Relationship between Information Rating and Capital Structure Decisions; Empirical Evidence from Emerging Market of Pakistan

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Ms. Nuzhat Gul

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Submitted in partial fulfillment of the requirements for the

MS degree with the specialization in Finance,

at the faculty of management sciences,

International Islamic University,

Islamabad.

Dr. Sumayya Chughtai *April, 2017*

In the name of Allah, the most merciful and beneficent

DEDICATION

I dedicate this thesis to my parents and my supervisor whose support has enabled me to complete this research study successfully.

(Acceptance by the Viva Voice Committee)

Title of Thesis: "Relationship between Information Rating and Capital Structure Decisions; Empirical Evidence from Emerging Market of Pakistan".

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Date: 6th April, 2017

FORWARDING SHEET

The thesis entitled "Relationship between Information Rating and Capital Structure Decisions; Empirical Evidence from Emerging Market of Pakistan" submitted by Ms. Nuzhat Gul as fulfillment of MS degree in Management Sciences with specialization in Finance, has completed under my guidance and supervision. The changes advised by the external and the internal examiners hava also been incorporated. I am satisfied with the quality of student's research work and allow her to submit this thesis for further process as per IIUI rules & regulations.

Date:_____ Signature:_____

Name : Dr. Sumayya Chughtai

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APPRECIATION AND GRATITUDE

No words of gratitude will ever be sufficient for the Allah Almighty who made me capable of learning, blessed me with the knowledge & intellect and facilitated me with the finest of the mentors all through my academic years.

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Ms. Nuzhat Gul

Table of Contents

List of Tables

List of Abbreviations

CGC	Corporate Governance Code of Pakistan
DEF	Deficit
DEFIR	Deficit*Information Rating
IR	Information Rating
SLK	Slack
TAN	Tangibility
PROF	Profitability

List of Equations

Abstract

The study aims to examine the financing behaviors in the capital structure decisions of the firms. The literature in this domain indicates that the firms in developing countries follow the pecking order theory. On contrary, in developed countries financing behaviors follow trade-off theory. While mix evidence is available for both exists in few countries. These differences in financing behaviors are due to various reasons. These financing behaviors are influenced by different factors in different countries i.e. the presence of information asymmetry, level of development and strictness of corporate governance code, political and economic stability of the countries likewise many other factors are responsible. It uses three models to examine the financial behaviors of the manufacturing firms in Pakistan. In the first model, simply deficit and net debt issuance are regressed, and the results confirm the financing behaviors consistent with pecking order theory in the capital market of Pakistan. Further, an interaction term of financing deficit and information rating is introduced in the second model of the study. The model aims to test if information asymmetry is an important factor behind the financial choices in the capital structure of the firms. To estimate the information asymmetry in the capital market, a modified information rating scale adopted from Karachi stock exchange over five dimensions to estimate the transparency of each firm from 2010 to 2014. The results of the second model show negative relation between interaction term and net debt issuance consistent with pecking order behavior. High (low) information rating relates to less distress cost consequently firms incorporate low (high) debt in capital structure of the firms. The third model is the extension of the first two models in which the study examines the direct relationship between leverage and information rating in addition with firm's characteristics. A deviation in the form of positive relation between information rating and leverage is shown in the results while firm characteristics are consistent with pecking order behaviors. Hence, the study shows that information rating is influential on pecking order behaviors with a slight change due to circumstantial changes in capital market of Pakistan.

Jel Classification: *G32*

Keywords: *Information asymmetry, Capital structure, Information rating, Pecking order theory*

CHAPTER 1

INTRODUCTION

1.1 Background and Purpose of the Study

Firms seek finance to invest in their operations and confront a fundamental choice that either they should use internal financing, debt or issue equity. Each source has its own peculiar effect on the outcome and reputation of the firms. Therefore, the firms adopt a specific strategy while taking financial decisions regarding the capital structure of the firms. A firm's good progress depends upon the appropriate capital structure formation. Modigliani and Miller (1958) propose in their relevance theorem that the size of debt and equity in capital structure depends upon the flow of cash generated from its operations. It suggests that a firm's value is independent of the composition of capital structure of the firm and no friction exists in the capital market. If the assumption of perfect markets is relaxed, the composition of capital structure becomes a vital value determining factor (Villamil, 2008). Myers and Majluf (1984) give an insight into components of capital structure in a preferred order when capital markets are imperfect and information asymmetry exists. Pecking order theory states that firms finance first through the retained earnings, if the internal source is not sufficient to fulfill the deficit then they go for debt financing, if debt outpace the limit which can lead to bankruptcy then firms opt the equity financing as a final alternative to avoid the adverse selection cost of capital in the presence of imperfect market. Imperfect market means that there are

frictions which restrict the choice of finance; information asymmetry is one of them. Information asymmetry exists in the market because managers and investors do not share same information content. Due to this information asymmetry one of the parties take benefit and others have to bear loss. The managers have better knowledge of firm's value and their growth prospects. The investors never know whether the project in which they are going to invest by providing debt or buying equity is a viable one, thus, the only option to address the phenomenon is to observe the behavior of the firm's managers (Myers &Majluf, 1984).

Information asymmetry plays an adverse role for the firm when firm is undervalued; therefore it is not suitable to issue equity. On the other hand, when it is overvalued, it is endowed with opportunity to issue equity valuably and more frequently (Change, Dasgupta, & Hilary, 2006). If managers inclined to issue equity first then the investors may think that the firm's stock is overvalued right now in the market. Consequently, investors think that firm is being tricky to take benefit through selling equity rather using internal or external sources. Therefore, the foreseen reaction from investors is decline in the value of the stock and they would not buy it considering firm's equity overvalued. It entails that if a security is overvalued, in actual its innate price or integral value is lower than current market price. An investor can also think that firm is in financial distress, unable to finance its operation through retained earnings and, not in a position to meet debt related obligations. Such actions by corporate managers are considered as bad signals generated due to existence of information asymmetry in capital markets. Therefore, firms have to bear adverse selection cost (Leland & Pyle, 1977).

Moreover, borrowing firms take benefit of information asymmetry by hiding their actual financial health by outsourcing funds to finance their projects. Above stated behaviors of corporate managers lead towards moral hazards as both lenders and borrowers should share same piece of information but mangers are more inclined to take advantage of information asymmetry. But due to this information asymmetry markets may fail to work efficiently and properly; investors may suffer by financing projects which may yield negative net present value in future (Leland & Pyle, 1977).

Following pecking order behavior, if a firm uses its own internal source, gives a positive signal about the positive future return in the market. After using internal source, the firm decides later that weather it should finance via debt or equity; this puts a good image of the firm's financial condition to the investor. Hence, investor anticipates that firm is in a position to pay good interests and required returns; therefore, they willingly get ready to finance the firm without considering equity as overvalued and place a good value to the firm in the market. However, there should be a proper transfer of information so that investors can willingly provide finances to the firm (Leland & Pyle, 1977).

In capital markets information asymmetry always exists because there is no perfect market without frictions (Myers & Majluf, 1984). Healy and Palepu (2001) argue that investors and entrepreneurs are always logical and value investments according to the exposure of information they have. If savers are unable to differentiate between good and bad business ideas, businessperson absolutely would claim their ideas as the "good" one. If this problem is not fully resolved, the capital markets will undervalue good ideas and overvalue the bad ideas due to the relative information available to them.[1]

[1] For further on this issue see; Markets for Lemons

Literature of corporate finance, analyze the firms all over the world and behavioral trends followed by corporate managers while making capital structure decisions. Empirical evidence suggests that firms follow pecking order behaviors in the presence of information asymmetry in the markets during financing process (Myers & Majluf, 1984; Asquith& Mullins, 1983; Masulis & Korwar, 1986; and Mikkelson & Partch, 1986).At the same time while investigating the developed countries other studies find their results contradictory or not much favorable towards pecking order behavior (Jung, Kim, & Stulz, 1996; Frank & Goyal, 2003; Bolton & Dewatripont, 2005; and Leary & Roberts, 2010). These studies suggest that the firms do not always choose hierarchy of financing due to asymmetric information in the market to minimize adverse selection cost because in some particular conditions it does not work.

