DETERMINANTS AND MANAGERIAL TRUSTWORTHINESS IN THE CAPITAL STRUCTURE AND DEBT MATURITY: EVIDENCE FROM SHARIAH COMPLIANT AND CONVENTIONAL FIRMS IN PAKISTAN

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ABSTRACT

The emergence of Shariah compliant firms is gaining attention in the financial markets. Inspired by the role of trustworthiness as a catalyst to minimize the rift between the interest of management and ownership, the study examines the impact of managerial behaviour on Shariah compliant and conventional firm's corporate financing decisions under the aegis of modern agency cost theory. The study argues that since the shariah compliant and conventional firms are expected to follow the entirely different philosophy of doing business, this might be reflected in their financial decisions. Thus, the study seeks to establish a relationship between corporate decisions and Shariah principles covering the areas of the capital and debt maturity structure in relation to the ownership structure. In brief, the study has four main objectives including (a) investigating the determinants of capital structure in the Shariah and conventional firms, (b) probing the managerial trustworthiness or self-interest in the capital structure decisions of the Shariah-compliant and conventional firms, (c) examining the determinants of debt maturity structure in the Shariah-compliant and conventional firms, and (d) examining the managerial influence in the decision of debt maturity choice in the Shariah-compliant and conventional firms. The sample firms consist of 68 Shariah compliant firms and 75 conventional firms from the listed companies on Pakistan Stock Exchange (PSX) of Pakistan for the period of five years from 2009 to 2013. Data analysis is carried out using different statistical and econometric methods including the univariate and multivariate techniques. The study applies t-test, pooled regression, Fixed and Random effects, Tobit regression, and robust regression M- estimation. The study extends the analysis at the sector-level. Results show some significant variations among the impact of various determinants of leverage and debt maturity among the Shariah and conventional firms. Our most striking finding is that the debt maturity among Shariah firms is significantly shorter than conventional firms. With regards to trustworthiness, results show that, unlike

conventional firms, leverage ratios in Shariah firms are insensitive to the varying degree of managerial ownership, indicating the absence of managerial opportunism in financial decisions of these firms. For the conventional firms, however, the results confirm findings of previous research which reveal that managers manipulate leverage ratios in their own interest at the cost of shareholders and firm value, indicating the severity of agency conflicts among these firms. Invoking agency theory, the study suggests that certain firm characteristics (such as lower free cash-flows and lesser liquidity), achieved through Shariah compliance, help Shariah firms mitigate agency conflicts. These features persuade managers to behave less opportunistically than their counterparts in conventional firms as shown from their financing choices. Amid the dearth of studies investigating the relationship between Shariah compliance and firm's choice of financial decisions, our study would be a source of unfolding the debate and understanding the nature of capital and debt maturity structure of Shariah firms. The research findings are also expected to benefit large and growing clientele of the Shariah firms by providing better insights on the capital and debt maturity structure of these firms.

ABSTRAK

Perkembangan syarikat patuh Syariah telah mula mendapat perhatian pasaran kewangan. Berinspirasikan daripada peranan kebolehpercayaan sebagai katalis yang meminimumkan pergeseran antara pengurusan dan pemegang saham, kajian ini memeriksa kesan kelakuan pengurusan atas keputusan pembiayaan korporat dalam syarikat patuh syariah dan syarikat konvensional dengan berpandukan teori kos agensi yang moden. Kajian ini berhujah bahawa oleh kerana syarikat patuh syariah dan syarikat konvensional dijangka mengikuti falsafah menjalankan perniagaan yang berbeza, hal ini mungkin terpapar atas keputusan kewangan korporat. Oleh itu, kajian ini cuba mewujudkan hubungan antara keputusan korporat dan prinsip syariah dengan berasaskan struktur modal dan kematangan hutang dan mengaitkannya dengan struktur pemilikan. Secara ringkas, terdapat empat objektif utama kajian ini iaitu (1) mengkaji penentu struktur modal dalam syarikat patuh Syariah dan syarikat konvensional; (2) menyiasat kebolehpercayaan pengurusan atau kepentingan sendiri dalam keputusan struktur modal dalam syarikat patuh syariah dan syarikat konvensional; (3) mencari penentu struktur kematangan hutang dalam syarikat patuh Syariah dan syarikat konvensional; (4) memeriksa pengaruh pengurus dalam membuat keputusan kematangan hutang bagi syarikat patuh Syariah dan syarikat konvensional. Sampel kajian terdiri dari 68 syarikat patuh Syariah dan 75 syarikat konvensional yang tersenarai dalam pasaran saham Pakistan (PSX) bagi tempoh lima tahun iaitu dari 2009 sehingga 2013. Analisis data meliputi perbezaan statistik dan ekonometrik termasuk teknik univariat dan multi-variat. Kajian ini menggunapakai ujan t, regresi OLS bergabung, kesan tetap dan rawak, regresi Tobit dan ujian robust anggaran M. Kajian terhadap pelbagai industri turut dijalankan. Dapatan kajian mendapati terdapat beberapa variasi signifikan dalam kesan penentu hutang dan kematangan hutang dalam syarikat patuh syariah dan syarikat konvensional. Dapatan yang paling menarik adalah tempoh matang hutang syarikat patuh syariah yang

lebih pendek yang signifikan daripada syarikat konvensional. Dari sudut kebolehpercayaan, nisbah hutang dalam syarikat patuh syariah didapati tidak sensitif pada tahap pemilikan pengurusan berbanding syarikat konvensional yang menandakan tidak wujud kepentingan pengurusan dalam keputusan syarikat ini. Bagi syarikat konvensional, dapatan kajian mengesahkan bahawa pengurus mempengaruhi nisbah hutang dengan melebihkan kepentingan sendiri mengatasi kepentingan pemegang saham dan nilai syarikat yang menandakan konflik agensi yang teruk. Dengan menggunakan teori agensi, kajian ini mencadangkan bahawa beberapa sifat syarikat seperti aliran tunai dan kecairan yang rendah yang dicapai dengan mematuhi syarat syariah membantu mengurangkan konflik agensi dalam syarikat patuh syariah. Tidak seperti syarikat konvensional, ciri ini mempengaruhi pengurusan dalam mengurangkan peluang mengambil kesempatan melalui keputusan pembiayaan. Oleh kerana tidak banyak kajian mengenai hubungan antara syarikat patuh syariah dan keputusan pembiayaan, kajian ini boleh menjadi sumber yang menunjukkan perbezaan antara syarikat patuh syariah dan syarikat konvensional dari segi struktur modal dan kematangan hutang syarikat. Kajian ini juga dijangkakan memberi faedah yang besar kepada pelanggan syarikat patuh syariah dengan memberi wawasan dari segi struktur modal dan kematangan hutang.

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LIST OF SYMBOLS AND ABBREVIATIONS

CON	:	Conventional firms
CSR	:	Corporate Social Responsibility
MO	:	Managerial Ownership
NDTS	:	Non-debt Tax Shield
NPV	:	Net Present Value
NSH	:	Non- Shariah firms
SBP	:	State Bank of Pakistan
SECP	:	Security Exchange Commission of Pakistan
SH	:	Shariah-compliant firms
WACC	:	Weighted Average Cost Of Capital

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CHAPTER 1: INTRODUCTION

This study aims to investigate the capital structure from the perspective of Shariah-compliant firms in Pakistan. Most of the previous studies in Islamic Finance have focused on the banking sector, while there is a considerable dearth of studies on the non-financial sector from Shariah perspective. Realizing the need and importance of exploring the capital structure decisions of Shariah firms, this study attempts to investigate some important aspects of capital structure of Shariah firms and compares them with those of conventional firms. First, the study seeks to explore the firm-specific determinants of capital structure of Shariah and conventional firms. Second, the study attempts to investigate the factors influencing the debt maturity structure of Shariah compliant firms and make a comparative analysis with conventional firms. Third, this study highlights the role of managerial opportunism in the capital structure decisions of Shariah and conventional firms. Accordingly, the study examines the managerial opportunistic behaviour in determining the leverage level and debt maturity structure within the capital structure of Shariah and conventional firms. The issue of managerial opportunism is of special interest in Islamic Finance given the role of a manager as trustworthy agent.

This chapter gives an introduction to the study. The chapter is structured as follows. Section 1.1 presents the background of the study. Section 1.2 discusses equity and debt financing focusing on their relative advantages and disadvantages to the firm. Section 1.3 describes the capital structure, debt maturity structure, and role of managerial behaviour. Section 1.4 highlights the importance of trustworthiness. Section 1.5 describes the problem statement. Section 1.6 discusses the motivation for the study while sections 1.7 and 1.8 present research questions and research objectives respectively. The significance of the study is described in Section 1.9. Finally, Section 1.10 presents the thesis structure.

1.1 Background of study

Currently the second-largest religion after Christianity, Islam is the fastest growing religion in the world. With more than 1.8 billion Muslims, in 2015, making one-fourth of the global population, Islamic world constitutes a big chunk of the global economy[1]. The appetite for Shariah investments is expected to improve in the future as total Islamic finance assets are expected to reach US$3.5 trillion by 2021[2]. The investors and policymakers are taking a deep interest in Islamic finance regardless of religious affiliation due to the safer mode of investment with less chance of financial crises. Therefore, Shariah-compliant businesses around the world are receiving increasing attention of investors due to their unique characteristics distinguishing them from the conventional enterprises.

The Islamic guidelines are mainly based on the moral and ethical values that Islam propagates to attain the objective of economic well-being or *Falah* for all human beings (Sarker, 1999). One of the consequential effect of the rise of Shariah firms is the increasing participation of religiously and ethically motivated investors in the stock markets Omran (2009), who would otherwise have chosen to stay away for their fears of being involved in forbidden activities of *gharar*[3], gambling, or detrimental speculation (Elgari, 1993). Shariah firms, thus, not only appeal Muslim investors, but also have the potential to attract a large chunk of ethically thoughtful investors who would prefer to avoid evil industries like arms and ammunition, tobacco, and liquor (El Qorchi, 2005).

[1] Pew research center, Religion and Public Life, April, 2, 2015 "The Future of World Religions: Population Growth Projections, 2010-2050".

[2] Thomson Reuters' Global Islamic Asset Management Outlook 2015 and Global Islamic Finance Development

[3] The Arabic word *gharar* is a fairly broad concept that literally means deceit, fraud, uncertainty, danger, peril, delusion, or hazard that might lead to destruction or loss. *Gharar* refers to any transaction of probable items whose existence or characteristics are not certain, due to lack of information, ignorance of essential elements in the transaction to either party, or uncertainty of the ability of one party to honor the contract.

To facilitate the growth of Islamic model of business and finance, numerous new, as well as established, institutions came forward to assist this newly growing market with the exceptional potential of growth in the Muslim and non-Muslim world.

Shariah guidelines mainly need to be defined for equity and debt investments, which may be permissible if the business activities of the issuing companies do not conflict with Shariah principles. However, firms screened as Shariah-compliant have certain characteristics which differ from other firms. The most striking feature of a Shariah-compliant firm is the ceiling on the maximum level of debt which it can include in its capital structure. In most of the cases, this limit is set nearly at 40%. Depending upon their Shariah screening mechanisms, the maximum debt ratio limit may vary from country to country. However, in most of the cases, it hovers around 40%. In Pakistan, currently, the maximum debt ratio that a firm can have is below 37% to be qualified as Shariah-compliant firm. This limit of debt has a substantial impact on capital structure and debt maturity structure of the firm. Some of these emerging features of a typical Shariah-compliant firm have also been recognized as essential factors influencing the capital structure and debt maturity choice in the literature of finance.

Furthermore, the conventional interest and debt securities are not permissible in Shariah-compliant firms. Thus the Shariah-compliant firm is restricted to (1) optimizing the objective function and minimizing the cost (but minimizing the cost of finance does not contradict value maximization goal of the firm). (2) The next constraint is to maintain debt- ratio, that it will not exceed a ratio of tangible assets to total assets. (3) The constraint that Shariah-compliant firms' debt financing has to be asset-backed, thus, a real transaction. Therefore, any expansion of operations requires an extension of its tangible assets partly. (4) The internal funds (retain earnings) will only be used for investment when they are available after paying off debt and dividend dues. (5) The institutional-debt

constraint implies that funds are not available in the form of debt *(Murabahah* and *Ijarah*) from institutions (or banks) unless the firms have a good reputation, collateral, and financial standing. (6) In private equity constraint, firm binding with institutional debt constraint will not qualify for private equity finance if they do not have good growth potential. Firms with prospects of adding value to assets can get funds in equity/debt from equity-based institutions like venture capital firms. (7) All firms are not able to issue IPO except established, and well-reputed firms can successfully participate in the stock market (Ahmed 2007).

1.2 Debate on equity and debt financing

The theory of business finance in a modern sense starts with the argument of Modigliani and Miller (1958) on capital structure irrelevance proposition. Before this, there was no generally established theory of capital structure. The debate about how and why firms choose their capital structure began in 1958 (Myers, 2001), when Modigliani and Miller published their famous arbitrage argument showing that the market value of any firm is independent of its capital structure. Modigliani and Miller start their proposition by assuming that the firm has a particular set of expected cash flows. When the firm chooses a certain proportion of debt and equity to finance its assets, what it has to do is to divide up the cash flows among investors. Investors and firms are assumed to have equal access to financial markets, which allows for homemade leverage[4]. As a result, the leverage does not affect the market value of the firm.

Modigliani & Miller proposed the concept of irrelevance, which nullifies the impact of capital structure on the value of firm and cost of the capital. The argument was developed that there is no use of choice in debt and equity proportion in the firm's financial structure.

[4] In corporate finance, homemade leverage is the use of personal borrowing of investors to change the amount of financial leverage of the firm.

It implies that in perfect capital markets value of a debt-holding-firm is equal to the non-debt-holding firm just as perfect capital market. The perfect capital market assumes that there is a perfect world where no transaction cost, no taxes, no bankruptcy, and no agency costs occur. Moreover, same information (symmetrical information) is available, market participants expect same returns in future, and all market participants behave rationally in maximizing profit and minimizing costs. Also, all market instruments can be divided perfectly, no monopoly in supply, independent financial decisions and so on. In brief, M&M's propositions were ideal that do not exist in the real world.

Modigliani and Miller's theory influenced the early development of other capital structure theories. There are at least four theories that can explain why capital structure is relevant namely trade-off theory, agency cost theory, asymmetric information theory and pecking order theory. Jensen and Meckling (1976) made an effective research on managers' and shareholders' relationship with agency theory that became more popular. The agency theory of capital structure recognizes the potential problems of interest between the shareholders and managers due to the separation of ownership and management. The conflict arises when management seeks to pursue their self-interest rather owners' or shareholders.' By such self-serving behaviour, managers deliberately exploit the debt ratios.

The literature so far explores the possible impact of managerial shareholding and use of debt in capital structure through controlling debt in the capital structure. Some research finds that managerial ownership affects debt ratio positively. According to which managers prefer higher debt for the reasons: (a) to avoid agency cost of external equity and (b) to perpetuate their control over firm's operations (Kim & Sorensen 1986; Florackis & Ozkan, 2009). However, the other strand of literature finds a negative relationship between managerial ownership and debt ratio (Jensen & Meckling, 1976;

Treynor & Black, 1976; Amihud & Lev, 1981; Chen & Steiner, 1999; Pindado & De la Torre, 2005a). Likewise, Friend & Lang (1988) build an argument based on risk aversion attitude among managers to avoid costs of default and bankruptcy. The most striking finding in above studies is that managers manipulate capital structure through distorting debt ratio from the optimal level for their personal interests, which indicates a lack of managerial trustworthiness, hence, managerial opportunism or self-interest.

1.3 Capital structure, debt maturity structure, and managerial behaviour

(a) Capital structure and managerial behaviour

Capital structure is a mix of equity and debt, and the proportion of two securities is the outcome of the decision by the financial management. However, the separation of ownership and management causes substantial problems of interest between the shareholders and managers. This agency related problems are inherent in all forms of corporate financing decisions unless effective mechanisms of aligning the interests of managers and shareholders are in place. Considering the managerial ownership, Jensen and Meckling (1976) developed the theory of agency conflicts among stakeholders of the firm. Thus, the literature on capital structure identifies the critical issues when managers follow their own interests instead of owners showing self-serving behaviour.

The tendency of manager has been widely studied, and it has been concluded that managers often behave opportunistically for their own interests. The prior literature, for example, Amihud and Lev (1981) and Friend & Lang 1988) maintain that through such self-serving behaviour managers intentionally reduce the debt ratios lower than the optimal level due to avoid their employment risk arising from bankruptcy due to high leverage level. Thus they argue that if there exists a desired level of debt or optimal capital structure, then it would be independent of ownership structure. However, if varying

managerial ownership in the firm affects the debt ratio in its capital structure, then it is an indication of managerial self-interest or lack of trustworthiness.

(b) Debt maturity and managerial behaviour

The inclusion of debt in capital structure has long been recognized as a tool to mitigate agency conflicts between shareholders and managers (Jensen and Meckling, 1976; Grossman & Hart, 1982). In the same vein, debt maturity structure is also considered to align otherwise conflicting interests of managers with shareholders (Myers 1977; Barclay and Smith 1996). In financing decisions, managers have the discretion not only to determine the debt level in the capital structure but also to choose the duration of borrowing. As a result, choice of debt and its maturity are themselves subject to potential agency costs (Datta et al. 2005; Berger et al. 2005).

The choice of debt maturity is rarely made in isolation for a host of unignorable reasons. Short-term maturity, for example, has lower agency-related costs than longer maturity. Lowering maturity could forestall underinvestment or overinvestment tendency among managers. One of the important outcomes of borrowing for short term is its effectiveness in building systematically repetitive monitoring mechanism that puts management's interest well aligned with those of shareholders'. Thus, debt maturity structure has a direct link with monitoring frequency of the firm by investors. Given the fact that management decides most of the times to form amount, timing and maturity structure of financing, only the management with its interests strongly linked owners' would prefer short-term debt. In contrast to this, in most of the cases, self-serving managers having misaligned interests would entrench themselves by borrowing longer term to retain their autonomy and avoid frequent monitoring. However, Myers (1977) argues that managers with some positive news not yet publicized might borrow for a shorter period to enable them to capitalize on markets factoring in the effect of good news on financing cost. Myers

contends that unless managers have some incentive, it is less likely that they choose maturity structure that serves the best interests of the owners voluntarily. Under their prerogative, therefore, managers are least likely to choose maturity structure that exposes them to undesirably more rigorous and frequent inspection of the debt markets. The inherent managerial preference of self-serving managers for minimum monitoring thus might lead to suboptimal choice for debt maturity structure within the firm against the interest of shareholders (Datta et al. 2005).

1.4 Managerial trustworthiness

The tendency of management to set aside shareholders' benefit and instead follow their own, is well grounded theoretically and empirically in conventional finance, despite various disciplining and monitoring processes. Harmonizing the inherently diverging interests of managers and shareholders thus poses a challenge to the mainstream corporate theory, which seems to be overly emphasizing the mechanical means of aligning the interests of the shareholders and the management, such as the use of debt (Jensen and Meckling, 1976), debt maturity (Datta et al 2005), dividend (Rozeff, 1982; Easterbrook, 1984) and raising managerial ownership (Jensen and Meckling, 1976). Identifying the limitations of these mechanisms, Berle, (1932) emphasized the importance of ethics as a better fix to the problems of interest clashes, otherwise too intractable to be settled. The advocates of ethics, therefore, have highlighted the need for cultivating and deeply ingraining moral and ethical values based on trustworthiness within the organization as an alternative measure to reduce agency conflicts between all the stakeholders thus to avoid the opportunism.

Trustworthiness has been studied as an important factor behind business success and failure (Macaulay, 1963). Baxter (2003) calls trust a root of any economic system, while Arrow (1974) declared it as a lubricant of an economic system. Moreover, high-trust

markets would facilitate more exchange and economic activity. Fukuyama (1995) maintained that countries with high trust level have a competitive advantage in an uncertain global economy. Therefore, trustworthiness, in markets and economy as a whole, promotes the business environment, and entrepreneurial development.

The literature on managerial and economic benefits of trustworthiness abounds. An organization is deemed trustworthy if it keeps to its commitments even if economically disadvantageous and works on the best effort basis delivering what is optimal for all the stakeholders. At the firm level, trust creates strategic advantage by reducing interaction cost of doing business and as a risk management tool. Bromiley and Cummings (1995) argue that without trust individuals and firms have to spend substantially on monitoring, control, and enforcement mechanisms. These transaction costs tend to decline as the trust between parties flourishes this leads to enhanced efficiency at the firm as well as market level.

The general business sector has discovered that trusting employees (Handy, 1995), suppliers/buyers (Kumar, 1996), and alliance partners (Nooteboom, Berger, & Noorderhaven, 1997) lead to competitive advantages that outweigh potential risks associated with opportunism (Williamson, 1985). When business is trustworthy as they do what they say; it reduces transaction and monitoring costs for their trading partners resulting in earning premium (Burchell & Wilkinson, 1997). Trustworthiness plays a major role in financing and investing as collateral (Ottati, 1994). Applying simple game models Gambetta, (1988) illustrated trustworthiness has value like any other intangible assets such as information and knowledge. Thus, high trust firms grow more productive and profitable than low trust firms, holding other things constant.

Finally, the corporate theory still struggles to provide effective means to overcome agency conflicts. The traditional fixes of mitigating ‘agency conflicts’ such as the use of debt

(Jensen and Meckling 1976), dividend (Easterbrook 1984, Rozeff 1982) and rising managerial ownership (Jensen and Meckling 1976) fall short to meet the desired objectives effectively. Therefore, trustworthiness, here, could play an important role to reduce agency conflicts and costs monitoring and controlling. Identifying the shortcomings of traditional mechanisms, Berle and Gardiner (1932), emphasized the importance of ethics as a fix to the problems of interest clashes. The advocates of ethics, therefore, have highlighted the need for cultivating and deeply ingraining moral and ethical values based on trustworthiness within the organization as an alternative measure to reduce agency conflicts between all the stakeholders.

1.5 Problem Statement

Most studies on Islamic Finance focus on the banking sector, while empirical studies on corporate financing behaviour of Shariah-compliant firms are still rare. This is despite the fact that literature offers some theoretical guidelines of the Shariah-compliant firms. For example, Ahmed (2007) argues that Shariah-compliant firm is expected to follow pecking order of financing and the management is assumed to work in the best interest of owners or shareholders.

Therefore for its utmost importance in Shariah, the principle of '*Amanah'* or 'trustworthiness' is of special interest in the case of Shariah firms. If a Shariah firm is indeed different from other firms, then one would expect its management to avoid opportunism by exhibiting the superior level of trustworthiness in their financial decisions. This discussion leads us to some empirically important questions regarding managerial behaviour in Shariah-compliant firms, which include:

Does management in the Shariah firm show a higher inclination towards trustworthiness in their financial decisions than conventional firms?

Does Shariah compliance leads managers to behave in a trustworthy manner in their financing decision?

There appears to be the noticeable lack of studies investigating the element of trustworthiness in the capital structure decisions of the Shariah firms.

1.6 Motivation of the study

The issues that managers often indulge in self-serving and opportunistic behaviour are well-known in corporate finance literature (Jensen & Meckling, 1976; Jensen, 1986). However, the Shariah laws about economic transactions and business contracts are strictly based on the principles of justice and trustworthiness (Sarker 1999). Sarker (1999) recounts some of the rights and obligations of contracting parties from Shariah perspective and maintains that the Islamic basis for agency relationship is based strictly on trustworthiness. The agent working on behalf of the principal is assumed to serve the interest of company rather than his own (Iqbal 1992). A Quranic verse, "Oh you who believe! Fulfil obligations", in this context further stresses the importance of trustworthiness in more elaborate manner. A true believer is supposed to deliver on his obligations (explicit or implicit) faithfully, and is heralded with the love of Allah (Quran 3:76; 16:91; 13:20; 23:8), while the breacher is declared as faithless (Quran 2:100 and 8:56).

Islamic Finance is emerging as one of the special kind of theoretical finance which is primarily based on the overall good of human and society while equally weighing the importance of individual interest. A Shariah firm is a genre of corporate entities which follows Islamic Shariah law in its business operations. This study establishing the desirability of the research builds on the supposition that Shariah-compliance should be reflected in the overall spectrum of managerial decision-making in Shariah-compliant firms. Shariah compliance leads to low leverage, low account receivables, and low cash,

and low/no investment in interest-bearing securities, which helps in mitigating the agency costs in these firms (Farooq & Tbeur, 2013, Jensen, 1986). A Shariah-compliant firm thus experiences a better governance mechanism than conventional firms which helps align the interests of the management and shareholders. In this connection, recently Farooq & Tbeur, (2013) concludes the higher tendency of Shariah-compliant firms to pay dividends. Also, report their earnings more truthfully than conventional counterparts (Farooq & AbdelBari, 2015; Wan Ismail, Kamarudin, & Sarman, 2015). Likewise, one would expect that the changes in capital structure should not be motivated by managerial self-interest or lack of trustworthy behaviour. None of the previous studies, however, has touched the phenomenon concerning managerial self-interest or trustworthy behaviour in the capital structure and debt maturity structure of Shariah-compliant.

A shariah firm is a rapidly emerging species of corporate entities, which follows Islamic Shariah laws in its business operations. The fact that trustworthiness claims to be one of the central principles of shariah law governing economic activities, rouses our motivation to study managerial opportunism with special reference to Shariah-compliant firms. The Islamic shariah laws are strictly based on the principles of justice, and no injury or principle of *maslahah* for all the partners in a business contract (Bashar, 1997). In this regard, while developing theory of capital structure in the context of Shariah firms, Ahmed (2007) begins with the supposition that, like any other firm, managers in shariah firms act in the interest of shareholders. As discussed, the empirical findings contravene this assumption in case of conventional finance (Jensen & Meckling, 1976; Friend & Lang, 1988). No empirical study, however, has addressed this hypothesis exclusively from the perspective of shariah firms.

Inspired by the special emphasis of Islamic finance on the principle of *Amanah* (trustworthiness), and its role as a catalyst to minimize the rift between the interest of management and ownership, this study initiate the research in this direction by investigating the impact of managerial ownership on Shariah-compliant firm's corporate financing

decisions under the aegis of modern agency cost theory and compare the same with conventional firms. The study essentially argues that because the two type of firm follow the entirely different philosophy of doing business, this would be reflected from their financial decisions. Moreover, by virtue of its strict social, ethical, and philanthropic adherence, a Shariah firm incarnate a model of trustworthiness and social responsibility and hence is expected to behave in accordance with the expectations of all the shareholders as conceived in finance theory. For its utmost importance in Shariah, the principle of *Amanah* is of particular concern in the case of Shariah-compliant firms. Therefore, the main motivation for this study is to analyse that if a Shariah-compliant firm is indeed different from other firms, then one would expect its management to avoid opportunism by exhibiting the superior level of trustworthiness in their financial decisions.

Apart from the reasons discussed above, the literature indicates that most of the previous studies in Islamic Finance have focused on the banking sector, while there is a considerable dearth of studies on the non-financial sector from Shariah perspective. This is despite the recent theoretical work on the capital structure determination of Shariah-compliant firms (i.e. Ahmed, 2007). With it unique characteristics emphasizing morals and ethics in business, Shariah compliance has a strong appeal for not only the Muslim investors but also the ethical investors. Understanding the financing characteristics of these firms is thus of immense importance for making better and more informed corporate decisions.

It has also been noticed that most of the previous studies regarding capital structure, debt maturity, and managerial opportunism have been carried out in the developed world, while very little is known about the less developed countries (LDCs) (Booth, Aivazian, Demirguc-Kunt, and Maksimovic, 2001), where equity and bond markets are not well-developed, and firms are not as free to choose the capital and maturity structure of their choice due to the weak financial and capital markets. Thus it leads us to a question as to which factors affect firm's capital and debt maturity choices given the constraints faced

by those undertakings in LDCs. Therefore, there is a dire need for research on the capital structure of Shariah-compliant firms in a developing market like Pakistan.

Moreover, recent research has explored the effect of religion on corporate debt maturity structure (Gunn and Shackman 2014). Another current study indicates a significant relationship between religion and capital structure choices of firms (Baxamusa and Jalal 2014). However, there is a lack of studies that make the connection between religion and capital structure decisions at the firm level. Considering the importance of this aspect and a severe dearth of literature, this study attempts to fill this gap in the literature by integrating the principle of *Amanah* (trustworthiness) into the financial decision making of Shariah firms and compare them with conventional firms.

Increasing interest of religious and ethical investors has been observed in the recent years in the financial policies in Shariah-compliant firms for better and more informed investment decisions. Therefore, the purpose of this study is to explore in detail the issues surrounding the capital structure in Shariah-compliant and conventional firms as well as managerial trustworthiness in these financial decisions.

1.7 Research questions

Based on the problems just highlighted, this study seeks to answer the following key research questions:

1. What are the determinants of capital structure of shariah-compliant firms and conventional firm and do Shariah and conventional firms differ on the attributes of capital structure that affect their leverage level?
2. Are the capital structure decisions of Shariah-compliant and conventional firms partially motivated by managerial self-interest or lack of managerial trustworthiness?

3. What are the key determinants of debt maturity structure of shariah and conventional firms and do Shariah and conventional firms differ on the attributes of debt maturity structure that affect the optimal length of borrowing?
4. Are the debt maturity structure decisions of Shariah-compliant and conventional firms partially motivated by managerial self-interest or lack of managerial trustworthiness?

1.8 Research Objectives

Based on the research questions, following key research objectives are set.

1. To examine the factors most important to the capital structure of shariah and conventional firms and to identify the difference between shariah and conventional firms on the attributes of capital structure that affect their leverage level.

2. To investigate whether the capital structure decisions of Shariah-compliant and conventional firms partially motivated by managerial self-interest or lack of managerial trustworthiness?

3. To examine the main factors influencing the debt maturity structure of shariah and conventional firms and to investigate the difference between Shariah and conventional firms on the attributes of debt maturity structure that affect the optimal length of borrowing.

4. To determine whether debt maturity structure decisions of Shariah-compliant and conventional firms partially motivated by managerial self-interest or lack of managerial trustworthiness?

1.9 Significance of study

This study contributes in several ways. Some of the main contributions of this study are highlighted below.

First, the current shariah screening methods only use superficial criteria to identify shariah compliance by the firms. This study, however, invokes the principle of *Amanah* (trustworthiness), to test whether the shariah-compliant management behaves by the fundamental teachings of Islamic principle by avoiding selfish motives in their financial decision-making. This study thus is related to the strand of literature which explores the link between religion and corporate financial decision making.

Second, the research in Islamic Finance is still at an embryonic stage. Much of the research in Islamic Finance is conducted on Islamic banking and financial institution area despite the fact that Shariah guidelines are adequate to govern corporate financing and investing decisions. Considering the importance of capital structure in both modern and Islamic finance, this study contributes to the still-developing literature on the capital structure of Shariah-compliant firms.

Third, Shariah law requires firms to behave in a certain way both qualitatively and quantitatively. Hence, Shariah compliance leads to a new kind of firm with particular financial characteristics especially relating to lower debt and liquidity, and safer investments avoiding excess speculations and concentration in interest-bearing contracts. For these reasons, a Shariah firm is fundamentally different from the conventional firm. Therefore, this study makes a considerable contribution by comparing the dynamics of the capital structure of Shariah firm with those of conventional firm. The study aims to depict the inherent cross-sectional differences between these two types of firms, which could pave the way for further research in capital structure differences between them. The

comparison is also expected to provide insights for better understanding of financial characteristics of Shariah firm.

Finally, most of the studies on the effect of ownership structure on capital structure are US oriented. By exploring this relationship from Shariah perspective in Pakistan, this study provides evidence from the developing world. The study document how managers of shariah and conventional firms make their choices between (a) debt and equity financing choices, (b) long and short-term debt choices, and (c) whether self-interest primarily motivates their choices.

This study will contribute to better understand the capital structure, debt maturity structure, and role of ownership structure in the capital structure of Shariah-compliant firms. Thus, this study is expected to assist in examining the managerial behaviour and highlighting the trustworthy role of the manager in Shariah-compliant firms.

1.10 Organization of Thesis

This study consists of six chapters. The first chapter provides an introduction which includes mainly the detailed background of the study, the motivation of the study, research questions and research objectives of the research. Chapter two provides a comprehensive literature review which begins with the introduction of capital structure and its determinants in Shariah-compliant and conventional firms following an overview of financial sources. The chapter describes the theories of capital structure, i.e., trade-off, pecking order, and Agency theories. It describes factors influencing capital structure with empirical considerations reviewing some previous studies on the capital structure of Shariah-compliant firms. The chapter also discusses debt maturity structure, its theories, and determinants. It also discusses managerial self-interest in capital structure and debt maturity decisions. The chapter also reviews previous studies on managerial ownership, capital structure, and debt maturity structure. Further, the chapter gives an overview of

Shariah-compliant firm and its objective. The role of manager from different perspectives is discussed. Finally, the concepts of trustworthiness 'Rizq e Halal,' 'justice (*Adl-Ihsan'*) and 'benevolence' in Islamic ethics are elaborated.

Chapter three highlights historical background, political system, economic sectors, capital market and corporate governance in Pakistan. Also, the chapter discusses main economic institutions such as State Bank of Pakistan, Security Exchange Commission of Pakistan, and Stock markets of Pakistan. Chapter four is about research methodology. The study applies quantitative methods using secondary data. The chapter describes data and sample, study objectives and their models and variables. Chapter five provides findings and analysis which begins with the descriptive statistics and goes to trend analysis, comparative analysis, and correlation analysis. The chapter analyses the data through pooled OLS regression, Tobit regression, fixed and random effect, and Robust test M-estimation. Chapter six concludes the whole thesis summarising the discussion about the purpose of study, methods, and results with main findings of every objective of the study. In the end, the chapter provides the limitations of the study and future recommendations and suggestions.

CHAPTER 2: LITERATURE REVIEW

This study focuses on the capital structure which is one of the essential aspects of modern corporate finance. This chapter is devoted to some of the fundamental discussions about the capital structure, followed by the specific literature review on the relationship between managerial ownership and capital structure. The rest of the chapter is organized as follows. Section 2.1 provides some basic information on the sources of funds and their relative advantages and disadvantages. Section 2.2 discusses the basic theories of the capital structure followed by the empirical literature on capital structure in Section 2.3. Section 2.4 discusses the managerial opportunism in capital structure determination. Sections 2.5 to 2.9 are devoted to debt maturity, its theories, empirical evidence, and the role of managerial self-interest in debt maturity structure. Section 2.10 discusses shariah firms, the role of manager, the importance of trustworthiness, and some empirical studies on shariah firms. Section 2.11 summarises the chapter.

2.1 Introduction to corporate finance

The scope of this research lies within the purview of corporate finance. Corporate finance involves some essential functions within the firm such as determination of the capital structure of the firm and carrying out capital budgeting decisions. Capital structure refers to the activity of financing through issuing the debt or equity to finance firm's operations. Capital budgeting, on the other hand, involves the processes and methods applied to identify, analyse, and carry out projects positive net present value projects, which enhance the value of the firm. Therefore, finance is a critical component of a business entity (Damodaran, 2010). The capital structure of a firm consists of two primary sources including the debt and equity financing.

