – market to book ratio supports the hypothesis of market timing theory but opposite in direction according to underlying assumption. The negative impact suggested that the asymmetric information exist. The negative significance of IGO does not support the hypothesis under tradeoff theory.

The negative signs of coefficients of bankruptcy risk (BCR), uniqueness (UQ), liquidity position (LP), agency cost (AC) timing effect (TE), and transaction cost (TC)

showed that the asymmetries of information exist. It is used to create agency behavior. The negative financial signaling as an agency cost theory and asymmetry of information theory confirmed the $H_1$. It is very important and worth to note that signs of coefficients reported not costless.

The negative coefficients are used to observe the violation of trade off theory by Krause and Litzenberger (1973). This is due to threat of bankruptcy and increase in financial distress cost which is used to confirm the assumptions and hypothesis for financial signaling and asymmetries in debt vs. equity in emerging and transitional and emerging market.

**Table 3: The Sensitivity and Validity of Micro Financial Covariates:**

| **Variables** | ***Coefficients*** | ***t* value** |
|---|---|---|
| ***TG*** | -0.07961 | -2.43*** |
| ***PF*** | -0.191972 | -3.44*** |
| ***SZ*** | 0.375363 | 12.13*** |
| ***GR*** | 0.000313 | 1.49 |
| ***IGO*** | -0.000778 | -8.49*** |
| ***BCR*** | -0.0001 | -3.06** |
| ***AC*** | -0.066982 | -3.01*** |
| ***UQ*** | -0.02969 | -2.33** |
| ***LP*** | -0.00048 | -2.42*** |
| ***FF*** | 0.060748 | 2.42*** |
| ***TE*** | -.00000230 | -0.46 |
| ***FCF*** | -8.305 | -7.24*** |
| ***RTE*** | 0.477066 | 0.9 |
| ***TC*** | -.00002 | 0.04 |

*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Hence, the determinants of debt vs. equity in this study supplied the extended perspective from Pakistan as emerging and transitional economy. The negative

significance confirms the financial signals and asymmetries as higher debt lead to higher level of threat of bankruptcy and effect negatively with reference to confirmation of $H_2$ and $H_3$. The positive tax effect reflects that investors are quite aware off debt tax shield benefits but it is not significant.

Financial flexibility (FF) taken as retained earnings as proxy showed a positive and same as the assumption of pecking order theory by Myers and Majluf (1984). The negative coefficient of transaction cost and agency cost variables showed the implication of agency cost theory by Jensen and Meckling (1976) and transaction cost economics by Williamson (1988). Finally, the sensitivity and validity of financial signaling and asymmetries effect is realized and accepted.

Free cash flow and liquidity negative coefficient are due to asymmetric and agency behavior as indicated by Jensen and Meckling (1976, 1986). Jensen (1986) argued that free cash flows are required for fixed payment of interest to reduce the burden of debt and minimized agency cost of debt.

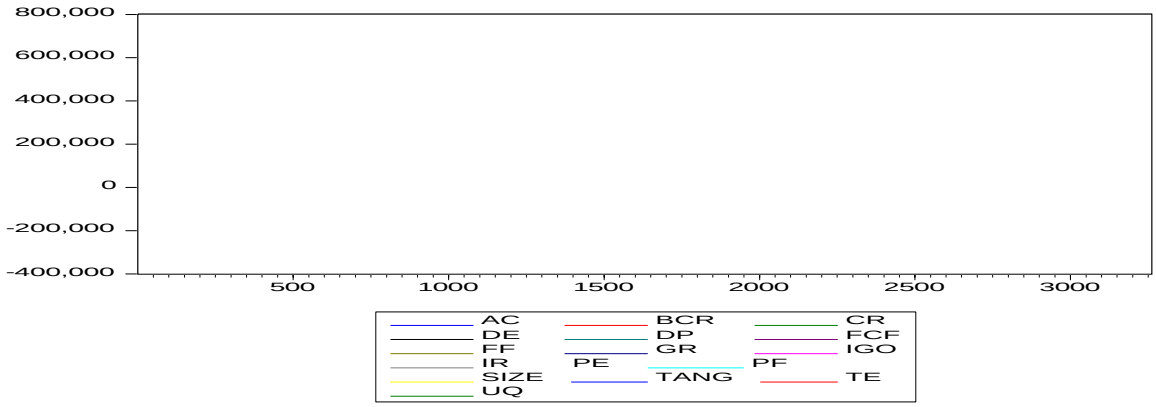


**Figure 4: Financial Signaling and Information Asymmetries of Micro Covariates and Debt Vs. Equity from 2001 to 2010**

The Extreme Bounds Analysis (EBA) is used for estimation of sensitivity and financial signaling as described by (Leamer 1983, 1985), (Leamer and Leonard 1983) and

(Levine and Renelt 1992). Table 4 indicates the signaling sensitivity of variables. The results in Table 4 are indicated about the estimation of range of values of coefficients of variables of interest.

The ***βmax*** and ***βmin*** are used in respect to significance level in percentage at 5% level of significance. The base β is an estimator of the coefficient of variable of interest M and always included in interest variables I. The maximum $\beta$ is used to estimate extreme maximum bound. The minimum β is used to estimate extreme minimum bound.

These maximum and minimum bounds can be required to measure the signaling sensitivity of the growth (GR), investment growth opportunity (IGO), bankruptcy risk (BCR), agency cost (AC), Uniqueness (UQ), Liquidity (CR), financial flexibility (FF), transaction cost (TC),free cash flows (FCF), timing effect(TE), relative tax effect (RTE).

**Table: 4 EBA of the Coefficients Sensitivity: Modified Approach**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| **Variables** | ***β base*** | ***β max*** | ***β min*** | **Sign *β,s(%)*** | **EBA Results** |
|---|---|---|---|---|---|
| **GR** | 0.002 | 0.052 | 0.002 | 13.3% | **Fragile** |
| **IGO** | -0.078 | -0.121 | -0.078 | 100% | **Robust** |
| **BCR** | -0.083 | -0.091 | -0.061 | 20% | **Fragile** |
| **AC** | -0.018 | -0.371 | -0.018 | 73.3% | **Robust** |
| **UQ** | 0.005 | 0.000 | 0.005 | 6.66% | **Fragile** |
| **LP** | -0.738 | -0.604 | -0.769 | 100% | **Robust** |
| **FF** | 0.402 | 0.421 | 0.152 | 100% | **Robust** |
| **TE** | 0.011 | 0.000 | 0.011 | 0% | **Fragile** |
| **FCF** | -0.044 | -0.044 | -0.243 | 86.6% | **Robust** |
| **RTE** | 0.051 | 0.067 | 0.051 | 0% | **Fragile** |
| **TC** | -0.077 | -0.073 | -0.112 | 100% | **Robust** |
| **Robust Relationships in the Group** | | | | **58.3 %** | **Globally Robust** |

These extreme bounds are used to indicate the relationship robust or fragile. The fragility and robustness indicates the extent of signaling and change in debt vs. equity in the reported variables. Table 5 indicates that the investment growth opportunity (IGO), agency cost (AC), liquidity position (LP), financial flexibility (FF), free cash flows (FCF) and transaction (TC) have robust and signaling relationship with debt vs. equity. This means that these are less likely to change signaling significance and magnitude as the change in debt vs. equity.

**Table: 5 EBA of the Coefficients Sensitivity: Leamer Approach**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| Variables | Mean μ | Upper bound (μ+2s) | Lower bound (μ-2s) | Cases Sign. at 5% | Leamer EBA Results |
|---|---|---|---|---|---|
| **GR** | 0.052 | 0.052 | 0.052 | 13.3% | **Fragile** |
| **IGO** | -0.110 | -0.143 | -0.077 | 100% | **Robust** |
| **BCR** | -0.089 | -0.092 | -0.086 | 20% | **Fragile** |
| **AC** | - 0.365 | - 0.396 | -0.334 | 73.3% | **Robust** |
| **UQ** | -0.034 | -0.034 | -0.034 | 6.66% | **Fragile** |
| **LP** | -0.664 | -0.550 | -0.778 | 100% | **Robust** |
| **FF** | 0.234 | 0.445 | 0.022 | 100% | **Robust** |
| **TE** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| **FCF** | -0.131 | 0.025 | -0.288 | 86.6% | **Robust** |
| **RTE** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| **TC** | -0.101 | -0.071 | -0.130 | 100% | **Robust** |
| **Robust Relationships in the Group** | | | | **50 %** | **Globally Robust** |

The results reported in Table 5 also showed that the range values of β upper

bound and β lower bound of variables of interest with respect to level of significance at 5%. These β upper &β lower extreme bounds are used to show the relationship robust or fragile. The investment growth opportunity (IGO), agency cost (AC), liquidity position (CR), financial flexibility (FF) and tax effect (RTE) are the robust variables and sensitive to debt vs. equity. Hence, the results confirmed the validity of previous results in Table 4 that all these are consistent as to signaling variables and not to change the signaling significance for further policy making.

Mahalanobis distance is used for trimming which is meant for exclusion of the outliers. The investment growth opportunity (IGO), growth (GR), agency cost (AC) of objective two, liquidity position (LP), financial flexibility (FF), free cash flows (FCF) and transaction cost (TC) are the robust and signaling variables. These are consistent and not to change the signaling significance for further policy consideration.

**Table: 6 EBA of the Coefficients Sensitivity (Trimmed OLS @ 2% M.D): Modified Approach**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| Variables | *β base* | *β max* | *β min* | Sign *β,s (%)* | EBA Results |
|---|---|---|---|---|---|
| **GR** | 0.002 | 0.056 | 0.002 | 73.3% | **Robust** |
| **IGO** | -0.078 | - 0.134 | - 0.078 | 100% | **Robust** |
| **BCR** | -0.083 | -0.083 | -0.074 | 0% | **Fragile** |
| **AC** | -0.018 | -0.328 | - 0.018 | 78.5% | **Robust** |
| **UQ** | 0.005 | 0.000 | 0.005 | 0% | **Fragile** |
| **LP** | -0.738 | -0.539 | -0.738 | 100% | **Robust** |
| **FF** | 0.402 | 0.402 | 0.140 | 100% | **Robust** |
| **TE** | 0.011 | 0.038 | 0.011 | 26.6% | **Fragile** |
| **FCF** | -0.044 | -0.044 | -0.239 | 80% | **Robust** |
| **RTE** | 0.051 | 0.000 | 0.051 | 0% | **Fragile** |

| | | | | | |
|---|---|---|---|---|---|
| **TC** | -0.077 | -0.065 | -0.105 | 100% | **Robust** |
| **Robust Relationships in the Group** | | | | **66.6 %** | **Globally Robust** |

The range values of trimming for β upper bound and β lower bound of variables of interest with respect to level of significance at 5%.The investment growth opportunity (IGO), growth (GR), agency cost (AC), liquidity (LP), financial flexibility (FF), free cash flows (FCF) and transaction cost (TC) are the robust and signaling variables. These are consistent and not to change the signaling significance for further policy consideration.

**Table 7: EBA of the Coefficients Sensitivity (Trimmed OLS @2% M.D): Leamer Approach**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| Variables | Mean μ | Upper bound (μ+2s) | Lower bound (μ-2s) | Cases Sign. at 5% | Leamer EBA Results |
|---|---|---|---|---|---|
| **GR** | 0.054 | 0.056 | 0.053 | 73.3% | **Robust** |
| **IGO** | -0.120 | -0.160 | -0.081 | 100% | **Robust** |
| **BCR** | -0.000 | -0.000 | -0.000 | 0% | **Fragile** |
| **AC** | - 0.319 | -0.352 | - 0.286 | 78.5% | **Robust** |
| **UQ** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| **LP** | -0.600 | -0.490 | -0.710 | 100% | **Robust** |
| **FF** | 0.216 | 0.420 | 0.012 | 100% | **Robust** |
| **TE** | 0.038 | 0.039 | 0.036 | 26.6% | **Fragile** |
| **FCF** | -0.154 | -0.044 | -0.263 | 80% | **Robust** |
| **RTE** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| **TC** | -0.093 | -0.064 | -0.122 | 100% | **Robust** |
| **Robust Relationships in the Group** | | | | **66.6 %** | **Globally Robust** |

## 5.2 Macro level Signaling and Asymmetric Covariates:

The summary statistics is presented in Table 8. The variables include DE, MS, INF, IR, ER, IP, RE and GDP. Total no of observations were 3260 in the sample. The average annual change in percentage in debt vs. equity showed high average change of 0.0157 per year with the deviation from the average of 0.071752 percent among all the variables. The money supply, second variable has annual average change of 0.1550 with the little deviation from the average of 0.0301 percent. Inflation (CPI) change, interest rate (TB) change and exchange rate (ER) have the annual average change of 0.0892, 0.1979 and 0.0243and deviation from the average among all these variables were 0.0531, 0.6426 and 0.0873 respectively. Industrial production (IPI) and reserves (RES) reflected low average change within one year with the volatility of 0.0770 and 0.3583 percent respectively.

**Table 8: Descriptive Statistics (10 - Year Summary)**

| Variable | *N* | *Minimum* | *Maximum* | *Mean* | *Median* | *Std. Deviation* | *Skewness* |
|---|---|---|---|---|---|---|---|
| ***DE*** | 3260 | -0.91556 | 0.668571 | 0.0157 | .014297 | 0.071752 | -2.60479 |
| ***MS*** | 3260 | 0.1106 | 0.2051 | 0.1532 | 0.1550 | 0.0301 | -0.0034 |
| ***INF*** | 3260 | 0.0292 | 0.2029 | 0.0892 | 0.0776 | 0.0531 | 0.7367 |
| ***IR*** | 3260 | -0.6924 | 1.8835 | 0.1979 | 0.1453 | 0.6426 | 1.4427 |
| ***ER*** | 3260 | -0.0383 | 0.2920 | 0.0420 | 0.0243 | 0.0873 | 2.2174 |
| ***IP*** | 3260 | -0.0424 | 0.1972 | 0.0707 | 0.0517 | 0.0770 | 0.3241 |
| ***RE*** | 3260 | -0.2715 | 0.9916 | 0.2870 | 0.1714 | 0.3583 | 0.5025 |
| ***GDP*** | 3260 | 0.0577 | 0.2437 | 0.1449 | 0.1519 | 0.0492 | 0.1345 |

The exchange rate reported minimum and maximum values of -0.0383 and 0.2920 respectively. Only DE and MS are negatively skewed and all the other variables are positively skewed.