If the firms follow pecking order behavior of capital structure, it does not imply that they are involved in this behavior because of existence of information asymmetry in markets. Altinkilic and Hassen (2000) infer in their study that information asymmetry is not the only reason that firms are following pecking order behavior, they further argue that transaction cost is one of the reasons that firms follow pecking order as transaction cost increases with the change of financial source from internal financing (no cost) to debt and then equity.

Graham and Harvey (2001) address in their research that managers do not concerned about the information symmetry or asymmetry but they want to keep their firms flexible in terms of cash therefore they use less debt in their capital structure. Bancel and Mitto (2004) investigate 16 European companies and observe the trend in their firms that they choose optimal target capital structure (trade-off theory).

Karadeniz et al. (2009), state that emerging markets either exhibit mix behavior or they tend to follow hierarchy of financial resources. Fama and French (2005) negate the idea in an out right way and suggest that the combination of trade-off and pecking order behavior is more appropriate in explaining the capital structure of the firms instead of considering a single theory as a best option to opt.

In this particular study, Pecking order theory is tested likewise Shyam-Sunder and Myers (1999) and most recently Pan, Lin, Lee, & Ho (2015) approach. The first model examines that which financial behavior is followed by the manufacturing firms in Pakistan. In the second model, financial behavior of manufacturing firms in Pakistan is analyzed through information rating scores. Information asymmetry is rated through an adapted scale developed by Karachi Stock Exchange authorities to rank companies on the basis of information quality they provide to investors. The scale in the model tests level of information asymmetry affecting the volume of debt. The third model is based on investigating the relationship between leverage and information rating along with firm characteristics, to investigate the effects of information asymmetry with the inclusion of firm's characteristics on the firm's leverage.

1.2 Theoretical Foundation

1.2.1 Pecking Order Theory

Since the persuasive work of Modigilani and Miller (1958), capital structure theory and its relationship with firm's value has always been a well explored topic in

corporate finance and accounting literature. The study uses pecking order theory of capital structure as an over-arching theory to get theoretical support.

Donaldson propose pecking order hypothesis in 1961 which is later revisited by Myers and Majluf in 1984. Aforementioned studies argue that the equity is an expensive source of financing as compared to other sources i.e. internal financing and debt. The preliminary work of Myers and Maljuf (1984) is based on the assumption of frictionless capital markets. The theory theorizes that cost of financing gets higher in the presence of information asymmetry therefore, there is a hierarchy of choices available to corporate managers while making capital structure decisions. The theory states that firms prefer internal financing over external financing. While making a choice between debt and equity sources, debt is preferred as negative signals are associated with equity issue in presence of information asymmetry in the capital market.

It is assumed by investors that corporate manger possess better information about growth prospects of the firm when information asymmetry prevails. Equity issue generates a signal that mangers consider firm's equity overvalued and they want to take advantage out of it. Consequently, the outsiders (investors) place less value to the subsequent equity issue. Myers and Majluf (1984) advocate that if firms use retained earnings rather than issuing new security for investment opportunity, the problem of information asymmetry can be fixed. Therefore, the firms with high information asymmetry should issue debt to avoid adverse signals generated by equity issue.

Investors consider financing choice a firm as financial risk they face and incorporate such risk to assess their required rate of return. That is why, they analyze the firm's capital structure to assess the risk of their investment decisions and consequently

firm's equity will be under-priced. On the flip side, the study also analyzes the behavior of the firms while bridging their financial deficit. If the firms are following hierarchy of resources that means they are following pecking order behavior in the presence of information asymmetric environment. The theory also explains that in addition to firm characteristics, information rating also plays a vital role in capital structure decisions especially firm's debt-to-equity ratio (Frank & Goyal, 2003; Bharat, Pasquariello, & Wu, 2009 and Pan et al., 2015).

1.3 Gap Analysis

A major assumption of pecking order theory which affects the capital structure decisions is information asymmetry (Myers & Majluf, 1984). Information asymmetry hampers the efficacious allocation of resources in a capital market economy. Therefore, to resolve the problem of information asymmetry between managers and investors several ways of disclosure are created to maintain the curriculum of capital markets. Hence, to resolve the problem of information asymmetry, significant regulations governing corporate reporting and disclosure exist in all countries. Like US have the Securities and Exchange Commission (SEC) where companies have to comply with corporate information disclosure rules. However, the effectiveness of disclosure regulation in resolving the problem of information asymmetry in capital markets is still unaddressed (Healy & Paleupu, 2001). In Pakistan, Corporate Governance Code is also implemented in 2002 and revised in 2012 to regulate the governance system and to ensure transparency and disclosure in security market.

Transparency and disclosure has been worked out and studied widely in developed economies but a little work is done on developing economies especially. In Pakistan, the corporate governance infrastructure is in developing stage after Security Exchange Commission of Pakistan instigation its code of corporate governance in 2002. SECP revised the code in 2012 to improve governance system to enhance the transparency and disclosure in Pakistan (Zaman, Arslan, & Sidiqui, 2014).

Besides several steps taken by the government of Pakistan for incorporation and improvement of corporate governance in the country still firms in Pakistan have weak mechanisms of governance. This weak governance is evident from recent corporate scandals in Pakistan: Taj Company, PTCL privatization, Mehran bank and ENGRO Group of Companies (Javeed, Hassan, & Azeem, 2014).

Moreover, there is a need to investigate the kind of behaviors; firms are following in response to information asymmetry in the presence of Corporate Governance Code. There are different financial behaviors in different economies. Javeed et al. (2014) highlight the significance of corporate governance and its revision in 2012. There is a need to investigate the financial behaviors in order to examine the capital structure decisions of manufacturing firms in Pakistan. Moreover, it is needed to further explore the relation between information rating and capital structure decisions and the effect of information asymmetry on leverage in the Pakistan's capital market.

1.4 Problem Statement

Previous studies report a significant relationship between information asymmetry and capital structure behavior in developed economies. However, literature on capital

structure still lacks much work on emerging economies like Pakistan. Therefore, it is needed to explore capital structure dynamics in Pakistan from perspective of information environment and observe financial choices of the firms in presence of information asymmetry. Moreover, it is also imperative to study, how leverage reacts in the presence of information asymmetry along with other conventional factors of leverage.

1.5 Research Questions

The study seeks to address the following questions:

1. Whether firms follow pecking order of capital structure choice in the presence of information asymmetry?
2. Whether information rating affects capital structure decisions of Pakistan's firms?
3. Whether firm leverage is a function of information asymmetry in addition with its firm's characteristics?

1.6 Objectives of the Study

The study aims to seek the following objectives:

1. To access that firm's capital structure choice is following pecking order behavior in the presence of information asymmetry in the Pakistan's capital market.
2. To investigate whether information rating affects capital structure decision of Pakistani firms.
3. To examine the firm's leverage as a function of information asymmetry in addition to firm's characteristics.