2.1.1 Equity financing

Equity financing is defined as the process of raising funds by issuing equity shares to investors; who, in return get the ownership rights in the firm. Equity financing can either be internal and external. Internal equity financing refers to firm's own earnings generated by the operations of the business which is also known as retained earnings. External equity (common and preferred shares) is acquired from outside the firm (Ross, 2007). Equity financing commonly involves certain advantages and disadvantages to the issuing firm.

(a) Advantages of the equity financing

Equity financing brings some significant advantages to equity issuing firms. First, when a firm raises funds through issuing equity, it faces no obligation for the repayment of it. The equity investor is not usually entitled to guaranteed dividends or share of profit from her investments. These features make equity financing attractive for firms by relieving them of the obligations to meet periodic and terminal payments as in the case of debt. Therefore, when losses occur equity acts as a shock absorber (Ross, 2007).

Second, financing through equity reduces the marginal costs of financial distress and bankruptcy, which can arise when debt is issued. This results in increased creditworthiness for the firm. Third, firms enjoy the greater financial flexibility to fund its growth, and other objectives such as earnings are not committed to recurring fixed periodic payments through equity finance.

Lastly, having more equity strengthens firm's ability to raise additional finances through debt, cetris paribus. In brief, equity financing does not need to be repaid. Since firms do not have to make committed payments, they can use the cash flow generated to fund the future growth and to further diversification. Maintaining a low debt-to-equity ratio puts a firm in the better position to get a loan in the future (Ross, Westerfield, & Jordan, 2008).

(b) Disadvantages of equity financing to the firm

Equity financing bears some disadvantages too. The first demerit of equity financing stems from the unfavourable tax treatment of equity. Unlike interest payments on debt, the returns on equity distributed as dividends among shareholders are non-tax deductible. Dividends are paid out of after-tax income, whereas interest payments on loans are paid before income is taxed, as they are tax deductible. Dividends cannot be used to reduce firm's taxable income. This affects the relative cost of capital to the firm because equity has the disadvantage of paying tax expenses that are deducted from the taxable income of the firm (Brealey, 2012).

Second, equity is neither guaranteed repayment nor returns; it is considered riskier than the debt financing generally for potential equity investors. The increased risk comes with higher demand of returns from the potential investors affecting the cost of capital adversely (Berk et al., 2013). Third, equity also involves loss of control for the existing shareholders. External equity may impose conditions like voting rights over critical business decisions or right to appoint some directors. Considering these demerits, sometimes, the founders of firm forgo expansion of firm just to retain control (Laisne, 2013).

2.1.2 Debt financing

Debt is another source of finance, which is the liability over the firm for specified terms conditions and period. Debt holder is a creditor to the firm, who earns a commitment from the firm to receive principal and interest on principal on specified amounts and dates. Debt is divided into two types according to maturity which are short-term and long-term debt. Short-term debt is defined as liabilities expiring within one year, while the long-term debts are liabilities having maturity period more than one year (Berk & DeMarzo, 2007). Like equity, issuing debt to obtain fund also has advantages and disadvantages for the firm.

(a) Advantages of debt financing

There are some advantages that a firm can reap by issuing debt. First, the most important advantage of debt is its treatment of tax. Interest payments on debt are tax-deductible, as they are treated as expenses that can be deducted from pre-tax income. Debt provides an opportunity for a firm to make huge savings on tax liabilities (Glen & Pinto, 1994; Wu & Yue, 2009).

Second, debt does not imply share in firm's ownership; this solves the problem of withering control of the firm by existing owners (Glen and Pinto, 1994).

Third, when interest rates are low, debt financing allows the firm to pay for new assets such as buildings and equipment. This can be an excellent way to pursue an aggressive growth strategy.

Fourth, debt has the feature of fixed amount payments. This allows a firm to earn more returns on the fixed amount of the payments which is done by capitalizing on financial leverage. Having the fixed amount of obligations, allows the firm to properly plan its financial commitments (Wu & Yue, 2009).

The fifth advantage is debt serves as a disciplining mechanism to management. This is possible as management have to meet strict external monitoring of capital markets while raising debt. Moreover, periodic payments on debt reduce agency cost of free cash flows, which could otherwise be used for managers' personal gains. Once firm issues debt, it is bound to pay the interest with a regular interval such as annually, semi-annually, quarterly, and also principal on maturity. These cash outflows keep the managers alert and cautious to generate the enough cash flows to cover debt obligations. It also compels the managers to decrease the other expenses such as unproductive and luxurious expenses for their own use hence, reducing agency cost (Jensen & Meckling, 1976; Ross et al.,

2008). Since debt commits the firm to pay out cash, these commitments reduce the free cash available to the managers to spend on their own benefits, i.e., perquisites such as plush offices and building empires. This benefit of debt financing reduces the conflict between shareholder and manager (Jensen, 1986).

Finally, debt contains an informational value for the firm. Most shareholders regard increasing debt as good news while decreasing debt as bad news. This is due to the confidence of investors outside the firm as well as the confidence of firm to generate enough cash flows to pay interest and principal amounts. Many of empirical studies identify that whenever companies decide to increase their debt (leverage), the price of share increases in the market (Berk & DeMarzo, 2007; Kim & Stulz, 1988). The preceding discussion leads to an important question that: if the debt is increasing the tax shield and reducing the agency cost, then why companies do not finance their capital fully with debt? To discuss this important point we need to focus on some equally substantial costs/disadvantages that limit the use of debt in the capital structure.

(b) Disadvantages of debt financing

The main disadvantage of debt financing is the firms have to repay the principal and its interest. Failure to do so leads to financial distress or bankruptcy and will expose the firm's property and assets to repossession by the creditors [5] (Warner 1977).

Second, debt financing is essentially borrowing against future earnings. This means that instead of using all future profits to grow, firms have to allocate a portion of its future earnings to debt servicing, which could be staggeringly high if earnings shrink or debt

[5] Ross, (2008) maintains "financial distress is the situation when firm does not generate enough cash flow to cover the interest and or principal payment of debt outstanding".

ratio rise. Therefore, excess debt can severely limit future cash flow and stifle growth (Arnold, 2008).

Third, debt covenants, imposed by creditors, can seriously affect firm's freedom in decision-making. This is not good for the firm if the activities of the firm are limited to the creditors. Firm managers are not freely able to decide according to their will.

Finally, debt affects agency cost adversely and becomes responsible for the problems of asset substitution effect, free cash flows (Jensen, 1986), underinvestment and overinvestment (Miller, 1977)[6]. These problems of agency cost explain the relevance of capital structure. These problems will be elaborated further in the discussion of agency theory ahead.

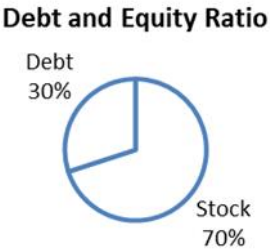
The firms may consider various conditions in financing decisions because the optimality of the choice of issuing debt or equity depends on the conditions at hand. It is important for the firm to consider these conditions before issuing financial securities. First, new firms without any solid record of sales and earnings usually find it difficult to tap debt markets. In this situation, the creditors are reluctant to take more risk; therefore, a firm should issue equity rather than debt. Second, similar conditions may arise when a firm has unstable sales and earnings (Ross et al. 2008). Third, issuance of equity is also advisable, when credit rating of a company is low or poor. Conditions like these result in burdensome terms and conditions by the creditors as they are not attracted to invest in a

[6]Whenever the debt to equity ratio increases, management has an increased incentive to undertake risky projects, which leads to a problem '*asset substitution effect'*. If the project is successful, shareholders get all the upside benefits, whereas if it is unsuccessful, debt holders get all the downside risk and costs (Ericsson, 2000). Jensen, 1986) say "*Free cash flow* refers to cash flow available after funding all projects with positive cash flows. Managers may try to use the free cash flows sub-optimally or use them to their own advantage rather than to increase value of the firm". And "The *underinvestment* refers to the tendency of managers to reject positive NPV projects in which the value increase goes to bondholders rather than equity holders. This suggests that firms will issue debt when they have assets-in-place rather than when they have growth opportunities. Therefore, firms with higher growth opportunities are expected to have less leverage".

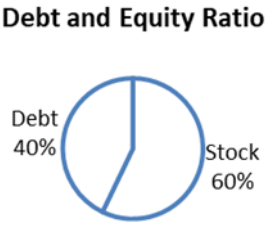
company with a higher risk of default of bankruptcy. Fourth, times when interest rates are a relatively high call for equity financing. In this situation, it will not be feasible to issue costlier debt. Instead, the firm should be financed through equity which would be cheaper than the debt to keep the cost of capital lower. Cost of capital refers to the cost of a firm's capital/ funds paid both on debt and equity. It is the minimum return that investors expect for providing capital to the company (Brealey, 2012). Finally, when dilution of control is not a concern, equity financing may be a viable option (Baker & Powell, 2009; Van Horne & Wachowicz, 2008). Noticeably, these all financial components affect the capital structure of firm substantially.

2.2 Capital structure and its theories

Capital structure refers to the sources of funding at the firm which can be in the form of debt and equity. If a firm acquires Rs. 70 billion through issuing equity, and Rs. 30 billion by issuing debt, its capital structure consists of Rs. 100 billion. The firm's total debt ratio becomes 30%, which refers to the amount of debt in the capital structure. Liabilities here denote to leverage used in the capital structure, so the leverage refers to debt ratio in the total financing of a firm. The financing mix of a company can be shown through the following pie model in Figure 2.1.



Company A
Debt ratio 30%



Company B
Debt ratio 40%

Figure 2.1The Pie Model of capital structure

A firm is called levered if it uses debt in its capital structure, while the firms relying solely on equity financing is called unlevered firms. The leverage ratio of a firm refers to the

mix of debt along with equity financing. The optimal capital structure is the debt-to-equity ratio that maximizes the value of the firm and minimizes the firm's cost of capital (Van Horn 2007). The optimal capital structure for a company is one which offers a balance between the ideal debt-to-equity proportions (Jensen, 1986). In theory, debt financing generally offers the lowest cost of capital due to its tax deductibility (Miller, 1977). However, an excess of debt also involves certain risks such as financial distress and bankruptcy (Iqbal, 2012).

The different behaviour of financing by firms gives birth to mainly these three questions. The first question is why some firms use more leverage while others use less or no leverage in their capital structure. The second question is what exactly motivates managers to use leverage. The third question is, whether there exists an optimum debt ratio which maximizes the value of the firm. The theoretical research on capital structure has mainly revolved around these questions. However, the final answer to these questions is yet to be discovered. The main theories of capital structure are as follows.

2.2.1 The irrelevance of capital structure: Modigliani and Miller Theorem

The modern debate on capital structure theory triggered since the seminal work of Modigliani & Miller, (1958). Before Modigliani & Miller, there was a lack of a systematic and standard theory of capital structure. Despite the enormous theoretical work of capital structure, however, there is no universal theory of capital structure (Myers, 2001). Since M&M research, there have been various conditional theories emerged which explain debt and equity choices of firms. The theories can be divided into two groups which are a trade-off and pecking order hypothesis. The following paragraphs outline the descriptions and implications of these theories in more detail. The next section begins with the famous irrelevance argument of M&M followed by the capital structure relevance theories.

The Modigliani & Miller's proposition of irrelevance serves as a focal point of the subsequent development of capital structure theories. Most of the later theories emerged in response to Modigliani & Miller's work. The Modigliani & Miller's argument of irrelevance suggests that based on certain assumptions capital structure does not affect the firm's value and its cost of capital. The term firm's value refers to the net present value of cash flows generated by the investments whereas the cost of capital associated with the cost that firm pays for its financing mix. This implies that value of the firm cannot be changed by changing the mix of debt and equity in the capital structure. This is known as the first proposition of the Modigliani & Miller's theorem in the absence of taxation. It merely asserts that in perfect capital markets value of a levered company is the same as the unleveraged company. The foundation of assumptions of the theory is the existence of the perfect capital market. The assumptions are as follows:

1) Frictionless market: A frictionless market has no taxes, transaction costs, agency and bankruptcy cost.

2) Symmetric information: All the market participants have equal and costless access to the material information of the firm/market.

3) Homogeneous expectations: Participants hold same expectations about the future returns.

4) Rationality: All the market participants are rational who maximize their profits and minimize their losses.

5) Perfect divisibility: All the securities trading on the market are perfectly and infinitely divisible.

6) Equivalent risk class: Each firm has its substitute with equivalent returns.

7) Competitive markets: All the agents are price takers with no firm or individual having a monopoly on the supply of any security in the market.

8) Independence of financing and investment decisions: Financing decisions are independent of the investment decisions and vice versa.

This proposition is based on the arbitrage argument which refers to the process of buying low in one market and sell high in another market. Under the assumptions that investors and firms have equal access to financial markets, allowing them homemade leverage, investors can create any leverage that they want. As a result, leverage under perfect capital markets has no increased value of the firm. Modigliani & Miller's propositions are based on some highly restricted and hypothetical assumptions which raise the question of the real world application of this theorem. Although, the theory is conceived under severely unrealistic assumptions it sets the stage for considering various market imperfections into the theory of capital structure. Subsequent research has discredited M&M theorem by showing a variety of factors that result in optimal capital structure, where the cost of capital is minimized, and the profit is maximized.

2.2.2 The relevance of capital structure: Trade-off, Pecking order, and Agency theories

The irrelevant argument strictly implies perfect market conditions which seldom hold in the real world. Therefore, many subsequent studies in the 1960s and 1970s disregarded M&M's irrelevance propositions by invoking some market imperfections that may support the notion of optimal capital structure. The most prominent of these imperfections are tax benefits (Modigliani & Miller, 1963), personal taxes (Miller 1977), bankruptcy, (Kim, 1978; Kraus & Litzenberger, 1973; Scott, 1976).

The Modigliani and Miller (1958)'s theorem states that the capital structure is irrelevant in a perfect market, but the real world imperfections and asymmetric information are the

reason for the relevance. However, the M&M theorem does not provide a real description about financing the firm for its operations; it provides the source or means of finding reasons for why financing matter. This description provides the reasonable interpretation of the theories of corporate finance up to around 1980s. It influenced the early development of trade-off theory, pecking order theory, and agency theory, thus, showing the relevance with the capital structure of the firm.

2.2.3 Trade-off Theory

The trade-off theories assume the traditional approach towards the capital structure which recognizes the optimal leverage ratio for each firm. This optimal capital structure is achieved as a trade-off between certain advantages and disadvantages arising from the debt. The basic idea of the trade-off theory is capital structure minimizes cost and maximizes the benefits. This approach requires identifying the advantages and disadvantages due to debt financing.

One of the most critical factors in the trade-off theory is tax treatment. The tax treatment makes debt financing more desirable. In their later version, M&M (1963) included tax benefits as a correction. They argue that the optimal capital structure would be the one that uses maximum debt in the capital structure. However, the resultant capital structure would nearly exclude equity financing which is again impractical in the real world. Subsequent studies considered the infinite use of debt and the risks associated with it. To avoid this extreme prediction, an offsetting cost of debt is needed, and the apparent result is the cost of bankruptcy. Therefore, the optimal level of leverage in the firm may result in maximizing the benefits and minimizing the cost of funding. A classic statement of this theory is provided by Kraus & Litzenberger, (1973) which states that the optimal level of leverage reflects a trade-off between the tax benefits of debt and the deadweight costs of bankruptcy.

The trade-off theory assumes that an interior solution is obtained so that marginal costs and marginal benefits are balanced (Haugen & Senbet, 1978). This theory mentions that the optimal capital structure may be achieved if the net tax benefits of the debt financing balance the leverage-related costs (Myers & Majluf, 1984). This shows that the use of debt in the capital structure is beneficial because of the tax benefit. However, there are also some extra costs of debt financing such as the cost of bankruptcy and the cost of financial distress. As the debt increases, the marginal return will decrease while the marginal cost increases. It is essential, therefore, for a firm to focus on the tradeoff between the proportions of the two sources for optimizing the overall value of the firm. In other words, trade-off theory in capital structure explains the idea that firm selects the extent of the proportion of debt finance and the equity finance to use for balancing the benefits and costs of debt.

According to Myers (1984), "a firm that follows the trade-off theory sets a target debt-to-value ratio and then gradually moves toward the target. The target is determined by balancing debt tax shields against costs of bankruptcy". Myers' description points out two important implications of trade-off theory. The first is the idea of the static capital structure according to which firm's leverage is determined by a single period trade-off between the tax benefits of debt and the deadweight costs of bankruptcy. The second part, however, implies target adjustment hypothesis according to which firm shows target adjustment behaviour, if the firm has a target level of leverage and if deviations from that target are gradually removed over time. The two versions of trade-off theory are discussed below.

(a) Static Trade-off theory

The standard treatment of trade-off theory was proposed by (Bradley et al.1984). The theory makes the following assumptions. These include:

(i) The investors are risk neutral.

(ii) The progressive tax rate is applied on investors' terminal wealth (end of period wealth) form bonds.

(iii) A constant marginal tax rate on firm's terminal wealth is applied.

(iv) The firm can reduce both interest and principal payment, but the investors must pay taxes on receipt of these payments.

(v) In the case of default on debt payment, the firm incurs the burdensome cost of financial distress.

The trade-off theory makes following predictions regarding firms' characteristics and their effect on firm's leverage.

(i) The optimal level of debt decreases as the cost of financial distress increases.

(ii) The optimal level of debt decreases as non-debt tax shields increase. Non-debt tax shields are tax deductible items other than debt such as deprivation expense.

(iii) The optimal debt level increase with the personal tax rate on equity.

(iv) The optimal level of debt decreases with increase in bondholder tax rate when the capital structure is at an optimal level.

(v) Although not very clear but the volatility is negatively related to optimal debt ratio.

The trade-off theory has been widely studied in both academic and empirical research; however, this theory also has a few limitations. One of the limitations of this theory is that the components of the model are not directly observable which causes the need for indirect testing through using proxies (Grahm, Leary, & Roberts, 2014; Bevan & Danbolt,

2002). In case the results contradict the predictions, it is hard to distinguish whether the flaw lies in the theory or the proxies.

Another limitation of this static version of trade-off theory is that there is no consideration of retained earnings of the firm. Therefore, it is difficult to interpret retained earnings. Retained earnings are internal equity of the firm which is conceptually different from external equity issues. This entails that the more profitable firm, the higher its ability to retain, hence lower level of leverage.

As a static model, this theory is silent about mean reversion to the optimal capital structure. The model assumes no room for deviation from the level of optimality which is hard to believe in the real world. Naturally, this model does not accommodate the idea of target adjustment in case of temporary deviation from the optimal level of the debt ratio. Because of these issues arising from the static nature of trade-off theory, the researchers have shown increasing interest to develop the dynamic version of trade-off theory which is mainly based on target adjustment hypothesis. The target adjustment hypothesis allows for temporary deviations from the optimal capital structure and assumes that the firm strives to adjust the deviations over the period to attain the targeted capital structure. This phenomenon is called as the mean reversion.

(b) Dynamic trade-off theory

The dynamic trade-off hypothesis is based on the assumption that each firm has an optimal debt ratio which is determined by its specific characteristics. The theory guides, external financing should be raised for the firm to be closer to its optimal or targeted capital structure. Hence the theory allows an occasional drift from the targeted capital structure which may be caused by information asymmetry, market imperfection, and transaction cost. Unlike the static model, dynamic model recognizes the role of time, expectations and adjustment cost. However, if the debt ratio drifts away too far from the

targeted level firm issues debt or equity to adjust its deviated capital structure. The dynamic trade-off theory is the compromise between static trade-off and pecking order theory (Gill et al. 2012; Leland & Toft, 1996).

2.2.4 Pecking Order Theory

Pecking order is another well-grounded theory of capital structure. The pecking order theory was initially suggested by Donaldson (1961) and was later modified by (Myers and Majluf 1984).

The authors defined the pecking order theory as the pecking order that the firm follows from internal to external financing according to the firm's preference. In other words, the pecking order concerns the preference of debt over equity. This theory outlines the order in which firms may finance their capital structure sequentially. On the assumption of information asymmetry between managers and shareholders about the value and future growth potential of the firm, the theory suggests a pecking order in financing choices. The funding hierarchy predicted in theory is due to the adverse selection problem of sources of finance (Myers and Majluf, 1984). In contrast, Frank & Goyal, (2009) argue the retained earnings have no problem of adverse selection, debt has a minor problem, and equity has the highest problem. Consequently, firms make their financing choices in a way that avoids the adverse selection problems most effectively.

The theory is based on the assumption that firms begin with least costly and safest mode of financing moving up the ladder after exhausting the current one (Myers,1989). Therefore, firms prefer internal financing[7] which has lower information cost and adverse selection problem than external funding. Exhausting this source, the firm management

[7]Internal financing is generated through the internal operations of the firms, which generally is the amount left after paying interest and dividends.

can move up the ladder and use debt financing for its relatively lower information cost and adverse selection problem than equity. Finally, if the funds are still needed, the stocks are issued thus the information asymmetries justify financing hierarchies.

Information asymmetries provide justifications for financing hierarchies. The earlier work of Donaldson (1963) also hinted towards same conclusions based on the managerial theory of the firm and agency costs of managerial discretion. In both cases, capital structure choice is a function of growth opportunities and profitability. Hing (1977) investigated the links between growth profitability and needs of external financing. Under the implication that low-profit growth firms will resort to external financing while high-profit slow-growth firms would rely on retained earnings.

The *signaling hypothesis* also suggests using internal financing before external funding. Given information asymmetry between managers and investors, debt issue gives the signal that investment is profitable and current share price is undervalued. However, when the share price is overvalued, the equity issuance would be favoured. The equity issuance would signal a lack of confidence in the managers that they feel stock price is overvalued. Consequently, investors place a lower value to that new issuance of equity. Thus the issuance of equity would lead to decrease the stock price. As a result, the firm would prefer not to issue equity until and unless it exhausts its internal financing and debt options. The costs of external financing such as administrative cost, underwriting cost, and under-pricing of new securities make external financing less attractive than internal financing (Myers, 1984).

The pecking order theory could also be justified based on *agency considerations*. Based on the agency considerations, managers, prefer internal funds to external funds is an old one (Butters, 1949). The argument was the external financing requires managers to explain the details of projects and investments to external investors and therefore expose

themselves to investors for monitoring. Managers do not like this process and prefer internal financing (retained earnings) to external financing (debt or equity). However, there is no direct prediction about the relative use of debt versus equity when seeking external funding. Thus, agency costs of equity could result in a pecking order.

The pecking order theory is different from trade-off theory as the pecking order does not identify the relevance of optimal leverage ratios. The theory predicts that firms with fewer growth opportunities and higher profitability will experience lower debt ratio. On the other hand due to the lack of retained earnings high-growth firms facing smaller cash flows will be more leveraged.

2.2.5 Agency Theory

Initially, Berle and Gardiner (1932) developed the concept of agency theory. They suggested the divergence of interest between ownership and control of a firm. This provides a platform for managers to pursue their own interest instead of maximizing returns to the stockholders. Jensen and Meckling (1976) significantly contributed to research on agency theory. They describe that managers do not always run the firm for the return maximization of the shareholders. According to agency theory, the principal-agent problem was taken into account as the main element in determining the performance of the firm. They also narrate that, "An agency relationship is a contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent." Therefore, it creates the problem where the interest of managers and shareholders is not always the same as in this case; the manager who is responsible for running the firm tends to achieve his personal goals rather than maximizing returns to the shareholders. The agency theory considers agency costs of various financing decisions as key determinants of capital structure of the firm.

Jensen and Meckling (1976) argue “Agency cost is the type of internal cost that arises from or must be paid to, an agent acting on behalf of the principal. Agency costs arise because of core problems such as conflicts of interest between shareholders and management. Shareholders wish for management to run the company in a way that increases shareholder value, but management may wish to grow the company in ways that maximize their power and wealth that may not be in the best interests of shareholders”. Hence, by choosing the financing sources for capital structure, managers may look over their own interests. Managers being more informed of internal conditions of the firm than the investors, thus, can manipulate capital structure through debt, dividend policy, and other related decisions. Essentially, agency theory is derived from asymmetrical information (Jensen & Meckling, 1976).

They further describe that agency cost is a type of internal cost that arises from or must be paid to, an agent who acts on behalf of the principal. Agency costs arise because of core problems such as conflicts of interest between shareholders and management in the agency relationship of separation of ownership and management. Consequently, agency cost is an economic concept concerning the cost to a principal (owner of an organization, person or group of individuals), when the principal chooses or hires an agent to act on its behalf. Since the two parties have different interests and the agent has more internal information, so the principal cannot directly ensure that its agent is always acting in the principal's best interests.

The agency cost for a firm or principals refers to the costs inherently associated with using an agent, (e.g. the risk that agents will use organizational resource for their own benefit) and the costs of techniques used to mitigate the problems when agents gather more information on what the agent is doing (e.g., the costs of producing financial statements), or employing mechanisms to align the interests of the agent with those of the principal

(e.g. compensating executives with equity payment, right to buy shares such as stock options) (Bebchuk & Fried, 2006).

Agency cost of debt and other financing sources help to understand the issue of relevance of capital structure. The agency related advantages of using debt may be described in following four statements:

- In the firms partially owned by management, conflict of self-interest between managers and stockholders can be settled partly by debt. A higher fraction of debt in firm indicates that some of the equity is held by managers that reduce the agency conflict by matching the interests of managers and shareholders (Jensen and Meckling, 1976).
- Higher debt creates an obligation to pay out more cash flows that in another case could be wasted by the agents/managers (Jensen, 1986).
- The vigilance and monitoring of creditors and debt covenants may control the intention and willingness of managers in over investing for their own benefits and interests (Myers, 1977).
- In capital structure, the debt produces valuable information in reducing agency conflict (Harris & Raviv, 1991).

Therefore, agency theory posits out that debt financing should reduce conflicts between outside stockholders and managers due to increasing the part of management's ownership and interest expense commitment to pay out. The debt is also valuable in the sense that the credit covenants restrict the managers from any misuse. In this way, debt disseminates the information and becomes the reason for making changes in the existing policy.

Here again arises a question that if debt possesses so many agencies advantages, why then firms use equity financing. However, this is explained by the agency costs of debt which increase as debt ratio increases. Hence, as there are agency related benefits of debt, there are also agency-related costs to debt, e.g., conflicts of interests between stockholders and debt holders in a leveraged (debt holding) firms. Such conflicts are

related to the risky projects and are referred to the problem of shifting the risk or asset substitution.

In the capital, structure debt induces the problem of moral hazards by motivating shareholders for riskier investment than that of debt holders. By increasing cash flow in riskier projects, creditors' amount is used, and interest payments are made fixed before transferring risk. Therefore, when risky investments become successful, the extra gains are grabbed by stockholders; conversely, if risky projects are unsuccessful, the losses or cost is shared to all security holders. Thus, this risk- shift behaviour inserts adverse effects on debt in capital structure as this causes debt more expensive. Debt is more expensive regarding the required rate of return by investors, making debt more constraining and restricting in shape of covenants (terms and conditions) and loss of reputation in market making the less available source of finance in future.

The benefits of managers decrease with increasing debt and the cost of debt increases. Therefore, the firm that optimizes overall value would focus and check this trade-off while selecting the ratio/ proportion of the debt and equity as the source of the fund in the capital structure of the firm. Accordingly, Kraus and Litzenberger (1973) state that there should be consideration of the balance between the costs of bankruptcy and the tax saving benefits of debt and usually in that balance, agency costs are also included.

(a) Effect of debt on agency cost

Having too much debt in capital structure increases agency cost of the debt. These costs or problems are known as 'asset substitution effect', 'underinvestment problem' (also called debt overhang problem), 'overinvestment problem' and 'free cash flow problem.' These four problems of agency cost can help explain the relevance of capital structure.

(i) Asset substitution effect: This issue occurs when stockholders prompt a firm to invest in assets that are riskier than what creditors want (asset substitution). The newer, riskier

investment potentially that may or may not enhance the profits will increase the risk among creditors which in turn increased the risk of bankruptcy. Simply put asset substitution refers to invest in such assets that are riskier than what creditors/bondholders had approved by agreements and covenants (terms and conditions). Asset substitution leads to the asset substitution problem that becomes agency conflict among managers and creditors and also shareholders. By way of debt to equity ratio (D/E) increases, management has an increased incentive to undertake risky even negative net present value (NPV) projects[8]. This is because if the project is successful, shareholders get all the upside, whereas if it is unsuccessful, debt holders get all the downside (Ericsson, 2000).

(ii) The underinvestment problem (debt overhang problem): The underinvestment refers to the tendency of a manager to avoid low-risk investment with positive NPV because the low-risk projects do not provide excess earnings to shareholders. The underinvestment or debt overhang problem occurs when the debt is risky (e.g., in a growth firm), the return/gain from the project will accrue to debt holders rather than shareholders. Management has an incentive to reject positive NPV projects, even though they have the potential to increase firm value (Cariola et al. 2005).

Literature observes that low-risk projects provide more security for the firm's creditors because a steady stream of cash can be generated to pay off the lenders. The safe cash flow does not generate an excess return for the stockholders. As a result, the project is rejected, despite increasing the overall value of the firm. Shareholders underinvest capital by refusing to participate in low-risk projects. In brief, when firm managers refuse to

[8]Net present value (NPV) is defined as the sum of the present values (PVs) of incoming and outgoing cash flows of project over a period of time discounted at the cost of capital for the firm. 'Present value' or 'present discounted value' is the value of an expected stream of income determined as of the date of valuation (Moyer, et al 2011).

invest in low-risk assets, due to maximize shareholders' wealth at the cost of the debt holders; there will be an underinvestment problem. This is similar to the asset substitution problem, where stockholders exchange low-risk assets for high-risk ones. Both instances will increase stockholders' value at the expense of the debt holders. Since high-risk projects have high returns, so the stockholders benefit from increased income, as the debt holders require only a fixed portion of cash flow. The problem occurs because the creditors/debt holders are not compensated for the additional risk thus agency conflict arises (Morgado & Pindado, 2001).

Cariola et al. (2005) maintain "the potential conflicts of interest between managers, stockholders and debt holders influence capital structure, corporate governance activities and investment policies, which, in turn, could give rise to inefficient managerial decisions and "suboptimal" investments that generally fall under the categories of problems of underinvestment and overinvestment".

According to Rajan, et al. (1998), the most troublesome result of high debt is creating difficulty to manage human capital. The connection between underinvestment problem and the role of human capital in this context is enough to observe. For instance how financial crisis momentarily provoked by a lack of liquid funds can have irreversible effects on the value of the firm, growth opportunities and the firm's competitive edge.

The firm's managers prefer to take risky projects with high risk to generate an excess return to shareholders but holding risky project does not promise any excess return to bondholders (Myers 1977). Underinvestment affects all the debt holding firms however mostly those firms which face financial distress (Brealey and Myers 2000). Those firms usually expect the underinvestment problem whose value depends upon the investment and growth opportunities (Diamond, 1993). If the firm finances its new project by issuing equity the underpricing of new equity may be difficult. Thus, new investors may be more

benefited by positive NPV project at the loss of existing shareholders. Hence, this situation may lead to underinvestment problem so the firm may reject the projects having positive NPV and creates agency problem among investors and managers. Therefore, the agency conflict between shareholders and managers endorse 'high leverage can create underinvestment problem.' (Myers 1977).

(iii) The overinvestment problem: Agency conflicts also arise due to the overinvestment problem. Contrary to underinvestment, overinvestment refers to a situation where firm's managers invest in too many projects, especially when the projects do not benefit stockholders. Overinvestment may be a violation of the management's fiduciary responsibility to stockholders, especially when the managers get benefit from the arrangement and investors do not thus the agency problem takes place (D'Mello & Miranda, 2010). Overinvestment shows the propensity of managers to invest in riskier projects where the plausibility of generating excess returns is less. In other words, overinvestment occurs when managers do not act according to shareholders' best interests and invest excessively in the projects having possibly negative net present value, which creates the agency problem in the firm among managers and shareholders (Morgado & Pindado, 2001).

Managers of corporate firm invest in too many projects, even when the investment projects do not benefit the stockholders of the firm. Therefore, overinvestment is a violation of managers' legal/fiduciary responsibility to the stockholders, and by that arrangement, management gets the benefit but not the investors. Thus overinvestment may not give benefit to shareholders, and that creates the point of conflicting with interests (Cariola et al. 2005). The authors conclude that the interaction between financing and investment policies creates a situation where high or low debt can compromise a firm's ability to take advantage of growth opportunities that may arise.

(iv) The free cash flow problem: Free cash flow[9] is also a critical part of agency cost due to increasing conflict of interests among stakeholders, i.e., the principal (owner) and agent (manager). Managers have the incentive to exploit the free cash by using in luxuries, empire buildings, and perks and destroy the value of the firm unless free cash flow is given back to the investors. However, increasing leverage imposes financial discipline on managers, by which managers would be bound to pay the creditors as an obligation of payments, so could not misuse free cash flow. Those firms who experience stable free cash flows may face agency conflict between principals and managers regarding the utilization of that free cash flow. Conflict of interests arises due to the possibility of manipulation of free cash flow by the agents/ managers, which does not align with the core goal of maximization of shareholders' wealth and firm's value. Therefore, holding the higher ratio of debt is cheaper for the firm because it has the feature of tax deductibility, but it is also riskier when debt produces the benefit of diminishing agency cost of equity, e.g., free cash flow.

In this context, Jensen (1986) argues that high leverage can add the value to those firms which have more assets and generate stable cash flow. Managers may invest excess free cash flow just to enhance the size of the firm or purchase luxurious goods for personal use, so they deviate from the core objective. Michael Jensen noted that free cash flows allow firms' managers to finance even those projects which earn low returns, which, therefore, might not be funded by the equity or bond markets. The authors further illustrate "Examining the US oil industry, which had earned substantial free cash flows in the 1970s and the early 1980s, he wrote that in 1984 cash flows of the ten largest oil companies were $48.5 billion that is 28% of the total cash flows of the top 200 firms in

[9] This is cash flow that is available to managers after financing all the projects with positive net present value (NPV).

Dun's Business Month survey. Consistent with the agency costs of free cash flow, management did not pay out the excess resources to shareholders. Instead, the industry continued to spend heavily on exploration and development activity even though average returns were below the cost of capital". To circumvent such problem, firms prefer to issue debt as a disciplinary device. Hence, by this act of debt issue, the firm becomes bound to pay interest expenses and also the principal amount when it is due and matures. In case of failure the obligation, the creditors can file a lawsuit against the firm into bankruptcy court. Therefore, interest payments decrease the free amount of managers' discretion as well as prohibit the management from misusing the free cash flow.

2.2.6 Market Timing Theory

A recent study by Baker and Wurgler (2002) propose a new theory of capital structure called market timing theory. The market timing theory states that the current capital structure is the collective result of past attempts to time in the equity market. Through this market timing theory intimates that firm sells new stock when it seems that shares are overvalued and firm repurchases stock when it appears that shares are undervalued.

2.3 Determinants of capital structure – empirical evidence

A considerable amount of literature has focused on the features of the firms that determine their capital structure. This section reviews some of the most important determinants of capital structure. The review consists of following key determinants based on the various theories of the capital structure among firms: growth, size, asset tangibility, profitability, risk, and non-tax debt shields.