However significant variability is observed in macroeconomic variables of the study and debt vs. equity which indicates that these are important risk factors and need to

hedge these factors for diversification of the risk. The result indicates the relationship of macroeconomic variables and debt vs. equity.

In Table 9 results report that proxies of macroeconomic variables, IR with MS and ER are negatively associated with the values of -0.0211 and -0.0087 respectively but INF is positively with debt vs. equity with the value of 0.0488. Inflation and MS was positively correlated with the values 0.2775 respectively. The debt vs. equity and MS, ER, IR were negatively correlated with the values of -0.0488, -0.0013 and -0.0071 respectively. The INF and IP, RE were negatively correlated with each other with the values of -0.0253 and -0.0461 respectively.

**Table-9: Correlations among Variables**

| Variable | *DE* | *MS* | *INF* | *IR* | *ER* | *IP* | *RE* | *GDP* |
|---|---|---|---|---|---|---|---|---|
| ***DE*** | 1.0000 | | | | | | | |
| ***MS*** | -0.0488 | 1.0000 | | | | | | |
| ***INF*** | 0.0483 | 0.2775 | 1.0000 | | | | | |
| ***IR*** | -0.0013 | -0.0211 | -0.0087 | 1.0000 | | | | |
| ***ER*** | -0.0071 | -0.0040 | 0.0049 | 0.0150 | 1.0000 | | | |
| ***IP*** | 0.1338 | -0.0240 | -0.0253 | -0.0023 | 0.0001 | 1.0000 | | |
| ***RE*** | 0.0006 | -0.0314 | -0.0461 | -0.0190 | -0.0004 | 0.0006 | 1.0000 | |
| ***GDP*** | 0.0046 | -0.0904 | -0.0105 | 0.0617 | -0.0117 | -0.0171 | -0.0442 | 1.0000 |

Overall results depicted that there were no strong correlation among all the macroeconomic variables which shows that there is no issue of multicolinearity.

**Table 10: The Sensitivity and Validity of Macroeconomic Financial Covariates:**

| Variables | *Coefficients* | *t* value |
|---|---|---|
| ***MS*** | -4.93202 | -1.16 |
| ***INF*** | 3.702317 | 1.56 |
| ***IR*** | -0.15905 | -2.03** |
| ***ER*** | -2.79296 | -1.26 |
| ***IP*** | 0.931207 | 0.75 |
| ***RE*** | -1.22627 | -1.52 |

| | | |
|---|---|---|
| ***GDP*** | -6.35875 | -1.16 |

***** Significant at 1% level ,**
**** Significant at 5% level**
*** Significant at 10% level**

The result presented in Table 10 indicated that money supply (MS) and inflation rate (INF) are used to increase the price of goods and services to reduce the purchasing power. Money supply (MS) and inflation rate (INF) are used to increases the retained earnings to decrease in debt vs. equity. The money supply (MS) has negative insignificant impact on debt vs. equity. The high exchange rate (ER) will lead to low in cash and high interest expense. The exchange rate (ER) negative insignificant relation to debt vs. equity means reduction in debt equity ratio. The managers required to establish the minimum cost sources to decrease in debt.

The negative significant relation of interest rate (IR) means reduction in debt vs. equity. The interest rate does not support the tax shield benefit due to negative impact with debt vs. equity. The people also feel threat of bankruptcy. The bankruptcy supports the transaction cost, asymmetric information and agency assumption due to the negative impact of interest rate. The high interest rate will increase the investor expected rate of return.

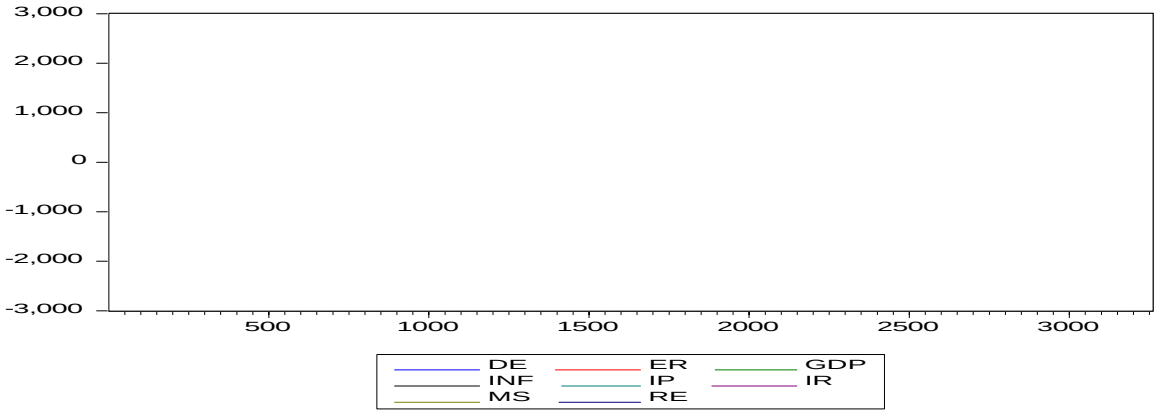


**Figure 5: Financial Signaling and Information Asymmetries of Macroeconomic Covariates and Debt Vs. Equity from 2001 to 2010**

The industrial production (IP) improved strength of cash flows and earnings to make reduction in debt. Industrial production (IP) has positive insignificant impact on debt vs. equity. It is used to lead more debt. The cash flows of the company can be strengthened by increase in Gross Domestic Product (GDP) and reserves (RE).

The Gross Domestic Product (GDP) and reserves (RE) has negative insignificant impact on debt vs. equity. The result of sensitivity is reflected in the Table 11. The results showed the range values of parameters of variables of interest. The ***βmax*** and ***βmin*** are used in respect to significance level in percentage at 5% level of significance.

**Table: 11 EBA of the Coefficients Sensitivity: Modified Approach**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| **Variables** | ***β base*** | ***β max*** | ***β min*** | **Sign *β,s (%)*** | **EBA Results** |
|---|---|---|---|---|---|
| ***MS*** | -0.119 | 0.000 | -0.119 | 0% | **Fragile** |
| ***INF*** | 0.064 | 0.069 | 0.064 | 0% | **Fragile** |
| ***IR*** | -0.005 | 0.000 | -0.005 | 0% | **Fragile** |
| ***ER*** | 0.028 | 0.000 | 0.028 | 0% | **Fragile** |
| ***IP*** | 0.008 | 0.000 | 0.008 | 0% | **Fragile** |
| ***RE*** | -0.009 | 0.000 | -0.009 | 0% | **Fragile** |
| ***GDP*** | 0.102 | 0.109 | 0.102 | 0% | **Fragile** |
| **Robust Relationships in the Group** | | | | **0 %** | **Globally Robust** |

These maximum and minimum bounds can be required to measure signaling sensitivity of the debt vs. equity (DE) and macro variables. The fragility and robustness indicates the extent of signaling and change in debt vs. equity in the reported variables.

The results represent the negative insignificance relationship of inflation (INF), interest rate (IR) , exchange rate (ER), reserve (RE) and gross domestic product (GDP) have fragile relationship and no sensitivity to debt vs. equity. The results presented in Table 12 also showed the range values of β upper bound and β lower bound of variables of interest with respect to level of significance at 5%. The results also represent the negative insignificant relationship of inflation (INF), interest rate (IR) , exchange rate (ER), reserve (RE) and gross domestic product (GDP) are fragile variables.

**Table: 12 EBA of the Coefficients Sensitivity: Leamer Approach**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| Variables | Mean μ | Upper bound (μ+2s) | Lower bound (μ-2s) | Cases Sign. at 5% | Leamer EBA Results |
|---|---|---|---|---|---|
| ***MS*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| ***INF*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| ***IR*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| ***ER*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| ***IP*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| ***RE*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| ***GDP*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| **Robust Relationships in the Group** | | | | **0 %** | **Globally Robust** |

Mahalanobis distance is used for trimming which is meant for exclusion of the outliers. The results also represent the negative robust and signaling relationship of variables. The interest rate sensitivity is more as presented in table 13 and table 14 respectively.

The Money supply (MS), inflation (INF) , exchange rate (ER), industrial production (IP), Reserve (RE) and GDP have negative insignificant signaling relation to debt vs. equity.

**Table: 13 EBA of the Coefficients Sensitivity (Trimmed OLS @2% M.D): Modified Approach:**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| Variables | *β base* | *β max* | *β min* | Sign *β,s (%)* | EBA Results |
|---|---|---|---|---|---|
| ***MS*** | -0.056 | -0.056 | -0.092 | 0% | **Fragile** |
| ***INF*** | -.118 | -0.118 | -0.182 | 0% | **Fragile** |
| ***IR*** | -0.062 | 0.062 | -0.100 | 73.3% | **Robust** |
| ***ER*** | -0.248 | -0.248 | -0.356 | 0% | **Fragile** |
| ***IP*** | -0.094 | 0.000 | - 0.094 | 0% | **Fragile** |
| ***RE*** | -0.003 | 0.000 | -0.003 | 0% | **Fragile** |
| ***GDP*** | -0.102 | -0.068 | -0.109 | 0% | **Fragile** |
| **Robust Relationships in the Group** | | | | **14.2 %** | **Globally Robust** |

**Table: 14 EBA of the Coefficients Sensitivity (Trimmed OLS @2% M.D ): Leamer Approach:**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| Variables | Mean μ | Upper bound (μ+2s) | Lower bound (μ-2s) | Cases Sign. at 5% | Leamer EBA Results |
|---|---|---|---|---|---|
| ***MS*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| ***INF*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| ***IR*** | - 0.099 | -0.097 | -0.102 | 73.3% | **Robust** |
| ***ER*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |

| | | | | | |
|---|---|---|---|---|---|
| ***IP*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| ***RE*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| ***GDP*** | 0.000 | 0.000 | 0.000 | 0% | **Fragile** |
| **Robust Relationships in the Group** | | | | **14.2 %** | **Globally Robust** |

The negative significant relation of interest rate (IR) is used to make decrease in debt vs. equity. Industrial production (IP), reserve (RE) and GDP improved strength of cash flows and earnings to make reduction in debt. Industrial production (IP), reserve (RE) and GDP has negative insignificant with debt vs. equity.

$H_1$ and $H_2$ is hence proved due to significant negative relation of interest rate (IR). It is used to decrease in debt vs. equity due to high agency cost and also consistent with 2nd objective. The interest rate (IR) has 73.3% robust and sensitive relationship to debt vs. equity.

## 5.3 Firm Value Signaling and Asymmetric Covariates:

The descriptive statistics of firm variables presented in Table 15.The variables are debt vs. equity, return on assets (ROA), return on equity (ROE), operating profit margin (OPM), earning per share (EPS), Tobin Q (TQ) and market value (MV). The average annual change in percentage in debt vs. equity indicates average change of 0.01571 per year with standard deviation is 0.071752.The return on asset (ROA) showed the 0.032439 change per year, return on equity (ROE) 0.04242 change, operating profit margin (OPM) -0.0053 change negatively and earnings per share (EPS) showed 5.539269 change, Tobin's Q 5.161753 low average and market value added (MVA) reflected -0.160128 high average negative change within one year. The standard deviation showed that the return on asset (ROA) is deviated from mean value of 0.387755. Return on equity (ROE)

6.975947 is significantly high, operating profit margin (OPM) 2.443395, earning per share (EPS) 21.1614 significantly very high, Tobin's Q 81.69144 and market value added (MVA) 7.536732 showed the highest volatility. The Skewness showed that return on equity (ROE), operating profit margin (OPM), earning per share (EPS) and market value added (MVA) are negatively skewed. The return on asset (ROA) and Tobin Q (TQ) are positively skewed. The maximum decrease in Return on equity (ROE) is -334.203 and maximum increase in return on equity (ROE) 137.6667.

This volatility can be hedged to mitigate the risk exposure. The market value (MV) reflected the change in minimum -170.57.2 and maximum 148.025.

**Table 15: Descriptive Statistics (10 - Year Summary)**

| | ***DE*** | ***ROA*** | ***ROE*** | ***OPM*** | ***EPS*** | ***Tobin,s Q*** | ***MVA*** |
|---|---|---|---|---|---|---|---|
| ***Mean*** | 0.01571 | 0.032439 | 0.04242 | -0.0053 | 5.539269 | 5.161753 | -0.160128 |
| ***Median*** | 0.014297 | 0.019146 | 0.072928 | 0.062734 | 1.3 | 0.785532 | -0.019502 |
| ***Std. Deviation*** | 0.071752 | 0.387755 | 6.975947 | 2.443395 | 21.1614 | 81.69144 | 7.536732 |
| ***Skewness*** | -2.60479 | 34.29072 | -30.5349 | -28.8646 | -25.1271 | 40.53619 | -0.905635 |
| ***Minimum*** | -0.91556 | -3.85016 | -334.203 | -113.5 | -174.3 | -35.2111 | -170.572 |
| ***Maximum*** | 0.668175 | 18.6426 | 137.6667 | 49.33333 | 214.7 | 405.4768 | 148.025 |
| ***Count*** | 3260 | 3260 | 3260 | 3260 | 3260 | 3260 | 3260 |

However, significant variability is observed in firm value variables of the study and debt vs. equity. Table 16 presented correlation among firm value variables and debt vs. Equity. The results revealed that there is no significant relationship among firm value variables and debt vs. equity except return on equity (ROE).