1.7 Significance of the Study

1.7.1 Theoretical Significance

The study contributes towards existing literature in a way that it explores the phenomenon of financial behaviors followed by the firms in the information asymmetric environment in capital structure decision-making in Pakistan. Moreover, the study provides direct evidence regarding the effect of information rating on capital structure decisions in Pakistani firms in the presence of Corporate Governance Code in Pakistan since 2002. The literature indicates that information asymmetry is a major factor affect financing decisions. In the study, a definitive information rating scale is used instead of old measures which are being used in previous studies for measuring information asymmetry. This information rating scale rates the quality of information disclosed. Hence, the study helps to understand behavioral aspect of finding decisions of firms under asymmetric information environment. Another contribution of the study is that it examines how leverage increases or decreases in relation to the information ratings (information symmetry/asymmetry).

1.7.2 Practical Significance

Since the inception of the SECP Corporate Governance Code (hereafter CGC) mechanism is mandatory for listed companies to comply with the code. The cost of equity lowers if more and more information is available regarding firms (Botosan,1997; Botosan & Plumlee, 2002; Francis, Nanda, & Olsson, 2008; Hail & Leuz, 2006 and Leuz & Verrecchia, 2000). Therefore, the study aims to help policy makers to revisit existing

governance code in light of finding of the current study. The high transparency and more disclosure considered as trust building tools in order to maximize the worth of organization. The study has policy implications for corporate managers and investors as well. The findings of the study may help them in rational decision making.

CHAPTER 2

LITRATURE REVIEW

In literature, pecking order is a theoretical model which addresses the preferences of financing choices of the firms to avoid adverse selection cost and distress cost, in the presence of information asymmetry in capital markets. Therefore, the firms prefer internal financing i.e. retained earnings over external financing and choose debt instead of equity financing when internally generated funds are not sufficient. Moreover, the firms use equity as a last resort therefore, presence of information asymmetry implies high leverage ratio of firms in capital markets. In such environment, equity issue by firms is considered overvalued by investors and it sends a negative signal in the market (Myers & Majluf, 1984).

Further, the new equity offerings are perceived as overvalued and will decline in future as market corrects this mispricing. Therefore, the large corporations avoid issuing equity to fulfill financial deficit through this source (Asquith & Mullins, 1986; Masulis & Korwar, 1986; and Mikkelson & Partch, 1986). In past few decades, ample literature is available on the influence of pecking order behavior over the firm's financing preferences. Some studies favor the pecking order behavior suggesting that it is a good predictor of real market phenomenon (Shyam Sunder & Myers, 1999; and Fama & French, 2005). On the flip side, other studies argue that pecking order behavior is not being followed in some specific conditions. Capital structures decisions are country

specific and industry patterns are also observed. For example American firms first use hierarchy of financing but then this behavior vanishes away with the passage of time. One plausible reason is that the small firms more frequently trade than large firms. Therefore, the small firms have a tendency to follow the hierarchy which changes the overall trend (Frank & Goyal, 2003). The findings of Jung et al. (1996) and Leary & Roberts (2010) also support aforementioned studies.

In another empirical study of US firms based on the initial public offerings (hereafter IPO) layout that there are few evidences about following pecking order behaviors. It further argues that IPO firms may have less sensitivity towards pecking order financing choices due to asymmetric information problem (Helwege & Liang, 1996). Baskin (1989) conducts a study based on 378 firms listed on fortune 500 in US firms. The study supports pecking order behavior contrary to the static optimal capital structure considering that; it discounts the problem of information asymmetry.

A crosswise argument to the pecking order theory is the irrelevancy proposition (Modigillani & Miller, 1961). It specifies that there is no lag of information about the firm in the market and the value of the firm is independent of the capital structure. Trade-off theory as a contestant of pecking order state that leverage is worthy due to tax shield benefits instead of disbursing dividend on equity issues and firms go for a mix of both equity and leverage until gets optimal capital. The theory further adds financial distress cost a firm bears in case of excessive debt financing; therefore, there is trade-off between tax shield benefit and cost of distress (Miller, 1977). Bancel and Mitto, (2004) report that firms whose financing choices are based on institutional environment and international operations of the businesses tend to achieve optimal capital structure.

Chazi, Terra, and Zanella (2010) support the mix of both the theories. The study uses a sample of six middle-eastern countries. The study reports that firms use both pecking order and trade-off approach while making capital structure decisions. Nor et al. (2012) conducts a survey on a sample of Malaysian firms. They analyze the financing choices whether they go for optimal structure or use a hierarchy of financing sources. This study finds that Malaysian managers regard the pecking order behavior. Beatti, Goodacre, and Thomson (2006) report that firms from United Kingdom maintain an ideal level steady with trade-off theory but 60% of those firms use hierarchy of sources persistent with pecking order theory.

Leary and Roberts (2005) report the dynamic re-balancing force of leverage is a significant driver behind the corporate decision making. The results indicate that firms increase leverage if the leverage ratio is fairly low and vice versa. Hence, the rebalancing element (leverage) is present at both spectrums i.e. trade-off and pecking order theory. Moreover, a notable increase or decrease in leverage is steady with the assumption of target debt ratio but the asymmetric leverage ratio also shows that firms prefer high leverage ratio following the hierarchy of financial sources.

On the flip side, Byoun (2008) negates pecking order theory by arguing that firms adjust their capital structure when there is a financial surplus or deficit, and firms adjust towards target capital structure. Myers and Majluf (1984) observe private and public firms regarding their preferences for internal or external financing sources. They report that the difference of information asymmetry between insiders and outsiders because private firms are less transparent to the outsiders. In private firms, the equity value is

sensitive towards information asymmetry than the public firms. Hence, the private firms have eminent leverage in their capital structure. In a similar study in United Kingdom, Brav (2009) argues that the private equity is more costly for the private firms because of information asymmetry. Therefore, they have high leverage ratio than public firms. Another reason of costly equity is that private firms avoid issuing securities in the capital markets and this leads them to wreck their performance due to extra high leverage in their capital structure.

Graham and Harvey (2001) held a survey from 392 CFOs in USA and asked questions about the capital structure, capital budgeting and cost of capital. The study supports trade-off theories of capital structure. They find that executives are not much concerned about asymmetric information, asset substitution, transaction cost or personal taxes instead they are profound towards staying financially flexible. This preference negates the pecking order theory. The survey shows that tax advantage is more important for the firms which pay more taxes. Therefore, 44% CFO's favor the tight debt target ratio, 34% favor flexible target debt ratio and 19% have no target.

In United States, Bharath et al. (2009) manifest a question that whether information asymmetry plays a key role in capital structure decisions or not. Using information asymmetry index based on adverse selection risks from market valuation rather than firm characteristics as old researches do. The results demonstrate that informational asymmetry affect the capital structure of US firms that is consistent with pecking order theory. This result pictures that US firms face higher adverse selection cost therefore, they accomplish financial deficit via incorporating debt in their capital structure. Kovacs (2010) investigates the link between information asymmetry and equity

issuing firms. He observes that the firms which prefer to issue equity than debt financing, these firms are low in information asymmetry as compared to other firms and time-variation of information asymmetry is an important element for them. As per pecking order theory the equity issue is costly when information asymmetry is high, therefore, expect that these firms can take benefit when asymmetry is low temporarily as compared to the remaining firms and can issue equity. The research based on developed economies to test the pecking order hypothesis like US, uncovers different results as compared to developing economies.

Bhaduri (2015) investigates the corporate sector of India to test the Pecking order hypothesis. He examines that Indian firms improve their financial deficit through preferential order of financing choices while equity issue is last preference in choice. Their behavior is more inclined to pecking order theory. The reason for their consistency with pecking order behavior is that developing economies do not have full disclosure of information as developed countries having proper regulatory framework which facilitate through effective information disclosure. That is why results are not surprising in a developing economy like India.