2.3.7.1 Growth

The growth of the firm is an important determinant of capital structure. The static trade-off theory and the agency theory predict the negative relationship between leverage and growth. This is because growth firms lose their value when they are financially distressed

(Rajan & Zingales, 1995). Thus the growth firms prefer less debt due to underinvestment problem. Another reason for this is that high-growth firms face severer asset substitution problems. Hence, debt becomes costlier for the firms with high growth opportunities. Also, according to Jensen (1986), agency cost of free cash flow is less severe in growth firms, which implies that high growth firms would avail less debt. Debt reduces the agency cost in firms with low growth opportunities, but good firms with growth opportunity have less need for debt. Thus, both the trade-off and agency theories predict an inverse relationship between growth opportunities and debt.

In this connection, various authors observe the inverse relationship between growth and debt. Kim & Sorensen, (1986) and Rajan and Zingales (1995) found the negative relationship between leverage and growth opportunities. Rajan and Zingales (1995) used market-to-book ratio to measure the growth opportunities arguing that "The firms with high market-to-book ratios have higher costs of financial distress, which is why we expect a negative correlation." Deesomsak, et al. (2004) measure growth opportunity as the book value of total assets less the book value of equity plus the market value of equity divided by the book value of the total assets. The researchers reported that the impact of growth opportunity on leverage is negative in Thailand, Malaysia and Singapore however, this result is not similar in Australia. Also, Gonzalez and González (2008) suggest the negative relationship between leverage and growth opportunities. Their findings imply that when there is a growth opportunity, it will lead the firm to higher agency costs; as perceived by shareholders and hence higher cost of financial distress.

In contrast, pecking order theory of capital structure proposes the positive relationship between growth and debt. The pecking order theory argues that firms with high growth opportunity should raise more debt (Kester, 1986). Consistent with the pecking order theory, some studies observed a positive relationship between growth and debt. They

suggest that the high growth firms borrow more debt due to the firms' higher need for funds to finance. They argue that when growth rates of the firm increase the debt level will also increase because of expanding business activities (Titman and Wessels 1988; Barton and Gordon 1988; McCue & Ozcan 1992; Sivarama Krishnan and Moyer 1996; Nguyen and Ramachandran 2006). Amidu (2007) also maintains that the growing firms tend to the greater need for internal funds. Therefore, a firm with relatively high growth rate will tend to look at short-term less secured debt first and then to the long-term more secured debt to finance their growth level. Thus there is a positive relationship between growth and leverage.

However, some studies show mixed results. For example, Lööf (2004) observed that the relationship between growth and capital structure could be positively or negatively correlated. It is positively correlated because the firm wants to pay off debt and reduce their leverage. The relationship also can be negative because they aim to borrow more from the other banks as a result of increased competition in the industry. In short, the empirical evidence on the relationship between growth and leverage is mixed (Barton,1988; Mccue & Ozcan, 1992; Krishnan &Moyer, 1996; Deesomask et al. 2004; Nguyen &Ramachandran, 2006; Supanvanij, 2006; Huang & Song, 2006).

2.3.7.2 Size

Past studies have identified that size is an important determinant of capital structure. The static trade-off theory predicts that there is a *positive* relationship between size and debt. The theory states that the larger firms are more diversified with a lower risk of default and are more mature so they should raise more debt. Further larger firms have a reputation in the market resulting in lower agency cost of debt. However, the pecking order theory predicts the *inverse* relationship between the size and debt. The theory poses that large known firms usually prefer lower adverse selection problem. This allows the firm to issue

equity more easily than smaller firms having a severe adverse selection problem. Moreover, the larger firms have more assets than, the smaller ones, and so the negative selection may be more important. It is also observed that pecking order theory is ambiguous about firm size because of cross-sectional tests of debt and size resulting positive relation. Various authors found different results on the relationship between leverage and size.

Numerous studies suggest the positive relationship between leverage and size. For example, Rajan and Zingales (1995) computed size as the logarithm of net sales. They suggest "Larger firms tend to be more diversified and fail less often, thus size may be an inverse proxy for the probability of bankruptcy. If so, size should have a positive impact on the debt. However, size may also be a proxy for the information outside investors which should increase their preference for equity relative to debt." Similarly, many other authors maintain that larger firms will be more interested in borrowing to finance them as compared to small firms. They argue larger the firm, the larger the debt will be (Krishnan &Moyer 1996; Sivarama et al. 1996; Huang & Song 2002; Deesomsak et al. 2004; Supanvanij 2006; Nguyen and Ramachandran 2006; Delcoure 2007).

However, some studies also show a negative relationship between leverage and size. For example, Titman and Wessels (1988) state "The cost of issuing debt and equity securities is also related to firm size. In particular, small firms pay more compared to large firms to issue new equity and long-term debt. This suggests that small firms may be more leveraged than large firms and may prefer to borrow short-term (through bank loans) rather than long-term debt because of the lower fixed costs associated with this alternative". Likewise, McCue and Ozcan (1992) examine that smaller firms have greater tendency to borrow as compared to larger firms indicating a negative relationship between the size and the debt ratio. They further argue that the vulnerability of smaller firms and

effects of higher costs of issuance are compelling the smaller firms to borrow more for the short-term rather than long-term. They identified that smaller firms would prefer to borrow more because the relative cost of issuing equity would be higher for them. Kim & Sorensen, (1986) and (Kester, 1986) also find a negative relationship between size and debt ratio.

Finally, however, Barton and Gordon (1988) find no relation of size with the debt ratio of the firm. The authors measured size as the average total sales over the period. They argue that larger firms may prefer equity financing since the sale of additional shares has little influence on the control of the large firms. The results of the study show that the size has no significant relationship with the capital structure of the firm. As a conclusion, there are mixed results regarding the relationship between leverage and size of a firm.

2.3.7.3 Tangibility

Tangibility is generally measured as the ratio of fixed assets to total assets. The trade-off theory interprets that tangibility affects the cost of financial distress. Shareholders found it difficult to substitute higher-risk assets for lower- risk ones due to tangibility. There is lower agency cost for firms with more tangibility. Both the trade-off theory and agency theory propose positive relation between tangibility and debt.

Different studies are consistent with the trade-off and agency theory such as Titman & Wessels, (1988), Friend & Lang, (1988), Rajan & Zingales (1995) and Booth et al. (2001). The authors suggest that "The more tangible the firm's assets, the greater its ability to issue secured debt and the less information revealed about future profits." Therefore, the tangible assets can easily be collateralized, and if firms go into distress, they suffer comparatively smaller loss. Various empirical studies are consistent with the findings of this study.

In contrast, according to pecking order theory, there is an inverse relationship between debt and tangibility of assets. In this vein, Harris and Raviv (1991) argue that due to low information asymmetry associated with tangible assets, equity becomes less costly (higher the tangibility higher the equity) and results in a negative relationship between debt and tangible assets. Huang and Song (2002) also observed an inverse relation between tangibility and debt.

In summary, the trade-off theory suggests a positive relation between tangibility and debt while the pecking order theory proposes an inverse relationship between the two variables. However, there are a few studies that found no link between tangibility and debt ratio. Thus, the results are mixed, so the findings are inconclusive.

2.3.7.4 Asset structure

Asset structure refers to the balance between total liabilities and equities of the firm. Assets structure may be described as the financial structure of the firm concerned with all the liabilities (short-term and long-term) and equities side of balance sheet. Converse to that capital structure refers to the balance between equities and long-term liabilities. Asset structure has been widely used in the studies of financial leverage in the corporate sector. Different studies have shown different results on asset structure. Moyer and Ozen (1992) indicate a positive relationship between debt and asset structure. They found that asset structure affected long-term debt positively, which specifies that the firm with more long-term assets avails higher financial leverage. Conversely, Nguyen and Ramachandran (2006) illustrated a negative relationship between asset structure and debt. Their study showed that although asset structure was significantly affecting SMEs' debt ratio, its impact was negative and relatively weaker than other factors used in their regression

model. This could be attributed to SMEs' greater concern for working capital about capital structure.

However, Krishnan and Moyer (1996) found no correlation between asset structure and debt level of the firm. Their study revealed that the asset structure was not a significant factor to explain changes in short and long-term debt of the sample firms. In a nutshell, some studies show a positive relationship between debt and asset structure whereas other studies show a negative relationship between debt and asset structure. Nevertheless, some other group of studies found no significant association between debt and asset structure thus the findings may be said inconclusive.

2.3.7.5 Profitability

Profitability is also a significant determinant of capital structure. The trade-off theory entails that profitability and debt have a positive relationship with each other. It interprets that for the more profitable firms, tax shield benefits are more valuable and the bankruptcy costs are lower as compared to less profitable firms. Higher profit-generating firms relative to investments take advantage of reducing the free-cash-flow problem (Jensen, 1986). The free cash flow theory maintains that more profitable firms should use more leverage ratio to control managers. Thus, managers would be disciplined and payout the cash instead of spending money on the unproductive use of cash. This implies the positive relationship between profitability and debt which is according to the proposition of the trade-off theory. Simply put, the trade-off theory predicts a positive relationship between profitability and debt while pecking order theory says it negative. However, theoretical predictions on profitability are observed ambiguous and inconsistent. The pecking order theory prefers internal finance (retain earnings) over external funding for profitable firms because more profitable firms will have a lesser need for external financing. Researchers use profitability variable as one of the influencing factors of capital structure.

Several empirical studies[10] find a negative relationship between debt and profitability consistent with pecking order theory. According to pecking order theory firms follow the hierarchy of financing sources thus internally generated funds are the most preferred source for the firm. Following this notion, Barton & Gordon (1988) discovered a negative relationship between profitability and debt. They argue that a firm with high earnings rate would maintain relatively low borrowings because of its ability to finance itself from internally generated funds. Their results further displayed that long-term debt to the total asset has a negative relationship to profitability while short-term debt to the total asset has a negative or positive correlation to profitability. Likewise, McCue and Ozcan (1992) find negative coefficient between profitability and short-term debt. They maintain that firms use their retained earnings first instead borrowing short-term debt. This evidences that profitability and short-term debt financing are significantly associated.

Nevertheless, Supanvanij (2006) find mix results (positive and negative) viewing that total debt of the firm increases with profitability suggesting a positive relation between profitability and debt. However, short-term debt decreases with the profitability of the firm. Hence, Supanvanij (2006), as well as Abor (2005) observed mixed or ambiguous results for the relationship of profitability and debt of the firm.

In summary, the profitability is widely studied in research where the trade-off theory proposes that profitability is positively related to the debt. Therefore, many studies are consistent with the trade-off and show a positive relationship between the two variables. In contrast, pecking order suggests a negative relationship between debt and profitability,

[10] See for example, Titman and Wessels (1988), Friend and Lang (1988), Rajan and Zingales (1995), Huang and Song (2002), Booth et al (2001), Kester (1986), Krishnan and Moyer (1996), Mccue and Ozcan (1992), Barton and Gordon (1988), Hong and Song (2006)' Deesomsak, Paudyal and Pescetto (2004); Amidu (2007); Sen, Chuang-zhao, and Ben-bo (2004), Victor and Francisco,(2008), and Loof (2004).

so the vast number of studies also consists of pecking order theory. However, some studies find mix results based on short and long-term debt.

2.3.7.6 Risk

Risk, also called volatility, is generally referred to the probability of bankruptcy also pose mixed results in association with debt. Most of the studies predict its relationship negative with debt. For example, Bradley et al. (1984), Titman & Wessels (1988) and Huang and Song (2006) observed a negative relationship between risk and leverage. However, Kim & Sorensen (1986) and Huang & Song (2004) observed a positive relationship between the risk and leverage. Huang and Song (2004) mention: "As the variance of the value of the firm's assets increases the systematic risk of equity decreases, so the business risk is expected to be positively related to leverage." Also, Sen et al. (2004) also find a similar effect of risk with the capital structure of the firm. Hence, the author concludes that the risk is positively correlated with total debt.

In contrast, Kuo and Chi-Haw (2003) identified mixed results that operational risk is negatively related to the local public bank but is positively correlated with local private banks. Whereas, Kale et al. (1991) discover that risk is a quadratic function of leverage. On the other hand, Amidu (2007) discovers no impact of risk on the level of debt. Indeed, he raised a question whether risk should be considered in the study of capital structure or not.

In short, some studies found a negative relationship while other studies found a positive relationship between the risk and debt. However, some studies suggest no significant relationship between risk and debt. The literature, however, confirms that it is difficult to get consistent results with the theoretical expectations.

2.3.7.7 Non-debt tax shield

Non-debt tax shields refer to such items, which can decrease the burden of the corporate tax, e.g., depreciation, investment tax credits, or loss carryforwards are commonly mentioned. DeAngelo and Masulis (1980) propose "Ceteris paribus, decrease in allowable investment-related tax shields such as (depreciation deductions or investment tax credits are due to changes in the corporate tax code or due to changes in inflation which reduce the real value of tax shields) will increase the amount of debt that firms employ. In a cross-sectional analysis, firms with lower investment-related tax shields (holding before-tax earnings constant) will employ greater debt in their capital structures." Therefore they suggest an inverse relationship between debt and non-debt tax shields.

Consistent with above argument, Kim and Sorensen (1986) maintain that "depreciation has a significantly negative coefficient and depreciation is an effective tax shield, and thus offsets the tax shield benefits of leverage." Similar to this several other studies find an inverse relationship between non-debt tax shields and debt. They suggest that firms having low tax rate should borrow more than the firms with high tax rates. However, since the tax rate is measured after the impact of leverage, this interpretation may be misleading (Titman & Wessels 1988; Huang & Song 2002; Krishnan and Moyer 1996).

However, in contrast to the proposition of De Angelo and Masulis (1980), Yair and Robert (1983) suggest that tax as an important factor that determines the optimal capital of the firm. Interest expenses for the firm are tax-deductible, but the dividend payments are not tax deductible. According to them, tax financing is viewed as having a tax advantage over equity financing thus firms would like to have more debt to save their cost. Similarly, Bradley et al. (1984) found a positive relationship between two variables. They used depreciation and investment tax credits, research and development, and advertising expenses as their proxies for non-debt tax shield. In the same vein, McCue

and Ozcan (1992) find that the interest- tax savings of debt financing, increase attraction towards debt source of funding thus, positively correlated with debt. Later, Chaplinsky and Niehaus (1993) and Graham (2003) observed a positive relationship between the two variables. They maintain that if a firm invests heavily and avail debt to invest, there may be a positive relationship between non-debt tax shield and debt. Also, (Amidu, 2007) find his results consistent that there is a positive and significant relationship between tax shield and leverage. The successive tax increase would be associated with the increase of debt hence, to employ more debt given that interest charges are tax deductible.

In summary, the non-debt tax shield items include those factors which help in decreasing tax liabilities such as tax deduction for depreciation. Non-debt tax shields are considered as a substitute for debt-related tax shields so the non-debt tax shield should be inversely related to debt. In contrast, several other studies found a positive relationship between the two variables. A positive mechanical correlation of this type overwhelms and renders unobservable any substitution effects between debt and non-debt tax shields (NDTS). Hence, the literature shows inconclusive results. Table 2.1 presents the summary of selected studies on determinants of capital structure.

Table 2.1Summary of selected studies on determinants of capital structure

Studies	GROW	SIZE	PROF	ASST	NDTS	RISK
Titman and Wessels (1988)	-	+/-	-	+ / –	-	-
Borton and Gordon (1988)	+	+	-			
Mccue and Ozcan (1992)	+	+	-	+	-	+
Krishan and Moyer (1996)	+	+	-	-	-	-
Hall, Hutchinson, Michalelas (2000)	+	+	+	+		
Ghosh Cai and Li (2000)	-	+	-	+	-	-
Suto (2003)	-	+	-	+	-	+
Chen (2004)	+	+	-	+	-	-
Deesomsak, et al. (2004)	-	+	-	+		
Low and Chen (2004)	+	+				-
Loof (2004)	+ / -	+ / -	+ / -	+ / -	+ / -	
Chen (2004)	+	-	-	+	+	-
Abor (2005)	-	-	+	-	-	-
Abor (2005)	-	-	-	-	-	-
Akhtar (2005)		+	-		-	
Haung and Song (2006)	-	-	-	+	-	-

Table 2.1Summary of selected studies on determinants of capital structure

Studies	GROW	SIZE	PROF	ASST	NDTS	RISK
Nguyen Ramachandran (2006)	+	+	-	-	-	+
Supanvanij (2006)	-	+	+/-	+	-	+/-
Carpentier (2006)	-	+	+			-
Huang and Song (2006)	-	+	-	+	-	+
Delcoure (2007)	+	+	-	+	+	-
Eriotis (2007)	-	+				
Abor (2007)	-	+	-			-
Delcoure (2007)	+	+	-	+	+	-
Jong, Kabir and Nguyen (2008)	-	+	-	+	-	-
(Anwar & Sun, 2015)	-	+	-		+	_

Note: Grow = Growth, Size = Size, PROF= Profitability, ASST = Asset Structure, NDTS = Non-Debt Tax Shield, RISK = Risk

2.4 Corporate financial decisions and managerial behaviour (self-interest)

The agency theory argues that due to the conflict between interests of shareholders and management, managers often behave so as for serving their own benefit (Jensen & Meckling, 1976). The opportunistic managerial behaviour motivated by pursuing self-interest, despite various monitoring and controlling means, and its resultant harming effect on corporate financing decisions are well established in conventional finance literature (Demsetz, 1983; Shleifer & Vishny, 1986).

Previous studies suggest that managerial opportunism is reflected in various corporate decisions such as during the initial public offerings (Chalmers et al. 2002), and in setting dividend policy (Eisdorfer, at al. 2015; Farinha, 2003). In the same line, under the umbrella of agency theory, studies show that managers reduce their non-diversifiable employment risks by avoiding firm's risk of bankruptcy through controlling debt in the capital structure. They empirically find evidence that managers maintain sub-optimally lower leverage ratios to escape bankruptcy risks (Jensen & Meckling, 1976; Treynor & Black, 1976; Amihud & Lev, 1981; Friend and Lang 1988; Pindado & De la Torre, 2005).

Apart from manipulation or influencing the debt and dividend, the managerial self-interest may arise from their concern for personal reputation (Narayanan, 1985), empire-building motives (Jensen, 1986), making short-term bonus targets (Chandio, 2006), benefits from risk-taking when holding large stock options (Arby, 2004), and perils from default risks affecting pension pay-outs (Ali et al. 2011). This strand of literature, therefore, recognizes the element of opportunism in managerial decision-making, which is mainly caused by the increasing conflict of interest between management and owners.

Managerial participation in shareholding is reckoned as one of the means to curb selfish managerial behaviour and reduce agency conflicts. In this connection, Jensen & Meckling (1976) claim that allowing managers to possess firm's ownership aligns the corporate owners' and managers' interests, which eventually eliminates the agency conflicts between them. Although this argument appears potentially convincing on the surface, increasing insiders' ownership, however, would lead to another problem called "entrenchment effect" which sets in when firm's control shifts in the hands of the management by dint of increasing managerial ownership (Berger et al. 1997). Therefore, with greater control and superior information, the entrenched managers have even greater freedom to manipulate corporate financial decisions for their own interest. For that purpose, they maintain that as the share of managerial ownership rises so does their exposure to the bankruptcy risks. The entrenched management, in this case, is more likely to reduce leverage level to avoid bankruptcy (Friend and Lang 1988). According to a recent study by Anwar & Sun, (2015) it is concluded that the domestic firm's capital structure is also affected by the foreign investment apart from ownership structure. Their results show the negative impact of foreign investment on the leverage of privately owned firms is more significant than public or state-owned firms. They further indicate that the foreign investment effect is different and varies industry wise.

There are different opinions made by researchers on the possible impact of managerial shareholding and use of debt in the capital structure which show mixed results. Those who found managerial ownership affecting debt ratio positively they argue that managers prefer higher debt for the reasons: (a) to avoid agency cost of external equity and (b) to perpetuate their control over firm's operations (Kim & Sorensen,1986; Florackis & Ozkan, 2009). The other strand of literature finds a negative relationship (Chen & Steiner, 1999; Pindado, & De La Torre, 2005; Friend & Lang, 1988). Similarly, Amihud & Lev, (1981) argue that managers, deliberately keep debt ratio lower than the optimal level to avoid their ownership and employment risk arising from the greater degree of debt (risk and cost of default/bankruptcy). Some studies, however, found a nonlinear relation, in that at a lower level of managerial ownership, the relationship is direct, while at a higher level it is inverse (Brailsford, Oliver, & Pua, 2002; Florackis & Ozkan, 2009). From the discussion, therefore, the most striking finding in above studies is that managers manipulate capital structure through distorting debt ratio from the optimal level for their personal interests, which indicates a lack of managerial trustworthiness, hence, managerial opportunism or self-interest.

Conclusively, the concept of self-interest and trustworthiness is very much connected to each other as it is depicted in literature. Authors admit that the agency theory holds the intensity of agency conflicts that stimulates managerial opportunism, while the paucity of it discourages managerial opportunism and leads towards trustworthiness (Fama & Jensen, 1983). Although traditionally it has been studied that managers are often biased in their decisions in the firm to pursue their own interest we also need to investigate the role of the manager particularly in Shariah-compliant firms, either having self-interest in their decisions or ethical and moral values, honesty and trustworthiness.

2.4.1 Previous studies on capital structure and managerial behaviour

Ever since the work of Modigliani and Miller (1952), numerous studies have been conducted on the capital structure of the firms. These studies are based on the assumptions of M&M's understanding of capital structure. Although present research has a few important insights on the capital structure of the firm, no theory adequately describes the optimal capital structure. For these reasons, contemporary theoretical justifications of leverage ratios still are seen as inconclusive. Literature on financial economics witnesses increasing efforts that examine the role of corporate ownership patterns in financing decisions of the firms (Moh'd, Perry, & Rimbey, 1998; La Porta et al., 1999; Mahrt-Smith, 2005; Boateng 2004; Abor 2008; Bokpin and Arko 2009; Ebel Ezeoha & Okafor 2010). However, there exists a slightly different approach emphasizing conflict of interest between managers and equity holders.

Agency conflicts mostly arise when managers manipulate the financial structure of the firm by their decisions. Hence, managers are considered responsible for such problem because despite being owners' agents and controlling authority they ignore the interests of owners. The managers at their discretion have the power to regulate the debt ratio of the firm thus they may overlook the optimal level of the debt ratio in the capital structure. Consistent with this conjecture, Grossman & Hart (1980) argue that corporate debt is itself an internal control mechanism that can decrease or increase the agency problem/conflict.

Jensen and Meckling (1976) claim that an increased managerial ownership will increase the pursuit of self-interest due to the extensive exposure of management to the firm. Therefore, at the high levels of managerial shareholdings, there are incentives to decrease debt levels. They further describe that managers do not always run the firm for the return maximization of the shareholders. Based on their agency theory explanation, the

principal-agent problem was taken into account as the main element in determining the performance of the firm. They also narrate "An agency relationship is a contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent." Therefore it creates the problem where the interest of managers and shareholders is not always the same as in this case; the manager who is responsible for running the firm tends to achieve his personal goals rather than maximizing returns to the shareholders.

Many researchers have studied the role of managerial self-interest in firm's financing decisions and the magnitude of its effect. Grossman & Hart (1980) argue that in the absence of agency conflicts the optimal capital structure would look very different from what is observed in the world. This partly indicates that despite intensive research on the role of taxes asymmetric information and other market imperfections would be incomplete without incorporating managerial self-interest in capital structure determination.

Modern capital structure theories suggest that there is an optimal capital structure for a firm which is independent of a mix of its ownership structure. Therefore, in fair dealings increased or decreased managerial ownership should not affect the choice of financing of a firm. However, due to all these self-interest practices, there is an effect on the capital structure by the managerial decision-making. The owner faces the risk of opportunism and incompetence on the part of agents. For the owner, the risk of opportunism becomes greater in the lack of monitoring or lack of information about agents' actions. For instance, information asymmetry and also when competing incentives or goals for agents motivate them to engage in actions other than what was contracted by the principal (Whitener et al.1998).

In this line, Grossman and Hart (1982) observe that a company with many small stockholders faced the 'Incentive problem' arising from the clash of interests between managers and shareholders. Shareholders want managers to commit them to maximize their wealth, but contrary to that managers may pursue their own interests and benefits. However, previous research suggests that the incentive problem could be avoided by various tactics such as compensation packages, stock options, and profit-sharing arrangements. To avoid the incentive problem at first, the manager will act towards increasing the shareholder's wealth as there are more incentives to do so. Second**,** stockholders can make company charter permitting takeover bids that means in the case of ill-management, the firm could be a target of a takeover. Consequently, a purchaser can make a profit by getting company at a lower price, and after reorganizing the firm, selling it at a higher price. This threat of takeover bid leads management to act in shareholders' interests. Third, bankruptcy can further reduce the incentive problem that may encourage the managers/insiders to maximize the profits. Therefore, if managers do not seek high profits, the chances of the bankruptcy of company will increase.

Grossman and Hart (1982) further argue that the disciplinary source depends on the financial structure of the firm. The authors developed a theory to describe the usage of debt as a financial tool. This theory gives an idea that managers who focus on equity finance do not have the incentive to maximize the profit. Specifically, without debt, there is no chance of bankruptcy. One of the reasons why managerial self-interest influences on the debt, is the managers reduce non-diversifiable employment risk by decreasing the holdings of corporate debt (Jensen & Meckling, 1976; Amihud & Lev, 1981; Friend & Lang, 1988). To understand non-diversifiable employment risk, we consider the fact that as the debt increases the business risk (risk of bankruptcy) also increases. So the emergence of the bankruptcy risk due to the financial distress would lead to the loss of the employment and also the low capacity of the earnings. Thus it is pointed out by the

argument that opportunist or self-interested managers have the incentive to reduce corporate debt to a level that is less than an optimal point thus avoiding the employment risk.

Friend and Lang (1988) inspect the influence of managerial self-interest on capital structure. They test whether managers optimize their own interest at the cost of shareholders through deviating from the optimal capital structure which maximizes the firm's value. Consistent with their hypothesis the study shows that the management has a greater incentive, as compared to other stockholders, to maintain the low debt ratio to avoid bankruptcy possibility. It is argued that when managerial stake in the firm increases they would strive to keep the leverage ratio lower to prevent the risk of bankruptcy. The study further analyzes this issue by adding large non-managerial principal stockholders in the presence of managerial shareholders. They find that the firms with block shareholding tend to have higher debt ratios than the firms with no nonmanagerial principal stockholders. These results suggest that when managerial ownership is high, and there is no other main stockholder, there is the tendency of managements' self-interest behaviour.

However, Kim and Sorensen (1986) find that firms with higher ownership of insiders also have greater debt ratio compared to firms that have lower insider ownership. The authors show the presence of agency costs and their relationship with debt policy of the firm. They essentially argued that when managerial ownership increases, the debt level increases due to escape the cost of external equity to share their incentives. This is so because when managers have high ownership, and if they increase equity issuance further, the additional equity issue conflicts with their voting rights and leads to dilution of control.

It is consensually agreed that the firm's choice of debt and equity is essentially governed by the relative agency cost of the two modes of financing for management. Similarly, Jensen and Ruback (1983) observed the problem between shareholders and managers that the interests of both parties can not necessarily always align. In this case, the manager who is responsible for running the firm can achieve his own interest and personal gains rather owner's returns. In this case, managers will use the excess free cash flow available to fulfil their personal interests instead of increasing the returns of the stockholders. This view is also supported by Harris and Raviv (1990) who perceive that due to self-interest, managers are reluctant in liquidating firm or providing information leading to liquidate the firm, even in the case when liquidation is the best action from investors' viewpoint. Therefore, debt is the disciplinary device because failure to pay debt obligation causes firm's investigation which deviates it from normal operations and enhances firm's cost, i.e., legal fees. Legal fees make this information costly and disrupt in operations, inform the investors, that leads to amendments and efficient operating policies. Hence, the debt is an indicator of investigating the firm in case of default.

Correspondingly, Mehran (1992) tests the claim of agency theory that in the absence of proper monitoring and control mechanisms, managers would behave selfishly. The agency theory proposes three main devices of surveillance and control including compensation contracts, managerial equity participation and direct monitoring by the board. The study simultaneously tested the effect of these measures on capital structure decisions. The results show a positive relationship between debt ratio and managerial equity ownership confirming the managerial self-interest. Hence, their findings are consistent with the propositions of agency theory.

Firth (1995) also maintains the idea that the conflict arises due to the managerial self-interest and clash with those of stockholders'. With the presence of institutional investors'

constraints and management's discretion in setting capital structure, he identifies a positive relationship between ownership and debt. The managerial incentives by the executive ownership are said to be essential for firm's capital structure. Florackis and Ozkan (2009) study the impact of managerial incentives and corporate governance on the firm's capital structure decision. They argue that implication of the incentives on leverage determined by the firm is significant on specific governance characteristics. This evidence suggests that better corporate governing practices cause higher leverage ratio. Their results show that managerial ownership influences the leverage.

Harmoniously, Leykun (2011) investigates the managerial self-interest and its effect on the corporate capital structure. Their findings indicate a negative relationship between capital structure and managerial shareholding which shows that self-interest significantly influences on capital structure decision-making of the firm. Hence, maintain that managers decrease debt to avoid bankruptcy risk when their ownership increases in the firm. Recently, Pokharel (2013) investigates managerial self-interest in the capital structure decision making. Their results show that as CEO ownership increases, the managerial entrenchment also increases hence a positive relation between managerial ownership and managerial entrenchment or self-interest. The literature on the impact of managerial ownership (self-interest) on capital structure has already been developed somehow in developed markets that have different institutional financing arrangements from those in emerging markets (Pokharel, 2013). Many authors previously find the managerial influence on the capital structure decisions (Shleifer and Vishny 1986; Shleifer and Vishny 1997; Short et al. 2002; Abor and Biekpe 2007). For that reason, it requires an examination of the impact of managerial self-interest on the corporate capital structure in developing market too.

Further, the extended idea based on agency theory regarding ownership structure and capital structure, the hypothesis of managerial entrenchment and managerial opportunism is also tested by various authors. Entrenchment is about the actions of managers who make investments that are more valuable to them than other stakeholders. Those investments might not maximize shareholder's value. So stockholders may have a moral hazard in contracting with managers. Weisbach (1988) states: "Managerial entrenchment occurs when managers gain much power that they can use the firm for their own interests rather than the interests of shareholders." This idea emerged in the 1980s when several actions to hostile takeover companies occurred, and several firms started planning on how to protect them from being bought through such takeover. Researchers investigated and concluded managerial entrenched and self-serving behaviour that deviate from their core objective and exploit the wealth of owners by serving their own motives.

In this context, Berger et al. (1997) explore the relationship between managerial entrenchment and the capital structure. They find that the leverage of firm is affected by the degree of managerial entrenchment. Their results indicate that entrenched managers seek to avoid the debt. They also examined cross-sectional relation between corporate governance and the leverage. They observe the lesser leverage when the CEO has, for example, the long tenure in office, weak stock, compensation incentives, no monitoring from the major stockholders or board of directors. They conclude that after the major stockholder joins the board of directors, the leverage increases. They argue that entrenched managers usually seek to deviate and avoid debt. Consequently, managerial entrenchment behaviour enhances the problem of conflict of interest when this behaviour leads to increase managerial opportunism**.** Managerial opportunism occurs when managers use employer information for personal gains. This approach creates a conflict of interest because managers by self-serving decisions benefit themselves rather firm's owners.

Some evidence, however, reveals a nonlinear relationship between debt and managerial ownership. For example, Wansley, Cary Collins, and Dutta (1996) observe a cubic (nonlinear) and significant association between insider ownership and leverage. This indicates that at first debt increases with the increase of insider holdings and then declines after a certain point. The positive relationship between debt and managerial ownership retrieves as insider ownership holdings reach 100%. They found these results by two measures of debt by controlling firm size, tax shields, growth options and earning volatilities.

Brailsford et al. (2002) examine the relation among external block holders and leverage, managerial ownership, and debt ratio. They incorporate the impact of both managerial and external block holders on the firm's financing decisions. They observe that at the low level of managerial ownership there adjust shareholders and management interests. However, when the managerial ownership reaches a certain level and holds a significant ownership proportion, the entrenchment effect sets in. Thus, resulting in managerial opportunism and lead to lower debt ratio to maintain lower risk to managers. It is argued that low levels of managerial ownership and external owners play a significant role in monitoring the behaviour of management, resulting in lower managerial opportunism. With low levels of managerial ownership, managers have less control due to limited voting power and influence, while external shareholders can monitor and restrict the opportunistic managerial behaviour, thus minimizing the agency conflicts.

In summary, managers can deviate from the choice of optimal debt leading to the agency cost of managerial discretion. Hence, theoretical and empirical arguments support that managers may become entrenched and opportunists in self-interest motive which results in a lack of trustworthiness.

2.5 Debt maturity structure

Previous research entails that an ideal or optimal capital structure consists of such composition of debt and equity that minimizes the cost of capital and maximize the value of a firm. When the company uses debt to finance, it exerts an impact on cost rising in capital structure; the company will have a financial risk. Therefore, the company must consider their priority in the decision of structure of debt maturity to the investor, and other types of debt contracts (Brealey & Myers, 2000; Peirson, Brown, & Easton 2002). Financial decisions have movements for the choice between debt and equity and features of debt and debt maturity linked with agency cost hypothesis (Jensen and Meckling, 1976; Titman and Wessel, 1988).

As a fact, agency costs arise from the separation of ownership and control inside a firm who affect the determination of debt maturity choice. Thus, in financing decisions, managers have the discretion not only to determine the debt level in the capital structure but also to choose the duration of borrowing. As a result, choice of debt and its maturity are themselves subject to potential agency costs (Datta et al. 2005; Berger et al. 2005). Other previous studies also show that the level of leverage is positively related to the length of maturity of firm's debt (Blood, 1996; Leland & Toft, 1996). The empirical evidence suggests high levered firms borrow more on a longer-term basis than low-levered firms (Cai et al. 2008). Liquidity risk hypothesis assumes that firms with higher debt level offset higher probability of liquidity crisis by borrowing on longer-term maturities (Deesomsak et al. 2009).

The maturity matching hypothesis suggests that firms match their liabilities maturities with their asset maturity structure to reduce agency costs. Matching borrowing maturity to asset maturity relieves management of more complicated debt repayment arrangements and hence brings down agency costs of refinancing and restructuring capital structure.

The matching principle thus implies that firm with a higher concentration of long-term assets in asset structure would borrow long-term debt more if it follows maturity matching principles. Therefore, it is claimed that the choice of debt maturity structure help lessens this cost by reducing conflicts of interests of stakeholders (Myers, 1977; Barnea et al. 1980; Haris and Raviv, 1991; Guney & Ozkan, 2005). However, lenders prefer short-term debt for firms in which there are more conflicts of interest between managers and shareholders (Arslan & Karan, 2006). Thus, Importance of debt maturity arises from the fact that debt maturity directly affects firm's liquidity risk, its agency conflicts with management and debt holders, and also the financial flexibility (Cai et al. 2008).

Some research has been carried out regarding the determinants of debt maturity structure in the context of developed nations. For instance, in the US (Mitchell, 1993; Barclay & Smith, 1995; Scherr & Hulburt, 2001; Stohs & Mauer, 1996), and in Western European countries (Antoniou et al. 2006; Ozkan, 2000). Recently researchers focused on the firms'debt maturity choices among developing countries. For example, in China (Cai et al., 2008), in Latin America (Amal et al. 2011), in African nations (Gwatidzo & Ojah, 2009), and in Pakistan (Shah & Khan, 2009). There is still need to assess the firm characteristics in different types of businesses based on diverse philosophies.