The correlation coefficient between firm value variables and debt vs. equity showed week relationship. Return on assets (ROA), return on equity (ROE), earning per

share (EPS) and market value (MV) are negatively correlated. The operating profit margin (OPM) and Tobin Q (TQ) – Economic value added (EVA) are positively correlated. The return on equity (ROE) showed a strong negative association -0.91087.

**Table-16: Correlations among Variables**

| *Variables* | *DE* | *ROA* | *ROE* | *OPM* | *EPS* | *Tobin,s Q* | *MV* |
|---|---|---|---|---|---|---|---|
| ***DE*** | 1 | | | | | | |
| ***ROA*** | -0.00211 | 1 | | | | | |
| ***ROE*** | -0.91087 | 0.024737 | 1 | | | | |
| ***OPM*** | 0.00304 | 0.252787 | 0.005785 | 1 | | | |
| ***EPS*** | -0.00304 | 0.065353 | 0.010457 | 0.021302 | 1 | | |
| ***Tobin,s Q*** | -0.001808 | -0.0058 | -.00006 | -0.00123 | -0.00157 | 1 | |
| ***MVA*** | -0.00163 | 0.019943 | 0.002724 | 0.001291 | 0.094394 | 0.013578 | 1 |

**Multicollinearity statistics:**

| **Statistic** | ***ROA*** | ***ROE*** | ***OPM*** | ***EPS*** | ***Tobin,s Q*** | ***MV*** |
|---|---|---|---|---|---|---|
| **$R^2$** | 0.830 | 0.070 | 0.830 | 0.064 | 0.013 | 0.000 |
| **Tolerance** | 0.170 | 0.930 | 0.170 | 0.936 | 0.987 | 1.000 |
| **VIF** | 5.887 | 1.075 | 5.891 | 1.068 | 1.013 | 1.000 |

The results presented in Table 17 showed a negative relation of return on asset (ROA), earning per share (EPS), Tobin's Q (TQ) – economic value added (EVA) and market value added (MVA) which is used to reflect that decrease in return on asset (ROA), earning per share (EPS), Tobin's Q (TQ) and market value added (MVA). It is presented that trade of theory by Kraus Litzenberger (1973) is violated due to negative coefficients of market performance variables. The return on equity (ROE) has also negative significant association with debt vs. equity. The negative direction of effect of

coefficient is due to asymmetry of information and negative signals in the market with fifth objective. Operating profit margin (OPM) is significant and positively associated. It is reflected that an increase in debt vs. equity is associated with increase in operating profit margin (OPM).

$H_4$ indicates that increase in firm value should increase in debt vs. equity is accepted only in case of operating profit margin (OPM). This element is proved that inverse relationship between debt vs. equity and firm value variables. This element shows inconsistency with prior findings as Modigliani and Miller (1958) theory that the market value is irrelevant to capital structure. This element is also contradictive with Fama & French (2002) that leverage and firm value directly moved together in the same direction. Modigliani and Miller (1963) supported the negative relation of firm value and concluded that there should be an increase in cost of equity as debt of firm increased.

**Table 17: The Sensitivity and Validity of Firm Value Financial Covariates:**

| **Variables** | ***Coefficients*** | ***t* value** |
|---|---|---|
| ***ROA*** | -.0000123 | -0.57 |
| ***ROE*** | -.0154029 | -9.815*** |
| ***OPM*** | 0.0001447 | 7.13*** |
| ***EPS*** | -.0008792 | -0.56 |
| ***TQ*** | -.00000781 | -0.07 |
| ***MV*** | -0.0013698 | -0.18 |

***** Significant at 1% level**
**** Significant at 5% level**
*** Significant at 10% level**

Rajan & Zingales (1995) stated that there was negative relation between profitability and debt of the firm. The increase in debt should pursue to reduce in tax burden by Mayers (2001). This is also in accordance with the tradeoff theory of Kraus

Litzenberger (1973). Mayers (1984) concluded that a negative relation between profitability and debt of the firm.

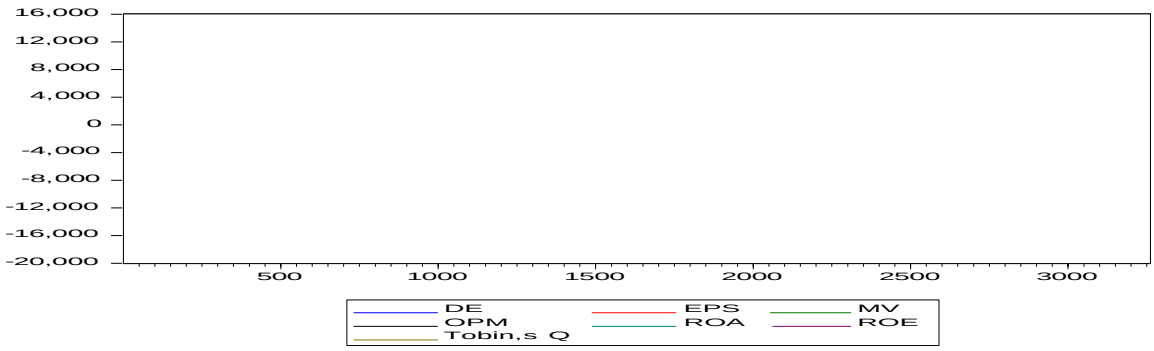


**Figure 6: Financial Signaling and Information Asymmetries of Firm Value Covariates and Debt Vs. Equity from 2001 to 2010**

The results of signaling sensitivity are showed in the Table 18. The results indicate the estimation of range values based on ***βmax*** and ***βmin***. The ***βmax*** and ***βmin*** are the measure of significance at 5% level of significance. The coefficient of the interest variables M are estimated with base β.

**Table: 18 EBA of the Coefficients Sensitivity: Modified Approach**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| Variables | *β base* | *β max* | *β min* | Sign *β,s (%)* | EBA Results |
|---|---|---|---|---|---|
| ***ROA*** | -0.427 | -0.393 | -0.428 | 100% | **Robust** |
| ***ROE*** | -0.121 | -0.147 | - 0.120 | 100% | **Robust** |
| ***OPM*** | 0.121 | 0.122 | 0.121 | 26.6% | **Fragile** |
| ***EPS*** | -0.369 | -0.324 | -0.369 | 100% | **Robust** |
| ***TQ*** | -0.077 | -0.080 | -0.072 | 100% | **Robust** |
| ***MVA*** | -0.436 | -0.426 | -0.439 | 100% | **Robust** |
| **Robust Relationships in the Group** | | | **87.77 %** | | **Globally Robust** |

The extreme maximum bound is calculated with maximum $\beta$. The extreme minimum bound is calculated with minimum $\beta$. The maximum and minimum bounds are estimated to measure the signaling sensitivity of the debt vs. equity (DE) and firm value. These extreme bounds are used to indicate the relationship robust or fragile. The fragility and robustness indicates the extent of signaling and change in debt vs. equity in the reported variables.

This is shown in Table 18 that return on assets (ROA), return on equity (ROE), earning per share (EPS), Tobin,s Q (TQ) – economic value added (EVA) and market value added (MVA) have robust relationship and highly sensitive to Debt Vs. Equity. This means that these are less likely to change significance and magnitude as the change in Debt Vs. Equity. The results presented in Table 19 also showed the range values of β upper bound and β lower bound of variables of interest with respect to level of significance at 5%. These β upper & β lower extreme bounds are used to show the relationship robust or fragile.

In accordance with the hypothesis four, return on assets (ROA), return on equity (ROE), earning per share (EPS), Tobin, s Q (TQ) – economic value added (EVA) and market value added (MVA) are the robust variables.

Hence, the result confirms the validity of previous results in Table 18 that all these are consistent with fifth objective and not to change significance for further policy making. These distortion, imperfection and asymmetries of information are the basic premise of negative financial signaling in transitional and emerging market with reference to $H_4$ and $H_5$. This is being used for creation of anomalous behavior effect the

market efficiency by mispricing of market value of firms. The better handling or tackling this issue with serious concern may support to obtain the best market value of firms.

**Table: 19 EBA of the Coefficients Sensitivity: Leamer Approach**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| Variables | Mean μ | Upper bound (μ+2s) | Lower bound (μ-2s) | Cases Sign. at 5% | Leamer EBA Results |
|---|---|---|---|---|---|
| ***ROA*** | -0.403 | -0.373 | -0.433 | 100% | **Robust** |
| ***ROE*** | -0.139 | -0.162 | - 0.117 | 100% | **Robust** |
| ***OPM*** | 0.121 | 0.123 | 0.120 | 26.6% | **Fragile** |
| ***EPS*** | -0.335 | -0.302 | -0.368 | 100% | **Robust** |
| ***TQ*** | -0.078 | -0.084 | -0.072 | 100% | **Robust** |
| ***MVA*** | -0.432 | -0.424 | -0.440 | 100% | **Robust** |
| **Robust Relationships in the Group** | | | | **87.77 %** | **Globally Robust** |

The power of control over mis-presentation, agency problems and negative financial signals leads to the ultimate goal of firm wealth maximization. This is being a reason to justify the theory and empirics among transitional and emerging markets. This can be helped to find the reason for deviations being traced out to supply better guideline for improvements in the value of firm.

## 5.4 Market & Non Market Risk Financial Covariates:

The descriptive statistics of all three variables presented in table 20.The variables are debt- equity, financial distress risk (Z-Score), market systematic risk (β). The average annual change in percentage in debt vs. equity showed high average change of .0.015713 per year with standard deviation is 0.071752.

The non market -financial distress risk (Z-Score) showed the 1.251398 change per year which is significantly high, systematic risk (SR) 0.238137 change. The standard deviation showed that the operational risk (Z-Score) deviated from mean value with 1.091928 which means that companies have very high non market – financial distress risk due to highest level of volatility.

**Table 20: Descriptive Statistics (10 - Year Summary)**

| Variable | N | Minimum | Maximum | Mean | Median | Std. Deviation |
|---|---|---|---|---|---|---|
| **DE** | 3260 | -0.91556 | 0.668571 | 0.015713 | .014297 | 0.071752 |
| ***Z*-Score** | 3260 | -2.966600 | 2.997444 | 1.251398 | 1.345979 | 1.091928 |
| ***B*** | 3260 | -0.44214 | 1.258121 | 0.238137 | 0.191284 | 0.122614 |

Market risk - systematic risk (SR) 0.122614 showed the volatility. This volatility can be hedged to mitigate the risk exposure. The systematic risk – market risk factor has astonishing level of range maximum 1.258121 and minimum -0.44214. However significant variability is observed in risk variables of the study and debt vs. equity. The summery statistics for all variables given in table 21 as under. The results presented in the form of table to make an ease of reference of results. This attempt is due to draw inference from data in relation to hypothesis. This hypothesis already set out previously.

**Table-21: Correlations among Variables**

| Variable | DE | ZS | B |
|---|---|---|---|
| **DE** | 1 | | |
| ***Z*-Score** | -0.00042 | 1 | |
| ***B*** | -0.025732 | -0.00645 | 1 |

Table 21 presents correlation among risk and debt vs. equity. The results revealed that there is no significant relationship among risk variables and debt vs. equity. The correlation coefficient between risk variables and debt vs. equity showed week

relationship. The non market – financial distress risk (Z-Score) is negatively correlated. The market risk - systematic risk (β) is negatively correlated. The results of the estimates for risk factors of debt vs. equity that is relevant to emerging and transitional market. The results reported in Table 22.

**Table 22: The Sensitivity and Validity of Risk Financial Covariates:**

| **Variables** | ***Coefficients*** | ***t* value** |
|---|---|---|
| ***Z-Score*** | -.00000230 | -1.89* |
| ***B*** | -1.034569 | -5.09*** |

*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

The results shown in table 22 indicate that risk factors of debt vs. equity relevant to emerging and transitional market cited in literature have statically significant effect.
It is also worth to note that sign of coefficients of both variables i.e. non market - financial distress risk at 10% level of significance and market - systematic risk confirm that negative effect is due to asymmetric information.

Thus the significance of risk parameters in this study is used to extend the perspective from Pakistan as emerging and transitional market. The non market – financial distress risk (Z.Score) and market systematic risk (β) are negatively significant. This is main concern of the sixth objective under this study is to examine the signaling effect of risk on debt vs. equity.

The adverse practical implications due to negative and asymmetric impact of risk i.e. bankruptcy cost and financial distress and accepted $H_2$ and $H_3$. This required that

study variables statically significant to report the signaling effect of risk variables relative with debt vs. equity.