In an emerging market of turkey, Karadeniz et al. (2009) evaluate the lodging companies listed on Istanbul Stock Exchange (ISE) regarding determinants of capital structure. Their results indicate that Turkish companies partially favor the hierarchal trend of resources, but both pecking order and trade-off theories are not completely able to explain capital structure of Turkish lodging companies. Booth et al. (2001) investigate ten developing countries named India, Pakistan, Turkey, Thailand, Malaysia, Zimbabwe, Mexico, Brazil, Jordan, and Korea to test that whether capital structure theory holds true

across developing countries on the bottoms of different institutional environments. Their results are consistent with pecking order theory. The results explain that high profitable firms do not prefer to include more debt in their capital structure. Moreover, these firms in the presence of information asymmetry avoid taking risk by issuing debt or equity.

Berrell, Park, Song, and Zeng (2008) report the results of Chinese firms which are consistent with the other developing countries' results favoring pecking order behavior in their capital structure decisions. Doukas, Guo, and Zhou (2011) investigate the reasons behind debt issuance during hot-debt market periods and its effect on capital structure. Resultantly, they come up with the results that firms choose to take debt when conditions are more favorable in hot-debt market because at that time firms are subject towards the market frictions; market timings and information asymmetry causing an adverse selection cost of equity. Firms with more adverse selection cost move towards debt intake and they do not bother to limit their leverage level to adjust towards optimal capital structure.

Leary and Roberts (2010) further try to quantify pecking order behavior being followed by the firms' financing decisions. They find that pecking order can only explain half or less than half of the firm's financing decisions like almost 20%. It all depends upon the examiner that whether he tests this theory while keeping conditions liberal or strict (i.e. "modified" pecking order). Then researcher tests it through liberal way via incorporating different factors and found that its ability to classify observed financing decisions about debt and equity issuance has increased over 80%. This finding is the confirmation of another study examine by Fama & French in 2005. They address the problems relate to both theories i.e. pecking order and trade-off and come across a result that not a single theory is an appropriate explanation of firm financing behaviors

but the combination of both theories can better explain the firms' financing decisions to build a good capital structure.

Helwege and Liang (1996) examine the USA firms which went IPO in 1983. These firms do not take debt when financial deficit occurs due to insufficient internal funds nor there is a link between the size of deficit and ability to take debt and issuing equity. Even though firms have surplus of funds yet they avoid going to the capital markets. Therefore, their evidence supports the trade-off behavior and rejects the pecking order theory because sometimes firms use external financial sources to attain a target capital structure. Chakraborty (2010) reports that Indian firms which are mostly family owned businesses, listed on Bombay stock exchange and National stock exchange, follow a combination of both pecking order and trade-off theory. Business groups take more debt due to less financial distress cost.

2.1 Information Asymmetry Measurements

Proxies for Information Asymmetry

In the extant literature different proxies have been used by different researchers. Four proxies to measure information asymmetry are firm size, volatility of stock returns, institutional ownership and proportion of independent directors (Hutton, Peterson, & Smith, 2014). These are also a measure for firm risk as well. Under pecking order theory, tangible assets are considered the measure of high and low information asymmetry. Firms with a few tangible assets, large firm size, and high market to book equity are also the measure of information asymmetry and firms take debt keeping in view these firm's

characteristics (Harris & Raviv, 1991; Frank & Goyal, 2003; and Lemmon & Zender, 2010).

Analyst coverage ratio is also one of the most dynamic proxies to measure information asymmetry. There is a negative relation between information asymmetry and number of analysts. Analysts reduce information asymmetry, because they provide a cover to more transparent firms, consequently adverse selection cost decreases. Firms with less analyst coverage are more inclined to be imperfectly valued. This is a kind of noisy and conflicting proxy to measure information asymmetry (Chang et al., 2006).

On contrary to these proxies, Pan et al. (2015) introduce a more definitive and direct measure for information asymmetry in Taiwan market. In his study an information rating scale is used to rate the disclosure of information. This rating scale consists of 114 indicators having five different groups. The securities and Futures Institute (SFI) in Taiwan accumulates disclosed information of each firm and assigns an information rating ranging from 1 to 7. The five categories are "regulatory compliance, information timelines, forward-looking information, information reported in annual reports and information reported in company website" through which transparency will be examined of each firm.

The study uses another directive scale developed by Karachi Stock Exchange authorities to rank companies on the basis of information quality they provide to investors. The scale includes five indicators with its specific rating weights. Weightages are assigned to each firm against these indicators. A mean value is calculated for each year separately for all the firms. A dummy of 1 and 0 is allocated to the firms on the basis

good and bad. If a firm has rating above its mean value for that year it is assigned a dummy of 1 which shows that firm is good (transparent) and vice versa.

2.2 Relationship between Leverage, Information Rating and Firm's Specific Characteristics in Finance Literature

Firm's leverage is taken as a function of its information asymmetry in addition with its firm's characteristics (Frank & Goyal, 2009; Bharat et al., 2009; and Pan et al., 2015). According to Shyam-Sunder and Myers (1999), a broadest measure for leverage is the ratio of total debt to market of equity. Financial slack, Tobin's q, firm's size, tangibility and firm's profitability are taken as the measure for firms' characteristics (Pan et al., 2015). Frank and Goyal (2009) used six factors which can cause variation in the leverage level and Pan et al. (2015) used four factors from Fank and Goyal (2009) core model of leverage and added two different factor, slack (ratio of cash to total assets) and information rating.

2.2.1 Leverage

Shyam Sunder and Myers (1999), and Frank and Goyal (2009) measured the leverage through using the ratio of total debt to market of equitys.

2.2.2 Slack

According to the pecking order theory (Myers & Majluf, 1984) if a firm has its own retained earning then firm should prefer to use that cash instead debt or equity financing. If slack of a firm is high, then firm will use less leverage.

2.2.3 Information Asymmetry

Under pecking order theory (Myers & Majluf, 1984) information asymmetry is the driver for financial decisions of capital structure of the firms. If rating of the firm is above mean value that means information symmetry exists and vice versa. And information rating and leverage are considered inversely related to each other.

2.2.4 Tangibility

Tangible assets are like plant, property and equipment etc. it is easy for the outsiders to value the firm through its tangibility. Pecking order theory says that when information asymmetry is low regarding tangible assets then cost of equity lessen. Therefore, less leverage is incorporated in the firms with high tangibility (Myers & Majluf, 1984).

2.2.5 Growth Opportunity

If the firms have more growth opportunities then according to the assumption of pecking order theory the firms should use less debt while keeping the profit fixed to avoid distress costs. Therefore, growth opportunity and leverage are negatively related to each other (Myers & Majluf, 1984).

2.2.6 Firm Size

Large firms are considered the ones who are large in terms of asset/sales or in terms of age. The large firms are assumed to have less default risk and this is the reason

they use more debt (Frank & Goyal, 2009). Pecking order theory and trade off theory both presume a positive link between these two variables (Myers & Majluf, 1984).

2.2.7 Profitability

Pecking order theory says that firms use internal source first than external source of finance. If investments and dividends remain constant then profitable firms use less leverage (Myers & Majluf, 1984).

2.3 Hypotheses

1. In presence of information asymmetry in the capital market, firms will follow pecking order in their capital structure decisions.
2. High information rating results in less inclusion of debt in the capital structure of the firms.
3. Firm-specific characteristics and information rating significantly affect firm leverage.

CHAPTER 3

METHODOLOGY

3.1 Research Design

3.1.1 Sample and Population

The population of the study is all listed manufacturing firms at Karachi Stock Exchange. Moreover, total 66 firms from 14 manufacturing sectors have been taken as sample on the basis of their profitability from 2010 to 2014. The profitability is the criteria for sample size in the study because firms having good profits are better illustrator of financial behaviors in the presence of information asymmetry in the capital market.