2.6 Theories of debt maturity structure

The importance of debt maturity structure in the capital and other financial decisions arises from several reasons. Firms may time debt maturity to their asset structure to avoid untimely and forced liquidation of its assets (Diamond, 1991). The choice of debt maturity may also signal the earning's quality of firms to outsiders (Flannery, 1986). Agency issues within the firm may also be addressed through changing debt maturity structure of firms (Miller, 1977). Debt maturity gains importance also in considering issues like financing flexibility, the cost of financing, and refinancing risk. Diamond (1991) explains the notion of maturity about cash flows attached to firm's assets and financial obligations like debt.

The debt is short term if it falls due before the project's cash flows begin to arrive suggesting that maturity is a phenomenon of cash flow timing rather the calendar year.

The following section reviews some major theoretical work on potential factors which are pertinent to the debt maturity choice of firm. Although debt maturity has remained an important topic in financial, economic research since the modern debate on capital structure triggered on after famous research work of Modigliani and Miller (1958). However, more concentrated theories on debt maturity emerged during the 1980s and 1990s[11]. Signaling and agency cost based theories favour the use of short-term debt[12]. Tax hypothesis side long-term debt on the other hand (Brick and Ravid, 1991). Much of the specific empirical analysis of debt maturity started in the late 1990s. In the US (Barclay & Smith, 1995; Guedes & Opler, 1996; Stohs & Mauer, 1996; Johnson, 2003; Berger, et al. 2005; Datta et al., 2005; Billett & King, 2007). In Western Europe (Ozkan, 2000; Antoniou et al. 2006), in Japan (Cai et al. 1999), in Turkey, (Arslan & Karan, 2006).

2.6.1 Agency cost theory of debt maturity

The choice of debt maturities within a firm may also be influenced by the agency costs related to debt financing.

(a) Underinvestment Problem

A set of available future investment opportunities for a corporation is like options, the value of which depends upon how optimally the firm exercises them. If these growth opportunities prove more favourable to creditors than shareholder, the firm has the incentive to forgo these positive NPV investment possibilities in the interest of existing shareholders. Myers (1977) refers this tendency among firms as underinvestment or debt

[11] See for example: Barnea et al. (1980), Brick and Ravid (1985), Flannery (1986), Lewis (1990), Diamond, (1991).

[12] See Flannery (1986) and Kale and Noe (1990) for signaling models and Myers (1977), Barnea et al., (1980) for agency models.

overhang problem. The greater the availability of growth options (investment opportunities to be exercised later) for a firm, higher the agency conflicts between the shareholders and creditors of the firm. In the study, the author suggested the solution to this conflict is presented in several ways like (a) by including less debt in capital structure, (b) by including restrictive covenants in its debt agreements, and (c) by shortening the effective maturity of its debt. More specifically, Myers (1977) argues that disincentive to invest (underinvestment problem) can be eliminated if firm times its debt in such a way that it matures before the growth option is exercised. The argument signifies that firms should borrow for shorter-term if the growth opportunities abound.

Myers (1977) proposes the solution of underinvestment problem through the issuance of shorter-term debt than debt with long-term maturity. In a similar vein, Barnea et al. (1980) contend that because short-term bond prices are relatively less sensitive to shifts in risk of underlying assets, the short-term debt could be the source of reducing the incentives for risky asset substitution. Hence, the agency cost or contracting cost perspective on debt maturity structure suggests that the firms whose value is largely dependent upon investment or growth opportunities (as against those whose value is determined mainly by assets in place) would found short-term debt preferable to long-term debt.

(b) Overinvestment Problem

The agency cost view on debt maturity also theorizes that agency conflicts between the management and the shareholders could be tackled by choice of debt maturity structure of the firms. Hart, Aghion, and Moore (1995) show that at an optimal level of firm debt maturity structure, the incentive for management to invest in unprofitable projects, are minimized. They argue that in the absence of long-term debt in capital structure firms managers may be encouraged to invest in negative NPV projects for their own perquisites, which might lead firm to overinvestment problem. Hart and Moore suggest that an

optimal level of debt maturity can be attained by weighing the cost and benefits from the short-term debt. The agency cost view is deemed opposite to liquidity risk hypothesis, which says that as firms have more of risky growth opportunities, optimal debt structure would include a greater portion of long-term debt.

2.6.2 Information asymmetry

Information asymmetry refers to a condition where a party to a contract can possess superior information than other parties to the contract. The models of debt maturity based on information asymmetry assume that borrowers have a higher assessment of their expected changes in default risk (Flannery, 1986; Kale et al., 1991; Noe & Rebello, 1996). Hence, information asymmetry models predict debt maturity as a trade-off between information effect of future news and the refining risk firm faces.

Information asymmetry models are categorized either as signaling modes or adverse selection models. The signaling models suggest that the choice of debt maturity has a signaling value for investors and markets which firms can use to convey good or bad future prospects. As compared to long-term debt, short-term debt is less sensitive to under-pricing. Accordingly, firms with under-priced liabilities are more likely to issue short-term debt, while those with overpriced debt would prefer longer term maturities. Diamond (1991) explains that high-quality firms issue short-term debt because of lower financing risk, whereas low-rated firms prefer long-term debt to avoid refinancing risk[13]. Flannery (1986) argues that short-term debt issues are more likely to be followed positive changes in firms stock returns, better ratings, and positive change in unexpected earnings. Firms with better credit quality are also more liable to issue debt with call and conversion

[13] Low-grade firms have also problems raising long term debt, though, which might suggest that the short term debt market are accessed by only two types of borrower, one with very high credit quality and others with poor quality. Medium quality firms hence are more likely to issue long term debt (Diamond, 1991).

feature to separate themselves from the low-quality firm (Robbins & Schatzberg, 1986; Stein, 1992).

In adverse selection models, on the other hand, maturity is chosen to minimize the effect of the cost of privately held information on costs of financing. Given that there is favourable private information which would possibly have a positive impact on firm's credit quality, the firm would be more to shorten its borrowing maturity. The firm would borrow for a shorter period to materialize the benefits of improved credit risk later to keep the refinancing costs lower when the actual credit quality is revealed to markets. In contrast, firms with unfavourable information would prefer to issue longer-term debt to avoid the increasing refinancing costs, and liquidity risk after the bad news about their credit quality arrive the market. According to Lucas and McDonald (1990) firms expecting good news, which can increase share prices shortly, would most probably delay the debt issue until the news is spreading in the market. However, firms expecting bad news shortly would issue debt of longer maturity instantly.

2.6.3 Liquidity risk and screening

Firms found refinancing increasingly difficult when their default risk increases. At times when some bad news hits the market shortly before the firm enters debt market for raising finances (Sharp, 1991; Diamond, 1991; and Titman, 1992), lenders may demand higher default premium or reject the credit extension. According to Diamond (1991), firms facing these problems face higher liquidity risk leading to forced liquidation of assets to retire the outstanding debt as the refinancing option is either not available or turns highly expensive. Therefore, fears of increasing default risk premium or even the rejection of the credit extension in such conditions can induce firms to issue their debt with a longer maturity. Even if these extreme conditions may not hold, firms might still avoid short-term debt for overly expensive refinancing rates due to imperfections in the credit markets

(Titman, 1992). However, not all firms might be able to do so due to the required rate of return to compensate investors for greater credit risk of long-term debt which induces substitution into risky low-quality projects (Diamond, 1991; Stiglitz & Weiss, 1981). This will result in screening out of low-quality firms from long-term debt markets, leaving only high and good quality firms eligible for long-term debt market[14]. If a firm faces greater default risk, its tendency to borrow on long-term basis increases.

2.6.4 Asset Maturity

Asset maturity refers to timing and pattern of firm's cash flows from its assets. In order to attain financial equilibrium, assets maturity should be matched with debt maturity (Morris, 1992). Under the framework of agency theory of debt, asset maturity is also deemed as an important determinant of debt maturity structure of the firm. Myers (1977) argues that firms synchronize debt repayments with a decline in value of assets in place as a way to mitigate agency cost of debt specifically the underinvestment problem. Hence, nature of firm's assets maturity could determine the capacity of firm's borrowing length. As such, firms with proportionately more long-term assets sustain to borrow more on a long-term basis. This resulting maturity matching allows the firm to extend debt maturity without significantly increasing its agency costs which could otherwise be unsustainable too high. Likewise, Demirgüç-Kunt and Maksimovic (1999) argue that firm's capacity to borrow for long-term debt is enhanced if it has more fixed assets in place. Therefore, the nature of assets may also be influential in debt maturity choice of firm. Asset maturity thus could be a major determinant of debt maturity structure of the firm.

The mismatch of the debt and asset maturities would entail firm into liquidity risk (Diamond, 1991). Stohs and Mauer (1996) state that when firm's debt matures before

[14] This is further bolstered in Rizzi (1994), who showed low quality firms have been unable to issue long term debt.

assets start generating cash flows, then even solvent firm could face the liquidity risk in meeting its financial obligations. On the other hand, when the debt matures later than assets, firms would have financial obligations to face while cash flows from assets would stop. This suggests that in either case, maturity mismatch culminates in liquidity risk problem. Hart and Moore (1994) propose matching of assets with liabilities to match debt with either stream of returns or rate of depreciation, both of which are regarded as assets. Following matching principle in debt maturity structure lessens the expected costs of financial distress, while also helps determine capital needs with relative certainty (Morris, 1991).

2.6.5 Taxes

Lewis (1990) derives M&M like irrelevance argument for debt maturity similar to leverage. By showing that a firm could achieve optimal debt policy by varying mix of both short and longer-term debt at given tax rates. In the study of Lewis (1990) analysis mere taxes are not sufficient to raise the question of the relevance of debt maturity. Hence, other imperfections like floatation costs, agency problem of underinvestment and alike, are warranted for debt maturity to matter. The author further says that the level of debt and its maturity structure are determined simultaneously as the underlying assumption of the model. Brick and Ravid (1991) argue that the irrelevance argument of debt maturity in the presence of taxes depends largely upon this assumption. Brick and Ravid (1985), on the other hand, based their analysis of optimal debt maturity structure on the premise that firms decide on debt level before debt maturity. The writers further opined that long-term debt accelerates interest payments which maximize the present value of tax shield on long-term debt, which in turn maximizes the firm value. They give another tax-based explanation for optimal debt maturity structure invoking the slope of the term structure of interest rates. All else constant, their model predicts the positive response of firm value to increasing maturity of debt while the yield curve is sloping upward. This is because tax

shield on interest payments accelerates with a larger proportion of long-term debt in the capital structure. Thus, in the framework offered by their maturity structure is an increasing function of the term structure of interest rates. The testable hypothesis based on Brick & Ravid, (1985) analysis, debt maturity increases in the slope of the yield curve.

In a continuous-time framework, presented by Kane, Marcus, and McDonald (1985) (KMM model), debt maturity is determined endogenously. Taking personal and corporate taxes, costs of default and bankruptcy and costs of floating additional debt, KMM model shows that optimal level of debt maturity involves a trade-off between floatation and bankruptcy costs and tax benefits arising from debt issue. The KMM model makes following predictions about debt maturity given floatation costs, bankruptcy costs, and tax-related benefits of debt. For example 1) the optimal maturity of debt lengthens if the floatation costs increase for a firm. The rationale behind lengthening debt maturity when floatation costs rise is to spread the floatation costs over a longer period. 2) The optimal maturity of debt lengthens if the tax advantages of debt decrease. The rationale to lengthen debt maturity in dwindling tax advantages is to keep the marginal benefits of tax advantages from debt (net of bankruptcy costs) are either equal or above the flotation costs. 3) The optimal maturity of debt lengthens if the firm's volatility decreases. Finally, if the firm is risky or its volatility increases it runs the risk of mounting bankruptcy costs.

Hence, in such circumstances, the rationale demands to borrow on a longer term to avoid more frequent refinancing and to curb expected bankruptcy costs. Wiggins (1990) further demonstrates that higher volatility prompts longer debt maturity because default risk premium on the long-term debt becomes more sensitive making the tax shield from interest payments on long-term debt more favourable than the short-term debt. However, Wiggins, (1990)'s analysis lacks the derivation of optimal debt maturity endogenously.

2.7 Determinants of Debt Maturity- Empirical considerations

Following variables are generally used as determinants of debt maturity structure.

2.8.1 Size

Several studies have revealed that size is a crucial determinant of debt maturity. For instance, Kirch & Terra, (2012) confirm that firm size is significantly and positively correlated with firm's debt maturity approving trade-off and agency theory. They maintain that the larger firms use more long-term debt in their capital structure. As the larger firms have a lower cost related to bankruptcy, transaction, contracting, and monitoring thus they suffer less from asymmetric information. The larger firms also have better credit quality than small firms and therefore can borrow with long-term debt. Similarly, Barclay et al. (1995), indicate that large firms issue significantly higher proportion of long-term debt and find a positive and vigorous relationship between size and debt maturity. Moreover, they observe that small firms borrow more from banks which usually have shorter maturity relative to public debt because smaller firms have less advantage of scale economies. Therefore, smaller firms opt for private debt for its lower fixed costs and lower flotation and overall costs.

Similar to the findings of Barclay & Smith, (1995), Cai et al. (2008) found that size has positive and significant effects for Chinese firms in extending the maturity of the debt as larger firms seem to issue longer-term debt. Also, Arslan and Karan (2006) tested the Turkish companies and their findings also show a positive association with long-term debt. In the same way, Fan et al. (2012) study 46 different developed and developing countries and conclude a positive relationship between size and the debt maturity. Shah and Khan (2009) also find a positive correlation between size and debt maturity structure. According to agency theory prediction, agency costs are higher for small firms as

compared to large firms. Therefore, such costs may be controlled by replacing long-term debt with short-term debt.

Substantively, Deesomsak et al. (2009) catch positive relation between size and debt maturity consistent with signaling hypothesis and moral hazard prediction that predict a positive relation. In the situation, smaller firms face more conflicts between debt holders and shareholders. Therefore the size as positive and significant supports the hypothesis that small firms tend to higher agency costs of debt and thus avail short-term debt to reduce these costs. Their findings also support the signaling hypothesis, which stipulates that small firms have higher levels of asymmetric information, and thus more motivated to use short-term debt to signal their quality to the market. In this connection, following studies also observe a positive relationship between size and debt maturity (Singh 2009; Demirgüç-Kunt & Maksimovic, 1999; Körner, 2007; Morris, 1976; Ozkan, 2002). Converse to that numerous studies find the negative relationship between size and debt maturity for example, (Guedes & Opler, 1996; Heyman, Deloof, & Ooghe, 2003; Scherr & Hulburt, 2001). In brief, the literature specifies the mix results about the size and debt maturity.

2.8.2 Growth

Growth is also considered an important determinant of debt maturity. Barclay et al., (1995) support the hypothesis that firms with more growth opportunity options in their investment, issue more short-term debt. Their result suggests that growth options are important and significant where the growing firms use short-term debt. Hence there is a negative relationship between growth and debt maturity. They further find that regulated firms borrow more long-term debt similar to the results of (Smith, 1986). Equally, Arslan and Karan (2006) maintain that as firms get financially strong or have more growth opportunities, they shorten their corporate debt maturity to reduce the underinvestment

problem. Thus the findings show highly negative and significant relationship between growth and debt maturity. Authors, further, document that despite having a large controlling shareholder or a concentrated ownership structure, firms with growth opportunities still prefer shorter maturities to solve the underinvestment problems. Likewise, Goyal, and Racic (2002) and Johnson (2003) also discover the negative relationship between growth and debt maturity structure. The above studies are consistent with the prediction of Myers (1977), suggesting that debt maturity is inversely related to proxies for growth options in firms' investment opportunity sets. According to which short debt maturity helps control the underinvestment problem. However other studies such as Deesomsak et al. (2008), Körner, (2007) and Garcia and Martinez (2010) find the positive and significant effect on firm's debt maturity structure. On the other hand, Cai et al. (2008) investigate the potential determinants of debt maturity on the Chinese listed firms. The authors argue that the overinvestment problem has been paid more attention than the underinvestment problem. Their estimates give the positive however insignificant coefficient of growth. Hence it shows somehow irrelevance between growth and debt maturity. Likewise, other studies also find same results (Billett et al. 2007; Kim, Mauer, & Stohs, 1995; Stohs & Mauer, 1996). Their findings also sustain the overinvestment argument by Hart and Moore's (1995) that firms tend to use long-term debt to control managers' incentives to invest in negative NPV projects. In the same vein, Krich et al. (2012) and Shah and Khan (2009) indicate an insignificant relationship of growth opportunity with the debt maturity.

Whereas Stohs &Mauer (1996) reveal multiple findings, i.e., with a larger amount of growth, firms have little leverage and vice versa. The results show negative and (positive) relationship between growth and debt supporting the prediction of signalling model. Therefore, from the literature, it is evident that the results about the relationship between growth and debt maturity are mixed.

2.8.3 Asset maturity

Asset maturity is also an important factor influencing debt maturity structure. It is widely used in the existing literature on debt maturity choice. This variable is hypothesized and analyzed by one of the debt maturity predictions, i.e., maturity matching also known as the textbook rule of thumb. Titman and Wessels (1988) used this variable as influencing determinant of debt maturity and examine the ratio of long-term debt to total assets as well as the ratio of short-term debt to total assets. Their evidence shows that firms with higher leverage issue both more long-term debt and more short-term debt. Their specification, however, does not provide a clear picture of how the mix of long-term and short-term debt varies with firm characteristics.

However, Stohs &Mauer (1996) support the prescription that firm should deal according to matching principle by which they match the maturity of their debt with their assets. Thus the asset maturity is positively related to debt maturity. Arslan and Karan (2006) also find clear support for maturity matching hypothesis. Their results show the positive coefficient of asset maturity displaying that long-term assets are positively and significantly correlated with debt maturity structure. However, the yearly rise and falls in operating activities cause the short-term financing to rise and fall accordingly. Many other studies also find the positive relationship between asset maturity and debt maturity (Correia, 2008; Hart and Moore, 1994; Graham & Harvey, 2001; Körner 2007; Shah and Khan 2009). Cai et al. (2008) also confirm that asset maturity has significant effects in extending and explaining debt maturity mix consistent with the predictions of maturity theories. Inverse to that, Krich et al. (2012) suggest that asset maturity is insignificant with the debt maturity.

2.8.4 Tangibility

According to some studies, tangibility is significantly and positively correlated with firm's debt maturity confirming trade-off and agency theory. Results suggest that more tangible firms use more long-term debt in their capital structure because the coefficient of tangibility is statistically significant and positive. For example, Krich et al. (2012) analyze the dynamic panel data by testing the effect of well-known variables suggested by the theories of debt maturity such as signaling, agency cost, trade-off and maturity matching arguments. They further test whether institutional quality or financial development (or both) have first order effect on decisions of debt maturity of the firm. It is argued that more tangible firms having more real assets have better collateral thus lower bankruptcy cost as compared to lower tangible firms. Therefore, in reducing risk collateral plays a greater role in long-term debt than short-term debt.

2.8.5 Profitability

According to the literature, the relationship between profitability and debt maturity is mix having a different piece of evidence. For example, Fan et al. (2002) demonstrate the positive relationship between size and debt maturity. Similarly, Scherr & Hulburt (2001) also find the positive relation of profitability with debt maturity. However, Krich et al. (2012) find no evidence for the influence of profitability on debt maturity since they find that profitability is insignificant with the debt maturity.

2.8.6 Risk

According to trade-off theory, firms with higher business risk should choose longer debt maturities to reduce expected bankruptcy cost, since higher business risk implies a higher probability of bankruptcy. In this context, Krich et al. (2012) support that the risk is significantly and positively correlated with firm's debt maturity confirming trade-off and agency theory. The tradeoff theory suggests that riskier firms use more long-term debt in

their capital structure. In contrast, Stohs &Mauer (1996) investigate that firms with larger earnings surprises tend to use short-term debt showing that earning volatility has a negative relation with debt maturity. In this relation, Cai et al. (2008) show a negative relationship between volatility and debt maturity for low-growth firms and the positive relation for high-growth firms. It indicates that firms with risky earnings are intended to use long-term debt. High risk may lead to bankruptcy. Therefore, firms with good valued growth opportunities would prefer long-term debt to protect their profitability in longer period's projects against any liquidation in the future. The other studies also find the negative relationship between volatility and debt maturity (Guedes & Opler 1996; Scherr & Hulburt 2001; Ozkan 2002; Stephan, Talavera, & Tsapin, 2011).

2.8.7 Tax rate

The literature suggests that taxes play a major role in determining firm debt maturity, i.e., Krich et al. (2012) find that the tax effects are negatively and significantly correlated with debt maturity in the firm of South America. This finding supports the tax hypothesis such as firms with lower tax rate should issue long-term debt to minimize flotation costs associated with debt issues, a recommendation that cannot be rejected by our results. In this context, Diamond (1991) proposes that firms with very low ratings and those with high ratings issue more short-term debt comparative to intermediate-rated firms. Stohs &Mauer (1996) support the tax hypothesis of debt maturity, so the coefficient of the tax is negatively and significantly correlated to debt maturity. Likewise, Shah and Khan (2009) measure tax rate as taxable income divided by tax expenses. Their results show a negative relationship between tax rate and debt maturity. The similar results are drawn by Kane *et al.* (1985) they argue that debt-maturity increases with floatation cost and it decreases with tax shield benefits of debt. However, Arslan and Karan (2006) provide the evidence of insignificance of tax suggesting that there is no effect of taxes on debt maturity structure. The reason behind the indifferent behaviour of tax with debt maturity

supports the prediction of Lewis (1990) that describes that tax arguments are not correlated to optimality of leverage and maturity.

2.8.8 Liquidity

The empirical analysis shows that the liquidity factor tends to be significant in explaining debt maturity mix that is consistent with the predictions of maturity theories. For example, Cai et al. (2008) discover that the liquidity has positive and significant effects for both large and small firms in extending the maturity of debt employed by Chinese companies. Similarly, Deesomsak et al. (2009) also indicate the positive relationship between liquidity and debt maturity. This suggests that firms in this region tend to use more long-term debt when they are more liquid to avoid cash deficit and to prevent the probability of bankruptcy.

2.8 Some stylized facts

Guedes and Opler (1996) provide some stylized facts for high quality (firms with high ratings) and low-quality firms (firms with speculative or lower rating). The authors have summarized the key characteristics of debt maturity choice of these two groups of firms as follows.

2.8.1 Debt maturity characteristics of high or investment grade firms.

1. Investment-grade firms participate in lower and higher spectrum of debt maturity spectrum. As such, these firms issue shorter-term debt (especially less than five years) and longer-term debt (with maturity over 30 years) disproportionately higher than low-grade firms.

2. High-quality firms participate very little in the middle of the debt maturity spectrum (i.e., debt issues between 15 to 29 years) but very high in over 30-year maturity.

3. Investment-grade firms visit Euro bond markets more often than low-grade firms

2.8.2 Debt maturity characteristics of low or speculative-grade firms

1. Firms with speculative grade rating rarely issue the debt less than 5-year maturity.

2. Low-quality firms usually participate in the middle of the debt maturity spectrum (i.e., debt issues between 15 to 29 years).

3. Convertible and another non-straight debt is more often a territory of speculative or low-grade firms rather than high-quality firms.

The following Table 2.2.presents the summary of selected studies on determinants of debt maturity structure.

Table: 2.2 Summary of selected studies on determinants of debt maturity structure

Authors	Size	Leverage	Asset maturity	Growth	Profitability	Tangibility	Risk	Tax rate
Kane et al. (1985)	+	+	+	insig	+	N/A	-	
Morris (1991)	+	+	+					
Hart and Moore (1994)			+					
Barclays at al. (1995),	-	+/-		-	-		+/-	insig
Stohs & Mauer (1996)		N/A	+	+	N/A	N/A	-	-
Guedes & Opler (1996),	-		+	+	N/A	N/A	-	insig
Demiruc-Kunt and Maksimovic (1999)	+							
Graham & Harvey (2001),			+					
Scherr & Hulburt (2001)	+		+	-	+		-	
Ozkan (2002)	+	N/A	+	-	N/A	N/A	-	insig
Goyal et al. (2002),				-				
Johnson (2003)				-				
Heyman et al. (2003)	-							
Korner (2006)	+		+	+	+			
Fan et al. (2008	+				+			
Cai et al. (2008).			+	+	-	N/A	-	-
Correia (2008)	-		+	-/+		N/A		insig
Morris (2009),	+							
Singh(2009),	+							
Deesomsak et al. (2009)	+	+	+	-	+	N/A	insig	+
Garcia- & Martinez (2010)				+				
Stephane et al. (2011)							-	
Krich et al (2012)	+	-	-	-	-	+	+	-

Note: +ve shows positive relation and –ve shows a negative relationship between variables, insig= insignificant relation, N/A= Not available.

2.9 Debt maturity structure and managerial behaviour- Empirical evidence

In financing decisions, managers have the discretion not only to determine the debt level in the capital structure but also to choose the duration of borrowing. The self-interested managers with lower or no equity ownership avoid external pressure by debt markets arising from frequent monitoring and thus prefer to issue long maturity debt. The frequent monitoring occurs when managers issue short-term debt. Shorter maturities help shareholders monitor the management more efficiently and hence saves the firm a good deal in monitoring costs (Rajan & Winton, 1995).

Increased managerial ownership helps align the interests of owners and managers and mitigate agency problem. A higher level of the interest matching decreases the agency cost generating from long-term debt and less monitoring by self-interested managers. For this reason, the equity ownership provides an incentive to the managers to choose debt maturity that can provide frequent monitoring (Datta et al. 2005). Hence, short-term maturity has lower agency-related costs than longer-maturity thus it can be used as a highly effective tool to monitor management (Stulz, 2000). Researchers believe that one of the important outcomes of borrowing for short term is its effectiveness in building systematically repetitive monitoring mechanism that puts management's interest well aligned with those of shareholders'. So the debt maturity structure has a direct link with monitoring frequency of the firm by the underwriters, investment bankers, investors, and lending institutions. In this scenario, shorter maturity forces firms to interact debt markets frequently, which tighten monitoring process by the credit rating agencies, lending institutions, and capital markets.

Under their prerogative, therefore, managers are least likely to choose maturity structure that exposes them to undesirably more rigorous and frequent inspection of the debt markets. The inherent managerial preference of self-serving managers for minimum

monitoring thus deviate from value maximizing debt and might lead to suboptimal choice for debt maturity structure within the firm against the interest of shareholders. Therefore, managers tend to issue long-term debt rather short term. Authors argue that the conflict over the debt maturity structure arises between owners and managers due to their inherent preference of self-interest to be monitored less (Datta et al. 2005). Given the fact that management decides most of the times about funds and maturity structure of financing, only the management with their interests strongly linked with the interest of owners would prefer short-term debt. However, in most of the cases, self-serving managers having misaligned interests would entrench themselves by borrowing longer term to retain their autonomy and avoid frequent monitoring. On the other hand, Myers (1977) argues that managers with some positive news not yet publicized might borrow for a shorter period to enable them to capitalize on markets factoring in the effect of good news on financing cost. Hence, Myers contends that unless managers have some incentive, it is less likely that they choose maturity structure that serves the best interests of the owners voluntarily.

Giving the evidence of self-serving managerial behaviour, Datta et al. (2005) find that managerial ownership is inversely related to debt maturity indicating that with the increase of ownership proportion managers align their interests with shareholders and issue big proportion of short-term debt and vice versa. According to Diamond (1991)[15] liquidity risk has a direct relation to debt maturity. Therefore, debt maturity increases with the liquidity risk. So the same outcome is drawn by Datta et al. (2005) who claim that managers with lower ownership choose longer-maturity debt even when liquidation risk is low confirming the relation between liquidity risk and the choice of debt maturity. Other studies also capture the self-serving managerial element such as Guedes and Opler

[15] "Given the monitoring benefits of short-maturity debt, the choice of debt maturity entails a trade-off between the benefits of external monitoring by the debt market and the cost of inefficient liquidation".

(1996) document that good investment grade firm borrows short-term debt. They maintain that the firm managers issue long-term debt probably to avoid the costly liquidation risk. Similarly, growth firms tend to avail short-term debt while the large firms with lower credit ratings prefer longer-term debt (Barclay and Smith 1995). To see the fact managers in high-quality firms issue short-term debt and managers in low-quality firms borrow long-term debt (Kale and Noe 1990).

Harmonizing the concept García & Martínez, (2010) maintain that managerial ownership and the long-term debt have a positive relationship with each other at the low level of managerial ownership and at a high level of managerial ownership, it is negatively related. They conclude that when firms are smaller and burdened with more debt, they prefer long-term debt. Additionally, the authors elaborate that firms usually do not consider tax effects while making decisions about debt maturity but try to avoid term premium on the interest rates.

2.10 SHARIAH-COMPLIANT FIRMS, TRUSTWORTHINESS, AND ROLE OF MANAGER

2.10.1 Introduction to Shariah and Islamic ethical criteria

The integrity and character of the manager directly affect the firm's value by influencing the corporate decisions in the firm. Therefore, the issue of managerial behaviour is important in conventional and Shariah-compliant firms. The focus of this section is to provide a conceptual framework based on Quran and Hadith on Islamic principles for Shariah-compliant firm and the manager. According to the teaching of Islam, the wealth should be pursuit based on moral and ethical as guided and suggested through the criteria of Halal (permissible) and Haram (prohibited). The positive valuable and just is permissible nonetheless damaging and unjust is prohibited. These are the criteria proposed by the Islamic Law (Shariah) consists of Qur'an, Sunnah (the practice of Prophet Muhammad), and further opinions and deductions (logically applied principles) from

Islamic scholars and experts and advocates/devotees to the faith. Therefore, Islamic ethics and principles suggested by Shariah are at the root of Islamic business ethics.

The Shariah-compliant firm is called when it follows the Shariah Law and the set of criteria in the operation of its activities. Muslims refer to Shariah Law through which implicit message is conveyed to understand the objective God tried to convey to mankind[16]. The purpose of this message is to secure the benefits for the people here and hereafter, and that is the duty of a Muslims. The Shariah-compliant objectives are explicated that major purpose of the Shariah-compliant law is to safeguard five main essentials of human beings. For example, faith (*din*), life (*nafs*), intellectual (*'aql*), lineage or descendants (*nasl*) and property or wealth (*maal*), i.e., al-Ghazali and Awdah, Al-Juwayni (Febianto, 2011; Mukti, 2005). According to the Shariah law, wealth is defined as everything that can be used, legally, such as business, debt, consumption, and gift. In other words, everything whether goods or services that can be used by men are considered as wealth.

People by nature seek security and safeguard especially for all above mentioned five essentials, and thus they feel safe in the cover of their religion when it provides the same to them. Consequently, people prefer religious (Islamic) concept in their investments to be safer as compared to the conventional firm. Unlike conventional finance, Islamic finance puts Islamic guidelines of doing business ahead of modern market-based economic rationalities. Those guidelines are based on the moral and ethical values that

[16] Ibrahim al-Nakha'i (died (96H) says "Verily, the rulings of Allah have their own specific objectives which are reflected as benefit and wisdom upon mankind". Similarly, Al-Izz bin Abdul Salam a classic jurist says "the greatest of all the objectives of the Qur'an is to facilitate benefits *masalih* (public interest) that the realization of benefit include the prevention of harm".

Islam propagates to attain the objective of economic well-being or *Falah* for all human beings (Sarker, 1999).

Thus, the main focus of the Shariah (Islamic Law) is on the *Falah* (welfare) of the human being. According to this law, the Islamic firm's producer is ethically bound to follow related business rules of Shariah, i.e., first, *(maslaha)* maximizing the social satisfaction of stakeholders and public interest, second, restricting to grieve, affect or injure others and minimizing the social disutility, third, the preference of social benefit over the personal benefit and to remove the hardships of the life of people by facilitating them in the time of need (Numānåi & Rāhnemā 1994).

Conspicuously, an Islamic business can be defined as all kinds of business activities that cannot limit (regarding quantity) the ownership of goods or services including the profits but can be limited concerning the way it gets and the way it uses according to the Shariah law (Febianto, 2011). So the good governance (management) is bound to deal with *amanh*, justice and avoiding individual benefit or interest as Islam discourages the axiom of self-interest and encourages trustworthiness. In the Islamic view, if there is no *falah* in the *maqasid*, it is no longer a governance process. The good governance consists of the *maqasidic* elements to fulfill the *maqasidic*[17] end. Islamic scholars maintain that Islam favours such governance or management with *maqasid* determines the ambit of policies by accumulating general benefits of stakeholders or society and avoiding harm to the whole community to enhance public interest (*maslahah 'ammah*). Whereas, the suppression of *mafsadah* (in its various forms) may lead to underdevelopment,

[17] Dr Maszlee Malik states "it is a process to attain a holistic end for the benefits of individuals through its *tawhidic* individualistic paradigm, beyond the instrumental value meaning e.g. multi-dimensions of benefits for both individuals and community here and Hereafter. The prevention of public harm or evil (*mafsadah 'ammah*) should be the priority of Islamic governance according to the orientation of *maqasid al-Shari'ah"*.

unemployment, and economic crises and impede the accomplishment of the *maqasidic* goals is indeed an act of good governance (Maszlee Malik).

These arguments give an insight about the Shariah maqasid for good governance by implying justice, social equilibrium, sustainable development, the rule of law, efficiency, empowerment, in the community for overall human well-being which is the ultimate aim of a governance process. The activation of *maqasid* within such understanding can be understood within the spirit of verse (2: 177, Quran). Therefore to seek individual benefit on the cost of public benefits is forbidden. For a business organization, the Shariah law is a core value and thus provides strategic and tactic guidelines. If any business activity harms five factors mentioned above, it is not allowed because this comes under damages and injustice. Conversely, if any service, product or activity protects and supports the above five factors is allowed. Therefore, Islamic ethics take care of public interest generally by assessing and evaluating every business activity according to approved criteria (Febianto, 2011).

Some Islamic ethical criteria are given below:

Equity and justice: Islam encourages Muslims to deal everyone with justice because it is linked to the faith and belief of a Muslim. Quran says "be just! For justice is nearest to piety" and ''Deal not unjustly, and ye shall not be treated unjustly" (Al Quran). To behave with just in this life will lead to expect same from God in Hereafter.

Amanah or trustworthiness: Being the trustee of God in this world one must take responsibility for his actions. Notably, the wealth and other resources the humanity in this world avails do not belong to him, but by God thus it is significant to perform accordingly and fulfil that responsibility. So the firm's management has also a fiduciary responsibility towards owners.

Benevolence or excellence: Benevolence also means "kindness to others" is further defined as "an act which benefits persons other than those from whom the act precedes without any obligation" (Umaruddin, 1996). Kindness is encouraged in Islam. The Prophet (PBUH) states "among the inhabitants of Paradise will be one who wields authority and is just and fair; one who is truthful and has been endowed with power to do good deeds; and the person who is merciful and kind-hearted towards his relatives and to every pious Muslim, and who does not stretch out his hand in spite of having a large family to support".