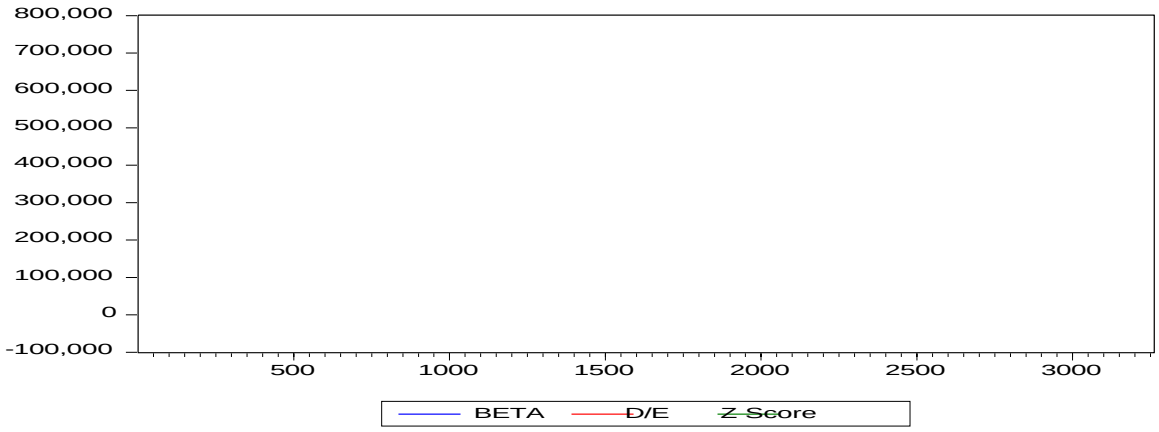


**Figure 7: Financial Signaling and Information Asymmetries of Risk Covariates and Debt Vs. Equity from 2001 to 2010**

The results of extreme bounds analysis (EBA) are presented in Table 23. The results indicate the range of values of coefficients of variables of interest. The ***βmax*** and ***βmin*** are measured at 5% level of significance. The coefficients of variables of interest M are exhibit as a base β estimator. The signaling sensitivity is estimated based on the relationship robust or fragile.

**Table: 23 EBA of the Coefficients Sensitivity ( ): Modified Approach**

Dependent Variable: DE

M varaibles Included: TG PF SZ

| **Variables** | ***β base*** | ***β max*** | ***β min*** | **Sign *β,s* (%)** | **EBA Results** |
|---|---|---|---|---|---|
| ***Z-Score*** | -0.361 | -0.240 | -0.361 | 100% | **Robust** |
| ***(β)*** | -0.537 | -0.349 | -0.544 | 100% | **Robust** |
| Robust Relationships in the Group | | | | 100 % | **Globally Robust** |

The estimation of extreme maximum bound is based on maximum $\beta$. The estimation of extreme minimum bound is based on minimum $\beta$. These bounds are required to measure the sensitivity of the non market risk -financial distress (Z-Score) and market - systematic risk (β). These extreme bounds are used to indicate the relationship robust or fragile. The fragility and robustness indicates the extent of signaling and change in debt vs. equity in the reported variables.

This is shown in table 24 that non market – financial distress risk (Z-Score) and market - systematic risk (β) have robust relationship and highly sensitive to debt vs. equity. This means that financial distress risk (Z-Score) and systematic risk (β) are less likely to change significance and magnitude as the change in debt vs. equity.

The results reported in Table 24 also showed the range values of upper bound and lower bound of variables of interest with respect to level of significance at 5%.These upper & lower extreme bounds are used to show the relationship robust or fragile. The operational risk (Z-Score) and systematic risk (β) are the robust variables. Hence, the results confirmed the validity of previous results in table 23 that both are consistent and not to change significance for further policy making.

Dependent Variable: DE

M varaibles Included: TG PF SZ

| **Variables** | **Mean μ** | **Upper bound (μ+2s)** | **Lower bound (μ-2s)** | **Cases Sign. at 5%** | **Leamer EBA Results** |
|---|---|---|---|---|---|
| ***Z-Score*** | -0.276 | -0.182 | -0.370 | 100% | **Robust** |
| ***(β)*** | -0.401 | -0.240 | -0.562 | 100% | **Robust** |

| | | |
|---|---|---|
| Robust Relationships in the Group | 100 % | **Globally Robust** |

**Table: 24 EBA of the Coefficients Sensitivity: Leamer Approach**

## 5.5 Corporate Governance Diversification Financial Covariates:

The descriptive statistics of all fourteen variables presented in table 25. The variables are DE, BS, BI, CD, AI, SA, IO, OC, ROA, ROE, OPM, EPS, TQ and MV. The average annual change in percentage in debt vs. equity showed high average change of 0.7077 per year with standard deviation is 0.142346. The results shown ownership concentration (OC) with 0.75 change, institutional ownership (IO) with 0.59 and board size (BS), board independence (BI), audit committee independence (ACI),CEO duality (CD) and share holder's activism (SHA) reflected low average change within one year i.e. 8, 0.98, 0.997, 0.1771.133 respectively.

**Table 25: Descriptive Statistics (10 - Year Summary)**

| Variable | N | Minimum | Maximum | Mean | Median | Std. Deviation |
|---|---|---|---|---|---|---|
| **DE** | 350 | -0.366897 | 0.2668838 | 0.76644 | .155612 | 0.142346 |
| **BS** | 350 | 5 | 15 | 8 | 7 | 1.837571 |
| **BI** | 350 | 0.428571 | 1 | 0.982814 | 1 | 0.004133 |
| **CD** | 350 | 0 | 1 | 0.177143 | 0 | 0.020437 |
| **AI** | 350 | 0.666667 | 1 | 0.997271 | 1 | 0.001575 |
| **SA** | 350 | 0 | 2.5 | 1.133907 | 1 | 0.022981 |
| **IO** | 350 | 0.002159 | 0.999911 | 0.594279 | 0.644863 | 0.015542 |
| **OC** | 350 | 0.015243 | 1.980159 | 0.753478 | 0.786306 | 0.010387 |
| **ROA** | 350 | -0.28653 | 1.019468 | 0.052601 | 0.026811 | 0.006061 |
| **ROE** | 350 | -334.203 | 6.560479 | -0.93412 | 0.084936 | 0.959002 |
| **OPM** | 350 | -1.72667 | 2.671022 | 0.101861 | 0.082389 | 0.015187 |
| **EPS** | 350 | -18.00 | 20.00 | 1.056649 | .0315123 | 0.849678 |
| **TQ** | 350 | 0.026772 | 438.9761 | 4.705551 | 0.865639 | 1.817631 |
| **MVA** | 350 | 77.295 | 42.89535 | 0.586728 | 1.05881 | 0.531675 |

The standard deviation indicates the deviation from mean. Ownership concentration (OC) 0.01, institutional ownership (IO) 0.0155, board size (BS) 1.837577, board independence (BI) 0.0004, audit committee independence (ACI) 0.000157, CEO duality (CD) 0.0204 and share holder's activism (SHA) 0.022 showed the volatility. This volatility can be hedged to mitigate the risk exposure. These results pointed out that there is negative relationship between corporate governance variables and debt vs. equity. This reflected that proxies of corporate governance variables, share holder's activism (SHA) with value of - 0.04725ainsignificant negative relationship. This also reflected the proxies of corporate governance variables i.e. board size (BS), board independence (BI), audit committee independence (ACI), CEO duality (CD) a positive relationship with value of 0.08, 0.009, 0.03 and 0.11 respectively.

Table 26 presented correlation among financial factors and debt vs. equity. The results revealed that there is no significant relationship among financial factors and debt vs. equity.

**Table-26: Correlations among Variables**

| Variable | DE | BS | BI | CD | AI | SA | IO | OC | ROA | ROE | OPM | EPS | TQ | MV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **DE** | 1 | | | | | | | | | | | | | |
| **BS** | -0.083371 | 1 | | | | | | | | | | | | |
| **BI** | -0.009216 | -0.15481 | 1 | | | | | | | | | | | |
| **CD** | -0.11778 | -0.16342 | -0.1317 | 1 | | | | | | | | | | |
| **AI** | 0.003773 | -0.0051 | -0.0207 | 0.04317 | 1 | | | | | | | | | |
| **SA** | -0.04725 | 0.27861 | -0.0590 | -0.0914 | 0.07626 | 1 | | | | | | | | |
| **IO** | 0.102899 | 0.16519 | -0.1013 | -0.0651 | 0.05922 | 0.03490 | 1 | | | | | | | |
| **OC** | 0.085022 | -0.06185 | -0.0525 | 0.11804 | 0.03300 | -0.0885 | 0.41623 | 1 | | | | | | |
| **ROA** | -0.07304 | 0.12217 | -0.2415 | -0.0125 | -0.0310 | 0.10222 | 0.07753 | -0.061 | 1 | | | | | |
| **ROE** | -0.97185 | -0.08798 | -0.0154 | -0.1130 | -0.0057 | 0.05844 | -0.0685 | -0.0548 | 0.10489 | 1 | | | | |
| **OPM** | -0.03492 | 0.04717 | -0.0787 | 0.00868 | -0.0309 | -0.0512 | -0.0188 | -0.1020 | 0.46891 | 0.04847 | 1 | | | |
| **EPS** | -0.00493 | 0.11833 | -0.0014 | -0.0211 | -0.3465 | -0.0743 | -0.0133 | -0.0932 | 0.20416 | 0.00898 | 0.14944 | 1 | | |
| **TQ** | -0.00442 | -0.02729 | 0.01390 | 0.00568 | 0.01020 | 0.00375 | -0.0662 | -0.0692 | 0.01916 | 0.00661 | -0.0990 | -0.00431 | 1 | |
| **MVA** | 0.002253 | 0.02064 | -0.0373 | 0.11927 | 0.20402 | 0.03259 | -0.0084 | 0.05368 | 0.18208 | -0.0009 | 0.00762 | -0.0848 | 0.043816 | 1 |

The correlation coefficient between financial variables and debt vs. equity showed week relationship. The SA, ROA, ROE, OPM, EPS and TQ – economic value added (EVA) are negatively correlated. The board size (BS) and market value added MVA are positively correlated.

The results showed the relationship between corporate governance (CG) and debt vs. equity (DE). It produces reasonably more significant $^2$ 0.230547, *P – Value* <0.000000 and *F-Value* 8.389469. The Institutional Ownership (IO) has a significant effect on Debt Vs Equity decisions. Institutional ownership (IO) is the premise to increase the confidence of investor and decrease the asymmetries of debt vs equity choices. The Chairman duality (CD) is found statically more significant and negatively related to debt vs. equity. The CEO duality not to prefer to more debt as source of financing.

**Table 27: The Sensitivity and Validity of Corporate Governance Financial Covariates:**

| **Variables** | **Coefficients** | **t-Statistics** |
|---|---|---|
| ***C*** | 1.061575 | 2.765418 |
| ***IO*** | 0.291967 | 8.871128 |
| ***OC*** | 29.07754 | 0.641545 |
| ***BI*** | -0.08398 | -1.60286 |
| ***BS*** | -0.06301 | -0.49442 |
| ***CD*** | -0.20763 | -0.60261 |
| ***AI*** | 0.058877 | 2.3089 |
| ***SA*** | -0.03309 | -1.43716 |
| | 0.230547 | |
| ***F-Value*** | | 8.389469 |
| ***P – Value*** | | 0.000000 |

Significant at 0.01, 0.05level.

The investors or creditors will be unwilling to have choice of debt and feel threat of bankruptcy. The results are consistent with Abor (2007). According to objective three most of the variables of corporate governance (CG) reflected negative relationship with debt vs. equity meant for companies prefer to have equity financing for their investments with reference to $H_8$. The governance structure and business strategy are utilized as a controlling tool of risk diversification of debt vs. equity choice and firm performance.

**Table 28: The Sensitivity and Validity of Debt Vs. Equity (DE) and Firm Value (FV)**

| **Variables** | **Coefficients** | **t-Statistics** |
|---|---|---|
| ***C*** | -2.51563 | -1.18769 |
| ***ROA*** | 40.96586 | 2.109587 |
| ***ROE*** | -8.01932 | -76.799 |
| ***OPM*** | -0.95319 | -0.12684 |
| ***EPS*** | -0.00252 | -0.2089 |
| ***TQ*** | 0.006274 | 0.113609 |
| ***MVA*** | -0.00069 | -0.35916 |
| | 0.945358 | |
| ***F-Value*** | | 989.0278 |
| ***P – Value*** | | 0.000000 |

Significant at 0.01, 0.05 level.

The model of the research takes into account the test of mediating effect and moderating effect of corporate governance (CG). The interactive dynamics of the model is importantly considerable to reflect the mediating effect and moderating effect. The overall models are satisfying the basic assumptions of normality, linearity, multicolinearity and homo – scedasticity.

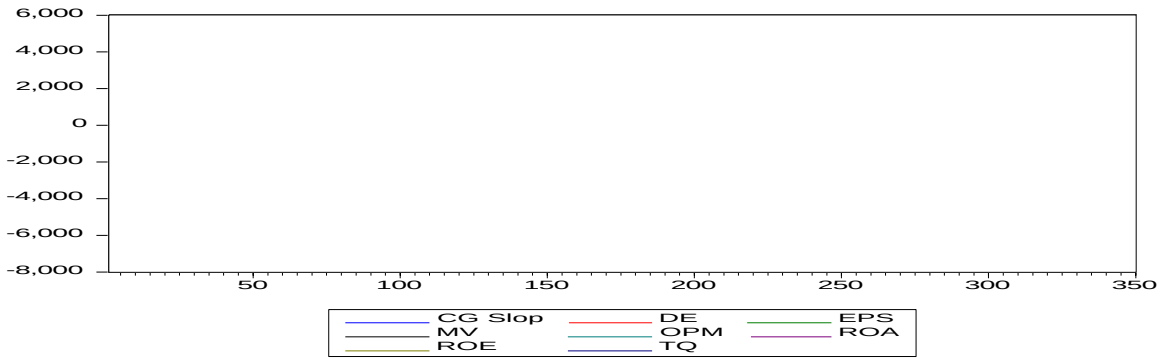


**Figure 8: Financial Signaling and Information Asymmetries of Corporate Governance Covariates and Debt Vs. Equity from 2001 to 2010**

Table 29 diversification of risk (*Div*$_{cg}$1 and 7) are statically significant. The model 1 is significant at $p < .05$ and model 7 is significant at $p < .10$. It satisfied the objective three and meet the conditions of mediation as corporate governance (CG) in between debt vs. equity and firm performance. In accordance with Baron and Kenny (1986) documented that mediation can be observed by three regression equations. In accordance with Baron and Kenny (1986) documented that mediation can be observed by three regression model equations. At first, debt vs. equity (dependent variable) must be significant relation to corporate governance (CG) - (mediator).