3.2 Data Source and Collection

The study utilizes secondary data obtained from the annual reports of sample firms, the website of Karachi Stock Exchange and, financial statement analysis published by State Bank of Pakistan.

3.3 Econometric Models

The study strives to capture those elements which are affecting the decisions about capital structure of the manufacturing firms in Pakistan market.

3.3.1 Model 1

To test the pecking order model the study is similar to the research of Shyam-Sunder and Myers (1999), Bharath et al. (2009), Lemon and Zender (2010) and Pan et al. (2015) by regressing the net debt issuance on the financing deficit as follows;

$$\Delta D_{it} = \alpha + \beta DEF_{it} + \varepsilon_{it} \ \ldots\ldots\ldots\ldots (1)$$

Net Debt Issuance

Net debt issuance ΔD_{it} is a dependent variable and it is measured by taking long-term debt issuance minus the long-term debt reduction at time t for firm$_i$.

Financial Deficit

Financial deficit DEF_{it} is an independent variable in the regression equation which changes with the change in net debt issuance. This deficit is defined by accounting cash flow identity by Shyam-Sunder and Myers (1999), Bharath et al. (2009) and Pan et al. (2015) as follows;

$$DEF_{it} = DIV_{it} + CEX_{it} + \Delta WC_{it} - CF_{it} \ \ldots\ldots\ldots\ldots (2)$$

DIV_{it}: Dividends for each company at the period of t

CEX_{it}: Capital expenditure for each company at the period of t

ΔWC_{it}: Net change in working capital for each company at the period of t

CF_{it}: Operating cash flow after interest and tax for each company at the period of t

3.3.2 Model 2

According to pecking order theory (Myers & Majluf, 1984) the information asymmetry is a driver for financial decision in the capital structure of the firms. The

pecking order theory has a supposition that the slop of β coefficient should be very close to 1 according to strict version (Shyam-Sunder & Myers, 1999). According to modified version of pecking order theory if information asymmetry is a driver for decision making then the firms having high information rating should have lower β coefficient value (Myers, 1984 and Myers & Majluf, 1984). An interaction term of financing deficit and information rating estimates the relationship between the extent of debt issuance and information ratings in the study;

$$\Delta D_{it} = \alpha + \beta DEF_{it} + \gamma DEF_{it} * IR_{it} + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots (3)$$

IR_{it}Information rating for $firm_i$ at time t

Information Rating

To score information asymmetry, industry specific panel data is collected through the transparency scale established by Karachi Stock Exchange authorities to rate the top twenty five firms. These indicators illustrate information disclosed by each firm. Using this scale each company is rated through the assigned weights against five indicators. After rating these indicators from 2010 till 2014, a mean value is calculated for each year. Then a dummy of 0 and 1 is generated. When rating of a firm is above the mean value, the dummy of 1 is assigned to that firm which means information asymmetry is low and firm is using less leverage. The adverse selection cost of equity financing is less; therefore, firms use more equity than debt. If the rating is below the mean value it is assigned dummy of 0, which means firm is bad at disclosure and transparency consequently firm is using high debt. The information rating is used in the equation to build an interacting term with financial deficit to assess the extent of debt issuance.

Five indicators of information rating scale and their weights are listed in the Appendix A

3.3.3 Model 3

Relationship between Leverage, Information Rating and Firm's Specific Characteristics

The study also assess the effects of information asymmetry similar to Frank & Goyal (2003); Bharat et al. (2009) and Pan et al. (2015) by examining that how information variation brings change in leverage in addition with others conventional leverage factors.

$$Leverage_{it} = \alpha + \beta IR_{it} + \beta Slack_{it} + \beta Tang_{it} + \beta QRatio_{it} + \beta Size_{it} + \beta Pf_{it} \quad \ldots (4)$$

According to Shyam-Sunder and Myers (1999), a broadest measure of leverage is the ratio of total debt to market of equity. Financial slack, Tobin's q, firm's size, and firm's profitability are the measure for firms' characteristics.

3.4 Proxy Variables and Definitions

Proxy Variables	Definitions
Δ in Debt	Taking long-term debt issuance minus the long-term debt reduction (Shyam-Sunder and Myers, 1999)
Deficit	Dividend plus capital expenditure plus Δ in working capital minus cash flow (Shyam-Sunder and Myers, 1999)
Deficit*Information rating	Deficit is multiplied with information rating (Bharath et al. 2009)
Leverage	Ratio of total debt to market of equity (Frank and Goyal, 2003)
Information rating	Rated available information from financial statements of the sample firms based on five criteria
Slack	Ratio of cash to total assets (Pan et el., 2015)
Tangibility	Ratio of fixed to total assets (Frank and Goyal, 2003)
Growth opportunity	Ratio of market to book equity (Frank and Goyal, 2003)
Firm size	Natural log of sales (Frank and Goyal, 2003)
Profitability	Ratio of total EBITDA to total assets (Frank and Goyal, 2003)

CHAPTER 4

EMPIRICAL RESULTS

4.1 Descriptive Statistics

The Table 1 comprehends descriptive states for all the three models of the ongoing scrutiny. These descriptive states are demonstrating the minimum and maximum values, mean and median values and the standard deviation from mean of the sample data.

Table 1: Descriptive statistics for all variables

The table reports the statistics of variables of all three models. Δ in debt is change in debt and deficit is financial deficit. Ir*def is an interaction term of information rating and deficit. Leverage is the ratio of total debt to market of equity. IR is information rating. Slk is slack, the ratio of cash to total assets. Tan is tangibility, the ratio of fixed to total assets. Q-ratio is Tobin's q ratio to measure growth opportunity, the ratio of market to book equity. Size is the natural log of firm sales. Prof is the profitability, the ratio of total EBITDA to total assets. Their minimums, medians, maximums, means, standard deviations and observations are given.

	MIN	MDN	MAX	MEAN	STD	OBS
Δ in Debt	11.12	18.91	24.20	18.78	2.23	324
Deficit	15.43	22.24	22.23	25.58	1.57	330
IR* Deficit	0.00	0.00	25.58	8.71	11.13	330
Lev	0.03	1.08	56.35	2.43	4.54	330
IR	0.00	0.00	1.00	0.38	0.48	330
Slk	0.00	0.03	0.61	0.08	0.11	330
Tan	0.06	0.53	0.96	0.51	0.19	330
Tobin's Q-Ratio	0.05	0.89	127	2.42	8.91	330
Size	19.48	22.87	25.89	22.94	1.30	330
Prof	0.07	0.16	0.65	0.18	0.09	330

From the first and second model, change in debt has a mean value 18.78 and the data has a standard deviation from the mean is 2.23. Deficit from the first model has mean value 25.58 and the deviation from the mean is 1.57. The interaction term has mean

value 8.71 and the deviation is high 11.13 from the mean. Leverage (dependent variable) has 2.43 mean values, whilst the dispersion of data from its mean value is 4.54. The dispersion is high in case of leverage because different firms have disparate level of leverage that is why standard deviation is more scattered from mean. Mean value of information rating is 0.38 and deviation of data from mean value is precisely tolerable having value 0.48. The cash to total assets (slack) has mean value 0.08 and it's deviation of data from mean is 0.11. The explicatory data of tangibility has mean value 0.51, and deviation is a bit low having value 0.19. Then appears the q-ratio whose mean value is 2.42 but data divergence is quite high with a value of 8.91. High divergence is due to that different companies have disparate level of stock valuations. Alike, the firm size has highest mean value 22.94 and deviation is quite small (1.30) comparatively. The reason is that the firm size is being calculated from natural log of sales. The profitability has mean value, 0.18 and deviation is 0.09. Observations of the data are 330.