Ihsaan: *Ihsaan* is also a key concept in Islamic ethics, which relates to behaviour and also to seek the wish and love of God. The basic Arabic word for this is "h-s-n" means beautiful, suitable or proper fitting (Siddiqui, 1997). Similar to worship, it entails that any devoted Muslim employees (managers) should perform the duty for the love of God realizing that God is watching them, even if people do not watch them. *Ihsaan* also means excellence, so Islam emphasizes excellence at work along with productivity.

2.10.2 The objective and features of Sharia firm

An economic enterprise aims to attain satisfactory profits, for this Islamic business ethics recognizes a profit, but it is more towards achieving society's well-being or public interest (Siddiqi 1988). In the conventional economic system, the objective of the firm is primarily on profit maximization and cost minimization. Rarely do they focus on social, ethical and moral components (Azid et al. 2007). Thus the objective of an economic firm is to make satisfactory profits that may be different from profit maximization in the neoclassical sense due to ethical and social factors affecting the production decision (Siddiqi (1988). Consequently, the primary goal of the Islamic firm is not the only maximization of profit rather its motive is to gain only fair profit along with social service that is more important for the pleasure of God. Moreover, thus it considers two targets altogether, first the

welfare of human being *(falah)* and second the profit maximization. Thus, the Islamic firm focuses on taking care of benefit of the whole community as well as the state along with the wealth maximization (Sarker, 1999).

Describing the feature of Shariah-compliant firms, Sarkar (1999) gives following points. First, the Shariah-compliant firm is ethically bound to follow the Islamic rules in providing the goods of basic needs at an affordable price for whole society. Second, the Shariah-compliant firm expects to operate at such output level, where (MC=MR) marginal cost and marginal revenue becomes equal. Third, according to (Siddiqi, 1989) the producer of Islamic firm may reject the existing market wage uniformity and adjust to different or higher wage that he considers as on justice. Fourth, the firm believes cooperation and the mutual responsibility with four factors of production, i.e., labour, land, capital, and entrepreneurship as the driving force. Fifth, under the Islamic principles various contracts like *Musharka, Mudarba, Bai-Salam, Istisna,* and others should be free from *garar, riba,* and *Masir.* Sixth, according to nature of the contract, the responsibilities and rights of the contract parties should be predetermined (Sarker 1999).

Also, Yusanto and Widjajakusuma, (2002) describe that the business is to get four critical components guided by Shariah-compliance. For example, (1) profit-material and benefit-nonmaterial, that means the firm's goal should provide benefit to the internal company organization as well as external (environment), such as brotherhood working condition, social care and so on. (2) Growth (3) continuity, and (4) Allah blessing. This element to gain Allah blessing is a high gratification to Muslims and if they if they reach this, it remarks the triumph of sincerity and according to Shariah. Therefore, the managers in organizations pursue such orientation to seek the blessings of Allah. Managers should seek the same blessing by avoiding self-serving behaviour and being trustworthy while making decisions for the capital structure in the firm.

Ricketts (2002) argues that observing the irregularities from unethical behaviours even in the conventional firms; it is profoundly felt that stakeholders should be supported and protected from economic and social costs. Moreover, these manipulations can be solved by implying moral, ethical and Islamic principles. As the Islamic man is different from an economic man so the behaviour of the producer of Islamic firm may depend on the Islamic objectives of the firm (Numānåi & Rāhnemā, 1994). Alike, Islamic economic system emphasizes that market should work with trust, justice, commiseration, charity, and solidarity. Besides produce acceptance feasibility socially with economic efficiency (Ahmed, 2003). So Islam suggests for the sharing of loss and profits so that in a time of crises no single party bears the abnormal losses[18].

Any activity degrading the humanity or making a human being a party to the vices to gain economic benefit is not allowed, rather working with just and solidarity is encouraged in the Islamic system (Siddiqi, 1989). Thus, According to the teaching of Islam, the principle of trusteeship[19] markedly contrasted to the principle of manager's self-interest in the free market economies of non-Islamic communities (Ahmed 2003). Moreover, Ahmad (1995) used the term of *Amanah* or trustworthiness a major factor for the responsibility of manager in dealing and handling the wealth of owner. Hence the '*Amanah'* or trustworthiness is the core principle in Islam for the rights of stakeholders (Beekun and Badawi 2005).

[18] Uusmani & Taqī 'Us̲mānī (2002), describe "In *musharakah* all the partners share the loss proportionately to their investment while in *mudarabha* the loss, if any, is suffered by the *rabb-ul-mal* only, because the *mudarib* does not invest anything. His loss is restricted to the fact that his labor has gone in vain and his work has not brought any fruit to him".

[19] Trusteeship is a socio-economic philosophy by which the wealthy or controlling people would be the trustees of trusts that looked after the welfare of the people in general.

2.10.3Role of Manager

A considerable amount of literature suggests that managers by pursuing their self-interest exert the negative impact on the value of the firm which results in the shrinkage of shareholders' wealth. The firm's objective of maximizing the shareholders' wealth, therefore, cannot be achieved without management's moral uprightness; this is the reason why the ethically responsible role of managers has been emphasized in the literature on corporate ethics. The study summarizes the discussion on the managerial ethics from the perspectives of corporate social responsibility, stakeholders' theory, and Islam.

2.10.3.1 Corporate social responsibility (CSR) view

Corporate social performance is a multidimensional construct defined by Carroll (1979) by four components such as economic responsibility, legal responsibility, ethical responsibility, and philanthropic or discretionary responsibility. Accordingly, under the economic responsibility, managers are accountable to investors and consumers to strive to be competitively profitable. Next, under legal responsibility, managers are answerable to the law to obey, as law codifies about the right and wrong. Third, under ethical responsibilities, managers are responsible for society to be ethical and fulfil the obligations being fair, correct and just and avoid harm. Finally, under philanthropic responsibilities, managers are accountable to be a good corporate citizen, contribute resources to the community/ society and improve the quality of life. The authors say, "Ethical responsibilities embody those standards, norms, or expectations that reflect a concern for what consumers, employees, shareholders, and the community regard as fair, just or in keeping with the respect or protection of stakeholders' moral rights." Specifically, in a managerial sense, the firms having CSR attempt to get profits being legal, ethical, moral and good corporate citizen.

(a) Types of managers on moral basis

In the context of an organization, ethics and morality are used interchangeably and can be divided into following three forms, for example, immoral management, amoral management and moral management (Carroll 1991).

***1. Immoral Management*:** The actions, decisions, and behaviours of immoral managers are actively against of what is right thus, discordant with ethical principles and suggest the denial of morality. These managers only care about their success or profit of the firm. These managers consider legal obligations as hurdle or barriers. Their strategies are to exploit opportunities for personal benefits.

***2. Amoral Management*:** Amoral managers are neither immoral nor moral, but they are insensitive or indifferent to the fact that their routine business activities or decisions may have dangerous effects on others. They do not care their direction may hurt even those with whom they interact and transact business activities. Hence, these managers lack ethical awareness and perception. They may be inattentive and careless in implying their actions on stakeholders. These managers are also called unintentional amoral type of managers. Other than unintentional amoral managers some intentional amoral managers think that ethical considerations are for the private lives and not for the business. They believe that business is out of these moral obligations. Out of the categories of amoral managers, though most of them are unintentional yet intentional amoral managers also exist who do not consider the role of ethics in business.

3. Moral Management: According to this approach the managers contrast from above categories as they employ high ethical standards of right behaviour. Along with the high level of professional conduct, they also possess exemplified leadership attributes on ethics. Moral managers want to be profitable but only within the boundaries of legal and ethical aspects such as justice, fairness and valid and sound process. Through this approach, their orientation or understanding is towards both words and spirit of the law.

Legal considerations are on a priority basis and seen as minimal ethical behaviour and objective or goal is to act according to the orders of law. Moral managers strive to seek and use all sound ethical principles, i.e., fairness, justice, rights of others, utilitarianism and the Golden laws for their guidance in decision-making. They assume leading position among the firms and industries ethics whenever such situation arises in their role. Moral managers feel responsibility and are appreciated in building firm- stakeholder relationship according to their needs. If managers realize to develop a healthy society, such objects can be achieved by the spirit and role of the management.

2.10.3.2 Stakeholder theory view

The role of the manager is also discussed from the stakeholder's theory[20] perspective. According to stakeholders' theory shareholders are the primary class among stakeholders, so the core objective of the managers is to protect their rights and interests. The moral and ethical aspect of the stakeholder theory (principal-agent theory) supports the idea of managerial trustworthiness and fairness. Hummels (1998) states "the role of management is to balance all the rights and interests involved, while at the same time safeguarding the objectives of the firm." Many other authors highlight the power and role of the leaders/managers in the organization (Fraedrich, 1991; McAdam & Leonard, 2003; Minkes, Small, & Chatterjee, 1999; Punter & Gangneux, 1998).

[20] Stakeholders are "groups or individuals who benefit from or are harmed by, and whose rights are violated or respected by, corporate actions" OR "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman & McVea, 2001). However, Clarkson (1995) mentions stakeholders are those whose continued participation in the firm's business is critical to its survival. Carroll (1991) classifies "Primary stakeholders are shareholders (owners), employees, customers, suppliers, local community, interest groups or sometimes civil society representatives, government, the media, and society-at-large" Clarkson (1995) and Donaldson and Preston (1995) also mention suppliers, customers, employees, and community members as primary stakeholders.

The purpose of stakeholder theory is the focus on managerial decision-making and to safeguard the interested parties. The "essential premises" of stakeholder theory underlies below. (1)"The firm has relationships with constituent (stakeholder) groups. (2) The processes and outcomes associated with these relationships are of interest. (3) The interests of all legitimate stakeholders have value. (4) The focus of stakeholder theory is in managerial decision making" (Jones and Wicks 1999; Kakabadse, Rozuel, and Lee-Davies 2005).

Minkes et al. (1999) also explain that not only the top management but also the middle management has to play its role towards the honest and ethical approach to the stakeholders and society. Donaldson and Preston (1995) describe that the base of stakeholder theory is normative and therefore involves the adaptation of the ideas like stakeholders are persons with legitimate interests in procedural and substantial aspects of corporate activities. Stakeholders are identified by their interests in the firm whether the firm has any corresponding functional interest in them. This idea implies that managers of the firm must catalyze constructive contributions for their stakeholders to accomplish their desired results, e.g., the perpetuation of the firm, profitability, stability, and growth.

In the same line, Beekun and Badawi (2005) pragmatically explain the ethics balancing the needs of different stakeholders that is focusing the common approach in the stakeholders' theory like justice, balancing, trust and benevolence. Freeman (2001) further says "stakeholder theory concentrates on a core issue on whose behalf and at whose expense is the business being run. It also questions the view of managerial capitalism that managers work to achieve stockholders' interests in exchange for control of the business". Donaldson and Preston (1995) specify that stakeholder theory goes beyond and it takes care of all interested parties looking at their interests. However, managers should not earn on the loss of firm's stakeholders. For this, "stakeholder

paradox" specifically points out the legal duty of managers that is to serve the needs and fiduciary interests of stakeholders (Goodpaster 1991). Similarly, Jones and Wicks (1999) pointed out that stakeholder theory has a practicability element that recognizes the need for the firm to remain viable (profitable) to serve the interests of stakeholders. The environment is also considered as a stakeholder, and it is a part of the pro-active CSR and justifiable growth. Therefore the firm and managers are also expected to take care of overall stakeholders including the environment or society (Kakabadse et al. 2005).

Research on stakeholder often examines the link between stakeholder- management and firm-level outcomes, thus connecting managerial response to stakeholder interests with measurable consequences (Freeman, 1999; Jones, 1995). Instrumental stakeholder theory links a firm's consideration of stakeholders' interests to organizational performance. So the fulfilment of stakeholder theory includes both stakeholder-specific performance and financial performance. Kakabadse et al. (2005) present an extended review of stakeholder approach explaining that CSR and stakeholders' interests are partly related to each other. Also, Hillman and Keim (2001) test the relationship between shareholder value, stakeholder management, and social issue participation and find evidence that stakeholder management leads to improved shareholder value. They observed a positive relationship between firm's effective abilities of management value for shareholders which provides a connection to the financial performance of the firm.

Hence, financial performance is one indicator of judging the behaviour of managers (Hillman, Keim, & Luce, 2001). It is evident that in the burst of large firms' takeover in the period of 1980s share price increased for the acquired firms and decreased for acquiring firms. So the speculators observed that self-serving managerial behaviour and activities account for both results (Weidenbaum & Vogt, 1987; Jensen, 1989). The reason for an increase in the value of acquiring firms was the inefficient and self-interested

managers before the takeover. Moreover, the acquiring firms decrease in value because the motivation of acquisition was not the return on investment for owners but ego satisfaction and career development for their top management. Managers are usually paid with benefits, i.e., salaries and bonuses at the cost of the stockholders. It is, therefore, essentially required that managers should take care of stakeholders' interests rather their own.

Among different economic agents such as consumers, employees, and managers, the managers have more power because of their role and organized stature. Thus, the manager's role has an unavoidable and significant impact on the benefits and costs for the community and society (Garvey, 2012; Segal, Borgia, & Schoenfeld, 2005). Moreover, literature verifies the responsibility of the firm as well as manager beyond the sole profit accomplishment or fulfilment of the economic goal. So, it is the moral duty of management to attain the rights and interests of stakeholders by fulfilling both economic as well as social obligations of all stakeholders.

2.10.3.3 Islamic view

Shariah teachings obligate the manager to fulfil his duties according to the Islamic principles. According to Hadith "God; Most High says: I make a third with two partners as long as one of them does not cheat the other, but when one cheats, I depart from them." The above verses and Hadith persuade Muslims to earn what the Allah permits them. In the Islamic system, ethical obligations are inevitable for the economic and social way of earnings.

Islamic economic system gives importance to Shariah principles. Accordingly, a manager would have to fulfil the moral and ethical obligations proposed by Shariah principles specifically in Shariah-compliant firm. The unjust individual is accountable before God on the 'Day of Judgment' for doing unlawful deeds and getting the property by unfair

means, and the decision of authority cannot change the reality (Quran). It is the fiduciary responsibility of a firm and its management to follow the rules of God. Islam gives a way of life, and business ethics are not separate from these ethics. Iqbal and Mirakhor (2004), Ahmed (2004a) and Ahmed (2004b) discuss the moral boundaries as a filter to overcome the conflict between private and social interest and claim over property rights. Our Prophet Muhammad (PBUH) forbid people from wasting the resources or wealth by describing "Allah disapproves for your irrelevant talk, persistent questioning and wasting of wealth." The Messenger of Allah, Himself followed these rules in every walk of life including business. He was the best *Ameen* of the property and wealth of the people.

According to Islam, the manager aims to maximize the profit of the shareholders by taking care of their financial interests. The financial manager also has to decide for the betterment of stakeholders by acquiring a mix of funds and choosing between debt and equity to build an optimum level of capital structure with minimum cost and maximum profit. So the managers have to choose feasibly among all the financing sources, i.e., debt and equity. Also, the manager should attempt profit maximization to seek value maximization for primary stakeholders of a firm (Saeed, Ahmed, & Mukhtar, 2001). Moreover, the underlying goal of a Muslim entrepreneur is to earn reasonable profit along with just wages, just prices, and social welfare (Choudhury et al. 2006; Azid et al. 2008). Hence, the responsibility of a manager is in two ways: to maximize the profit of the firm and also to protect the interests of stakeholders (Siddiqi 1988; Azid et al. 2007; Jones, 1995; Turnbull, 1997).

This research argues that by its strict social, ethical, and philanthropic adherence, a Shariah-compliant firm should incarnate a model of trustworthiness and social responsibility. Thus it should work according to the expectations of all the shareholders as conceived in Islamic injunctions and modern finance theory. Despite the emphasis on

the conventional theory on implying ethics in the role of the manager; still, it fails due to its non-moral approach (Goodpaster, 1991). Islam overtly proclaims the contribution of ethical and moral oriented approach for firm's effectiveness along with the inclusion of Shariah-principles. Islam provides an extensive range of principles, which can set out the different ways to handle even conflicting or worse problems. For example, some vital principles are fairness, justice, benevolence and excellence, honesty, and *Amanah* (or trustworthiness).

(a) Managerial Trustworthiness

The most applicable Islamic principle for the role of the manager is "*Amanah"* (Trustworthiness). Trustworthiness literally can be said as the reliability or dependability on someone deserving the trust. Sarker (1999) refers trustworthiness with the Arabic word *Amanah*, and according to Islam financial issues, earnings, and business dealings are theoretically based on the principle of *Amanah*. All the activities by manager should be according to the Shariah law ensuring the moral and ethical obligations. In the traditional company form of organization managers being separate from the owners is the major cause of manipulation. However, according to Shariah principles, the manager is responsible for utilizing resources or property of an owner with honesty and fairness by avoiding the exploitation. Islam also encourages respecting the rights of all stakeholders by avoiding opportunism, dishonesty, nepotism and other human ills. In an Islamic firm, the title of *Ameen* is associated with the managers as they are the agents of principals/owners for handling and investing their wealth fairly, honestly and trustworthily. So, the actual role of the manager in Islam is to protect the interests of shareholders being trustworthy. *Ameen* refers to trustworthy and honest person guardian of property (wealth) of the owner *(Rab-ul-Mal)*. Islam requires true professionalism from the businessmen/entrepreneur, also guides them not to deceive the profession only for profit (Azid et al., 2008; Iqbal & Mirakhor, 2004; Kahf & Khan, 1992).

In any business contract, there is a general element of trust after mutual agreement. Hence, the managers being the representatives of the owners are responsible for safeguarding their investments to fulfil the principle of *Amanah* or trust. Islam makes manager responsible for shareholders and society as a whole. The partner should be trustworthy *(Ameen)* who uses other's property in trust. After the agreement, if controlling party is not trustworthy, it would deviate from the core objective of the contract made by the parties. The partner should not gulp or exploit other partners' wealth by false means due to his integrity, honesty, sincerity, and faith in God.

Ahmad (1995) maintains that "*Amanah*" or "trust" is the responsibility of the manager in dealing and handling the wealth of owner. If managers are not *Ameen*, they would act according to their own interests and would exploit the wealth of the owners who trusted on them. Thus significant loss can occur by the fraudulent behaviour of the managers that may lose their trustworthiness among the stakeholders. The same is mentioned by Amer (2007) and Brailsford et al. (2002) that manipulation in earning occurs by the decision of the management results in loss of billions to its other stakeholders.

The Holy Quran says that man is God's trustee on the earth and is responsible for the deeds or actions he performs. Quran calls human the *Khalifa* (trustee) of God because all the resources belong to only God as God makes everything. So He requires performing with just and fairness and trusteeship to fulfil God's promise to be honest (*Ameen*) as his test of *Iman*. Thus the wealth or resources should be utilized according to the guidance of God (*Quran* and *Sunnah*). To realize the will of God is part of the morale of one's responsibility or trusteeship that one has taken to fulfil (Ahmad, 1995). In the spirit of this notion, Islam emphasizes the fundamental trustworthiness in human behaviour. In this context, if we see the early life of Prophet Muhammad (PBUH) as a trader portrays a model of trustworthiness, which earned him the titles of truthful (*Sadiq*) and trustworthy

(*Ameen*). Being trustworthy is, thus, one of the core requirements for a Shariah-compliant firm.

Trust plays a major role in business, and it is emphasized that a business manager should be honest and trustworthy in his/her wealth handling responsibility. Eisenhardt (1989) says that theories of economic exchange, like agency theory place little emphasis on trust, but they do offer explanations for managerial behaviours, such as monitoring and control, that are commonplace in organizations and that affect employees' perceptions of trust. If Islamic teachings sort the duties, there would be rare conflict among different parties on their selfishness resulting from dishonesty or distrust.

It is a compulsion for a true Muslim being an agent/ manager[21] of the firm to perform duties with trustworthiness, honesty and safeguarding the wealth of owners who put trust in them. Since Islam is against the axiom of selfishness, so the manager is assumed to provide services on behalf of owners in their interest more than his self-benefit. The concept of self-interest is discussed through the terms of *mushaha* (understanding) and *mughbana* (haggling) (Iqbal, 1992). Moreover, the self-interest is not only against the very spirit of the principle of *Amanah* (trustworthiness) in Islam but also the corporate ethics. Hence, conspicuously the importance of trustworthiness is highlighted in Islamic teachings as well as corporate ethics and morale. In this context, Ahmad (1995) maintains "The responsibility of each stakeholder is morally anchored since it is based on the concepts of trust (*Amana),* equity, balance and fairness ('*adl* and *qist*), benevolence and excellence *(Ihsaan*). At all times, humanity must not forget his/her role as God's steward

[21] According to Islamic the difference between managers and owners is clearly identified i.e. *Mudarib* has decision power and the *Rabb-ul-mal* is the owner of the company. In Islamic firms, separation of control and owners is according to the concept of trustworthiness (*Amanah*) and avoiding managerial self-interest being an agent of the owner.

or vicegerent on earth". Islam teaches the businessman or an entrepreneur for the betterment, trying to persistently overcome self and shift from the selfishness to the altruistic approach. An individual must be honest and trustworthy (*Ameen*) in his personal act or business activity.

Due to locating the particular aims of the self-interested party, there develops the lack of trust among the contracting parties. Trustworthiness can be an important part of self-interest. It is easier to acknowledge trustworthy actions when there is a sacrifice of agents' interests, and it is possible that individuals perform trustworthy actions, and still, they serve their fair self-interest. Thus, it does not mean that when people perform trustworthy actions, they will not achieve their interests at all; rather it will be fair and beneficial for all parties (Hausman (2002). Thus, it can be inferred to be trustworthy first, and acquire the benefits for all stakeholders including the manager. However, sometimes trustworthy acts severely clash with self-interest. Despite that the trustworthy person, for the sake of maintaining what he is trusted for to do, he will avoid going for such profit which harms reputation and trustworthiness. If he does otherwise, he would be ashamed of himself and humiliated by the thought of what will his concerned people think of him who have trusted him. An honest and trustworthy person feels a moral obligation, and decency thus acts accordingly because he has strong reason to do what he is trusted for. Otherwise, he will lose regards, self-respect and social recognition, so his identity and reputation are endangered.

Furthermore, intrinsic benefits of trustworthiness vanish if no one trusts you. Therefore, well-socialized people are realized to perform the acts for what they are trusted and enjoy the pragmatic package of benefits in the shape of integrity, intimacy, good reputation, self-respect and social recognition. Further, Hausman (2002) suggests that human beings can flourish only in societies where people are trustworthy and trusting. Dishonesty

threats one's position and livelihood, profession-oriented societies think that open betrayal of trust generates risk, and is not governed by moral principle and suspicious of each other. Conclusively, the effect of trustworthiness or distrust starts from an individual's mind that indulges in his/her whole life and affects the job or workplace where he/she works and then it spreads to the overall environment or entire society. Following the above notion, if managers have the same reputation and earn the trustworthiness, it will be beneficial for a firm in all directions regarding investments and the stakeholders, who will be benefited by the fairness of activities. Conversely, untrustworthy managers may explain their acts and decisions regarding their self-interest that will lead ultimately to the harm and losses in the long run. Such continuing practices will be the cause of the declining value and worth of firm in the market.

As iterated earlier, the trustworthiness stands as a cornerstone of Islamic teachings on business dealings. The principle requires the trustee to act by the clauses stipulated explicitly (or implicitly) and agreed upon mutually with the trustors in an agency contract (Iqbal, 1992). A deliberate desecration of trust by the management in pursuit of its own interests provokes the conduct of managerial opportunism in the organization (Fama & Jensen, 1983; Jensen, 1986; Jensen & Meckling, 1976).

(c) The Importance of *Rizq-e-Halal*

The importance of trustworthy behaviour can also be highlighted by the Islamic principle of *Rizq-e-Halal*, which refers to making a livelihood through lawful means as guided by Islam. Khan (1989) in his book "Economic Teachings of Prophet Muhammad *(PBUH*)" mentions: "In Western economies, all those activities which are worthwhile on a utilitarian matrix of pleasure and pain can be undertaken by an individual of the society. There is no moral restraint in their pursuit, in the Islamic economy, this cannot be so. All the activities have been divided into two broad categories of *halal and haram*." The

concept of *Rizq-e-Halal* governs the practice of earnings, and thus it is directly related to all job holders and the business persons.

Muslims are guided to earn legally and purely for their livelihood thus, Islam emphasizes on *halal* earning, so the managers are responsible for performing their duties accordingly, that they may not suppress the rights or exploit the wealth of their employers or owners of an organization. A number of *Quranic* verses and *Hadiths* focus on this issue. For example "And eat up not one another's property unjustly (in any illegal way, e.g., stealing, robbing, betraying, deceiving), nor give bribery to the rulers (authority) that you may knowingly eat up a part of the property of others sinfully." (*Surah- Al-Baqarah* Verse 188).

In above ayah, Muslims are commanded not to use unfair means to earn that are against Islam. Such unjust property is not allowed in any way even if by arguing it right, but it will remain unfair. Instead, Muslims are encouraged to benefit from the opportunities of business and trade that *Allah* has allowed for them but by mutual understanding rather than force or coerce and unlawful ways (Quran). According to a Hadith "Everyone of you is a guardian, and he is accountable for his charge." Therefore, earning the profit by the unfair way is prohibited. Moreover, According to the teaching of Islam, the word *"Tayyab"* (pure) is used in a broad meaning. It includes both non-spending on prohibited things and the *halal* means of earnings. Similarly, any activity by management which damages the real spirit of *Rizq-e-halal* is strongly forbidden. Moreover, if any firm is used to grab and exploit the rights of stakeholders can be said as convoluted in *Zulm* (oppression) and practice against Islamic teachings.

(d) *Adl* (Justice), *Ihsan* and Benevolence

In Islamic value system, honesty and trustworthiness are preached as core elements of Justice (Bradley et al.) and Kindness (*Ihsan*). *Adl* means "equity and balance" and *Ihsaan*

in Arabic driven from "*husn*" which means "beautiful (suitable, fitting proper) and excellence" (Siddiqui, 1997). *Ihsaan* emphasizes on the ethical behaviour of an individual to seek God's love, and the reward is given accordingly on ethical behaviour and efforts with excellence and productive work at the workplace (Quran).

From the Islamic perspective, the reward refers to this world as well as hereafter because performance is judged by not only human but also by God Himself (Quran 18: 30). Prophet Muhammad (*PBUH*) taught: "God has ordained excellence in everything" and "God loves, when one of you is doing something and in the most excellent manner" (Al-Qaradawi, 1995). Justice is necessary and mandatory in Islamic teachings, without which no fair work can be performed. *Adl* refers the inner feelings and intentions should align with the actions and words spoken. However, *Ihsaan* means inner beauty or individual's inner feelings and intentions should be better than that of outer actions and words (Al-Qurtubi, 1966). Justice is discussed by two words in the book of God, i.e., *adl and qist*. Qist gives the meaning of portion, amount, allotment, share or measure. "So, justice is also described by the word *qist* means to give every one his proper due" (Siddiqui, 2002). Quran mentions "and be fair for God loves those who are fair and just" (Quran, 49: 9). Thus generally, by the meaning of '*adl'* and '*qist'* we understand the justice which maintains the overall needs of soul, body, and mind through giving out the due rights to everyone in everything. Managers should be just and ensure that all the business activities are going along with *adl, qist* and *ihsan* in an ethical manner. The Shariah Law in this regard gives a set of ethical principles that are guidelines for dealing with the firm managers and stakeholders reciprocally in all decisions without exploiting and deceiving (Beekun & Badawi, 2005). The unjust individual is accountable before God on the Day of Judgment for doing unlawful deeds and getting the property or profit by unfair means, and the decision of authority cannot change the reality (*Quran*).

Further, Muslims are encouraged to deal with *Adl* (justice) to all human beings as mentioned in Quran: ‘‘be just! For, justice is nearest to piety” (Quran 5: 8). To behave with just in this life will be rewarded similarly in the hereafter by God, as He says: ‘‘Deal not unjustly, and ye shall not be treated unjustly’’ (Quran 2: 279). *Adl* as equilibrium belongs to harmony in the universe. Therefore, the transaction if balanced is just. This concept is parallel to the idea of equity and justice (Gibson, Ivancevich, & Donnelly, 2001). Therefore, normative Islamic teachings focus on just in life every time at all levels. “God commands you to render back your trusts to those whom they are due; and when you judge between man and man, that you judge with justice” (Quran). Therefore, there is inevitable need to ensure the presence of basic Islamic principles, in the behaviour of management to safeguard the interests of stakeholders being trustworthy, just and honest in duty especially in Shariah-compliant firms.

Managerial characteristics diagram with conventional and Islamic principles

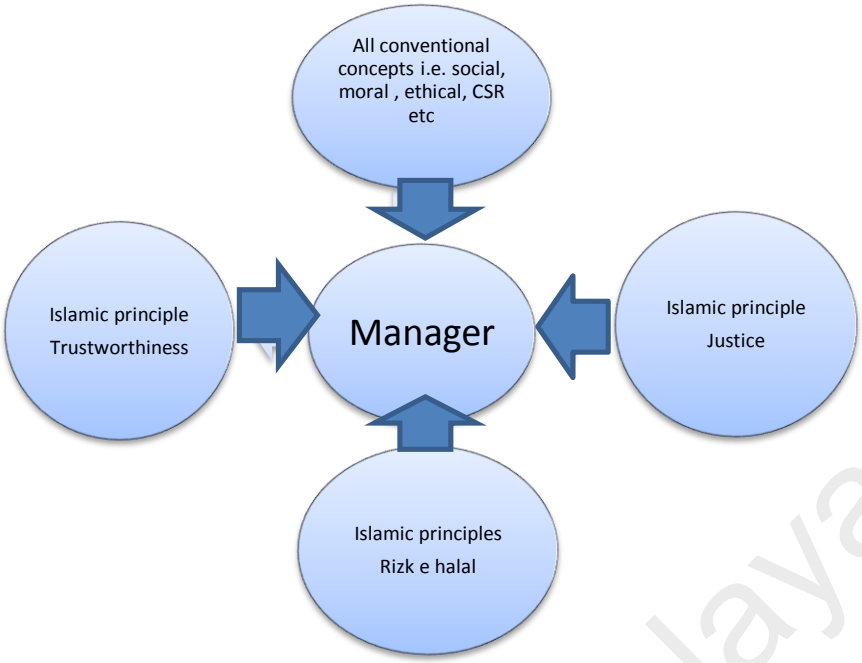


Figure 2.2: Role of Manager

2.10.4Screening criteria for Shariah-compliant firms

Different users practice the different ways of screening assets at two levels: micro and macro. Macro-level users screen available assets worldwide while micro-level users tend to screen assets from a particular country or region. There are four macro-level international Islamic index providers. For example, (1) Dow Jones Islamic Market Index (DJIM); (2) Financial Times Stock Exchange (FTSE) Global Islamic Index; (3) Morgan Stanley Capital International (MSCI) Global Islamic Index; and (4) Standard & Poor's (S&P) Shariah-compliant Index. The four micro level Shariah service providers are as follows. (1) The Shariah Capital of United States that screens universal assets for global investments. (2) Al-Meezan, a joint venture of Meezan Bank and Pak Kuwait Investment Company (PKIC) in Pakistan. (3) Azzad, a joint venture between Amri Capital, a London based investment management company and Azzad Asset Management from the U.S. (4) Amanie Business Solutions, a Malaysian based company that screens assets based upon clients' choices endorsed by the respective Shariah Board such as DJIM, FTSE. These Shariah service providers are profit oriented companies that provide Shariah consulting and related services, and thus screen the global asset based on the clients demand. Shariah

boards divide the screen methods into two categories for screening the Shariah-compliant firms. One is Qualitative Screen method another is Quantitative screen method. The qualitative screens fall into five categories: *Riba* and *Gharar*, non-halal products, gambling and gaming, immoral and other impermissible activities. For Quantitative Screening methods ratios are used. The compilation of all ratios and criteria, provide systematic information for comparison within the Shariah context. The quantitative criteria that are set by the users are Debt screen, liquidity screen, interest screen and non-permissible income screen. All the Islamic users follow the Shariah criteria however that may differ in level of ratios.

(a) Debt Screen: It is generally accepted to have some debt in Shariah-compliant business. Hence, the debt ratio is screened by all Islamic financial institutions except SC for it consider debt as unimportant to screen. The debt ratio screen range varies from 30% to 40%, and we can see such noticeable difference in figure 2.3. The higher debt ratio of nearly 40% is shown for 'AL MEEZAN' Pakistan.

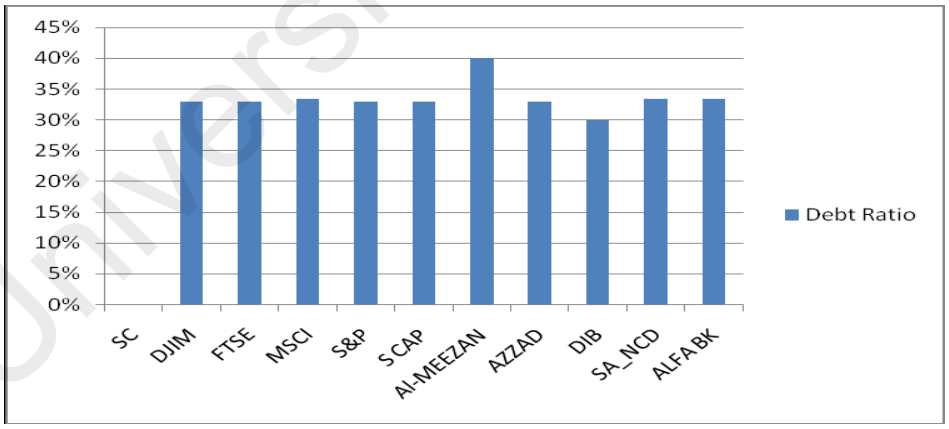


Figure 2.3: Limit for debt ratio for shariah screening
Source: Bellalah et al., 2013

(b) Liquidity Screen: The Shariah boards classified five sets of ratios under the liquidity screen: debt plus liquid funds, accounts receivable, accounts receivable plus cash, accounts receivable & cash plus other debt, and illiquid assets. The thresholds set by

different Shariah jurisdictions for liquidity screen ratios diverse greatly between 33 to 80% clearly shown in the following figure.

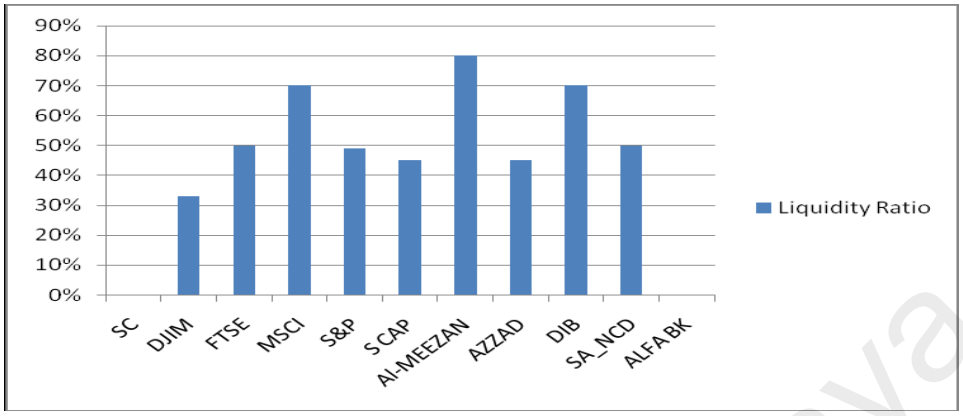


Figure 2.4: Limit for liquidity ratio for shariah screening
Source: Bellalah et al., 2013

(c) Interest Screen: Under the category of interest screen, two sets of ratios are classified: interest income and cash plus interest-bearing securities. The consensus is 5% being the maximum threshold limit. A standard benchmark of one-third is used for cash plus interest-bearing securities as illustrated in figure 2.5.