At second, corporate governance (CG) – (mediator) and firm value (FV) - (independent variable) must be significantly related. At third, both corporate governance (CG) – (mediator) and firm value (FV) - (independent variable) are currently included in multiple regression. The relationship between the results and independent variables must be statically significant where it is matched to main effect.

**Table 29: The Sensitivity and Validity of Mediating Effect of Corporate Governance (CG)**

| ***OLS*** | ***Div*$_{cg}$ *1*** | ***Div*$_{cg}$ *2*** | ***Div*$_{cg}$ *3*** | ***Div*$_{cg}$ *4*** | ***Div*$_{cg}$ *5*** | ***Div*$_{cg}$ *6*** | ***Div*$_{cg}$ *7*** |
|---|---|---|---|---|---|---|---|
| ***Dependent Variable*** | ***CG*** | ***ROA*** | ***ROE*** | ***OPM*** | ***EPS*** | ***TQ*** | ***MVA*** |

| ***Independent Variable*** | ***DE*** | ***CG*** | ***CG*** | ***CG*** | ***CG*** | ***CG*** | ***CG*** |
|---|---|---|---|---|---|---|---|
| | 0.120791 | 0.072122 | 0.092162 | 0.564960 | 0.067310 | 0.044646 | .1015300 |
| ***F-Value*** | 5.152674 | 1.81963 | 2.981193 | 1.114304 | 1.583854 | 0.695052 | 3.624647 |
| ***β (Beta Coefficient)*** | 0.000086 | 0.078259 | -15.8236 | -.153610 | -102.393 | -14.5286 | 966.4329 |
| ***P – Value*** | 0.023822 | 0.178234 | 0.085125 | 0.291881 | 0.209050 | 0.405023 | 0.057754 |

**Significant at 0.01, 0.05level.**

The diversification of risk- Divcg 1 and 7 fulfilled the conditions of mediation and meet the objective four. This provided that model 1 (β = 0.000086, F – value =5.1526, p (sig) = 0.0238) indicated the relationship and impact in between debt vs. equity (DE) and Corporate Governance (CG) and accept the first condition of the mediation. The Divcg - 7 (β = 966.4329, F – value =3.624647, p (sig) = 0.05) explained that corporate governance (CG) has the effect on Firm value (FV). It also satisfied the second condition to accept the mediation as prescribed by Baron and Kenny (1986). The results are consistent with Rocca (2007) to support the positive or negative relationship of debt vs. equity (DE) and Corporate Governance (CG). The model 2 provided that (β = 0.078259, F – value =1.81963, p (sig) = 0.17) fails to accept and rejected the second mediation condition but showed positive impact on firm value with reference to hypothesis eight. The Divcg - 3, 4, 5 and 6 where (β = - 15.8236),(β = - .153610),(β = - 102.393) and (β = - 14.5286) respectively negative effect but insignificant due to significance level at p > .05. In this regard particularly it is observed that negative effect of corporate governance (CG) due asymmetric information's and agency problems where perceptions of market participants may change and quite different from theoretical background.

The results in Table 30 provided the moderation effect of corporate governance (CG) on firm value (FV). The Divcg - 2 is statically significant at $p < .05$. It satisfied the conditions of moderation of the corporate governance (CG) on firm performance. The Divcg - 1, 3, 4 and 5 where ($\beta = -0.000680$), ($\beta = -0.000890$), ($\beta = -0.16867$) and ($\beta = -0.03439$) respectively negative effect but insignificant due to significance level at $p > .05$. The Divcg - 6 presented that ($\beta = 1.485575$, F – value =1.250005, p (sig) = 0.741346) fails to accept and rejected the condition of moderation but reflected positive relationship on firm value. To avoid the endogeneity problem we estimate our model with the help of generalized method of Moments (GMM). A variable is supposed to be an endogenous if there is association between the parameters or variables and error term. In Arelano Bond Generalized Method of Movement - GMM (1995) we can control the endogeneity by taking the lagged of all the right hand variables from (t-1).

**Table 30: The Sensitivity and Validity of Moderating Effect of Corporate Governance (CG)**

| ***OLS*** | ***Divcg1*** | ***Divcg2*** | ***Divcg3*** | ***Divcg4*** | ***Divcg5*** | ***Divcg 6*** |
|---|---|---|---|---|---|---|
| ***Dependent Variable*** | ***ROA*** | ***ROE*** | ***OPM*** | ***EPS*** | ***TQ*** | ***MVA*** |
| ***Independent Variable*** | ***CG ,DE, CG slop*** | ***CG,DE, CGslop*** | ***CG ,DE, CGslop*** | ***CG ,DE, CGslop*** | ***CG ,DE, CGslop*** | ***CG,DE, CGslop*** |
| | 0.130670 | 0.998616 | 0.073217 | 0.068546 | 0.046231 | 0.103547 |
| ***F-Value*** | 2.003488 | 4158600 | 0.621597 | 0.544456 | 0.247030 | 1.250005 |
| ***β (Beta Coefficient)*** | -0.000680 | -0346280 | -0.000890 | -0.16867 | -0.03439 | 1.485575 |
| ***P – Value*** | 0.181529 | 0.00000 | 0.490789 | 0.815140 | 0.823899 | 0.741346 |

**Significant at 0.01, 0.05level.**

The results presented that corporate governance, return on assets (ROA) and return on equity (ROE) are statically signifying where J-statistic with a p-value of 0.80

and as such, we cannot reject the hypothesis that our instruments are valid and best represent the model specification of control.

## 5.6 Business Strategy Diversification Financial Covariates:

The descriptive statistics of all eight variables are presented in Table 31.The variables are **$P_1$**, **$P_2$**, **$P_3$**, **$P_4$**, **$A_1$**, **$A_2$**, **$A_3$** and DE. The Debt Vs. Equity showed average annual change in percentage .7077 per year with standard deviation is 0.142346 which is very high. The product (**$P_1$**) 0.64 change, product (**$P_2$**) 0.142, product (**$P_3$**) 0.114 and product (**$P_4$**) 0.100 and asset (**$A_1$**), asset (**$A_2$**), asset (**$A_3$**) reflected average change 0.031429, 0.000, 0.968571 respectively.

**Table 31: Descriptive Statistics (10 - Year Summary)**

| | ***DE*** | ***P1*** | ***P2*** | ***P3*** | ***P4*** | ***A1*** | ***A2*** | ***A3*** |
|---|---|---|---|---|---|---|---|---|
| ***Mean*** | .707664 | 0.642857 | 0.142857 | 0.114286 | 0.1 | 0.031429 | 0 | 0.968571 |
| ***Median*** | .155612 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| ***Standard Deviation*** | 0.142346 | 0.479843 | 0.350428 | 0.318613 | 0.300429 | 0.174723 | 0 | 0.174723 |
| ***Skewness*** | 1.679107 | -0.59885 | 2.050038 | 2.43512 | 2.678158 | 5.394425 | 0 | -5.39442 |
| ***Minimum*** | -.366897 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ***Maximum*** | .2668838 | 1 | 1 | 1 | 1 | 1 | 0 | 1 |
| ***Count*** | 350 | 350 | 350 | 350 | 350 | 350 | 350 | 350 |

Table 32 presented correlation among product **($P_1$, $P_2$, $P_3$, $P_4$,)** and asset diversification (**$A_1$**, **$A_2$**, **$A_3$**) and debt vs. equity. The results revealed that there is no significant relationship among product, asset diversification and debt vs. equity. The correlation coefficient between products and assets diversification variables and debt vs. equity showed week relationship.

The product ($\mathbf{P_2}$), product ($\mathbf{P_3}$), product ($\mathbf{P_4}$) and asset ($\mathbf{A_1}$), asset ($\mathbf{A_2}$) are negatively correlated. Where ($\mathbf{P_1}$) and ($\mathbf{A_3}$) are positively correlated. The correlation coefficients between debt vs. equity and diversification of product and asset employed are reported in Table 32.

**Table-32: Correlations among Variables**

| | ***DE*** | ***P1*** | ***P2*** | ***P3*** | ***P4*** | ***A1*** | ***A2*** | ***A3*** |
|---|---|---|---|---|---|---|---|---|
| ***DE*** | 1 | | | | | | | |
| ***P1*** | 0.029098 | 1 | | | | | | |
| ***P2*** | -0.0158 | -0.54772 | 1 | | | | | |
| ***P3*** | -0.01378 | -0.48193 | -0.14665 | 1 | | | | |
| ***P4*** | 0.01344 | -0.44721 | -0.13608 | -0.11974 | 1 | | | |
| ***A1*** | -0.00693 | -0.07079 | -0.07354 | 0.192648 | -0.00546 | 1 | | |
| ***A2*** | 0 | 0 | 0 | 0 | 0 | 0 | 1 | |
| ***A3*** | 0.006933 | 0.070794 | 0.07354 | -0.19265 | 0.005459 | -0.14 | 0 | 1 |

The results showed that product diversification is negatively related to debt vs. equity. Its means that firms are more diversified regarding to their product lines to be more risky. The asset diversification shifted from negative to positive relation. This showed that firms are diversified across assets and appeared to be less risky. This study is used to estimate the diversification of product and assets which means that it has impact on debt vs. equity choices. Table 33 ($Divp_{3-}$ 3 and $Divp_4$ - 4) have significant effect. The model 3 and model 4 are significant at $p < .05$. The $Divp_{3-}3$ and $Divp_{4-}4$ provided that $Divp_3$ 3 ($\beta$ = -0.16129, F – value =7.64835, t-statistics = -2.7656, *P* (sig) = 0.005985) signified the relationship between debt vs. equity (DE) and products. The $Divp_4$ - 4 ($\beta$ = -.158730, F – value =6.56604,t -statistics = -2.56243, *P* (sig) = 0 .010814) predicts debt vs. equity (DE) and diversification of assets have significant relationship and statically significant. The model 1 provides that ($\beta$ = 8.94795, F – value = 0.29489,t -statistics =

0.54304, *P* (sig) = 0.58745) fails to reflect the significant relationship as well as $Div_{P2}$ - 2 which shows (β = -6.65220, F – value = 0.086873,t -statistics = -0.29474, *P* (sig) = 0.76836) but shows negative impact on debt vs. equity (DE). The $Div_{A1}$, $Div_{A2}$ and $Div_{A3}$ where (β = -6.66874), (β = -13.4973) and (β = 16.55689) respectively negative to positive effect but insignificant due to significance level at p > .05.

Table 33 indicates fourth objective where the impact of diversification in product and asset to debt vs. equity (DE). The results indicated that product and asset diversifications are significantly related to debt vs. equity (DE). The product diversification of dummy variables (**$P_2$, $P_3$, $P_4$**) are significantly negatively related to debt vs. equity (DE) relative to (**$P_1$**) as predicted by the theory of product diversification (Williamson,1988, Barton & Gordon,1988).

**Table 33: The Sensitivity and Validity of Product (P) and Asset (A) and Debt Vs. Equity**

| ***OLS*** | ***$Div_{p1}$*** | ***$Div_{p2}$*** | ***$Div_{p3}$*** | ***$Div_{p4}$*** | ***$Div_{A1}$*** | ***$Div_{A2}$*** | ***$Div_{A3}$*** |
|---|---|---|---|---|---|---|---|
| ***Dependent Variable*** | ***DE*** | ***DE*** | ***DE*** | ***DE*** | ***DE*** | ***DE*** | ***DE*** |
| ***Independent Variable*** | **$P_1$** | **$P_2$** | **$P_3$** | **$P_4$** | **$A_1$** | **$A_2$** | **$A_3$** |
| | 0.00084 | 0.0002 | 0.0215 | 0.01851 | 0.00018 | 0.001959 | 0.0027 |
| ***F-Value*** | 0.29489 | 0.0868 | 7.6483 | 6.56604 | 1.58385 | 0.68306 | 0.9447 |
| ***β (Beta Coefficient)*** | 8.94795 | -6.6522 | -0.1612 | -.158730 | -6.66874 | -13.4973 | 16.556 |
| ***t – statistics*** | 0.54304 | -0.2947 | -2.7656 | -2.56243 | -0.25649 | -0.82648 | 0.9720 |
| ***P – Value*** | 0.58745 | 0.7683 | 0.0059 | 0.01081 | 0.79772 | 0.40909 | 0.3317 |

**Significant at 0.01, 0.05level.**

The asset diversification of dummy variables (**$A_1$, $A_2$**) are significantly negatively related to Debt Vs. Equity (DE) relative to (**$A_3$**) as predicted by the theory of transaction

cost economics (TCE) by (Williamson 1988, Kochhar 1996). The results in Table 34 provided effect of product and asset diversifications on Firm Value (FV). The model 2, model 4, model 5 are statically significant at $p < .05$. It satisfied the conditions of strong relationship of the product and asset diversifications on firm performance.