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4.2 Correlation

The Table 2 exhibits the Pearson's correlation coefficient values for the variables of interests. Correlation is a phenomenon which instructs the alliance between two variables. Its value ranges between +1 and -1. The magnitude of relationship can be anywhere between the above mentioned range. From third model, the study reviews correlation coefficient values of all independent variables. Amid independent variables the highest correlation value is 46%. It is moderate to some extent and there is no need to remove any one of the independent variable for the reason that profits are primarily affected by the available growth opportunities for a firm.

Table 2: Correlation matrix between explanatory variables

The table reports the Pearson's correlation coefficients between independent variables. The Pearson's correlation coefficients are below the diagonal. IR is information rating. Slack is the ratio of cash to total assets. Tangibility is the ratio of fixed to total assets. Q-ratio is tobin's q ratio to measure growth opportunity, the ratio of market to book equity. Size is the natural log of firm sales. Profitability is the ratio of total EBITDA to total assets.

	IR	Slk	Tan	QRatio	Size	Prof
IR	1					
Slk	0.25	1				
Tan	0.03	-0.38	1			
Tobin's q-Ratio	0.18	0.01	-0.04	1		
Size	0.32	0.14	-0.01	0.07	1	
Prof	0.21	0.25	-0.18	0.46	0.10	1

Next is slack and tangibility with low but negative correlation of 38%. The reason is that ratio of cash to total assets (slack) is high therefore; the ratio of fixed to total assets (tangibility) is low in that firm. Remaining variables have a very low and almost no correlation. Therefore, in the model, moderately highest correlation value is 46% and lowest is 1%. In the current study it is not vital to abolish their correlation because these are not perfectly or highly correlated. Secondly these are the variables that should have some sort of compatibility with each other being the firm's characteristics.

4.3 Panel Unit Root

The series containing unit root means data is not stationary. Non stationary data gives forged results. Unit root has two hypotheses. Null hypotheses imply that panel data have unit root whilst alternate imply that panel data have not unit root. When the p-value is not significant at any level of significance, null hypotheses is accepted. If the p-value is

significant at any level of significance then alternate hypotheses is accepted and then there is no need to remove unit root.

Variables of first and second model have no unit root therefore there is no need to apply unit root on those variables. Variables (leverage, Tobin's q-ratio, Profitability, Size) from the third model have unit root whose removal is required. The p-value is significant at 5%, therefore the tangibility and slack has no unit root and alternate hypothesis is applied in the case of these two variables.

Using Eviews software in Table 3, the p-value of leverage, profitability, tobin's q-ratio and size is greater than 0.05 therefore, the null hypotheses is accepted. Now unit root needs to remove from these variables.

Table 3: Unit root of 3rd model

	Leverage		Profitability		Tobin's q-ratio		Size		Tangibility		Slack	
Method	State.	Prob.	State.	Prob.	Statistics	Prob.	State.	Prob.	State.	Prob.	State.	Prob.
ADF - Fisher Chi-square	124.7	0.65	133.8	0.43	51.4	1.0	28.7	1.00	164.4	0.04	184.6	0.00
ADF - Choi Z-stat	0.9	0.82	-1.0	0.15	7.5	1.0	NA	-	-2.4	0.03	-1.1	0.14

Using Eviews software, the data is made stationary for good results. Now in the Table 4 given below; the p-value for all those variables, whose values were not stationary, is less than 0.05 which shows that an alternate hypothesis is accepted.

Table 4: Removal of unit root

	Leverage		Profitability		Tobin's q-ratio		Size	
Method	Statistics	Prob.	Statistics	Prob.	Statistics	Prob.	Statistics	Prob.
ADF - Fisher Chi-square	206.39	0.00	453.55	0.00	212.04	0.00	399.87	0.00
ADF - Choi Z-stat	-4.68	0.00	-14.06	0.00	-3.61	0.00	-11.34	0.00

Now the all non-stationary variables have become stationary after the removal of unit root. Stationary data improves the level of results. Therefore, the requirement to get good results is fulfilled after this step.

4.4 Panel Regression Analysis

Model 1

Myers & Majluf (1984) propose in the pecking order theory that firms go for debt financing first and then issue equity to overcome the inadequacy of finances. Issuing debt preferably is for the reason that information asymmetry between well-informed managers of the firm and less-informed venture capitalists. The current study opt the similar technique used by Shyam- Sunder and Myers (1999).

Table 5: Result of pecking order model (Fixed Effect Model)
The table reports the panel regression results of net debt issuance on financing deficit in the presence of information asymmetry in the capital market. DEF is the financial deficit; addition of dividend, capital expenditure, and change in working capital minus cash flow.

Variable	Coefficients	Std. Er	t-State	P-value
DEF	0.39	0.15	2.51	0.012
C	9.93	3.51	2.82	0.00
R-squared	Adj R-squared	F-state	Prob(F-stat)	
0.75	0.68	11.79	0.00	

Redundant Fixed Effects Tests

Test Summary	Statistic	d.f.	Prob
Cross section F	4.64	(65,257)	0.00
Cross section Chi-square	251	65	0.00

The study regress the net change in long term debt issuance on financial deficit. The result according to Hausman test (given below) exhibit that p-value < 0.01, which is

an indication that fixed affect model (Table 5) is appropriate than random effect test to analyze the results than the random effect model (Table 6).

Table 6: Result of pecking order model (Random Effect Model)

The table reports the panel regression results of net debt issuance on financing deficit in the presence of information asymmetry in the capital market. DEF is the financial deficit, addition of dividend, capital expenditure, and change in working capital minus cash flow.

Variable	Coefficients	Std. Er	t-State	P-value
DEF	0.82	0.08	9.97	0.00
C	0.37	1.84	0.20	0.83
R-squared	Adj R-squared	F-state	Prob(F-stat)	
0.22	0.22	95	0.00	

Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq. Statistic	d.f	Prob
Cross section random	10.08	1	0.00

The results from Table 5 show; one unit increase in financial deficit enhances the inclusion of debt by 39 points. Deficit and inclusion of debt are significantly positively relates to each other. The model is 75% supportive to express the behaviors of variables of interest. The p- value of F-statistics is highly significant and demonstrates that model is a good fit for the predictor variables to predict the dependent variable.

Model 2

In equation 2, the second model of the study is tested. The statistical results show that a change in long-term debt is being regressed against the deficit and an interactive term establishes which entails deficit and information rating. One of the assumptions of modified pecking order theory is that high information asymmetry triggers the financing decision of a firm. The firm with high information rating should have low β coefficient. To assess that if information rating drives the behavioral trends of the firms, an interaction term is part of the model. The results are given below in the tables.

Table 7: Summary of pecking order model test with high/low information rating (Fixed Effect Model)

The table reports the panel regression results of net debt issuance on financing deficit and information rating. DEF is the financial deficit, addition of dividend, capital expenditure, and change in working capital minus cash flow. IR is the information rating. DEFIR is the interaction term of deficit and information rating.

Variable	Coefficients	Std. Er	t-State	P-value
DEF	0.37	0.15	2.37	0.01
DEFIR	-0.03	0.01	-2.59	0.01
C	10.79	3.49	3.08	0.00
R-squared	Adj R-squared	F-state	Prob(F-stat)	
0.75	0.69	11	0.00	

Redundant Fixed Effects Tests

Test Summary	Statistic	d.f.	Prob
Cross-section F	4.81	(65,256)	0.00
Cross-section Chi-square	258	65	0.00

According to Hausman test p-value < 0.05 (given below), thus null hypothesis is rejected and fixed effect model (Table 7) is appropriate to evaluate the relationship of variables of interest than the random effect model (Table 8).