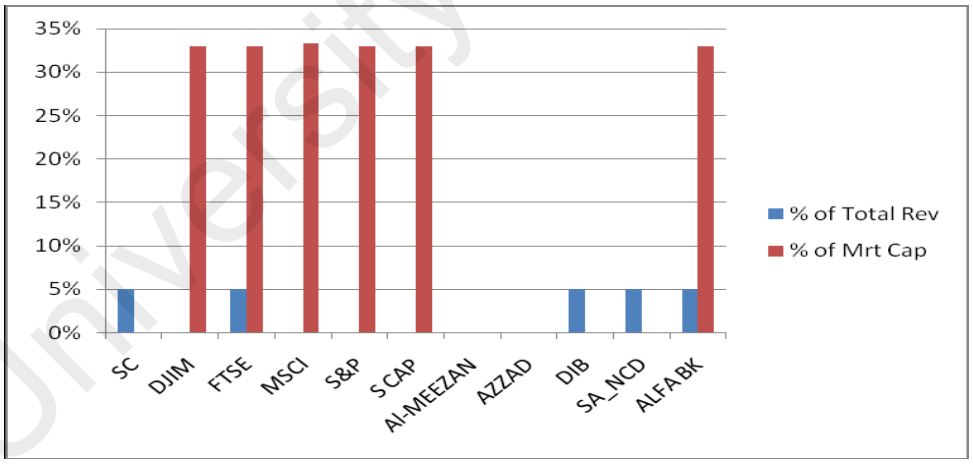


Figure 2.5: Interest screen for shariah compliance
Source: Bellalah et al., 2013

(d) Non-Permissible Income Screen: non-permissible activities identified from the initial qualitative screen are further quantified to check if their level is acceptable to the respective users. From the different screens published, only SC, FTSE, MSCI, S&P, Al–Meezan and DIB further screen Shariah level of non-permissible income derived from

these mixed businesses. There is a common consensus to use 5% as the maximum allowance for noncompliant businesses and income. Securities Commission of Malaysia is the sole user that applies innumerable benchmarks. For example, 5% for clearly prohibited activities such as interest-based activities or Riba; 10% benchmark for the level of contributions from mixed activities with the element of `Umum balwa, such as contribution of interest income from fixed deposits in conventional banks as well as for tobacco-related activities; 20% benchmark to account for the level of mixed rental payment from Shariah- non-compliant activities, such as rental payments from premises used for gambling or sale of liquor; and lastly, 25% maximum allowable level of contribution from mixed activities that are generally permissible according to Shariah but have an aspect of Maslahah (public interest), such as hotel and resort operations, share trading and stockbroking activities which may be partly involved in non-permissible businesses. Another unique criterion set by Al-Meezan is the additional benchmark of 33% for any investment in non-compliant businesses which is much higher than its 5% benchmark screen for non-permissible businesses income.

In brief, one can categorize DJIM and Azzad as very stringent Shariah users because they reject companies who are in one way or another involved in Shariah non-compliant businesses in the first round of qualitative screen. It is also apparent from our comparison that SC is the only user who does not practice debt and liquidity screen. Alfa Bank does not practice liquidity screen, while Al-Meezan, as well as Azzad, do not apply interest screen. There exists some consensus among FTSE, MSCI, S&P, and DIB to practice all four quantitative screens. Different references of Shariah jurisdictions may also have contributed towards the dispersion of the screening methods. The Middle East jurisdiction which can be represented by NCB and DIB are very much concern on the prohibition of Riba' by the stringent screen for interest received and paid. SC's Shariah board is concern about providing a wider range of investment instruments and only concentrated on the

right and pure returns of businesses, irrespective of how capital is generated which can be seen from the absence of debt and liquidity screen (Bellalah et al., 2013).

2.10.5 Studies on Shariah-compliant firms – Empirical evidence

Though various empirical studies are conducted on the capital structure from the conventional side, yet some research also exists from Shariah-compliance perspective. However, considering a specific area of agency theory or principal-agent relationship, the research in the field of corporate finance (i.e., ownership structure and capital structure in the nonfinancial sector is scant (Ahmed, 2007; Gunn, 2014). Some studies on Shariah-compliant firms in the area of capital structure are as follows.

Haron and Ibrahim (2012) investigate the speed of adjustment and the Determinants of target capital structure of Shariah-compliant firms in Malaysia. They found that there exists target leverage for Shariah-compliant firms with certain firm level and country level determinants and they significantly affect the target capital structure. Pursuing target capital structure firms do adjust from time to time due to time-varying factors. The magnitude of the speed of adjustment suggests a rapid adjustment towards target leverage in their sample of Shariah-compliant firms.

In the comparative study on Shariah-compliant and conventional firms, Hassan, Shafi, and Mohamed (2012) find that the Shariah-compliant companies' debt ratio is significant with profitability, size, and tangibility but insignificant with non-debt tax shield. The conventional companies' debt ratio is significant with profitability, size and non-debt tax shield but with tangibility it is negligible. This suggests that both Shariah-compliant and conventional firms have different factors to be considered in deciding the capital structure.

Shariah-compliant firm's agency issue is studied mostly in the Islamic banking sector by several authors. For example, Archer, Karim, and Al-Deehani 1998; Sarker 1999;

Aggarwal and Yousef 2000; Chapra and Ahmed 2002; Grais and Pellegrini 2006; Hagendorff, Collins, & Keasey, 2007; Safieddine 2009; Aljifri and Kumar Khandelwal 2013). Pratomo and Ismail (2006) attempt to prove the agency cost hypothesis in Malaysian Islamic Banks. They find high corporate leverage reduces agency costs. They further observe the negative relationship between bank size with bank performance and leverage. Pratomo and Ismail state that although banking is a regulated industry, banks are subject to the same type of agency costs as other non-financial firms. In the Islamic principles of Shariah, the similar nature of agency relations in Islamic banks and Islamic nonfinancial sector are attentively specified. Hence, it is notable that Islamic principles are well focused on all types of firms with additional attention and dimension if the managers deviate from their duties.

With similar notion, Aljifri and Kumar Khandelwal (2013) support the findings that good governance and good agency relationship is the outcome of Islamic moral code, ethics, and value system. Their research supports the previous studies with the idea that one way to reduce the non-diversifiable employment risk is to decrease the firm's debt holdings (Grossman and Hart 1980; Friend and Lang 1988; Mehran, 1992). The authors also maintain that when managers deviate from Islamic principles of Shariah, agency problem has to face additional challenges. They also put stress on the implication of rules of Shariah for agency relationships.

Similarly, Gunn and Shackman (2014) study the firms from Muslim and non-Muslim countries. They investigate the relationship between Islam as predominant religion in the country and the amount of long-term debt in firms of that country. Out of two hypotheses, the second hypothesis is supported by results and shows the negative relationship. They found that with the increase of Islamic religion in the country the long-term debt

decreases. Moreover, Islamic countries' firms tend to use short-term debt over long-term debt.

Correspondingly, Baxamusa and Jalal (2014) study the effect of religion on capital structure. The writers found that religion has a significant effect on the firm's leverage and adjusting speed towards the target capital structure. Results show a negative relationship between religiosity and leverage ratio. Concluding the results, it shows that when religiosity of countries increases the leverage level of firms decrease. More recently, researchers have directed the attention to the importance of managerial behaviour in Shariah-compliant firms and compare it with the conventional firms. The main objective of these studies is to show that Shariah-compliant firms are relatively well governed due to Shariah principles. Hence, the management in these firms does not deviate much from the core objective of value maximization. In this context, in a recent study on managerial deceptiveness through earnings management, Farooq, AbdelBari, and Haniffa (2015) investigate the difference of earning management behaviour in the comparative study of Shariah-compliant and conventional firms. The findings of the study show that Shariah-compliant firms engage in lower earnings management practices than conventional firms. They argue that the reason for the difference is the characteristics of Shariah-compliant firms which provide a lower chance to a manager to misreport earnings. For example, less cash in hand (free cash flow) decreases agency problem by confining the managers to spend resources on unproductive projects.

In another study, Farooq and Tbeur (2013) document the difference between dividend policies of Shariah-compliant and conventional firms' dividend policies. The findings indicate that Shariah-compliant firms not only have higher payout ratios but also have a higher likelihood to pay dividends than conventional firms. Authors argue that Shariah-compliant firms pay higher dividends than conventional firms due to their financial

characteristics. The idea is also supported by Omran and Pointon (2004) and Skinner and Soltes (2011), they maintain that those firms who have fewer account receivables and low level of debt have higher chance to pay dividends than a higher level of debt and account receivables' firms. Farooq and Tbeur further found that only a few firms mention on the website that they do business by Shariah-compliance. Hence they argue that Shariah-compliant firms should have advertised religious principles feature to attract a broader base of investors if the religion was driving force behind the decisions. However, they suggest surveying to identify religious preferences of managers in future.

Another recent comparative study regarding capital structure of Islamic and conventional firms is conducted on bank "Determinants of capital structure of Islamic and conventional commercial banks Evidence from Pakistan". The results show that the conventional commercial banks are more levered than Islamic commercial banks. The size and safer earnings in conventional commercial banks are greater than Islamic commercial banks. Conversely, regression results show more profitability, tangibility and growth in Islamic commercial banks. As a matter of fact, the findings in the study depict that "Islamic and conventional commercial banks have their own way to choose the capital structure than the non-financial firms" (Sheikh & Qureshi, 2017).

On corporate governance, a study explores "the effect of Islamic values on voluntary corporate governance disclosure" from the Saudi-listed firms. Their findings show that the firms who pay greater attention and focus on incorporating the Islamic values in the corporate activities they engage in higher voluntary CG (corporate governance) disclosures than those that are not incorporating (Albassam & Ntim, 2017).

Apart from this area of corporate finance, in the literature, some other empirical studies from Shariah perspective also exist. For example, Sadeghi (2011) investigates the impact of index additions on the return and liquidity of Shariah-compliant shares in Egypt and

Jordan. For this, they use sample firms from Dow Jones Islamic Market Index for 2008 to 2009. The writer finds that stock price has a positive impact on index addition events in mentioned countries. Moreover, by applying event study methodology, the results of the study support the increases in short and long-term profit and liquidity of additional shares.

Othman, Thani, and Ghani (2009), worked on corporate reporting for Islamic listed firms. They explore Islamic social reporting for the firms in Malaysia. Using top Shariah-approved firms listed in the Bursa, they identify the factors affecting a firm to provide Islamic social reporting. They take four firm-specific factors, i.e., size, profitability, board composition and type of industry. They found that size, profitability, and board composition are significantly influencing the sample firms to provide Islamic social reporting. They further conclude that industry type is not a significant determinant in the provision of Islamic social reporting.

Ousama and Fatima (2010) examine the relationship between the extent of voluntary disclosure for example, overall, conventional and Islamic disclosure items and firm-specific characteristics such as size, ownership structure, audit firm and industry of Shariah-compliant firms. They use a disclosure index, consisting of 59 items, to measure the extent of voluntary disclosure. They collect data from annual financial reports of top 50 shariah compliant firms. Their results indicate that firm size is correlated with the degree of voluntary disclosure in all three categories. While the ownership structure is significant with overall and conventional voluntary disclosure and the type of audit firm is significant with the overall and Islamic voluntary disclosure. They further report that non-manufacturing Shariah compliant firms seem to disclose more Islamic items than manufacturing firms voluntarily.

Also, in a recent study by Naz, Shah, & Kutan, (2017) the managerial impact is examined over leverage, divident policy and working capital of the Shariah-compliant and non Shariah-compliant firms. They evaluate the role of top managers in the Shariah-compliant firms and non Shariah-compliant firms from Pakistan and UK. They observe the differences in the financing decisions by the management of the firms in Shariah-compliant and non-Shariah. Their results show that managers exert significant influence on the debt, dividend, and working capital decisions. However, they indicate that there seems no much difference in policies regarding leverage, dividend pay-outs and working capital in two types of firms. Nevertheless, there is the significant difference in the managerial, financial styles in Sharia-compliant and non-Shariah-compliant firms according to which they can make strategic plans for financial decision making.

Zainal, Zulkifli, and Saleh (2013) compare the corporate social responsibility reporting (CSR) of Shariah and conventional firms regarding the quantity and quality of the disclosures in the annual reports. Sample data for the study is drawn from the top 300 firms (by market capitalization) that are listed on the main board of Bursa Malaysia over a five-year period from 2005 to 2009. For the purpose, a common CSRR checklist is developed to enable comparisons to be made between the Shariah and conventional firms. They use content analysis procedure in the firms' annual reports. They found no significant difference in the overall quantity and quality of CSRR disclosed between the Shariah and conventional approved firms in the given period. However, when CSRR is further divided into five categories (environment, community, workplace, marketplace, and others), there found various significant differences between the two samples, specifically regarding the quality and quantity of environmental and community-related reporting. Moreover, the study signifies the importance of relating the aspects of religion with CSRR, especially with the Islamic faith, as most of the Islamic teaching is very much related to the concept of CSR.

More recently, the research is conducted on different aspects of Shariah-compliance in Shariah-compliant firms. The different studies explore the properties and products of Islamic financing as well as shariah firms' performance in relation to ownership structure. For example, on the Malaysian Shariah-compliant firms Hooy & Ali, (2017), investigate that whether a Muslim CEO affects Shariah-compliant firms. They find no statistical between the performance of Shariah and non-Shariah firms. Nevertheless companies having Muslim CEOs show the lesser level of performance compared to the conventional firms. In recent year some studies on the Islamic bond (Sukuk) are carried out. For example, studies on the difference between conventional and Islamic bond (Azmat, Skully, & Brown, 2017), the dependence structure between stock market conditions and Islamic bonds (Sukuk) from Archimedean copulas (Naifar & Hammoudeh, 2016), corporate Sukuk issuance in relation with agency costs (Halim, How, & Verhoeven, 2017) and the challenge in Islamic bond markets regarding Shariah compliance (Azmat, Skully, & Brown, 2014).

2.11Chapter Summary

This chapter begins with a discussion of the capital structure as an important aspect of modern corporate finance. This chapter then provides specific literature on the relationship between managerial ownership and capital structure. The main theories of capital structure, i.e., trade-off theory, pecking order theory, and agency theory are discussed in detailed. The chapter provides the empirical literature on the capital structure, debt maturity structure and theories of debt maturity structure. This chapter discusses the debt maturity structures based on agency cost theory of debt maturity, information asymmetry, liquidity risk and screening, asset maturity and taxes. The chapter highlights the managerial self-interest/opportunism influencing capital structure choices and debt maturity structure of the firms and some studies on Shariah-compliant firms in the area of the capital structure. An explanation of Shariah-compliant firms and

the role of manager from a conventional and Islamic perspective based on ethics and morals are provided in details.

CHAPTER 3: PAKISTAN ECONOMY AN OVERVIEW

This chapter gives some key information about economic, institutional and business environment of Pakistan. The chapter begins with a brief introduction of the historical, political and economic background. Next, the study discusses the key financial institutions that are accountable for the management of economic and financial affairs in Pakistan. The chapter is organized as follows. Historical background and political system of Pakistan is discussed in Section 3.1. Section 3.2 gives the information about the main sectors of Pakistan's economy. The corporate governance and bond market in Pakistan are discussed in section 3.3 and 3.4 respectively. Section 3.5 is devoted to major economic institutions and the financial system of Pakistan. Section 3.6 summarizes the chapter.

3.1 Historical background and political system of Pakistan

Pakistan is located in South Asia, it is declared as the sixth most populous country with 199million people[22]. Pakistan is also reported as 36th largest country in the world. However, area wise it covers 881,913 km$^{2.}$

Pakistan, officially the Islamic Republic of Pakistan, got her independence on 14th August 1947 from Britain. According to Ibrahim (2006), Pakistan continued the British Common law as the underpinnings of its legal system. Soon after the freedom, the first Constitutional Assembly was established to form the constitution of Pakistan. In March 1949, the Constitutional Assembly issued the "Objective Resolution" for giving cornerstone to the Constitution of Pakistan[23]. However, the First Constituent Assembly of Pakistan was dissolved in October I954. At last, after nine years the Second Constituent

[22] http://www.census.gov/popclock/

[23] http://www.pakistani.org/pakistan/constitution/annex_objres.html

Assembly adopted a new constitution on February 29, I956. This constitution was more detailed as compared to the first one. The new constitution contained 234 articles and was split into 13 parts and six schedules. The constitution also contained a clause that no law would be adopted against the principles of Islam (Choudhury, 1956; Von Vorys, 2015).

According to Choudhury (1996), in the preamble of the constitution, it was defined that Pakistan is an "Islamic Republic" wherein "the principles of democracy, freedom, equality, tolerance and social justice as enunciated by Islam, should be fully observed." In fact, it was the core doctrine of the newly born country which declared "Whereas sovereignty over the entire universe belongs to Allah Almighty alone, He has delegated authority to the State of Pakistan; through its people to be exercised within limits prescribed by Him is a sacred trust." It was declared that the Islam would be followed as a complete code of life in Pakistan.

After the annexation of Bangladesh, the new constitution was incorporated in 1973 that remains under practice until today. Under this new constitution of 1973, Islam was made the religion of the state, however; minorities related to other religions (believers of other faiths) were given the freedom and surety to practice their religions or beliefs. The foundation of Islamic law is the revelation of Holy Quran as well as teachings and practices of Muhammad (PBUH). According to Mahmood (2002), Islamic Republic of Pakistan's different governments have been continuously striving to emphasize on Shariah-compliance.

The political system of Pakistan*:* Pakistan's political system is based on democracy; therefore, federal Parliament is elected by the voting system. The head of state is President, and the Prime Minister is the Head of the Government. The Prime Minister of Pakistan is elected by the National Assembly of Pakistan while the President (Head of the State) is elected by three bodies, i.e., Senate, National Assembly and four Provincial

Assemblies (Blood, 1996). The Government of Pakistan possesses the administrative powers while the Parliament carries on legislative power (Baxter, 2003; Chandio, 2006).

3.2 Main economic sectors and key indicators of Pakistan economy

The main economic sectors of Pakistan are Agriculture Sector, Industrial Sector, and Services Sector. Pakistan is known as an agricultural country because of its major contribution to the economy of Pakistan since her independence. The agriculture sector also provides the basic livelihood to the rural inhabitants and also the source of food for the urban population. The agriculture sector is the source of raw materials for Pakistan's main industrial sector. The agriculture contributes to export earning of the country; it contributes, on average, around 21.0 % of GDP and 43.7 % of a labour force of the country is involved in the agriculture sector.

Industrial Sector is a major source of tax revenues for Pakistani government which contributes significantly to the employment opportunities to the workforce of Pakistan. The industrial sector adds around 20.8% of GDP of Pakistan. The industrial sector includes subsectors, i.e., the manufacturing sector, construction sector, electricity, and gas generation, distribution and mining, and quarrying.

The service industry of Pakistan is considered as a significant driver and playing leading role in the economic growth of the country. Service sector increased its contribution from 56.6% of GDP in 2008-09 to 58.1% in the Fiscal year 2013-14. There are six sub-sectors in services such as Finance and Insurance, Wholesale and Retail Trade, Transport, Storage and Communication, Housing Services, Government Services including defence and administration, social services.

Table 3.1 presents the overall performance of some economic indicators of Pakistan from 2009 to 2014. GDP growth fluctuates from 4 10 % in 2009-10 and 4.24% in 2014-15. In

2011 to 2013 it was lower 3%, 3.7% and 3.7% respectively. Agriculture sector growth gives 2% to 3% of GDP from 2009 to 2015 on average. Similarly, the growth rate of all other economic indicators fluctuated during this period between 2009 and 2015. The industrial growth was recorded 43% of GDP in 2009 to 2010. The performance of the indicators such as per capita income, investment, and savings, foreign direct investment (FDI), fiscal development, capital market, inflation, trade and payments, public debt may be observed through Table.

Table 3.1 Growth in main economic indicators of Pakistan 2009-14

Economic indicators	14-15	13-14	12-13	11-12	10-11	09-10
GDP growth (%)	4.24	4.14	3.7	3.7	3.0	4.10
Agri. Sec. growth (%)	2.9	2.12	2.88	3.13	2.4	2.0
Industrial growth (%)	N/A	N/A	N/A	24.2%	N/A	43%
Manufacturing growth (%)	3.17	5.31	4.08	3.56	3.06	5.2
SSM growth (%)	8.24	8.35	8.28	7.51	7.5	7.5
LSM growth (%)	2.38	5.31	4.08	1.05	0.98	4.4
C S growth (%)	7.05	11.31	-1.68	6.46	-7.09	N/N
M & Q growth (%)	3.84	4.43	3.84	4.38	- 1.28	1.7
EG & DG growth (%)	1.94	3.72	16.33	-1.62	-7.25	- 1.7
Services sector growth (%)	4.95	4.29	4.85	4.02	4.45	2.42
PCI Growth (%)	9.25	3.5	1.44	2.33	1.33	4.5
Total investment (% of GDP)	15.12	13.99	14.57	12.5	13.1	19
Fixed investment (% of GDP)	13.52	12.39	12.97	10.9	11.5	15
Private investment (% of GDP)	9.66	8.94	9.64	7.9	8.6	10.7
P I growth (% of GDP)	25.56	17.12	(-0.35)	3.0	2.9	3.3
Foreign investment (US$ ml)	$1666.mn	$2979	$1277	$ 666.8	$ 1292.9	$1.897
National savings (%)	14.5	12.9	13.5	10.7	13.2	13.8
Domestic savings (%)	8.4	7.5	8.3	N/A	9.5	10.6
Inflation (CPI index) (%)	4.8	8.7	5.1	10.8	13.8	11.5
Core inflation	6.9	8.3	8.1	11.3	13.1	11.4

Note: FY= fiscal year, ml=million, bn=billion, AS= Agricultural Sector, LSM= Large scale manufacturing, SSM=Small scale manufacturing growth, CS= Construction Sector, MQ= Mining and Quarrying, EG&DG= Electricity Generation & Distribution and Gas, PI= Public Investment, PCI= Per Capita Income.

(Source: Economic surveys 2010-09 to 2015-14)

3.3 Corporate Governance in Pakistan

The corporate governance is the set of policies, customs, processes, laws, and institutions which affect a corporation as for how it is directed, administered and controlled. Corporate governance also comprises the relationships among stakeholders (i.e., stockholders, management and others such as employees, customers, suppliers,

regulators, banks and other lenders, environment and the society as a whole). The system of corporate governance does not work in isolation. It contains set of some core principles and values infused in all human dealings, i.e., business dealings and principles such as good faith, competence, trust and trustworthiness, accountability, professionalism, transparency, and interests which altogether makes a corporation. Further, the laws, rules, and practices make the framework of the corporation. Hence, the good corporate governance strengthens firm, society and ultimately the economy because it is a socio-economic tool for development. The economic health of any country depends on her sound and well-governed business environment.

Pakistan on her birth in 1947, inherited the Indian Companies Consolidation Act, 1913 and in 19 49 which was amended and called as Companies Act 1913. This Act governed Pakistani companies until Companies Ordinance 1984. In Pakistan, primarily, corporations are regulated by Securities and Exchange Commission of Pakistan (SECP). The main laws relating to business and corporate sector are under the Companies Ordinance 1984, the Security and Exchange Ordinance, 1969, the Security and Exchange Commission of Pakistan Act, 1997.

In the year of 2002, the Code of Governance was instituted in Listing Regulation of the Exchange. The main objectives of Corporate Governance Code are (1) Stimulation of firms' performance, (2) limitation in abusing the insiders' power, (3) monitoring the managerial behaviour by ensuring corporate accountability and the protection of the rights and interests of investors in particular and the society in general. In the result, the Exchange has an appreciating role in protecting the interests of stakeholders as well as fortified the capability of monitoring and enforcement to conform to the Code of Corporate Governance by listed firms. The Exchange being a regulatory body takes action against the listed firms who do not comply with the rules and requirements of Listing

Regulations especially Rule number 32 which is very important. The rule includes, (1) the failure in declaration of dividend/ bonus for last 5 years (2) inability to conduct general meeting for 3 years continuously (3) firm has gone into liquidation either under court order or voluntarily (4) failure in payment of listing fees for 2 years (5) failure in conforming to any requirement of Listing Regulations (6) failure in joining Central Depository System (CDS) when its securities are getting eligible by Central Depository Company (CDC). A defaulter company is placed separately on "Defaulters' Counter" by Daily Quotation of the Exchange to facilitate the investors/ shareholders for recognition among the companies who fail to follow the Listing Regulations.

Another purpose is to improve the performance of other companies by following the required rules. To encourage the companies Exchange distributes awards each year to best performer winner companies. The award is given by paying good returns to their investors/shareholders as well as on compliance with the Listing Regulations, especially the Code of Corporate Governance. Regarding the criterion for selecting top companies, Corporate Social Responsibility is also included in good Corporate Governance. Recently, the 'Corporate Governance Rules 2013' is introduced to institutionalize corporate governance. Through this regulation, the responsibilities of different stakeholder managers and the Board of Directors are specified; CEO and Chairman Offices are made separate. The Strategic Partnership by which share will be sold partially by investors to managers. In Pakistan, corporate governance contains the regulatory body, for example, Chief Executive Officer, the board of directors, managers and stockholders. Other parties may take parts such as employees, suppliers, customers, creditors and the community as a whole. In the corporations the managers are delegated the decision power by stockholders thus the managers are supposed and directed to act according to the best interests of shareholder/ owners. In this separate ownership and control system, the loss can occur as there becomes the problem of aligning the incentives

of managers with those of owners. This issue exerts a significant effect in the case of increase and decrease of the equity holdings between managers and owners. Consequently, the interests may be diverted and the conflict may arise among parties by self-serving managerial behaviour and thus losing the element of trustworthiness.

The commonly accepted corporate governance comprises, i.e., rights and equal treatment of stockholders, safeguarding the interests of all stakeholders, the appropriate and committed role and responsibilities of the board, integrity, the ethical and trustworthy behaviour of the management and the transparent and fair role of management with factual information. However, Pakistan still needs to improve all mentioned principles which seem not so common in the dealing of overall corporate governance.

3.4 Debt (Bond) market in Pakistan

Companies were restricted to borrow from the public by issuing debt security until mid of 1994 (Akhter 2007). Therefore, firms borrowed from the commercial bank until that duration. After that company law was amended and firms were permitted to borrow directly from the general public market by issuing term finance certificates (TFCs). Firms first time entered the public market for borrowing during the year of 1995 (Akhter 2007). Unlike East Asian countries, Pakistan's private corporate bond market seems less developed. Thus the total corporate debt issue remained one percent of GDP, e.g., the total outstanding corporate debt during 2006 was Rs. 49.3 billion (0.64% of GDP) compared to the other countries such as Malaysia report 38.2% and Korea at 21.1% (Akhter, 2007). This less level of debt issue shows that TFC could not get a good welcome from the market in Pakistan may be due to the late issuance of long-term government bond that provides long-term yield benchmark for pricing the private debt security. In 2000, the Pakistan Investment Bonds (PIBs) were introduced with the maturity of three, five, and ten years. That benchmark yield was more extended in 2004 through the

issuance of PIBs with the maturity of 15 and 20 years. The firms faced the hindrance due to the irregular issue of long-term debt (PIBs). PIBs created a problem for the corporate sector in price and response of investors. The TFCs were affected by the different costs such as issuance costs, listing costs, and taxation costs.

3.5 Major economic organizations of Pakistan

3.5.1 State Bank of Pakistan

The central bank of Pakistan is State Bank of Pakistan. SBP is bound to submit the quarterly report to Parliament of Pakistan. This report must contain the information on the affairs of the country's economy, i.e., the balance of payments, money supply, credit, growth. Formally, functions of State Bank of Pakistan can be divided into traditional and non-traditional functions. The traditional functions are the primary activities of SBP for example supervision, printing and issuing notes, and regulation of the financial system, as well as SBP, works as lender of last resort. SBP is also the bank of government which is responsible for determining monetary policy and credit, foreign exchange reserves, public debt and role of adviser to the government on different policy matters. Also, maintaining relationships with international financial institutions, i.e., the World Bank and IMF (Ali et al. 2011; Arby, 2004; SBP 2011).

In non-traditional functions, SBP plays a role in developing the commercial banking system, development financial institutions (DFIs), microfinance institutions as well as Islamic banking. SBP also pays out subsidized credit, implements the government's policy regarding the Islamisation of the banking system, provides training to the bankers and looks over the development of the capital market (Akram, Rafique, & Alam, 2011; Akhtar, 2007).

3.5.2 The Securities and Exchange Commission of Pakistan (SECP)

Pakistan constituted Companies Ordinance 1984 to properly regulate the securities in the corporate sector, i.e., companies and other associations as well as amendments if needed. In the result, the financial sector developed and grew in size, so, the scope of this regulatory body widened in the decade of 1990s. In the same decade, the Capital Market Development Plan of the Asian Development Bank started some work on restructuring the Corporate Law Authority (CLA) in 1997. Consequently, the Securities and Exchange Commission (SECP) of Pakistan Act 1997 was incorporated on December 26, 1997, and its operation got start on January 1, 1999. By this way, SECP being an autonomous body took the place of CLA. Hence, the objective of the Securities and Exchange Commission of Pakistan (SECP) is to create well organized and modern corporate sector/ capital market with well managed and sound regulatory principles.

On March 28, 2002, the Security Exchange Commission of Pakistan introduced the Code of Corporate Governance (CCG). The objective of CCG was to create such system whereby a company should be controlled and directed by its directors. This step was taken to ensure the better performance and to provide the safeguard for the interests of investors/stockholders (Shaheen & Nishat, 2005). The CCG is based on internationally recognized principles which emphasize on fairness, transparency, and accountability regarding the matters/ affairs of listed companies. In addition to this, it binds directors to play their best role and legal responsibilities in the account to protect the interests of all stakeholders. The head office of the SECP is located in Islamabad the capital city of Pakistan.

3.5.2.1 Functions of SECP

The main functions of the SECP are as follows: administration of the company law; registration of companies including non-banking financial institutions like leasing

companies, investment banks and mutual funds, regulation of insurance sector/business and private pensions; regulate on of securities market and related institutions like Central Depository Company (CDC), Credit Rating Companies and Modarabas (funds operating on the basis of Islamic economic principles); regulate the takeover, merger and acquisition of companies; monitoring and enforcing to implement the corporate laws; Exit/winding-up of companies; stock exchange development, protection and education of the market about malpractices, regulation and registration of security issues and stockbroker function, share transfer agents, portfolio managers and/or any other stakeholder associated with the security market; registration of companies audit of the stock exchanges and reviewing corporate laws (SECP, 2011).

3.5.3 Stock Exchanges

After the independence of Pakistan in 1947, there was no stock market, in its survival position to perform trading services in the country. Looking back into the history, we get the information about bourses, but then no exchange survived till the formation of Pakistan. In this relation, before the independence of Indo-Pak, in 1934, the Stock Exchange was established in the city of Lahore. After creation of Pakistan, the metropolitan city Karachi became the capital of Pakistan and therefore, the hub of business activities having the benefit big sea port. On September 18, 1948, the KSE started operations within two months and thus, became the first stock exchange of the newly born country Pakistan. It incorporated as a company limited by guarantee on March 10, 1949. Later in 1954, the Dhaka Stock Exchange was formed in Dhaka (the capital city) of East Pakistan now called Bangladesh (Mollah & Begum, 2001). In the late 1950s, the failed attempt was taken to reincorporate the stock exchange Lahore city (Mirza, 1993). However, in 1969 the current Lahore Stock Exchange (LSE) was built which started operations in May 1971. After that, another stock exchange called Islamabad

Stock Exchange (ISE) was established in the country in 1992. At this time Islamabad was the capital city of Pakistan.

According to Iqbal (2012), KSE had the leading position and largest stock exchange of the three exchanges with 85% of turnover, while the LSE had 14% turnover and ISE had 1% of it. He further mentioned that the external factors, i.e., political instability, economic volatility and rising high rates of inflation made the stock markets risky. However, Husain (2008) argues that instead of an uncertain situation of security Pakistan's equity capital returns were around 30% annually from 1998 to 2008.

In this context, Lukman (2010) mentions that KSE is capturing the major role in trading the securities, whereas most of the KSE listed companies have cross-listed on other bourses Islamabad and Lahore stock exchanges. Consequently, the trade volume has decreased on LSE and ISE due to much trading on KSE. In 2010, promoters and directors retained 40% shares, small investors 35% and institutional investors 25% of shares (Lukman (2010). The three stock exchanges are integrated to build the Pakistan Stock Exchange Limited.

3.5.3.1 The Karachi Stock Exchange

The Karachi stock exchange has obvious importance being the dominant stock market in Pakistan. To discuss KSE stock market is also important because it became the source of data used in this thesis. In this section, the background, structure, and performance of Karachi stock exchange are discussed. The KSE is the oldest, leading and most liquid exchange of the financial capital of Pakistan. It was established on 18th September 1947 with the name of Karachi Stock Exchange Limited. Until, 1948, Karachi Stock Exchange (KSE) had only having Rs. 35 million as market capitalization. Nevertheless, by the time KSE gained the growth in listed companies as well as in market capitalization, and thus the size of both kept increasing ahead (Bhattacharya & Daouk, 2002).

Different indices have been created to measure the performance of stock prices of Pakistan stock exchanges. Earlier, up to November 1, 1991, the KSE-50 stock index was in operation as the main index, from that date and onwards KSE100 index was created to gauge the performance of 80% of total market capitalization. Therefore, November 1, 1991, was used as the base year for calculating the KSE-100. The index was consisted of 100 companies out of which 34 companies are selected for the largest market capitalization in each of the 34 Karachi Stock Exchange sectors and 66 companies by their market capitalization irrespective of the industry to which they belong.

KSE 100 is the main index among all available to investors, i.e., on September 18, 1995, the KSE introduced the KSE-All shares index, having all companies listed on the KSE. KSE-30 index was also introduced for international investors as a standard measure of major stock performance; it consists of top 30 companies selected on the basis of free float market capitalization. Altogether, KSE consists of 4 indices such as KSE 100, KSE 30, KSE all-share index and KMI 30. Hamariweb.com Finance provides KSE 100 index, KSE 30 index, live Karachi stock exchange index, KSE live rates, KSE analysis, data, stock price, announcements, and KSE online trading. The KSE facilitates the trading of different securities including common shares, preference shares, redeemable certificates and corporate bonds. The KSE also provides the public with a list of defaulting companies which results in shares being de-listed from the KSE.

Earlier, there was no automated computerized system at KSE, but the open outcry system ran at its outset for trade/ transactions, later in May 1998, the computerized trading system was introduced called as Karachi Automated Trading System (KATS). In the result, the turnover ratio grew significantly and reached at 475.5% by 2000, which was just 8.7% in 1990 (World Bank Statistics, 2000). Of course, it was titled as the best performing stock exchange in the world in 2002 (Business Week and USA Today). It was observed that the

index moved upward from September 2001, and it peaked at the level of 14,075.83 in 2007 showing an increase of 14.1% (Zaghum, 2008). On 8th December 2009, around 654 companies were listed where the market capitalization reached $120.5 billion that becomes Rs 8.561trillion in Pakistani currency. Furthermore, there is a variety of Pakistani as well as overseas companies listed at KSE.