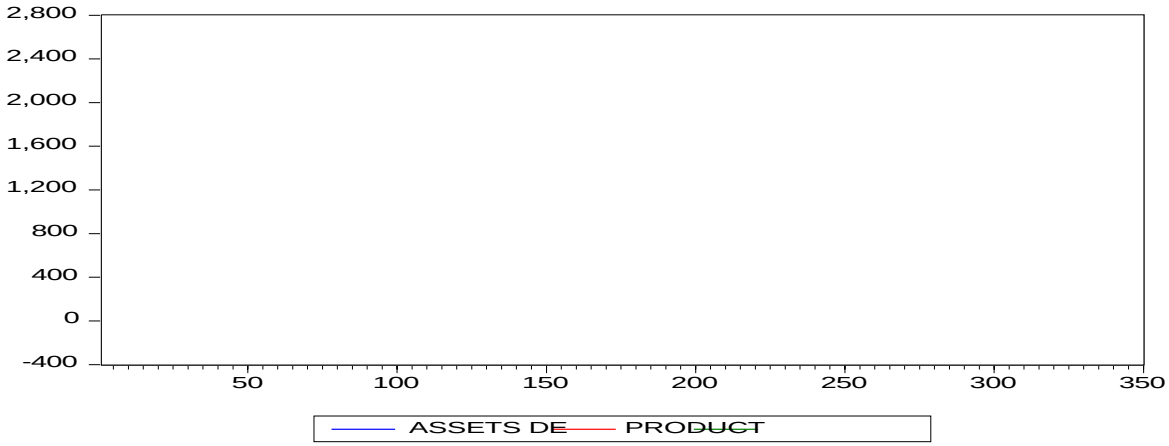


**Figure 9: Financial Signaling and Information Asymmetries of Business Strategy Covariates and Debt vs. Equity from 2001 to 2010**

The model $Divp_{1-1}$, $Divp_3$, $Div_{A2}$ have positive and $Div_{A3}$ negative effect where ($\beta = 61.47824$), ($\beta = 268.0169$), ($\beta = 54.5775$) and ($\beta = -42.4489$) respectively but insignificant due to significance level at $p > .05$. Table 34 showed impact of number of products and assets to market value added of the shares (MVA). It provided that products and assets diversification are significantly related to market value added of the shares (MVA).

**Table 34: The Sensitivity and Validity of Product (P) and Asset (A) on Market Value**

| ***OLS*** | ***$Div_{p1}$*** | ***$Div_{p2}$*** | ***$Div_{p3}$*** | ***$Div_{p4}$*** | ***$Div_{A1}$*** | ***$Div_{A2}$*** | ***$Div_{A3}$*** |
|---|---|---|---|---|---|---|---|
| ***Dependent Variable*** | ***MVA*** | ***MVA*** | ***MVA*** | ***MVA*** | ***MVA*** | ***MVA*** | ***MVA*** |
| ***Independent Variable*** | **$P_1$** | **$P_2$** | **$P_3$** | **$P_4$** | **$A_1$** | **$A_2$** | **$A_3$** |
| | 0.000 | 0.063902 | 0.00737 | 0.024474 | 0.043438 | 0.0007 | 0.00039 |
| ***F-Value*** | 0.30636 | 23.75586 | 2.58395 | 8.730564 | 15.80279 | 0.2454 | 0.136355 |
| ***β (Beta Coefficient)*** | 61.47 | -717.526 | 268.0169 | 517.951 | -102.393 | 54.577 | -42.448 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ***t –statistics*** | 0.553 | -4.874 | 1.607467 | 2.954753 | -681.467 | 0.4954 | -0.3692 |
| ***P – Value*** | 0.580273 | 0.000001 | 0.108859 | 0.003342 | 0.00009 | 0.6205 | 0.71215 |

**Significant at 0.01, 0.05level.**

The dummy variables of products (**$P_2$**, **$P_3$**, and **$P_4$**) are significantly related to market value added of the shares (MVA) relative to (**$P_1$**) as described by the product diversification theory (Williamson, 1988, Barton & Gordon, 1988). The hypothesis seven is rejected where assets diversification of dummy variables (**$A_1$** , **$A_3$**) are significantly negatively related to market value added of the shares (MVA) relative to (**$A_2$**) as described by the transaction cost economics (TCE) theory (Williamson 1988, Kochhar 1996). This study investigated that irrationality depends on financial signaling and asymmetries of information with reference to $H_6$ and $H_7$. It is not only the application of signaling theory in debt vs. equity choices.

It is an application of agency and information asymmetry theory and transaction cost under transaction cost economics theory. The level of asymmetries derived the financial signaling and irrational behavior of investor. The sentiments of investors derived the patterns of investment in stock market. The sentiments are related to capital structure decisions of the firms. This study opened new avenues of research in corporate finance and behavioral finance.

# CHAPTER NO 6

# CONCLUSION

# 6. CONCLUSION:

The debt vs. equity has applied in different perspective in this study and investigated the behavior of the determinants of capital structure. This study has strengthened the literature by creating the domain of the psychology of investor regarding to signaling and asymmetric behavior. The financial signaling and asymmetries of information are linked to irrational or rational psychology of investors and ultimately investment behavior of the investor. The irrational psychology can be controlled by implementation of good governance structure with best financing decisions. The empirical findings provide the evidence to support the signaling hypothesis of the study and indicate that the signaling and information asymmetry theory is significantly being applied by corporate sector in Pakistan. The financial policy is the sensitive measure of risk in non-financial sector of Pakistan. The outcomes found that the determinants of financial policy have significant effect. The coefficients signs and level of significance considered the fundamental assumptions of financial policy theories i.e. pecking order theory, trade off theory, signaling and information asymmetry theory, life stage theory, market timing theory and agency theory. According to first objective, relative application of the pecking order theory and trade off theory was tested and found violated due to signaling and asymmetries of information. The life stage theory also showed adverse practical implication due to negative and asymmetric impact of the relative factors i.e. operational - business risk which shows financial distress and bankruptcy cost. This study is used to make a good contribution and strength of the literature on psychological aspect of debt vs. equity. It is not only the application of signaling theory in debt vs. equity constraints but also the application of agency behavior under agency and information

asymmetry theory and transaction cost under transaction cost economics theory. The research also implicated that agency cost and asymmetric behavior is eliminated by proper application of signaling trade off theory and pecking order theory. Therefore, the financial policy determinants in this research can be important in setting the financial market of Pakistan as the transitional and emerging economy. The particular determinants reflected a diverse behavior in developed economies as literature exposes. The financing hierarchy must be used in accordance with packing order theory as by corporate sector of Pakistan to avoid information asymmetries and agency behavior. The information asymmetries and agency behavior can be controlled by using best practices of corporate governance with reference to objective three. The best corporate governance practices are used to assist and adjust the adverse signals. It can enhance the reliability of managerial decision making. The financing decision making at microeconomic level is strongly influenced by the development of macroeconomic level in Pakistan. This is being practically unsolved and requires proper guidelines by policy makers as an initial point in this dimension. The extreme bounds analysis (EBA) is the better procedure to estimate the coefficients rather than selective reporting and most favorable results. EBA enlarges the research and required for reporting most favorability and least favorable results. In this regard, the study is motivated with the desire to examine the robust behavior of the determinants of debt vs. equity composition. This EBA approach solves truly the signaling and asymmetric question rather than to prove a preconvinced idea of debt vs. equity behavior. The EBA is used to remove subjectivity of the empirical findings of the study on debt vs. equity. The study examined Z-score model to recognize the business risk and systematic risk to recognize the market risk. The results represent that choice of

debt leads to tax shield and low cost of capital. This phenomenon may increase the probability of survival of firms. The low business risk leads to high cash flows of business. The high business risk leads to high financial risk. This should decrease the probability of survival of firms. The results represent a negative significance of Z-score and systematic risk in equity market of Pakistan.

Furthermore, the study described the risk of financial signaling and information asymmetries. The t-statistics for systematic risk (β) has the most significant impact on financial policy. It can increase the fluctuation and change in the market value of firms. The financial policy makers considered the impact on financing concerns of industrial companies listed under Karachi Stock Exchange (KSE). The study concluded that financial signaling and information asymmetries of macroeconomic variables i.e. the interest rate (IR) has the most significant negative impact on financial policy. The negative significant relation of interest rate (IR) reflects that an increase in debt vs. equity is associated with decrease in interest rate (IR). The managers should require to achieve the lowest cost sources and reduction in debt composition. The economic and financial policy makers should definitely consider the impact of macroeconomic factors on financing to facilitate the non financial sector in Pakistan. The empirical findings indicate that negative relationships prevail between capital structure and value of firm. The result also concluded that return on equity (ROE) has negative and profitability (PF) has positive significant impact of capital structure and value of firm in KSE to confirm hypotheses of the study. The study further concluded that a negative relation of return on asset (ROA), earning per share (EPS), Tobin's Q (TQ) and market value added (MVA) indicated with debt vs. equity. Rajan & Zingales (1995) & Mayers (1984) documented

negative relation and in line with this study but contradicted with profitability (PF) and debt relation which was positive. The underlying assumption of seminal research of Modigliani and Miller (1958) market value is irrelevant to the financial policy under perfect market not fit for emerging and transitional economy.

Furthermore, the study concluded the third and fourth hypotheses that financial signaling and information asymmetries of debt vs. equity exist. It preceded risk due to volatility in market value of firms. In this regard, Mayers (2001) supported to the study that there is no universal rule of thumb of the choice of optimal financial policy and further argued that tax interpretation, agency cost and information asymmetry are based upon managerial decisions. The exact optimal capital structure is very difficult to choose. There is a large number of theories of capital structure that influenced the financial policy and value of the firm. So, there is a strong need to define a range of optimal capital structure. This range should be acceptable and preferable to stakeholders of the firm. In accordance with objective five, the results conclude that corporate governance (CG) has an effect on firm performance (FP) under transaction cost economics theory and good management theory. It is obvious from the results that CG has an effect on the firm value. In addition with reference to objective three, it is also shown that (CG) does have mediating effect in between the corporate financial policy (CFP) and firm value. The negative relationship showed an agency problem and asymmetric behavior. Therefore, the investors do not have the equal information as by the managers about the company. Furthermore, it is also proved that the singling hypothesis reflected that the further incorporation of debt or equity should have an impact on the behavior of the investor due to information asymmetries, it is negative. The sample period is quite significant due the

characteristic of corporate governance, financial policy and firm value becomes optional sometimes. Moreover, the study concluded that principal is concerned with the goal of maximization of wealth rather than the profitability. So, if corporate governance (CG) practices are incorporated and inferred that the agents have not practically implied by the managers. According to objective two, it is indicated that the negative signal has shown the existstence of an agency problem and asymmetric behavior. Furthermore, the investor do not have the equal information as to managers have full information's. The choice of debt or equity should have an impact on behavior of the investor due to asymmetries of information. The asymmetries of information lead to negative signals and investor withdrew from investment decision. As a result, it declines the firm value. The study further tested mediation and moderation to make the results unique and more reliable justification. This study also provides the basic premise to test the model of effect of CG on stock returns in a portfolio construction for risk diversification. The financial structure can be increased by degree of product diversification and degree of asset specificity. It is concluded by the results of fourth objective that corporate strategies should have an effect on the financial policy of the firm. In addition, it is also indicated that corporate strategies do not have mediating role in between the corporate financial policy and value of firm. According to hypothesis six and seven the negative association is presented due to an agency problem and transaction cost. In accordance with objective six the singling hypothesis showed that the debt or equity and diversification of strategies can affect the behavior of the investor due to information asymmetries, it is negative. The existence of limitations can be because of less number of sampled firms and period of reporting as compared to prior studies e.g. the sample period is very important because of the

characteristic of corporate strategies, financial policy and value of firm being optional sometimes. Therefore, this study did not identify that product diversification affects debt vs. equity beyond commonly accepted determinants of financial policy. The results of debt vs. equity choices are found risky due to the existence of asymmetric and irrational behavior as per sixth objective. The corporate governance is utilized as a controlling tool of risk diversification in between the debt vs. equity and firm value.

Although traditional finance theories are acceptable criteria for financial decision making. It is used to focus on aggregate market. It is incomplete and failing to account for individual behavior and its implications. The psychological dynamics are used to focus on individual psychology of investor. It affects individuals' actions and needs to understand how psychological decisions are considerable in the markets. It can be used to create the ability to predict those effects and capture the anomalous behavior and agency problem due to psychological factors. The psychological factors that are used to drive the dimensions of risk signaling and asymmetries to explore the intertemporal dynamics. The sensitivity of intertemporal dynamics is the basic premise of financial decisions being used to shift overtime. The model of optimal level of debt vs. equity is the solution of agency problem utilizing the corporate governance and business strategy as a tool of diversification of positive psychology and intertemporal dynamics concerning to objective six. This study finally concluded that all theories of capital structure identified that financial signaling and asymmetries of information changed the behavior of investors and lenders in a perspective where borrowing signals provides a positive impact and equity arising negative signals to the stock market investors but it is still there is a need to realize this impact that must have an index of capital structure based upon industrial

averages and return anomaly or we may can visualize the impact of financial signals and change in capital structure parameters by analyzing cross section of various industry of non financial sector that either the movement of capital from one industrial sector to another appealing industrial sector have caused an increase the return or not.

## 6.1 Recommendations:

The Karachi Stock Exchange (KSE) listed companies has a short history to develop sustainable financial system where the dynamics of financial policies are growing rapidly. The theories of developed economies implicated in the scenario of emerging market. These theories may not conditionally fit in nature of transitional or emerging market like Pakistan. There are large amount of differences in geographical areas, ownership structure, pattern of firms, institutional environment and temporal periods which can be influenced the debt vs., equity decisions. Therefore, followings are the suggestions and recommendations based upon the empirical study:

1. **Efficient Capital Market:**

This asymmetry of information affects the psychology and perception of investor in decision of investments. The imperfections can misprice the value of the firm. There should be improvements in trust and confidence of investors to make the market more proficient and frictionless to reduce the anomalous behavior and mis-presentation of the market. The only efficient capital markets can have the practical implications to fair market value of firm.

2. **Risk of Financial Policy:**

The emerging and transitional economies are imperfect and distorted markets. Actually, it can have the platform of better understanding of puzzle of financial policy and decisions

regarding to investments. This is the valuable concern regarding to the literature of financial policy for best support of empirics. The deviations in transitional and emerging market due to financial signaling and information's asymmetries are used to assist as a guideline to improve the market value of the firms and choices of debt vs. equity.

3. **Bankruptcy Law:**

A comprehensive law of bankruptcy should be designed that may protect the rights of investors, creditors to reduce the threat of bankruptcy and can have the best implication of firm value. The policies should be framed to enhance the strength of the institutions.