Table 8: Summary of pecking order model test with high/low information rating (Random Effect Model)

The table reports the panel regression results of net debt issuance on financing deficit and information rating. DEF is the financial deficit, addition of dividend, capital expenditure, and change in working capital minus cash flow. IR is the information rating. DEFIR is the interaction term of deficit and information rating.

Variable	Coefficients	Std. Er	t-State	P-value
DEF	0.84	0.08	9.98	0.00
DEFIR	-0.01	0.01	-1.46	0.14
C	0.03	1.87	0.01	0.98
R-squared	Adj R-squared	F-state	Prob(F-stat)	
0.22	0.22	47	0.00	

Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq. Statistic	d.f	Prob
Cross-section random	14.82	2	0.00

Table 7 shows that debt has a positive relationship with deficit. With the increase of deficiency for financing activities, issuance of debt increases by 37 percent. . The value of beta is not close to 1 therefore, it points towards the modified version of the theory. The study offers that if there is high information rating then debt issuance decreases. Therefore, in presence of symmetrical information the relationship becomes negative between debt and deficit up to 3%. The negative relationship is the indication that when information rating is high the firms do not prefer to issue more debt. The chance of uncertainty becomes less in the presence of high information rating. Misconceptions about the firms, that they do not have capacity to pay back debt and their equity is undervalued, are reduced and then firms comfortably issue equity to get finance.

Model 3

For estimation of equation 3 (to analyze the effect of information rating and some firm characteristics on leverage); the sequel is the regression test, deducted through Eviews, are represented in Table 9 and Table 10.

Table 9: Summary of pecking order model test with information rating and firm characteristics (Fixed Effect Model)

The table reports the panel regression results of firm leverage on information rating and firm characteristics. IR is information rating. SLK is the slack; the ratio of cash to total assets. Tan is the tangibility; ratio of fixed to total assets. Q-ratio is tobin's q ratio to measure growth opportunity, the ratio of market to book equity. Size is the natural log of firm sales. PROF is the profitability; ratio of total EBITDA to total assets.

Variable	Coefficients	Std. Er	t-State	P-value
IR	0.10	0.121	0.88	0.377
SLK	-1.47	0.567	-2.60	0.009
TAN	-1.60	0.450	-3.56	0.000
QRATIO	-0.97	0.064	-14.98	0.000
SIZE	10.54	2.64	3.98	0.000
PROF	-0.38	0.08	-4.39	0.000
R-squared	Adj R-squared	F-state	Prob(F-stat)	
0.699	0.586	6.195	0.000	

Redundant Fixed Effects Tests

Test Summary	Statistic	d.f.	Prob
Cross-section F	0.927	(65,189)	0.630
Cross-section Chi-square	72.26	65	0.25

According to the Hauseman-test (given below), the p-value > 5% therefore; the most appropriate model to explain the regression results for the current study is random effect model (Table 10) than the fixed effect model (Table 9) .

Table 10: Summary of pecking order model test with information rating and firm characteristics (Random Effect Model)

The table reports the panel regression results of firm leverage on information rating and firm characteristics. IR is information rating. SLK is the slack; the ratio of cash to total assets. Tan is the tangibility; ratio of fixed to total assets. Q-ratio is tobin's q ratio to measure growth opportunity, the ratio of market to book equity. Size is the natural log of firm sales. PROF is the profitability; ratio of total EBITDA to total assets.

Variable	Coefficients	Std. Er	t-State	P-value
IR	0.11	0.05	2.20	0.03
SLK	-0.58	0.23	-2.53	0.01
TAN	-0.52	0.14	-3.71	0.00
QRATIO	-0.99	0.05	-16.65	0.00
SIZE	10.08	2.21	4.54	0.00
PROF	-0.39	0.07	-5.35	0.00
C	0.14	0.08	1.63	0.10
R-squared	*Adj R*-squared	F-state	Prob(F-stat)	
0.60	0.59	64	0.00	

Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq. Statistic	d.f	Prob
Cross-section random	9.132	6	0.166

In the regression results, the value of the coefficients of determination is 0.60. That means model explains 60% (R-square) behavior of variables of interests. The p-value of F-statistics is highly significant and demonstrates that model is a good fit for the predictor to predict the dependent variable. Overall the model is significant. The explanatory variables included firm's characteristics and information rating and they are significantly affecting the leverage of the firms. Though some are positively or others are negatively affecting the independent variable. Therefore, the hypothesis is valid that firm specific characteristics and information rating significantly affect the leverage.

In the third equation, information rating has a direct and significant relation with the leverage. Information rating high or low causes an increase or decrease of leverage

subsequently. The change of one standard deviation in information rating causes a variation of 11 percent standard deviation in the leverage in positive direction at 5 % level of significant. Slack is another firm characteristic which is important factor to decide the limit of leverage in the firm. The results are expressive enough to explain the relation. In Table 10, it is shown that one unit increase in slack causes leverage to decrease by 0.58 points. Slack and leverage has a negative relationship significant at 5% level of significance. Tangibility and leverage have a negative and valid relationship at 1% which is different from the causal positive relation between them. The change of one standard deviation in tangibility causes a variation of 52 points standard deviation in leverage. Q-ratio also has a negative relationship at 1% level of significance with the leverage. One unit increase in firm's performance causes a decrease in firm's leverage up to 99 points. Whilst size and leverage have a positive relationship inferred from pecking order behavior. As reported in the result that size positively affecting the leverage having $\beta = 10.08$ with high significance value at 1% level of significance. Therefore, it is easy to access more leverage from the investors at low costs for them. Profitability and leverage has also negative significant relationship. The β-value is -0.39 at 1% level of significance.

4.5 Discussion

In first two models the study aims to test the financial behavior of the manufacturing firms in Pakistan when financial deficit occur. According to strict pecking order theory the coefficient β should be closer to 1 (Shyam-Sunder and Myers, 1999). The modified version of Pecking Order Theory address that firms trade-off between the adverse selection cost in case of issuing equity and cost of financial distress in case of

issuing debt. In modified pecking order the coefficient β should be less than 1 but positive (Myers, 1984 and Myers & Majluf, 1984). Later, Myers (2001) emphasize that pecking order theory is a very important phenomenon for firms' capital structure which relates information deviation to financing choices. In eq (1), change in debt is being regressed against financial deficit and got evidence in favor of modified version of pecking order behavior. The result shows that coefficient β is less than 1 and positive which means that the firms are not strictly following the hierarchical behaviors. Nonetheless they are trading-off between the costs of debt and equity which suits them more to save firms from disadvantage. The reason behind these results is that these firms have already issued enough debt therefore in the presence of high information rating; they issue equity to preserve liquid assets as well as debt capacity for future interests.

The second model (eq 2) analyzes that whether information asymmetry is an important driver to set the trend of financial behaviors of firms via introducing an interaction term of deficit and information rating. In the presence of that interaction term β is less than 1 and positive, and γ is also less than 1 but significantly negative. It is manifested from the results that decisions are taken to ambush from the financial distress of debt. Hence, the results are showing that manufacturing firms due to less adverse selection cost in the presence of less information asymmetry make decisions consistent with modified pecking order theory; the higher the information rating (symmetric information), the less debt is issued to avoid distress cost and satisfy financing needs through equity. Therefore, information asymmetry is an important driver for financial choices in the capital structures of the firm. Misconceptions decrease about the firms;

they do not have capacity to pay back debt or their equity is undervalued therefore firms comfortably issue equity to get finance.

In the testation of augmented pecking order model, all the variables except one (IR), give evidence in favor of pecking order theory. Slack, tangibility, q-ratio, profitability are affecting leverage negatively and significantly while size is significant and positively relates to leverage. The reasons are quite convincing behind these relationships concurring with pecking order behaviors. Information rating high means that there is symmetry of information in the market. Ordinarily the consequence of high information symmetry is that managers incorporate less leverage in their capital structure and go for more equity issue. On the grounds of the symmetry in market there would not left any suspicion about the equity overvalued or undervalued.