Also, it grew its market capitalization by $35 billion and Rs 2.95 trillion in rupee terms on July 30, 2011. KSE 100 index performed outstandingly in the last fiscal years when we compare with the world markets such as UK, USA, Tokyo, China, India and Hong Kong. In 2013 KSE 100 remained fifth best performing stock market in the world. Thus, given this point, Pakistan Stock market performed outstandingly in the regional and international equity markets. In 2014, Pakistan got the 3rd position in the ranking of world's top ten best-performing markets. The KSE growth increased by 13.75% during 2014-15 and showed better performance among some regional and international stock markets. Thus, Pakistan managed to secure position in top ten markets for the three consecutive years.

KSE generated a handsome return of 27 % (US$ 31%) for the investors, stock market builds stable macroeconomic environment, exchange rate, efficient privatization process, decreased inflationary trend, judgemental monetary policies and better economic growth. Market capitalization increased by 4.03% on April 30, 2015. Again the market capitalization reached about $72 billion or Rs. 7.33 trillion on 10th July 2015.

Table 3.2 Stock markets performance 2013-15

Performance Stock markets	2014-15 (Growth Increase in %)	2013-14 (%)
China Shanghai Composite	117	2. 4
Japan's Tokyo Nikkei	28.7	4.6
Hong Kong Hang Seng	21.3	6.4
India's Bombay Sensex	6.3	15.6
US S&P	6.4	17.3

UK FTSE	3.2	9.1
KSE	13.75	37.6

Table 3.4 shows that Pakistan Stock Markets outperformed from 2013 to 14 (July-April) among various International Stock Markets and secured top by gaining 37.6 percent surpassing USA, UK, Hong Kong, Tokyo India and China. Moreover, to improve the capital market, SECP has introduced Sukuk Regulation in 2015 with an objective to help issuers to raise funds from the capital market. This regulation is given under Section 506-A of the Companies Ordinance, 1984. According to which Shariah Advisor and Investment Agent are to be appointed to ensure well-regulated, efficient and broader Sukuk market. It will help improving capital market further. Recently, in 2016 the Karachi stock exchange is incorporated in the Pakistan stock exchange. The Pakistan stock exchange is now the consisting of all three bourses of Pakistan, i.e., KSE, LSE, and ISE.

3.6 Chapter Summary

This chapter is devoted to the information about Pakistan. The chapter gives an overview of Pakistan with historical background and its main sectors. It has been observed that Pakistan is striving to formulate different policies to uplift the economy in general and each key institution responsible for the growth of the economy, in particular. This chapter also gives an overview of the stock exchanges working in Pakistan. Additionally, other key institutions like State Bank of Pakistan SBP) and Security exchange commission of Pakistan (SECP) are discussed in the chapter.

CHAPTER 4: RESEARCH METHODOLOGY

This study intends to investigate various aspects of the capital and debt maturity structure of Shariah-compliant firms and compares them with conventional firms. This chapter is devoted to the development of a hypothesis, description of the measurements of variables used in this study, the specification of the empirical models, and sources of data. In the first objective, the study focuses on the key determinants of capital structure of Shariah-compliant and conventional firms from modern corporate finance theories as adopted in Islamic finance (Ahmed, 2007). As a second objective, the study focuses on the differences between the capital structures of Shariah-compliant and conventional firms arising from the effect of varying managerial ownership and resulting and resulting opportunistic behaviour of managers. The main focus here is to determine whether increasing managerial ownership affects the capital structure of the two types of firms (i.e., Shariah-compliant and conventional firms) in a way that favours managers at the cost of other shareholders. This study thus investigates an essential element of managerial trustworthiness, which is an integral part of Islamic Shariah. In the third objective of this study, the study examines various determinants of debt maturity structure of Shariah-compliant and conventional firms. Finally, as in the fourth aim, the study focuses on the role of managerial ownership on the issue of debt maturity among Shariah-compliant and conventional firms.

The chapter is structured as follows. Section 4.1 up to 4.4 present the hypotheses, variable description, and the empirical models for each of the four objectives of this study. Section 4.5 justifies using self-interest model of leverage for managerial trustworthiness. Section 4.6 discusses the research methods and techniques used in the study. Section 4.7 provides the overall research framework. The data and sample for the study is described in Section 4.8. Section 4.9 summarizes the chapter.

4.1 Objective One: Determinants of capital structure in Shariah and conventional firms

The first empirical analysis carried out for this study is to look into various determinants of leverage in the capital structure in Shariah-compliant and conventional firms. The main focus is on firm-level characteristics derived from capital structure theories. The discussion begins by developing a hypothesis for each of the firm-specific factors affecting capital structure as predicted by the capital structure theory and the description of the variables used as their proxies. Section 4.2.1 develops the hypothesis for each of the determinants of capital structure and describes its proxy. The specifications of the empirical model are explained in Section 4.2.2.

4.1.1 Hypothesis development and descriptions of variables

This objective seeks to determine the impact of various firm-level characteristics on the capital structure of shariah and conventional firms.

4.1.1.1 Dependent variable

The study applies the ratio of the book value of debt to book value of total assets as a measure of our capital structure. This is consistent with Friend and Lang (1988) and Rajan and Zingales (1995). The book value is also preferred over the market value by the managers in decision making (Stonehill et al. 1975). Moreover, using book value instead of a market value is also consistent with Shariah screening requirements on capital structure in Pakistan, which uses book value instead of market values.

4.1.1.2 Independent variables

In this section, the hypothesis for each of the firm-level determinant of capital structure is developed in the light of previous literature. The section also describes the variables used as the proxies for each factor.

A. Size

Firm size has been considered as one of the most important factors of capital structure choice (Booth et al. 2001; Ferri & Jones, 1979). The size of the firm is also expected to have an impact on the leverage of the shariah-compliant firm (Haron & Ibrahim, 2012). The Larger size is a natural hedge against risk and bankruptcy. Large size is normally correlated with the higher degree of diversification in different markets and products, which may serve as a safeguard against immediate insolvency (Nagano, 2003). Large firms, therefore, may be more leveraged resulting in the direct relationship between the size and debt (Nangano, 2003).

However, some studies have also found a negative relationship between firm size and its leverage level. These studies observe that smaller firms are more likely to borrow more because of their limited access to the equity capital market and relatively higher cost of issuing equity shares.

Based on the discussion above, following hypothesis is developed.

Ho: Firm size does not affect the leverage level of the Shariah-compliant and conventional firms.

H1: Firm size has a significant effect on the leverage level of the Shariah-compliant and conventional firms.

Size can affect the firm's leverage (Huang and Song, 2004). Like other variables, different measures for size have also been used in literature. Chen and Jiang (2001) used the natural logarithm of workers as a measure of size. Similarly, log of sales has also been used. Following Dang (2005), Krishnan and Moyer (1996), Titman and Wessels (1988) Deesomsak, Paudyal and Pescetto, (2004); Cook and Tang, (2010), this study applies natural logarithm of assets as a proxy to firm size.

B. Asset Tangibility

The theories of capital structure identify the asset mix of the firms as a drive to determine their choice of capital structure. Theories predict a positive relationship between the tangibility of assets and leverage. The lenders generally require higher collateral for the provision of debt. Firms with more fixed and tangible assets have a higher capacity to raise more debt (Myers, 1977). Agency theory suggests that high-levered firms may tend to invest sub-optimally raising and shifting the marginal risks of the investment to the creditors and benefitting the equity holders, given that the provision of limited liability for the equity holders. Consequently, lenders are more interested in fixed and tangible assets to issue debt to the firms in order to avoid the adverse effects of bankruptcy. Many studies, such as Williamson (1988), and Wald (1999) find the relationship of tangibility with leverage as positive. Chittenden, Hall, and Hutchinson (1996) further argued that effect of tangibility on leverage depend upon the type of debt. For short-term debt, the effect is found to be negative, while for the long-term debt the effect is positive.

In a Shariah-compliant firm leverage ratio cannot exceed the tangibility of assets. From this restriction/condition, it is evident that the firms having more tangible assets will be able to avail more debt. Total debt is restricted to the extent of tangible assets. Therefore the size according to asset tangibility and the current status of the firm is an important determinant of its debt to equity ratio in shariah firms (Ahmed, 2007). According to Haron and Ibrahim (2012), the influence of tangibility from a theoretical trade-off point of view is that firms holding assets can tender their assets as collateral to lenders that are more willing to lend due to secure instrument hence implying a positive relationship with leverage. However, the agency theory suggests that firms with less tangibility or collateral assets may choose higher debts level to curb managers from consuming more than the optimal level of perquisites (Titman & Wessels, 1988).

According to pecking order factor to select the financing instrument is to determine the choice of instrument facing the constraints, e.g., if the internal fund cannot generate retained earnings, the firm may avail debt by the institutional source. Moreover, if the firm acquires debt from the bank, the maximum level of debt may be determined by Debt ratio constraint. Moreover, the decision of the choice of instrument sources depends on the status and size of the firm (Ahmed, 2007).

This study extends the hypothesis that asset tangibility is positively related to leverage.

Ho: Asset tangibility does not affect the leverage level of the Shariah-compliant and conventional firms.

H1: Asset tangibility has a significant effect on the leverage level of the Shariah-compliant and conventional firms.

Numerous studies have used different measures of asset tangibility. For example, Pandey (2002) and Wolfgang Drobetz and Fix (2003) used a ratio of fixed assets to total assets as a measure of firm's tangible assets. Following Myers (1984); De Jong, Kabir and Nguyen (2008), this study applies the ratio of net fixed assets to total assets as a measure of tangibility.

C. Profitability

Profitability is generally considered as having a negative relationship with debt ratio (Rajan & Zingales, 1995). The pecking order hypothesis extended by Myers (1984) suggests that debt comes next to retained earnings in the order of financing choices. Higher profits lead to higher retained earnings, and hence it could be argued that profitability may be one of the sources of having lower debt level for the firm. Likewise, other studies claim that the profitable firms will tend to get less debt because they are self-sufficient to use their internal funds (Ahmed, 2007; Barton & Gordon, 1988; Myers, 1984; Sivarama Krishnan & Moyer, 1996).

The trade-off theory, however, suggests that the relationship between the profitability and leverage is positive. As the profitable firms borrow more, they need more debt to shield off their income from tax burden (Long and Mattiz, 1985; Frank & Goyal, 2009). The objective function of the Islamic firm has some ethical dimensions like the trustworthiness, *Amanah*, selflessness not self-interest in the sense of exploiting the wealth and *Amanah* of *Rabb-ul-mal* while deciding the capital structure of the firm. The manager tries to minimize the cost of financing assets and work with efficiency. Thus by employing least cost especially in preferences of choosing instruments should maximize the profitability (Ahmed 2007). The hypothesis for profitability is that it has the negative effect on Shariah-compliant and conventional firms.

Ho: Profitability does not affect the leverage level of the Shariah-compliant and conventional firms.

H1: Profitability has a significant effect on the leverage level of the Shariah-compliant and conventional firms.

As mentioned earlier the literature on capital structure has used various measures of profitability as a determinant of capital structure or as a control variable. Return on assets (ROA) and return on sales (ROS) (Al-Sakran, 2001); Earnings before interest and taxes (EBIT) (Huang and Song, 2004); ratio of cash flow to total assets (Bhaduri, 2002) have been used as some measures of profitability in the literature. This research, however, uses a more holistic measure of profitability by taking the average of ROA for last five years as a measure of profitability denoted by MROA.

$$\boldsymbol{Profitability_{i,t} = \frac{1}{5}\sum_{t=1}^{5} ROA_{i,t}} \qquad \textbf{(4.1)}$$

D. Liquidity

Liquidity may influence firm's borrowing through the availability of funds at the right time when needed. If a firm has sufficient funding to meet its investment and other

financial obligation, the firm reliance on the debt would be lower (Jensen and Meckling, 1976; Myers, 1977; Titman and Wessels, 1988). Therefore, it is hypothesized that liquidity influences debt level of the firm.

Ho: Liquidity does not affect leverage level of the Shariah-compliant and conventional firms.
H1: Liquidity has a significant effect on leverage level of the Shariah-compliant and conventional firms.

Following Jabbouri (2016), this study uses the ratio of cash and cash equivalents to the total current assets.

E. Risk

Riskier firms may tend to avoid the use and reliance on much debt. Debt entails a fixed cost of interest every year, which could be difficult for firms with unreliable or highly variable profits or cash-flow patterns. The probability of insolvency increases with the volatility of earnings. The findings from previous studies support these arguments (Bradley, Jarrell, and Kim 1984; Hirota, 1999). The authors establish that riskier firms tended to avoid getting into the higher levels of debt. The risk is measured as the probability of bankruptcy or profitability distress. The higher the risk of distress or bankruptcy the lesser debt the firm should add in its capital structure. The direct relation is central between risk and returns to Islamic financing**.** The hypothesis of the relationship between risk and leverage ratio of the firm as follows.

Ho: Risk does not affect leverage level of the Shariah-compliant and conventional firms.
H1: Risk has a significant effect on leverage level of the Shariah-compliant and conventional firms.

Previous studies calculated risk as the standard deviation of EBIT (earnings before interest and taxes) divided by total assets. Hence, this study uses the standard deviation

of last five years ROA as a measure of risk or volatility following Friend and Lang, 1988), which is calculated as follows.

$$\boldsymbol{Risk_{it}} = \sqrt{\frac{\mathbf{1}}{\boldsymbol{T}}(\sum_{\boldsymbol{t=1}}^{\boldsymbol{T}}(\boldsymbol{ROA_{i,T}} - \frac{\mathbf{1}}{\boldsymbol{T}}\sum_{\boldsymbol{t=1}}^{\boldsymbol{T}}\boldsymbol{ROA_{it}}))^{\mathbf{2}}} \qquad \textbf{(4.2)}$$

F. Non-Debt Tax Shield

Non-debt tax shield (NDTS) is a good substitute for tax benefit derived from debt financing. One such source of tax saving is depreciation expenditure. The higher the tax savings opportunity a firm has from depreciating, the lower the savings from debt financing. Consequently, the need to issue the debt decreases substantially (Titman and Wessels, 1988; Krishan and Moyer, 1996). The relationship, however, is ambiguous empirically. Therefore, this study hypothesizes that:

Ho: Tax shield does not affect leverage level of the Shariah-compliant and conventional firms.
H1: Tax shield has a significant effect on leverage level of the Shariah-compliant and conventional firms.

G. Growth

Pecking order theory predicts the leverage to be lower if the growth opportunities for the firm are less than the availability of internally retained earnings (Myers & Majluf, 1984). However, as soon as the positive NPV investment opportunities increase, the debt ratio tends to grow as firms may find the internal funds insufficient to finance further expansion. Therefore, the possible relationship between the growth opportunities and leverage may be positive. The study hypothesizes as follows.

Ho: Growth does not affect leverage level of the Shariah-compliant and conventional firms.
H1: Growth has a significant effect on leverage level of the Shariah-compliant and conventional firms.

Growth in this study is measured as percentage change in annual sales, which is considered a better measure the agency cost of debt (Körner, 2006; and Garcia-Teruel & Martinez-Solano, 2007).

4.1.2 Model specification

This study employs multivariate regression analysis in a panel data framework to measure the dependence of capital structure on corporate governance variables. The panel data analysis helps to explore cross-sectional and time series data simultaneously. In this section, the model is specified for determinants of capital structure. The dependent variable is the firm's long-term debt ratio to total assets, and independent variables are different firm characteristics.

4.1.2.1 Empirical model

Based on the hypothesis of no individual effects among the sampled firms, the following panel model is estimated for the sample of shariah firms and the conventional firms separately.

$$\boldsymbol{Leverage_{it} = \alpha_o + \beta_1\, Size_{it} + \beta_2\, Tangibility_{it} + \beta_3\, Profitability_{it} + \beta_4\, Risk_{it} + \beta_5\, Liquidity_{it} + \beta_6\, Growth_{it} + \beta_7\, Non\text{-}Debt\ Tax\ Shield_{it} + \varepsilon_i} \qquad \textbf{(4.3)}$$

Where,

$Leverage_{it}$ *is* firm's leverage measured total debt to total assets ratio,
$Size_{it}$ is measured as natural logarithm of assets,
$Tangibility_{it}$ is measured as a ratio of fixed assets to total assets,
$Profitability_{it}$ is measured as five-year mean return on assets,
$Risk_{it}$ is measured as standard deviation of five-year return on assets, and
$Liquidity_{it}$ is measured as the ratio of cash and equivalents to the total current assets.
$Growth_{it}$is measured as percentage change in annual sales.
$Non\text{-}Debt\ Tax\ Shield_{it}$ is measured as the ratio of depreciation to total assets.

Previous studies have applied the above model of capital structure using different measures of leverage. For example, the leverage has been calculated as the ratio of book value of total debt to the book value of total assets (Bos and Fetherston, 1993; Graham,

1996; and Rajan & Zingales, 1995); total debt to the market value of equity (Titman and Wessels, 1988), total debt over net assets, and total debt to capital and interest coverage ratio (Rajan & Zingales, 1995). Moreover, the authors have applied various firm-level variables as the proxies for the determinants of capital structure. Most common of these are firm size, growth, profitability, risk, and non-debt tax shield (See, for example, Kim et al. (2004); Titman and Wessels, 1988; and Rajan & Zingales, 1995 among others).

(a) ***Dummy variable approach to the analysis of capital structure determinants***

The slope dummy variable approach has been applied to compare the regression effect of various determinants of capital structure on the Shariah-compliant and conventional firms. This approach is widely used in econometrics, and empirical studies make a comparison of regression coefficients for different groups. In this case, the researcher's interest lies in finding whether the magnitude of the impact of different capital structure determinants differs for Shariah-compliant and conventional firms. To achieve this objective, the interaction terms for all the determinants in our model are created with Shariah-compliant dummy (DUM = 1 if the company is Shariah-compliant, and 0 otherwise). The regression model is developed as follows.

$$Levrage_{it} = \alpha_o+\beta_1 Size_{it}+\beta_2\ Tangibility_{it}+\beta_3\ Profitability_{it}+\beta_4\ Risk_{it}+\beta_5\ Liquidity_{it}+\beta_6\ Growth_{it}+\beta_7\ Non\text{-}Debt\ Tax\ Shield_{it}+\beta_8\ DUM\times Size_{it}+\beta_9\ DUM\times Tangibility_{it}+\ \beta_{10}\ DUM\times Profitability_{it}\ +\ \beta_{11}\ DUM\times Risk_{it}+\beta_{12}\ DUM\times Lliquidity+\beta_{13}\ DUM\times Growth_{it}\ +\beta_{14}\ DUM\times Tax\ Shield\beta\ +\varepsilon_{it} \quad (4.6)$$

The conventional firms are used as the reference category, and hence the coefficients from β_1 to β_7 apply to the conventional firms. The size of the coefficient is indicative of the magnitude of its influence on leverage ratios of these firms. On the other hand, the coefficients β_8 to β_{14} are the differential slope dummies applies to the Shariah-compliant firms only capturing the incremental effect of the firm characteristics used here as determinants on the Shariah-compliant firms' leverage ratio. For example, if *Size* of the

firm is under consideration as one of the determinants and the β_8 is statistically significant and positive, it would suggest that rate of change in debt ratio of Shariah-compliant firms is different from the reference group, i.e., conventional firms in this case. The sign of the coefficient β_8 would imply whether the impact is increasing or decreasing in relation to the conventional firms (the reference group). This, therefore, tests the following null hypothesis.

H_0: There is no difference in the impact of size on the debt ratios of Shariah-compliant and conventional firms.

i.e $\beta_1 - \beta_8 = 0$

H_1: There is a difference in the impact of size on the debt ratios of Shariah-compliant and conventional firms.

i.e., $\beta 1 - \beta_8 \neq 0$

If significant and positive, the conclusion would be that the size has a greater influence on debt ratio of Shariah-compliant firms than on conventional firms. Put another way, the sensitivity of the debt ratios to a firm size greater for Shariah-compliant firms than conventional firms. The similar hypothesis could be tested based on the model above for the other variables.

4.2 Objective Two: Managerial trustworthiness (self-interest) in capital structure

The Shariah law makes *Amanah* (trustworthiness) a fundamental obligation for all the contractual parties. From the agency theory perspective, this study investigates managerial trustworthiness in capital structure decisions of Shariah firms and compare it with those of conventional firms, in the light of Islamic principle of Amanah (trustworthiness). Specifically, the study examines whether capital structure of Shariah firms is partially influenced by managers for their own interest as their ownership changes in the firm.

This part of the thesis describes and develops the hypothesis about managerial trustworthiness which arises from the lack or absence of opportunistic or self-serving behaviour of managers in capital structure decisions.

4.2.1 Hypothesis Development

Trustworthiness (*Amanah*) serves as a guiding principle in an agency contract involving an agent (or trustee) to act on behalf of the principal (or trustor) in Islamic law. The principle obligates all contractual parties to act as trustee to one another and calls for strict adherence to the clauses stipulated explicitly (or implicitly) within the contract (Iqbal 1992). In the modern theory of firm which views a firm as a nexus of contracts between various stakeholders (Jensen and Meckling 1976), the relationship of principal (trustor) and agent (trustee) is analogous to that of owners and managers, according to which managers are put in charge of business to act in the best interest of the owners or shareholders (Jensen and Meckling 1976). In practice, however, the management is often tempted to act in its self-interest rather than the shareholders' (Fama and Jensen 1983), due to conflict of interests arising from agency relationship. A willful violation of trust by the management (agents) in pursuit of its own interests rouses the conduct of managerial opportunism in the organization (Fama and Jensen 1983, Jensen 1986, Jensen and Meckling 1976), which is not only against the very spirit of the principle of *Amanah* (trustworthiness) in Islam but also the corporate ethics.

In trade-off theory, optimal capital structure refers to the debt ratio which optimizes costs (financial distress) and benefits (tax advantages) of debt. Hence, Friend and Lang (1988) argue that optimal capital structure should be independent of the structure of the ownership of the firm. However, the literature on managerial opportunism suggests that managers tend to manipulate capital structure in their own interest at the cost of shareholders. For example, the managerial-optimization hypothesis developed and tested

by Friend and Lang (1988) suggests that if management fears losing its ownership stake in bankruptcy, it may deliberately keep the debt ratio lower than the optimal level to avoid the risk of bankruptcy. Therefore, if varying managerial ownership in the firm affects the debt ratio in its capital structure, then it is an indication of managerial opportunism or lack of trustworthiness (Friend & Lang, 1988, Amihud and Lev 1981). The prior literature recognizes such self-serving behaviour of managers in deliberately suppressing the debt ratios lower than the optimal level in order to avoid their ownership and employment risk arising from a higher level of debt and bankruptcy (Amihud and Lev 1981; Fama, 1980; and Friend & Lang 1988). These findings, therefore, portray the lack of trustworthiness and the managerial opportunism among Conventional firms.

A Shariah firm is an emerging genre of a corporate entity whose business model conforms to the Shariah guidelines. For its utmost importance in Shariah law, the principle of *Amanah* is of special interest in the case of Shariah firms. If a Shariah firm is indeed different from other firms, then one would expect its management to avoid opportunism by exhibiting the superior level of trustworthiness in their financial decisions. This study builds on the supposition that Shariah compliance should be reflected in the overall spectrum of managerial decision making of Shariah complying firms, the determination of capital structure being one of them. The previous research has explored this assumption and has found the higher tendency of Shariah firms to report their earnings more truthfully (Farooq, AbdelBari and Haniffa 2015; Wan Ismail, Kamarudin and Sarman 2015). Literature also suggests higher propensity to pay dividend among Shariah firms (Farooq and Tbeur 2013) than their Conventional counterparts mainly due to better corporate governance, and lower agency costs. In a similar vein, one would expect that the changes in capital structure should not be motivated by managerial self-interest in Shariah firms for their relatively low agency costs.

This study extends this argument that Shariah compliance leads to certain firm characteristics, which are instrumental in minimizing agency conflicts between the shareholders and managers leaving relatively little room and reward for managerial opportunism. For example, shariah guidelines require firms to have most of its assets in illiquid form, because the use of money, in any form such as cash or cash equivalent, as an earning asset is prohibited in Shariah law for the element of *Riba* (interest) in it. Hence, a Shariah-compliant firm cannot invest too much in cash and other interest-earning marketable securities (Derigs et al. 2008). Consequently, the level of cash and other liquid assets tend to be lower in Shariah-compliant firms (Derigs and Marzban 2008). The free cash flow hypothesis of Jensen (1986) postulates that firms with these characteristics are less likely to be affected by high agency costs arising from the misuse of free cash flow at the hands of management, as a result, due to lower agency conflicts, managerial opportunism tends to decline in these firms. Consequently, management in the Shariah firm would be expected to behave less opportunistically and hence would be more trustworthy in financing and other decisions than in the conventional firms.

Based on the above discussion, this study develops the following hypothesis to test the element of trustworthiness in Shariah firms in comparison to conventional firms.

Ho: Managerial ownership does not affect leverage level of the Shariah-compliant and conventional firms.

H1: Managerial ownership affects leverage level of the Shariah-compliant and conventional firms.

The variable managerial ownership is used as an independent variable to explore if managerial ownership affects capital structures of the firm. Following Friend and Lang (1988) among others, this research supposes the absence of managerial self-interest in capital structure determination if the coefficient of managerial ownership returns insignificant in regression results. However, if the coefficient returns significant, it

concludes the presence of opportunism or lack of trustworthiness. Previous studies investigating managerial self-interest in the capital structure argue that if managerial ownership significantly influences capital structure within the firm as their ownership varies; there exists managerial self-interest or opportunism. The rejection of the null hypothesis will lead us to conclude that managers influence capital structure as their ownership varies within the firm in their self-interest or opportunism.

4.2.2 Model specification and description of variables

The multivariate regression analysis is used to analyse the element of managerial trustworthiness in the capital structure decision of shariah and conventional firms. The empirical model and its specifications are explained below.

4.2.2.1 Dependent, explanatory and control variables

The dependent variable for this objective is firm leverage, which is measured as the ratio of total debt to total assets as described in detail in section 4.1.1.1 above.

Following Kim and Sorenson (1986) and Friend and Lang (1988), the study uses managerial ownership as the main explanatory variable to test managerial trustworthiness in the determination of capital structure. Studies investigating element of self-interest/trustworthiness in capital structure argue that if firm's capital structure is determined optimally, the debt ratio of the firm should be independent of the level of managerial ownership in the firm. However, if a change in managerial ownership influences the debt ratio to change significantly within the firm, it suggests that management is manipulating debt ratio in its own interest (Friend and Lang, 1988). Therefore, stating empirically, the statistical significance of the coefficient of managerial ownership in the regression is an indication of managerial opportunism, whereas insignificance denotes managerial trustworthiness.

Managerial ownership is not the sole determinant of firm's leverage ratios. Capital structure theories identify many other factors which could possibly lead capital structure to vary across firms. The effect of these factors is, therefore, important to isolate. In line with the modern corporate finance theories, Ahmed (2007) argues that the basic elements determining the capital structure of Shariah-compliant firms may not be different from those of conventional firms. Hence, this study applies a similar set of control variables for both shariah and conventional samples. Based on previous literature the model controls for firm *size* (Rajan & Zingales, 1995; Banerjee et.al. 1999), *asset tangibility* (Banerjee, Heshmati, & Wihlborg, 1999; Rajan & Zingales, 1995), *profitability* (Kester, 1986; Rajan & Zingales, 1995; Titman & Wessels, 1988), and *risk* (Myers, 2001), *growth* (Mehran, 1992), *non-debt tax shield* (Brailsford et al., 2002), and *liquidity* (Friend and Lang 1988). The proxies for all these variables are described above.

4.2.2.2 Empirical model

This section specifies the model used in the second objective of this research. The study proposes the quantitative method of research and employs the econometric model to test the results. This model is the extension of the model used for determinants of capital structure. The dependent variable is the ratio of firm's long-term debt and its total assets which are used as a measure of firms' financing patterns. The major difference in this model is the inclusion of the key explanatory variable "*Managerial Ownership*" to evaluate the trustworthiness of managers while financial decision-making (capital structure) when their ownership structure changes by variation in the proportion of equity holdings. Several studies[24] have used leverage model to determine capital structure with

[24] See for example, Kim and Sorenson (1986), Friend and Lang (1988), Shleifer and Vishny (1986), Harris and Raviv (1990), Mahran (1992), Firth (1995), Berger et al (1997), Ozkan (2001), Short, Keasey and Duxbury (2002), Brailsford et al (2002), Hasan et al (2009), Abor and Biekpe(2007), and (1997), Raj Pokharl (2013), Fentaw Leykun (2016).

managerial ownership as an explanatory variable by controlling other independent variables.

The study proposes the following model.

$$\boldsymbol{Leverage_{it} = \alpha_o + \beta_1\ Managerial\ Ownership_{it} + \beta_2\ Size_{it} + \beta_3\ Tangibility_{it} + \beta_4\ Profitability_{it} + \beta_5\ Risk_{it} + \beta_6 Liquidity_{it} + \beta_7\ Growth_{it} + \beta_8\ Tax\ Shield_{it} + \varepsilon_i} \quad \textbf{(4.7)}$$

where,

$Leverage_{it}$ is firm's leverage measured as total debt to total assets ratio

$Managerial\ Ownership_{it}$ is the fraction of managerial ownership in total equity, $Size_{it}$ is measured as natural logarithm of total assets,

$Tangibility_{it}$ is measured as a ratio of net fixed assets to total assets

$Profitability_{it}$ is measured as five-year mean return on assets (ROA)

$Risk_{it}$ is measured as standard deviation of five-year return on assets

$Liquidity_{it}$ is measured as the ratio cash and cash equivalents to total current assets.

$Growth_{it}$ is measured as percentage change in annual sales.

Non-Debt Tax Shield$_{it}$ is measured as the ratio of depreciation to total assets.

The subscript *i and t* refer to the cross-sectional and time variations.

The model above applies for managerial ownership as the main explanatory variable for testing the impact of managerial ownership on debt level. Managerial ownership is proxied by the fraction of equity held by managers and insiders (directors and executives). This study uses managerial ownership following previous studies (Morck et al. 1988; McConnell and Servaes 1990; Pindado and De La Torre 2005; Firth 1995). This model is used by several authors such as (Friend and Lang 1988; Mehran 1992; Firth 1995; Brailsford et al. 2002; Pindado and de la Torre 2005; Florackis & Ozkan, 2009).

4.3 Objective Three: Determinants of Debt Maturity Structure in Shariah and conventional firms

The third objective of the study addresses this issue of investigating the determinants of debt maturity structure of Shariah-compliant firms in comparison with the conventional firms. Using the theories of corporate debt maturity structure, the empirical analysis was

carried out to identify the firm-level factors that influence the debt maturity structure among Shariah-compliant firms in Pakistan. The study also compares the relative importance of each factor in comparison to conventional firms. Since Shariah compliance entails some specific firm characteristics such as lower debt ratio, lower liquidity, and higher tangibility, this study argues that the debt maturity structure of Shariah and conventional firms would differ significantly. The main purpose of the analysis, therefore, is to explore how Shariah compliance translates into debt maturity structure decisions of these firms. The following section explains the hypotheses and variables determining the debt maturity structure of Shariah-compliant and conventional firms used in this study.

4.3.1 Hypotheses Development and description of variables

The choice of debt maturity in creating firm value is already implied in M&M (1958) seminal paper. The following section describes the dependent variable for the objective. Next, based on the theories of debt maturity choice of firm, the hypotheses are developed for the empirical analysis.

4.3.1.1 Dependent variable

Several proxies have been used for debt maturity (DEM). For example, Ozkan (2000) used the ratio of debt maturing in 5 and one years to the total debt. Barclays and Smith (1995) used 3-year debt ratio to total liabilities. However, most of the studies apply the ratio of long-term debt to total debt as a proxy for debt maturity (Antoniou et al., 2006; Cai et al.; 2008; Deesomask et al., 2009; Kirch et al., 2012; Renato, Terra, Amal, Svensson, & Renato Soares Terra, 2011). For this reason and due to data constraints, this study uses long-term debt to total debt as a measure of debt maturity.

4.3.1.2 Independent variables

This section presents the hypothesis for each of the firm-level characteristic considered as the determinant of debt maturity in the previous literature.

A. Size

The ownership of small firms is relatively concentrated than large ones increasing the agency costs of these firms because managers with more share in ownership tend to be less risk-averse. Another reason why agency costs of smaller firms grow up is the larger investment opportunities (Whited, 1992). Larger firms issue information about themselves through various ways regularly. Hence gathering information about large firms is relatively easy and less costly for investors. Large firms also have the advantage of having less bankruptcy risk, which enables them to enter long-term financial markets (like debt and equity) more conveniently and successfully (Chittenden et al., 1996). Moreover, large public issues require sizable floatation costs and involve scale economies that suit larger firms only (Titman and Wessels, 1988).

For all reasons mentioned above, size is expected to be positively related to debt and debt maturity. Therefore, the size hypothesis of debt maturity is as follows.

Ho: Size does not affect debt maturity structure of Shariah-compliant and conventional firms.

H_1: Size has a significant effect on debt maturity structure of the Shariah-compliant and conventional firms.

B. Growth

Myers (1977) argues that in typical investment situation when the lion's share of the benefits from a project goes to the lenders, equity holders might be uninterested in investing in even a positive NPV project. The rejection of such projects creates a classical underinvestment problem within the firm. Arguably, firms having greater investment or growth opportunities suffer relatively more from the problem of underinvestment, and as a result, the conflict between equity holders and bondholders rises. According to Myers (1977), shortening debt maturity, whereby debt maturity falls before the option of the investment opportunity is exercise, can markedly reduce the disincentive to invest and so

checks otherwise rising agency conflicts between owners and creditors of the firm. Therefore, agency theory, in the presence of underinvestment problem, predicts negative relation of growth opportunities of the firm and the maturity of its debt. On the other hand, according to liquidity hypothesis, if a firm is growing it could be risky. Hence, additional risk caused by growth or new investment could be lowered by long-term debt. This means that liquidity hypothesis predicts a positive relationship between growth and debt maturity structure.

Therefore, the testable hypothesis for the possible impact of growth on debt maturity is as follows.

Ho: Growth does not affect debt maturity structure of Shariah-compliant and conventional firms.

H1: Growth has a significant effect on debt maturity structure of the Shariah-compliant and conventional firms.

C. Asset Maturity Structure

Matching principle is a popular corporate finance strategy to avoid liquidity risk. Synchronizing cash flows (inflows and outflows) relives firm of complicated refinancing processes, reduces the risk of forced liquidation, and hence increases firm's credit quality. According to Barnea et al. (1980), tailoring maturity structure of debt to asset maturity structure also helps mitigate agency costs of underinvestment and risk-shifting. If true, firms with a larger base of long-term fixed assets are expected to have a higher proportion of long-term debt in their financing patterns. The relationship between asset maturity and debt maturity is expected to be positive, as firms tend to match the maturity structure of assets and liabilities to reduce the agency costs of debt. The hypothesis develops as follows.

Ho: Asset maturity does not affect debt maturity structure of Shariah-compliant and conventional firms.