4. **Optimal Capital Structure:**

In fact, a choice of debt vs. equity represents as the governance tool by preservation of the corporate governance efficiency and protects its ability for better value creation and diversification of risk to make financial policy optimal. So, It is needed to follow the code of conduct of the corporate governance to enhance proficiency of governance to achieve optimal capital structure.

5. **Corporate Governance:**

A Theoretical framework can have the clear road map of the relationship of Debt Vs. Equity, Corporate Governance and Wealth maximization. The role of mediator and moderator of corporate governance provided research proposition for future empirical findings regarding the developed and matured system of economies as well as transitional, emerging and developing economies. The corporate governance played a very vital role in increasing the wealth of firm. So, steps should be taken how to make corporate governance more proficient.

**6. Business Strategy:**

The financial signaling and asymmetries of information in emerging and transitional economies recognized that the business product diversification and asset specificity can diversify the negative financial signaling and asymmetries of information. It is the important premise of reduction of cost and risk. So, business strategy is life blood of alignment of cost and risk.

**7. Financial Crises:**

The debt vs. equity is the main concern among contributing factors as shown in the financial crises history. The borrowing of money is utilized for investment and industrial production. The failing in investment and industrial production should be the main reason of bankruptcy. The degree of bankruptcy mostly is used to increase financial crises. The real and growth oriented utilization of borrowing of money for investments can better handle the financial crises.

## 6.2 Limitation to Research:

1. The research was limited to the sample period of 2001 – 2010.
2. The research was limited to those non-financial listed companies of Karachi Stock Exchange (KSE) which have complete data to include in sample.
3. The research mainly focused on empirical analysis where qualitative – theoretical justification could explain to conclusion of behavior of debt vs. equity.
4. The research was limited to Karachi Stock Exchange (KSE) - Pakistan as transitional and emerging economy.

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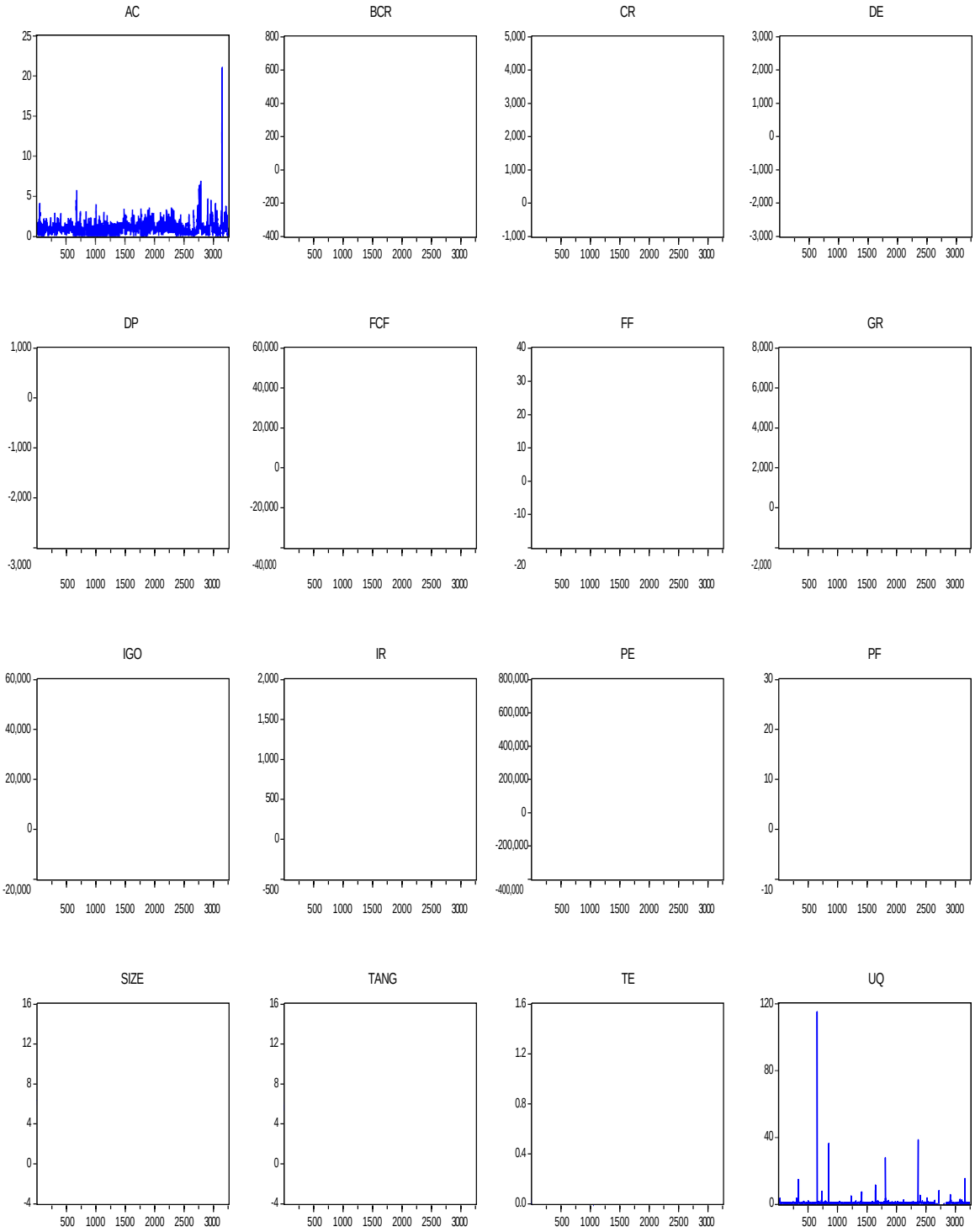
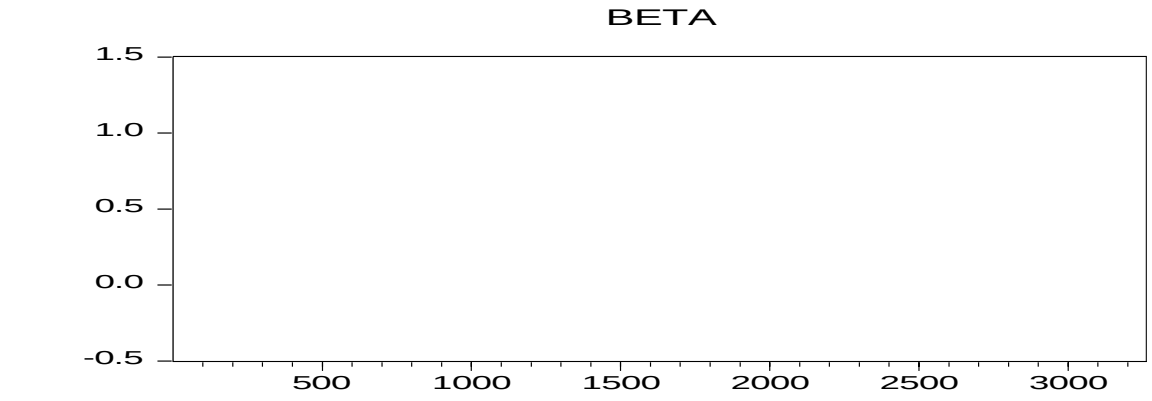
# APPENDICES

# Appendix A



# Appendix B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-0.5
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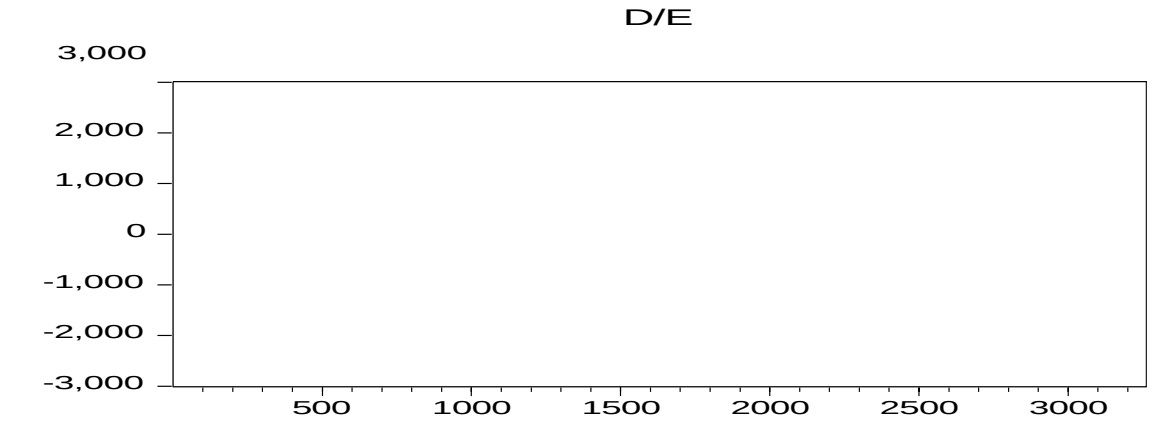
1000
1500
2000
2500
3000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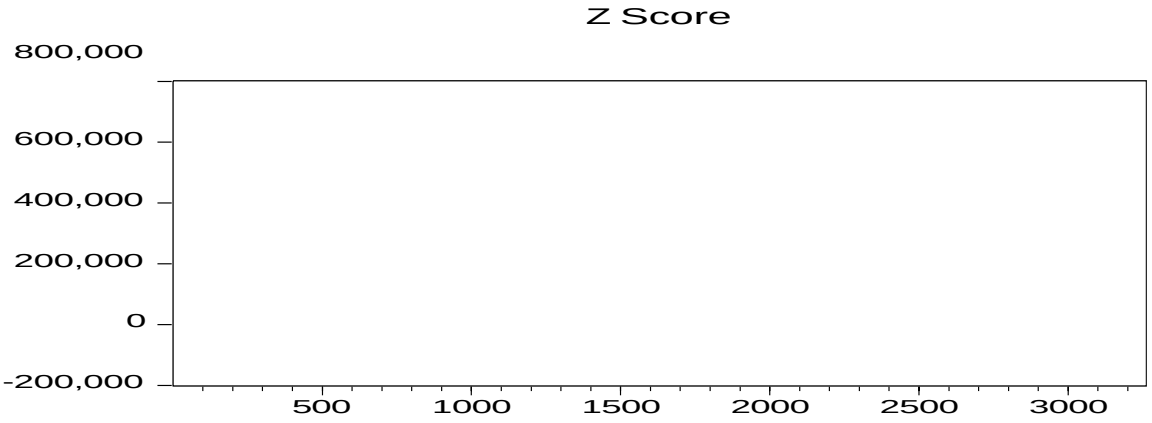
-2,000
-3,000
500
1000
1500
2000
2500
3000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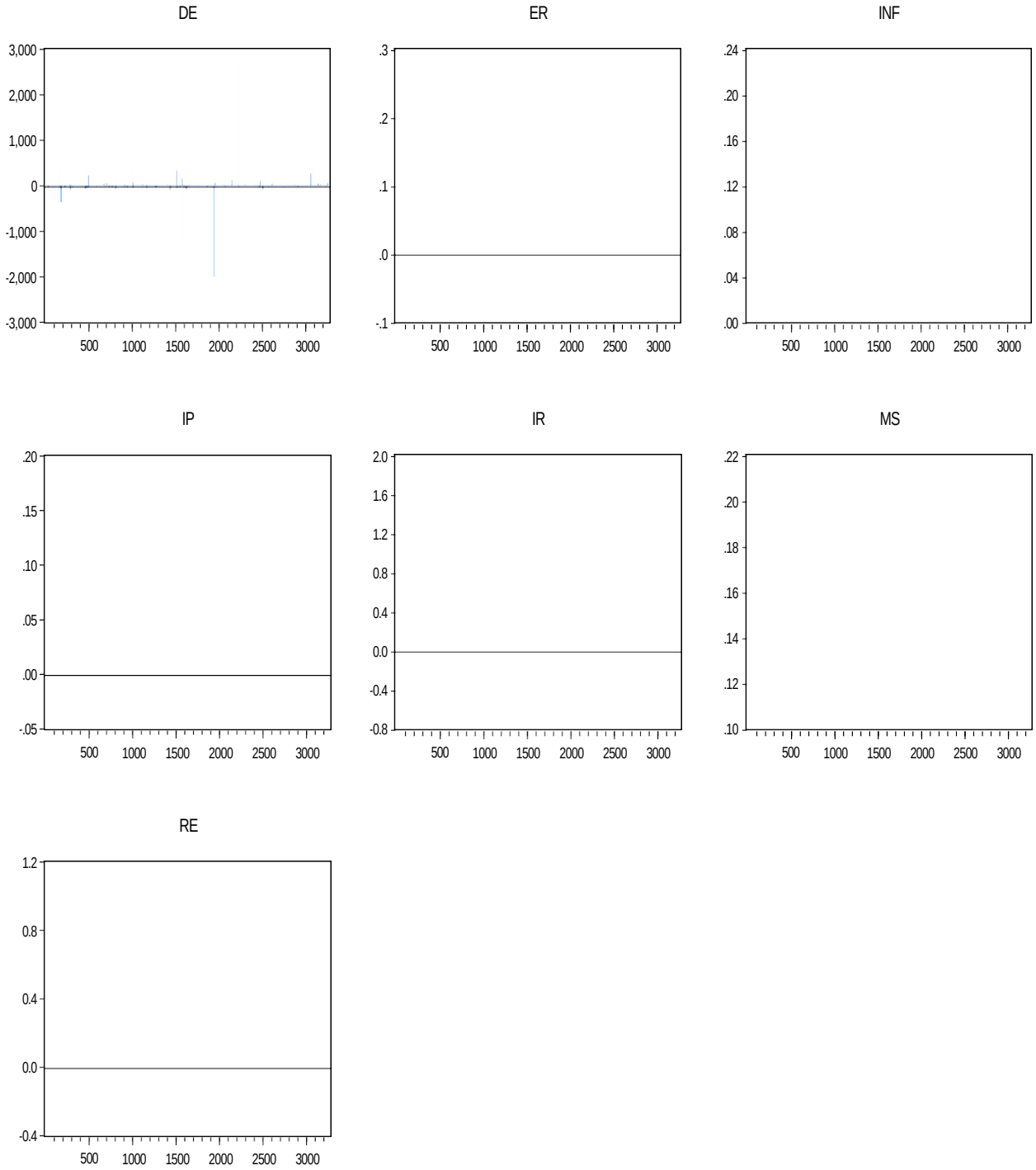
500
1000
1500
2000
2500
3000