In case of Pakistan, the trend is different regarding the inclusion of leverage in capital structure. From the results it is laid out that one unit increase in information rating brings 11% increase in the leverage. That means symmetrical information positively affects the use of leverage in the firms. The lack and low quality of information does not let the firms to use external funds. Low information rating means (high information asymmetry) there is low quality of information or lack of information to the investors. The reason behind positive significant relation of information rating and leverage is that high information rating (information symmetry) let the firms to be confident counting more on liabilities because these firms are able to downsize their external financing cost by providing transparent information to the outsiders. Hence, in return these investors require a less return on debt due to the certainty of return through the multiple overlapping projects. These firms are more inclined to use leverage because it is less

sensitive to the private information in the market than the equity does. The equity is risky source of financing due to its sensitivity towards the market information. Moreover, the discount rates were also low from State Bank of Pakistan which enhanced the incorporation of leverage in the capital structure of the firms. Therefore, these manufacturing firms in Pakistan apt the cheap and secure resource to finance their projects according to the instable economic conditions of the country.

The negative relation of slack and leverage shows that these firms with enough cash preferably use it instead using external funds. These firms are more prompt to use their own retained earnings to avoid financial distress cost and adverse selection cost. This relation is in conformity with other studies as well (Afza & Hussain, 2011; Tong & Green, 2005). Developed countries have positive relationship between ratios of large collateral (Tangibility) availability in the firms as an opportunity to take more debt. Pakistan is a developing country therefore manufacturing firms has negative relationship between these two variables. This relationship shows that the large amount of fixed assets are inclined to obtain finance through issuing equity on the basis of low information asymmetry so equity is not misinterpreted as undervalued. In the developing economics like Pakistan tangible assets are unsatisfactory source of collateral. Firm here are not interested to put the stake on their assets in case of bankruptcy, high cost of capital or conflicting interest rates (Afza and Hussain, 2011). The studies of Gill, biger, Pai & Bhutani (2009); Amjad & Tufail (2013) and Daskalakis & Psillanki (2008) confirm the findings of the current study.

Q-ratio and leverage have negative significant relation. The firms which have high growth opportunity suffer high financial distress costs so they avoid taking leverage.

A high growth firm has opportunity to invest in multiple projects therefore it is more prone to risk rather than a static firm. Creditors require high risk premium in compensation while financing the risky firms. To avoid extra cost of debt, firms issue equity preferably. Secondly when the market to book value of equity is high then firms are more inclined to issue stocks to get finance. Thirdly, when firms are involved in multiple new projects then managers avoid adding financial risk within high operational risk. The finding of this study affirms the study of Shah & Khan (2007); Tong & Green (2005) and Afza & Hussain (2011).

Firm size is an important element in gaining the trust of the financers. A trust element exists between large firms and capitalists. Capitalists are more comfortable to provide capital to large sized firms on the grounds of stability and low bankruptcy costs. Therefore, large firms have easy excess to the debt. So a much strengthened relation is laid out in the results between the independent and dependent variable. Large firms are good in dealing with investors to get finance so they bear low issuing costs for debt and equity. Moreover, there is a link between symmetry of information and firms' size because large firms are more transparent (Guney & Fairchild, 2011; Fama & French, 2002).

In accord with Pecking order theory, surplus profit directs these firms to issue less debt for the capital structure of the firms. When information asymmetry is less these firms issue equity rather than using debt and stay busy in paying off the already borrowed money plus its costs (Afza & Hussain, 2011; Gill et al., 2009 and Shah & Khan, 2007). Therefore, the manufacturing firms in Pakistan are following pecking order tactics. Other studies have similar evidence of negative relationship between issuance of debt and

financial deficit (Fama & French, 2005; Bharath et al., 2009 and Frank & Goyal, 2003). The results of this study are giving interpretation in favor of modified version of pecking order theory in the manufacturing firms Pakistan. Therefore, pecking order behavior is dominating but a slight deviation is found between the relation of information rating and leverage due to instable and sensitive circumstances of capital markets in Pakistan.

CHAPTER 5

CONCLUSION

The study supports the modified pecking order behavior in manufacturing firms of Pakistan. All the evidences concluded from econometric models are clearly demonstrating that Pakistani firms prefer to use debt over equity if there is financial deficit. The testation of 2nd model proves that information rating is an important factor in the capital structure decisions. High information rating leads to less adverse selection cost and firms go for less debt and prefer equity which is consistent with the assumption of pecking order theory. An exception does exist in the results of augmented pecking order model in this study. That exception negates the pure implementation of pecking order theory while testing the leverage as a function of information asymmetry along with firm characteristics. The result is the positive relationship between information rating and leverage which is not consistent with the other studies. The results of other variables are consistent with the studies conduct in developing countries. At times independent variables anticipate signs and these signs occasionally differ across the countries. This positive relationship gives a picture about manufacturing firms that when there is high information rating, firms do not prefer to get finance through equity rather than leverage. Therefore, discount rates during the time period of the study were also low by State Bank of Pakistan. Leverage is considered more cheap and secure source in manufacturing firms of Pakistan when markets are more transparent. Another reason behind this unusual behavior is the instable market of Pakistan where equity is considered more sensitive

towards private information rather than debt. Managers incorporate more leverage on basis of being trusted by the investors while providing information, consequently investors ask for less interest due to less risky nature of the firm. The difference in result is may be due to the use of economic models which have been suitable for the data in developed and less developing countries in different institutional and financial settings. Hence, these results are not surprising with the discreet regulatory structures and financial environment. The study has a good empirical validity in Pakistan.

5.1 Implications of the Study

1. Shareholders can anticipate the financing choices of a firm and its consequences while taking under consideration the existing financial settings and institutional environment in the market.
2. Managers can consider primarily that how the incorporation of leverage will impact the value of firm and how investors will take a signal from this step.
3. Managers can also keep an eye on the effectiveness of governance in the market.
4. Shareholders can invest in the manufacturing firm having more leverage in their capital structure to insure high gains but should also compare the implementation of governance rules therefore a better choice is made between offered investment opportunities.
5. Policy makers can also keep an eye on the level of leverage incorporating in the firms and whether firms are providing genuine information or not. Therefore, they can reshape policies to regulate the leverage level of the firms and force them to follow the regulations set by CGC of Pakistan.

5.2 Direction for the Future Research

The study evolves a direction to figure out the behaviors regarding financing activities and the significant factors which have an impact on capital structure decisions in different sectors of Pakistan. The study provides an opportunity for further research incorporating capital regulations and to include other factors like earning management in their research. Cross country comparison in relation to different institutional environment of the countries is paved a way towards further research in the same field. This will definitely enhance the sample data but it may enlarge control problem which is itself gives a new direction to work further. Data years can be upgraded in the upcoming studies of similar kind, with the same scale to measure information asymmetry or the better one, in comparison with the other sectors of Pakistan. The study also gives a direction to insight the relationship of corporate governance measures and capital structure. The study is so rich in itself that more effort in this area will provide drift to work on it.

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Appendix A. Information Disclosure and Transparency Measures and Their Corresponding Weights

This appendix shows the corresponding information rating weights for each measure.

1	Frequency of report publishing in a year, quarterly (12%), semiannually (8%) and annually (4%)	0.24
2	Disclosure of Corporate Social spending	0.19
3	Sustainability Reporting Annually 15%	0.15
4	Holding of AGM within 3 months of year-end.	0.20
5	Announcement of half-yearly result within one month.	0.22
Total		1