# Appendix C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-3,000
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ER
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.1
.0
-.1
500 1000 1500 2000 2500 3000
INF
.24
.20
.16
.12
.08
.04
.00
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IP
.20
.15
.10
.05
.00
-.05
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IR
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1.6
1.2
0.8
0.4
0.0
-0.4
-0.8
500 1000 1500 2000 2500 3000
MS
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.18
.16
.14
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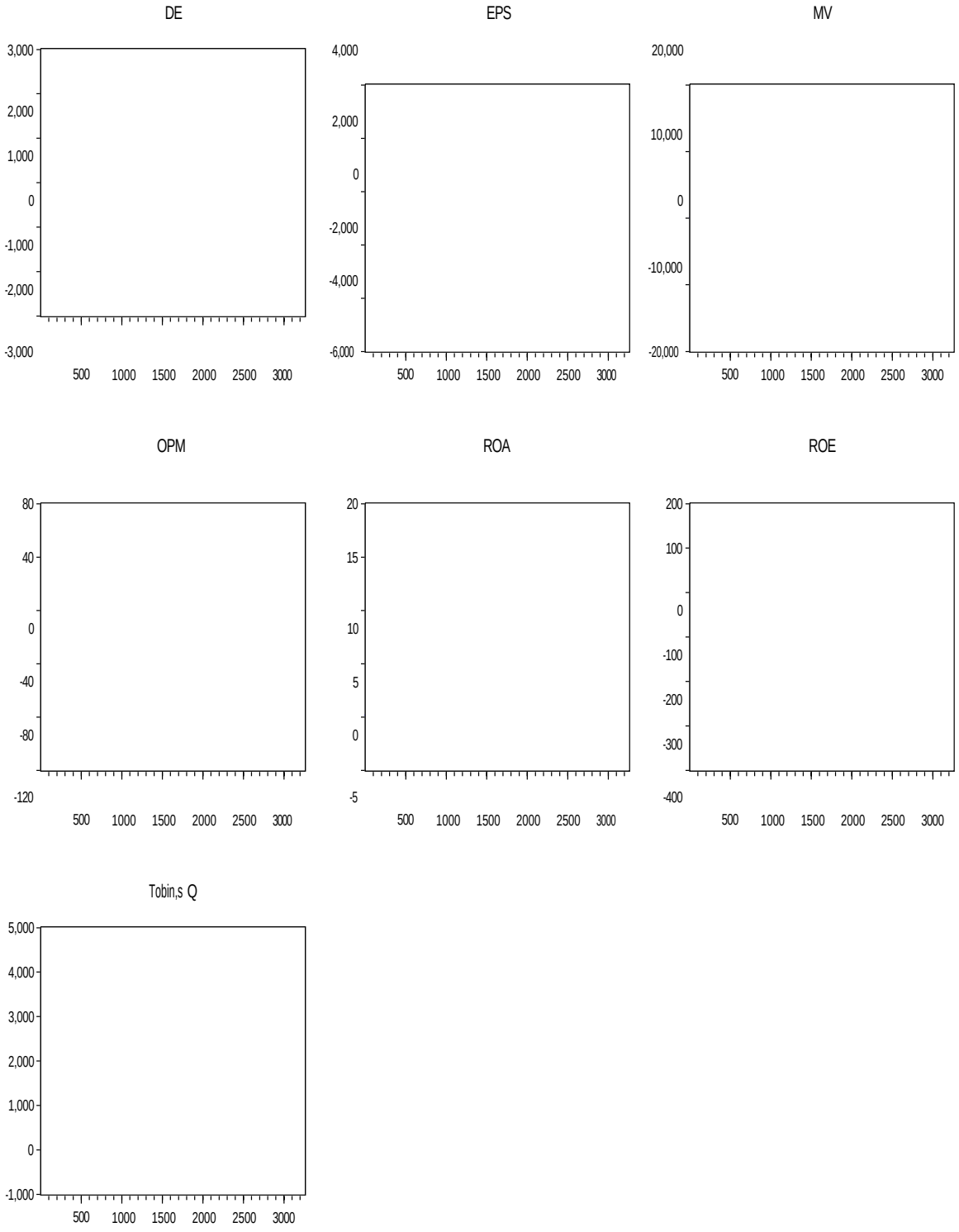
# Appendix D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-6,000
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OPM
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ROA
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15
10
5
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ROE
200
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0
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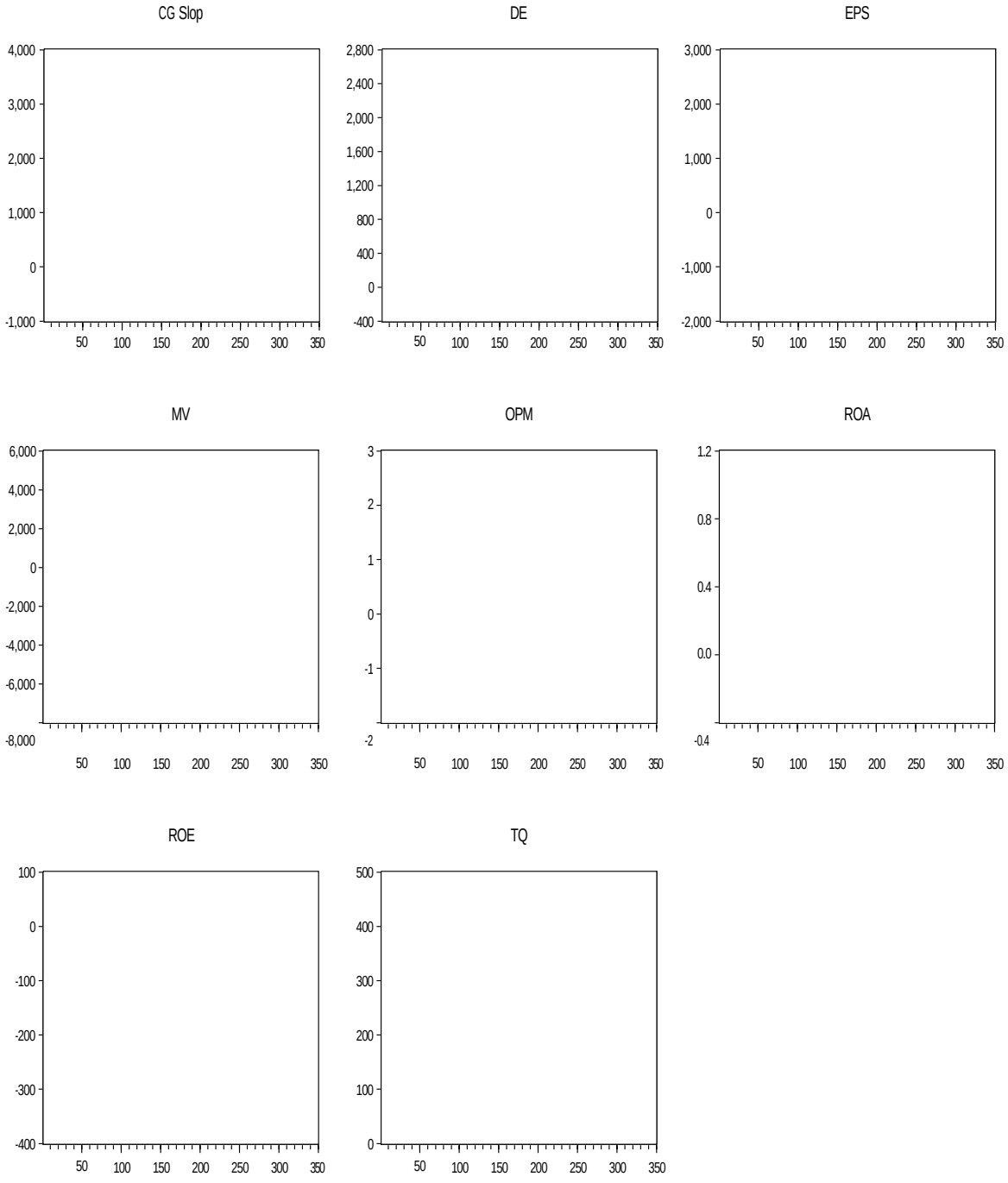
# Appendix E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50 100 150 200 250 300 350
DE
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2,400
2,000
1,600
1,200
800
400
0
-400
50 100 150 200 250 300 350
EPS
3,000
2,000
1,000
0
-1,000
-2,000
50 100 150 200 250 300 350
MV
6,000
4,000
2,000
0
-2,000
-4,000
-6,000
-8,000
50 100 150 200 250 300 350
OPM
3
2
1
0
-1
-2
50 100 150 200 250 300 350
ROA
1.2
0.8
0.4
0.0
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50 100 150 200 250 300 350
ROE
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TQ
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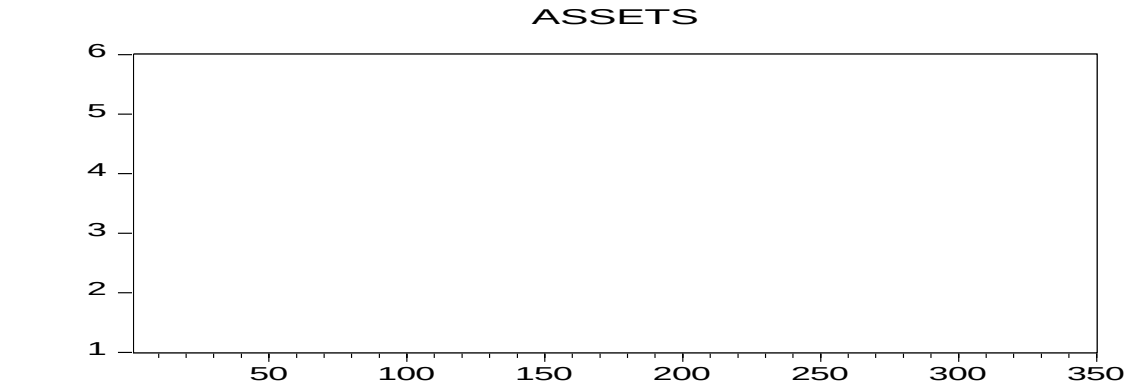
# Appendix F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200
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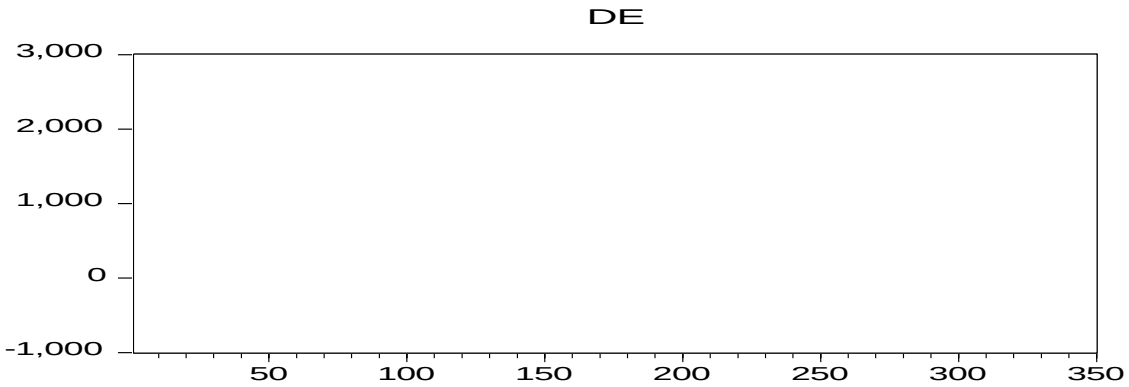
300
350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300
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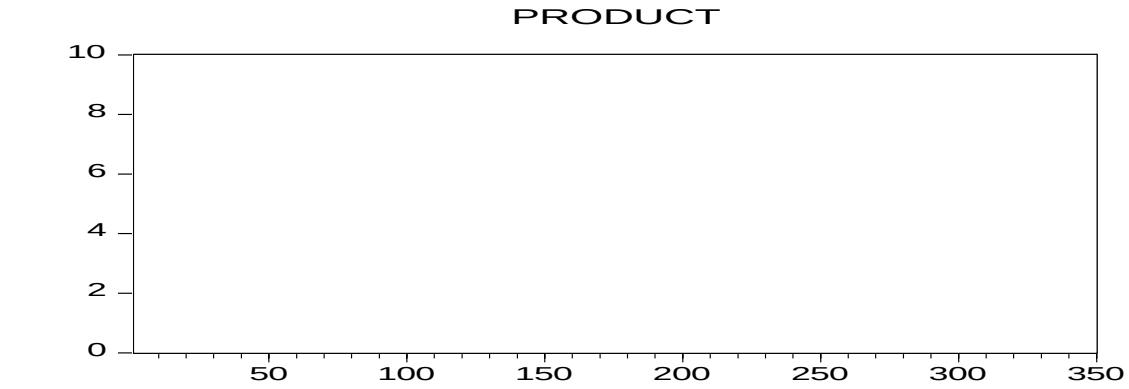
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