H1: Asset maturity has a significant effect on debt maturity structure of the Shariah-compliant and conventional firms.

D. Tangibility

Greater tangibility lowers bankruptcy costs by allowing higher collateral (Kirch et al. 2012). Therefore tangibility has a positive effect on debt maturity of firms.

Ho: Tangibility does not affect debt maturity structure of Shariah-compliant and conventional firms.

H1: Tangibility has a significant effect on debt maturity structure of the Shariah-compliant and conventional firms.

E. Profitability

A profitable firm has higher taxable income which results in the positive relationship between profitability and debt maturity. Profitability is likely to be positively related to debt maturity also because of tax benefits as profitable firms have higher taxable income so receive greater tax benefits from long-term debt (Kane et al. 1985, Deesomsak et al., 2009). Taxability can influence firms' debt maturity because choosing long-term debt over short-term debt can create tax timing option to repurchase and re-issue debt.

Ho: Profitability does not affect debt maturity structure of Shariah-compliant and conventional firms.

H1: Profitability has a significant effect on debt maturity structure of the Shariah-compliant and conventional firms.

F. Risk

Assuming manager's inherent edge over knowledge about the firm, if the firm has any secret good (bad) news, then its securities are underpriced (overpriced) in the capital

markets[25]. The nature of news (good or bad) determines firm's quality, of which markets are unaware of owing to the presence of asymmetric information. Diamond (1991) showed that good quality firms borrow on a shorter term basis. Flannery (1986) demonstrated that with positive transaction costs, riskier firms unable to pay repetitive rollover cost of financing short-term debt would resort to longer-term debt, whereas, low-risk firms will opt for short-term debt. In Kale & Noe (1990), this argument is held up even when the transaction costs do not exist. One plausible reason why good firms are more likely to choose shorter maturity is that they would expect markets to factor in their yet unknown news likely to increase their credit quality once it is made public. This account of theoretical reasoning leads to the following relational hypothesis about firm's creditworthiness or quality with debt maturity.

Ho: Risk does not affect debt maturity structure of Shariah-compliant and conventional firms.

H1: Risk has a significant effect on debt maturity structure of the Shariah-compliant and conventional firms.

G. Tax rate

Tax hypothesis on debt maturity choice favours longer maturity of debt in capital structure f firm. Depending on the shape of yield curve, tax saving value of long-term debt payments increases if the yield curve slopes upward (Brick & Ravid, 1985; Kane, Marcus, & McDonald, 1985). In another model based on option valuation model in a multi-period setting, Kane et al. (1985) showed debt maturity as a direct function of floatation costs, and an inverse function of tax-shield advantage (i.e., effective tax rate) and the volatility

[25] Note this applies to both debt and equity securities.

of firm value. The theory thus identifies both positive and negative effects of the tax rate on debt maturity. This produces tax hypothesis for debt maturity as follows.

Ho: Tax rate does not affect debt maturity structure of Shariah-compliant and conventional firms.

H1: Tax rate has a significant effect on debt maturity structure of the Shariah-compliant and conventional firms.

H. Non-Debt Tax Shield

Nondebt tax shields are a substitute for debt-related tax shields. The size of a tax shield benefit that a firm receives by issuing long-term debt depends on the size of its non-debt related tax deductible items, such as depreciation amortization and tax credits. The higher the size of these NDTS items, the lesser the taxable income and hence lesser the tax benefits from using long-term debt. Hence, NDTS affects debt maturity negatively.

Ho: Non-debt tax shield does not affect debt maturity structure of Shariah-compliant and conventional firms.

H1: Non-debt tax shield has a significant effect on debt maturity structure of the Shariah-compliant and conventional firms.

4.3.1.3 Measurement of variables

Size, growth, tangibility, profitability, and risk are measured as discussed in section 4.2.1.2 above. The study uses two proxies for the asset maturity, which include *asset maturity*, the ratio of net fixed assets over depreciation (Fan et al., 2002), and o*perating cycle*, the ratio of sales to fixed effects. *The tax rate* is effective tax rate for firm worked out as the ratio of the tax bill and taxable income (Fan et al., 2002; Stohs and Mauer, 1996). *Non-debt tax shield* is the ratio of depreciation to total assets.

4.3.2 Model specification

To examine the impact of the factors discussed above on the debt maturity of the shariah and conventional firms, the empirical model is developed and explained in this section. The model is based on the panel data and estimated using panel regression method.

4.3.2.1 Empirical model

This study uses the following regression equation to investigate the determinants of debt maturity in shariah and conventional firms.

$$\textit{Debt Maturity}_{it} = \beta_o + \beta_1\, \textit{Size}_{it} + \beta_2\, \textit{Growth}_{it} + \beta_3\, \textit{Asset Maturity}_{it} + \beta_4\, \textit{Operating Cycle}_{it} + \beta_5 \textit{Tangibility}_{it} + \beta_6\, \textit{Profitability}_{it} + \beta_7\, \textit{Risk}_{it} + \beta_8\, \textit{Tax rate}_{it} + \beta_9\, \textit{Non-debt tax shield}_{it} + \varepsilon_{it} \qquad (4.8)$$

Where,

$\textit{Debt maturity}_{it}$ *is* the ratio of long-term debt to total debt,
$\textit{Size}_{it}$ is measured as natural logarithm of assets,
$\textit{Growth}_{it}$is measured as percentage change in annual sales.
$\textit{Asset maturity}_{it}$ is the ratio of net fixed assets over depreciation
$\textit{Operating cycle}_{it}$ is the ratio of sales to fixed effects,
$\textit{Tangibility}_{it}$ is measured as a ratio of fixed assets to total assets,
$\textit{Profitability}_{it}$ is measured as five-year mean return on assets,
$\textit{Risk}_{it}$ is measured as standard deviation of five-year return on assets, and
$\textit{Tax rate}_{it}$ is the ratio of the tax bill and taxable income
$\textit{Non-Debt Tax Shield}_{it}$ is measured as the ratio of depreciation to total assets.

Different researchers have used the debt maturity structure model. For example, (1) Barclays and Smith (1995) used this model with following variables [debt maturity= investment opportunity set, regulation, size, firm quality, term structure]. (2) Guedse & Opler (1996) used the model with such variables as [debt maturity= Term to maturity (years) duration, sales revenue, asset maturity (years), income taxes/assets, R&D/sales, net operating losses/sales, market-to-book ratio, stock return in year prior to issue, stock return in 2 years after issue, industry earnings variability, interest rate volatility, term premium]. (3) Stohs and Mauer (1996) used the model like [debt maturity= growth, size, firm quality, asset maturity, tax rate, and leverage]. (4) Ozkan (2002) uses this model with following variables: [debt maturity= market-to-book, asset maturity, size, variability, effective tax rate, abnormal profit]. (5) Arslan and Karan (2006) used the model like [debt Maturity= concentration of ownership, financial strength, asset maturity, MV BV, firm size, effective tax rate, and leverage]. (6) Cai et al. (2008) used this model like; [debt maturity= growth, size, quality, asset maturity, tax rate, liquidity, volatility, profitability,

tangibility, leverage]. (7) Deesomask et al. (2009) use the model as [debt maturity= firm size, growth, opportunity, earnings volatility, liquidity, profitability, share price performance and asset maturity]. (8) Kirch et al. (2012) used the model with these determinants: [debt maturity= leverage, asset maturity, size, growth, business risk, tangibility, tax rate, credit rating].

(a) ***Dummy variable approach to the analysis of debt maturity structure determinants***

To distinguish between the effects of each factor on the shariah and conventional firms, the dummy variable approach as described in section 4.2.3.1 above is applied. This approach helps to identify the relative importance of each determinant for shariah-compliant firms relative to conventional firms. The following appended version of model 4.8 with shariah dummy interaction with determinants of debt maturity was estimated for the sample using OLS regression

$$\textit{Debt maturity}_{it} = \beta_o + \beta_1\ \textit{Size}_{it} + \beta_2\ \textit{Growth}_{it} + \beta_3\ \textit{Asset Maturity}_{it} + \beta_4\ \textit{Operating Cycle}_{it} + \beta_5 \textit{Tangibility}_{it} + \beta_6\ \textit{Profitability}_{it} + \beta_7\ \textit{Risk}_{it} + \beta_8\ \textit{Tax rate}_{it} + \beta_9\ \textit{Non-debt tax shields}_{it} + \beta_{10}\ \textit{DUM}\times\textit{Size}_{it} + \beta_{11}\textit{DUM}\times\textit{Growth}_{it} + \beta_{12}\ \textit{DUM}\times\textit{Asset maturity}_{it} + \beta_{13}\ \textit{DUM}\times\textit{Operating cycle}_{it} + \beta_{14}\ \textit{DUM}\times\textit{Tangibilitye}_{it} + \beta_{15}\ \textit{DUM}\times\textit{Profitability}_{it} + \beta_{16}\ \textit{DUM}\times\textit{Risk}_{it} + \beta_{17}\ \textit{DUM}\times\textit{Tax rate}_{it} + \beta_{18}\ \textit{DUM}\times\textit{Non-debt tax shields}_{it} + \varepsilon_{it} \quad \textit{(4.9)}$$

The conventional firms are used as the reference category. Thus the coefficients from β_1 to β_9 apply to the conventional firms. On the other hand, the coefficients β_{10} to β_{18} are the differential slope dummies applied to the Shariah-compliant firms only capturing the incremental effect of the firm characteristics used here as determinants on the Shariah-compliant firms' debt maturity. The significance and size of the slopes of interaction terms determine the whether a particular factor is more/less important in case of the shariah-compliant firms.

4.4 Objective Four: Managerial trustworthiness (self-interest) in debt maturity structure

This study extends the analysis of managerial opportunism in capital structure decisions to the debt maturity structure from both Shariah and conventional perspectives. In the next section, the hypothesis is developed followed by the description of variables used in the empirical analysis.

4.4.1 Hypothesis development

The managerial tendency towards suboptimal leverage level is documented well in literature. Berger et al. (1997) found managers avoiding high leverage. Likewise, Novas and Zingales (1995) showed that leverage level chosen by management differ significantly from the optimal level regarding shareholders' interests[26]. Short term leverage brings more rigorous and frequent monitoring to management resulting in aligning of management's and shareholders' interest. However, self-interested managers might avoid preferring longer-term maturity to circumvent external vigilance by more frequently. Friend and Lang (1988) argue that the leverage ratio of the firm would be determined independently of the level of managerial ownership within the firm if managers act in accordance with the interests of shareholders. In that case, changes in debt-equity ratios would be insensitive to changes in managerial ownership of the firm. On the other hand, if debt ratio responds significantly to varying degree of managerial ownership, this would indicate managerial tendency to influence capital structure for their own interests. Based on the monitoring frequency argument (Datta et al. 2005) and Friend and Lang (1988), this study proposes a similar argument in the case of debt maturity

[26] The chapter of literature review already described various studies giving evidence of managerial ownership significantly affecting leverage ratios within firms.

choice of firm. It is, thus, hypothesized that managers might influence debt maturity structure in their interest. The effect of such influence may be more pronounced when their share ownership level is high. However, as argued in the second objective, shariah-compliant firms possess some specific characteristics, such as lower level of debt, liquid assets, and free cash flows, which reduce agency conflicts in these firms.

4.4.2 Model specification and description of variables

Based on the discussion above, the study proposes the following extended empirical model.

4.4.2.1 Dependent, Explanatory, and control variables

Several proxies have been used for debt maturity, for example, Ozkan (2000) used the ratio of debt maturing in one and five years to the total debt. Barclays and Smith (1995) used 3-year debt ratio to total liabilities. Due to data constraints, this study uses long-term debt to total debt as a measure of debt maturity.

Managerial ownership is proxied by the fraction of equity held by managerial insiders. It is calculated by dividing the shares held by managers and insiders (i.e., directors and executives) with a total number of shares (Brailsford et al., 2002; Friend & Lang, 1988; Pindado & De la Torre, 2005a).

Managerial ownership is not the sole determinant of firm's debt maturity. Debt maturity theories identify various other factors which could possibly lead maturity to vary across firms. The effect of these factors is, therefore, important to isolate. Following the literature firm growth, size, asset maturity, tangibility, profitability, risk, tax rate, non-debt tax shield, and growth are controlled (Barclay and Smith, 1995; Stohs and Mauer, 1996; and Guedes ad Opler 1996). The proxies for these variables are described in the previous section.

4.4.2.2 Empirical model

$$Debt\ maturity_{it} = \beta_o + \beta_1 Managerial\ Ownership_{it} + \beta_2 Size_{it} + \beta_3 Growth_{it} + \beta_4 Asset\ Maturity_{it} + \beta_5 Operating\ Cycle_{it} + \beta_6 Tangibility_{it} + \beta_7 Profitability_{it} + \beta_8 Risk_{it} + \beta_9 Tax\ Rate_{it} + \beta_{10} Non\text{-}Debt\ Tax\ Shield_{it} + \varepsilon_{it} \quad (4.10)$$

The above model is also an extension of the model mentioned above for measuring determinants of debt maturity used in the objective three of this study. This model is extended by including the important explanatory variable named managerial ownership same as in the model 2 (4.6) for the second main objective of this study. Since in model 2 the explained or dependent variable was leverage or capital structure whereas in this model 4 for objective 4 of this study the dependent variable is debt maturity structure. A few researchers use this model, for example, Datta et al. (2005) previously for detecting managerial self-interest in the debt maturity structure in the firm. The authors used managerial ownership as the main variable to explain by controlling other variables. This study, therefore, attempts to use the same model for probing managerial behaviour in the debt maturity structure of the two sample firms mentioned already. Datta et al. (2005) use the model in this way; [Debt maturity structure= managerial ownership, leverage asset maturity, risk, firm value, and growth].

In this study, the model is like this [Debt maturity= managerial ownership, size, growth, asset maturity, operating cycle, tangibility, profitability, risk, tax rate, non-debt tax shield]. Thus, the impact of managerial ownership on the debt maturity of firms is explored by controlling other variables. In above-discussed models, the only difference can be noticed regarding types of independent variables due to variables of interest and data availability.

4.5 Using self-interest model of leverage for testing trustworthiness

Model 4.7 in the second objective and model 4.10 in the fourth objective are used to explore the managerial trustworthiness in the decisions of capital structure and debt

maturity structure choice respectively. These leverage models are in various studies on investigating managerial self-interest in the capital structure determination (Friend and Lang, 1988; Mehran, 1992), and debt maturity decisions Datta et al., (2005). Hausman (2002) maintained that the trustworthiness implies absence of self-interest and opportunism in managerial dealing. Therefore, the self-interest model used in the previous studies could be applied to probe trustworthiness as the significance of self-interest is synonymous to the absence of trustworthiness and vice versa (Hausman 2002, Sarkar, 1999).

The literature witnesses and argues that trustworthiness can be judged by determining the self-serving managerial behaviour. Hence, when the terms of managerial self-interest, opportunism, and entrenchment are used, the term of managerial trustworthiness goes along with the opposite assumption. In brief, each time when we try to detect individual's self-serving behaviour, in essence, we attempt to address whether there exists trustworthiness or not. Many scholars opine that by opportunist managers avoid trustworthiness (Sarker 1999; Hausman 2002; Siddiqi, 1981; Chapra 1992). Moreover, it is argued that wherever individuals or managers focus on their self-interest, trustworthiness will be under question.

4.6 Research methods

The study uses the panel data for the analysis. Therefore, panel data techniques including pooled OLS, fixed effects, and random effects are applied. Also, for the robustness purpose, the study also used Tobit regression and M-estimation methods. The techniques used are discussed below.

4.6.1 Advantages and shortcomings of Panel data

Advantages of pane data

The panel data estimation is used in this thesis due to the various advantages. For example, penal data is a combination of cross-section and time series data and provides more informative data lesser co-linearity and greater variability, more degrees of freedom and more efficiency. Panel data can also measure, identify and observe those special effects that may not be detected through purely time series or cross-sectional method. Panel data approach is more efficient than pure time-series or pure cross-section in a way that it helps us to study and evaluate more complicated behavioural models. Panel data deals with firms, individuals, countries, states and other units over time. There is heterogeneity problem in these units, and the panel data techniques can take such heterogeneity into consideration. Panel data is appropriate for studying the change dynamics panel data is also suitable for hexes unemployment; labour mobility and job turnover are better studied with panel data. Panel data has the capacity to make data available for a large number or several thousand units hence it can minimize the biasness of data that may occur if aggregate individuals or large category of firms. In brief panel, data can deepen the empirical analysis and make it enriched in many ways that may not be possible with only time series or cross-sectional data (Gujarati, 2008). Along with various advantages, the panel data carries some disadvantages also which are discusses below.

Shortcomings

There are some disadvantages of panel data due to the nature of cross-sectional and time series, the cross-sectional face problems such as heteroscedasticity and time series such as autocorrelation and some other problems such as cross-correlation in individual units at the same point in time.

4.6.2 Pooled Ordinary Least Square Regression

This piece of research employs panel data, which has both time series and cross-section components. A data set that records repeated observations for the individual units, e.g., firm, individual, employee, country, over multiple periods constitutes panel data. Panel data, therefore, can be thought to be cross-section dataset with an additional dimension of time series. Using panel in place of the cross-section or time series offers some advantages. Compared to pure time series or cross-section data, panel data possess higher informative value, more efficient estimative value, and predictive accuracy (Verbeek & Vella, 2005). Panel data not only helps identify causes of varying behaviour individual units as a whole but also help explain causes of variation for a given individual unit. Using panel provide a researcher to increase the sample size (Gujarati, 2008). Pooled regression technique for panel data has been used in this study. The basic assumption underlying the pooled regression is that all the coefficients (slope and intercept) are constant across time and individual units of observations, i.e., companies in this case. By treating the panel data as a cross section, pooled regression runs OLS regression on the pooled data or stacked data.

4.6.3 The Fixed Effects or (LSDV) Regression Model

The most straightforward approach can be used where all coefficients assumed constant across the time and individuals by estimating the normal OLS regression. However, where the slope coefficients remain constant but the intercept varies across the individuals, the fixed effect or the Least-Squares Dummy Variable (LSDV) regression model is used. The fixed effect regression model can be shown as follows.

$Yit = \beta 1i + \beta 2X2it + \beta 3X3it + uit.$

Fixed effect realizes the fact that even the intercept may differ across individuals (i.e., Companies); if each intercept remains constant over time, it is "time-invariant." In given fixed effect model we may notice that if it were β1it instead of β1i, it would suggest that

the intercept of each (firm) is time variant which changes by time. Therefore, it is visibly noticed from given model that (slope) coefficients of the repressors do not change over the time or across individual.

4.6.4 The random effect approach

Random effects model is a type of hierarchical linear model. The random effect model assumes that data is drawn from the hierarchy of different populations. The random effect models are used in panel data where there is assumed no fixed effects but may allow individual effects. The random effect model is a special case of fixed effect approach. Fixed and random effect models help in controlling for unobserved heterogeneity which is constant over the time and correlated with explanatory (independent) variables. This constant can be removed from the data through differencing; such as by taking a first difference which will remove any time-invariant components of the model. This is also said as error components model because composite error term [27](w_{it}) is made of two parts/components that are εi (cross-section or individual specific error component and u_{it} is combined cross section and time series error component. The individual error components are not correlated with each other and are not autocorrelated across both cross-section and time series units.

4.6.4.1 Fixed effect (LSDV) versus random effect model

For a researcher it is to decide between fixed effect model (FEM) and random effect model (ECM), this may be decided on the basis of some assumptions made for the likely correlation between the individual, and cross-section specific, error component *εi* and the *X* regressors. If it is assumed that *εi* and the *X*'s are uncorrelated, random effect (or ECM) may be appropriate, whereas if *εi* and the *X*'s are *correlated,* FEM may be appropriate.

[27] The composite error term w_{it} is called so because it consists of two or more error components.

While choosing the FEM and ECM one should keep some points in mind for example if observations of time series data (T) is higher than the number of cross-sectional units (N), then there will be little difference in values of parameters by FEM and ECM. The choice is on the basis of computational convenience here. Secondly, when N is larger than T, the estimates can be different significantly by two methods. Note that in ECM $\beta 1i = \beta 1 + \varepsilon i$, where εi there is cross section random component while in FEM we treat $\beta 1i$ as fixed and not random.

In FEM case the statistical inference is conditional on the observed cross-sectional units in the sample. However, this will be appropriate if it is believed that cross-sectional (the individual) units in the sample are not random drawings from a larger sample. Therefore in this situation, FEM is an appropriate model. Nevertheless, if an individual or cross-sectional units are considered as random drawings in the sample, the ECM model is appropriate, and in that situation statistical inference is unconditional. Moreover, if the error component in individual εi and one or more explanatory variables are correlated, then the ECM estimators are biased, while the FEM estimators are unbiased. Further, If N is large and T is small, and if the assumptions underlying ECM hold, ECM estimators are more efficient than FEM estimators. For choosing between FEM and ECM, there is a formal test developed by Hausman (1978) and the test help to choose between two methods by the null hypothesis underlying the test is that FEM and ECM estimators do not differ substantially. The test statistic developed by Hausman has an asymptotic $\chi 2$ distribution. If the null hypothesis is rejected, the conclusion is that ECM is not appropriate and that we may be better off using FEM, in which case statistical inferences will be conditional on the εi in the sample.

4.6.5 Tobit Regression

Apart from pooled OLS and fixed and random effect approach, the Tobit regression is used for the robustness check. The debt ratio is used as a proxy of capital structure, unlike in the pooled OLS where the natural logarithm of debt ratio is used for achieving normality. We used debt ratio as a measure of leverage in our estimated equation through Tobit regression. The observed debt ratios vary within the range of 0 and 1, where the observed values for debt ratio close to 0 indicate low leverage or lower proportion of debt in the capital structure, while values close to 1 indicate a higher degree of leverage. Existing financial research (Rajan and Zingales, 1995; Akhtar 2005) widely used Tobit model in capital structure studies to take the bounded nature of debt ratio which is used as a proxy to the firm capital structure.

Although extensively used in financial research, OLS has limitations when the dependent variable is of censored nature, or it assumes values within some particular range bounded from the upper level, lower level, or both. Hence, Dougherty (2001) notes that OLS may yield downward-biased estimates of slope coefficient and an upward-biased estimate of intercept. With censored data, OLS estimates do not perform well. The idea of censored regression model also called Tobit model, was first initiated by Tobin (1958). Tobit model suits the data when the dependent variable assumes its values only over some interval. Tobit estimation involves censoring of data from its lower or upper bound (James Tobin 1958). In most cases, the sample will be a mix of observations with 0 or and positive values. Censored variables complicate ordinary least-squares (Creamer et al.) regressions yielding inconsistency in estimated parameters because the censored sample is not representative of the population.

4.6.6 Robust regression M-estimation

There are different well-known methods of robust estimation to determine a regression model, for example, M-estimation, S estimation, and MM estimation. M-Estimation is a robust estimation and is an extension of the maximum likelihood method whereas; S estimation and MM estimation are the development of M-estimation method. The alternative to the least square method is robust regression analysis when fundamental assumptions are not satisfied by the data. M-estimators' definition was motivated by the robust statistics which introduced new types of M-estimators. M- Estimation is defined as the statistical procedure of evaluating an M-estimator on a data set. Generally, the M-estimator is said to be zero of an estimating function (Small and Wang, 2003). This is the derivative of another statistical function, e.g., a maximum-likelihood estimate is the derivative of the likelihood function concerning the parameter, and a maximum-likelihood estimator is a critical point of a score function (Ferguson, 1982). M- Estimation is also thought to estimate characteristics of the population.

The robust regression is the type of regression analysis which avoids the limitations of nonparametric and traditional parametric methods. In the regression analysis, the relationship of one or more explanatory variables with dependent variable is sought. If the underlying assumptions are true, the widely used methods, i.e., ordinary least square method is favourable but sometimes can show misleading results when those assumptions are not true. Therefore, in regression analysis, an only ordinary least square method is considered not sufficient or robust to solve the problems comprising the extreme values (the outliers). Therefore, it is needed another method, i.e., a parameter estimation that is a robust method where the values are not much sensitive to small changes in data.

This study also analyses the different sectors available in the data set for Shariah-compliant and conventional firms to assess the individual industry effects. The following technique is used for examining the impact of managerial ownership on the debt and debt

maturity structure. The fixed and random effect approach is also used for sector-wise analysis. This technique is used for penal data which is the combination of the time series and cross-section observations. Penal data has multi advantages such as it provides more informative data, more degrees of freedom and efficiency as well as more variability with less multicollinearity among the variables (Gujarati, 2004).

4.7 Research framework

This thesis uses quantitative research methodology for which different panel data techniques and additional robust checks are applied. Therefore, to get an easier understanding, a research framework is developed as follows:

4.7.1 Descriptive analysis and Comparative analysis

The study first calculates the descriptive statistics for each variable and compares both samples on their key financial features to distinguish among them. For this purpose, we performed the independent sample t-test for difference of means. The main testable hypothesis for variable i for the comparative analysis between the Shariah-compliant and conventional firms is as follows.

$H_{0:}$ The conventional firms and Shariah-compliant firms do not differ significantly on means of different financial variables.

Ho: $\mu_{i,Conventional} = \mu_{i,Shariah\text{-}compliant}$

Where i represents various measures for Shariah-compliant and conventional firms.

The H_o is rejected suggesting that the two types of firms are significantly different from each other in many variables.

Following that this study performs the tests and analysis on four main objectives of the study on the sample firms from Pakistan. The briefly described objectives are: (a) Investigating determinants of capital structure in Shariah-compliant and conventional

firms. (b) Examining the managerial trustworthiness in the capital structure of Shariah-compliant and conventional firms. (c) Investigating determinants of debt maturity structure in the Shariah-compliant and conventional firms. (d) Evaluating the managerial trustworthiness in the debt maturity structure in Shariah-compliant and conventional firms. For the research, the framework in the table below provides the hypothesis, model and variable description.

No:	**Table 4.1: Research framework: Null Hypotheses, model and variable description**
Comparative analysis of Shariah and conventional firms	
1	Ho: The conventional firms and Shariah-compliant firms do not differ significantly on means of different financial variables. Ho: $\mu_{i,Conventional} = \mu_{i,Shariah\text{-}compliant}$
Objective one: Determinants of capital structure **Model 4.5:** $Leverage = \alpha_o + \beta_1\, Size_{it} + \beta_2\, Tangibility_{it} + \beta_3\, Profitability_{it} + \beta_4\, Risk_{it} + \beta_5\, liquidity_{it} + \beta_6\, Growth_{it} + \beta_7\, Non\text{-}debt\ Tax\ Shield + \varepsilon_i$ **Dependent variable**: Capital structure/ *Leverage* is the ratio of the book value of debt over book value of assets.	
2	Ho: Firm size does not affect leverage level of the Shariah and conventional firms. Measurement: *Size* is measured as the natural log of total assets.
3	Ho: Asset tangibility does not affect leverage level of the Shariah and conventional firms. *Measurement: Asset tangibility* is the ratio of net property plant and equipment to total assets
4	Ho: Profitability does not affect leverage level of the Shariah and conventional firms. Measurement: *Profitability* is earnings before interest and taxes by total assets.
5	Ho: Liquidity does not affect leverage level of the Shariah and conventional firms. Measurement: *Liquidity* is the ratio of cash and cash equivalents to total current assets.
6	Ho: Risk does not affect leverage level of the Shariah and conventional firms. Measurement: *Risk* is the standard deviation of firm's return on assets over a 5-year period.
7	Ho: Tax shield does not affect leverage level of the Shariah and conventional firms. Measurement: *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets.
8	Ho: Growth does not affect leverage level of the Shariah and conventional firms. Measurement: *Growth* is sales growth each year.
Objective two: Managerial trustworthiness or self-interest in capital structure ***Model (4.7) :*** $Leverage_{it} = \alpha_o + \beta_1\, Managerial\ Ownership_{it} + \beta_2 Size_{it} + \beta_3 Tangibility_{it} + \beta_4 Profitability_{it} + \beta_5 Risk_{it} + \beta_6 Liquidity_{it} + \beta_7 Growth_{it} + \beta_8\, Tax\ Shield_{it} + \varepsilon_i$ **Dependent variable:** Capital structure/*Leverage* is the ratio of the book value of debt over book value of assets.	
9	Ho: Managerial ownership does not affect leverage level of the Shariah and conventional firms. Measurement: *Managerial Ownership* is a fraction of managerial ownership in firm i equity.
Objective three: determinants of debt maturity structure ***Model (4.8):*** $Debt\ Maturity_{it} = \beta_o + \beta_1\, Size_{it} + \beta_2\, Growth_{it} + \beta_3\, Asset\ Maturity_{it} + \beta_4\, Operating\ Cycle_{it} + \beta_5 Tangibility_{it} + \beta_6\, Profitability_{it} + \beta_7\, Risk_{it} + \beta_8\, Tax\ rate_{it} + \beta_9\, Non\text{-}debt\ tax\ shield_{it} + \varepsilon_{it}$ ***Dependent Variable:*** *Debt maturity (DEMAT)* is the ratio of long-term debt to total assets.	
10	Ho: Growth does not affect debt maturity structure of Shariah and conventional firms. Measurement: *Growth* is sales growth each year
11	Ho: Size does not affect debt maturity structure of Shariah and conventional firms. *Measurement: Size* is natural log of total assets.
12	Ho: Asset maturity does not affect debt maturity structure of Shariah and conventional firms.

	Measurement: Asset maturity is the ratio of net fixed assets over depreciation.
	Operating cycle does not affect debt maturity structure of Shariah and conventional firms. *Measurement: Operating cycle* is sales divided by fixed assets.
13	Ho: Risk does not affect debt maturity structure of Shariah and conventional firms. *Measurement: Risk* is the standard deviation of firm's return on assets over a 5-year period.
14	Ho: Tax rate does not affect debt maturity structure of Shariah and conventional firms. *Measurement: Tax rate* is effective tax rate is the ratio of the tax bill and taxable income.
15	Ho: Profitability does not affect debt maturity structure of Shariah and conventional firms. Measurement: *Profitability* is earnings before interest and taxes by total assets.
16	Ho: Tangibility does not affect debt maturity structure of Shariah and conventional firms. Measurement: *Tangibility* is the ratio of net property plant and equipment to total assets.
17	Ho: Non-debt tax shield does not affect debt maturity structure of Shariah and conventional firms. Measurement: *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets.
Objective four: Managerial trustworthiness or self-interest in debt maturity structure ***Model (4.8):*** $Debt\ Maturity_{it} = \beta_o + \beta_1\ Managerial\ Ownership_{it} + \beta_2\ Size_{it} + \beta_3\ Growth_{it} + \beta_4\ Asset\ Maturity_{it} + \beta_5\ Operating\ Cycle_{it} + \beta_6\ Tangibility_{it} + \beta_7\ Profitability_{it} + \beta_8\ Risk_{it} + \beta_9\ Tax\ Rate_{it} + \beta_{10}\ Non\text{-}Debt\ Tax\ Shield_{it} + \varepsilon_{it}$ ***Dependent Variable:*** *Debt maturity* (DEMAT) is the ratio of long-term debt to total assets.	
18	Ho: Managerial ownership does not affect debt maturity of the Shariah and conventional firms.

4.8 Data and sample size

The primary sources of data for this study comprise the financial and ownership data for the companies listed on the Pakistan Stock Exchange (PSE), formerly known as the Karachi Stock Exchange (KSE). The financial data on debt and other variables were extracted from the annual publication, *Financial Statements Analysis Of Companies (Non-Financial) Listed at Karachi Stock Exchange (2008-2013)*, which is published by the State Bank of Pakistan (SBP), the central bank of the country. The source is considered as one of the authoritative sources of data on Pakistani corporate sector. The publication tabulates important balance sheet and income statement data the listed companies. The source, however, does not provide information on the ownership structure of the companies. Therefore, the ownership data of firms (both Shariah-compliant and Conventional) were collected from the annual financial statements of each firm for each year for the sample period. The financial statements were sourced from the respective website of each company. In Pakistan, firms are required to publicize their pattern of shareholding in the annual report as per the requirements of the Securities and

Exchange Commission of Pakistan (SECP), the watchdog for the corporate sector in Pakistan.

The data were sorted out for five years, covering 2009 to 2013 for nonfinancial firms listed on KSE. Firms related to financial sector were excluded for their unique financial and capital characteristics and the excessive use of leverage in their capital structure (Rajan and Zingales 1995). One of the main reasons of selecting this period is that in Pakistan, Karachi Stock Exchange introduced the KSE Meezan Index (KMI-30), the index for top 30 Shariah compliant firms in Pakistan, in collaboration with Al-Meezan Investment Bank. The index was made functional in 2009 and firms were categorized as Shariah-compliant or conventional according to criteria set by Shariah Board of the Al-Meezan Investment Management Ltd, which also serves as a guideline for the construction of the KMI-30 Index.

The analysis for the last five years suggested that on average there were more than 100 firms that qualified as Shariah-compliant. However, additional screening was applied to derive the final sample for the Shariah firms. Accordingly, only the firms that made the Shariah compliance list for all the years (that are from 2009 to 2013) were retained. This served two main objectives. First, by including the firms that consistently qualify as Shariah-compliant; we minimize the likelihood of the error of identifying those firms as Shariah which make the list of the Shariah-compliant securities only by chance. This enhances the credibility of our sample as truly representing Shariah compliant firms. Second, this screening also made our sample relatively more balanced, which helps reduce noise and heterogeneity normally observed in unbalanced data (Cameron and Trivedi, 2009). This procedure led to the selection of 68 Shariah firms from 2009 to 2013, yielding 340 firm-year observations. The selection of the conventional firms was mainly random, which was however restricted to the availability of ownership data. Therefore,

balanced panel data on 75 conventional firms for the period 2009 to 2013 was collected which gave 375 firm-year observations. The whole sample thus includes 143 firms with 715 firm-year observations. In addition, these firms belong to various sectors which include *Cement, Chemicals, Automobile, Sugar, Oil and Gas, Textile, and Miscellaneous*. The classification of these sectors is based on the criteria adopted by the Pakistan Stock Exchange.

However, some screening was applied to derive the final sample for the Shariah-compliant firms. Accordingly, the firms are collected which made the Shariah compliance list for all the years that is from 2009 to 2013 making the sample relatively more balanced. As balanced data records observations of the same unit every time, it reduces noise and heterogeneity normally observed in the unbalanced panel. Following this procedure, we collected the data for 68 Shariah-compliant firms from 2009 to 2013 for five years yielding our sample to 340 firm-year observations. The sample of conventional firms was mainly random. However, the availability of ownership data was limited. Therefore, the balanced panel data was collected on 75 conventional firms for the period 2009 to 2013, giving 375 firm-year observations.

4.9 Chapter Summary

This chapter explains the research methodology applied in this study. The chapter gives the detailed methodology for each objective. For each objective, the set of hypotheses are proposed followed by the description and measurement of variables. Based on the hypothesis, the empirical model is proposed for each objective, and its specification is explained. The empirical analysis was carried out using econometric methods of panel data including pooled regression, fixed, random effects, Tobit regression, and M-estimation robust regression. A brief introduction of these methods is also provided in the

chapter. Finally, the chapter describes the sources of data and procedures applied to determine the final sample for the analysis

CHAPTER 5: FINDINGS AND ANALYSIS

This chapter presents the analysis and interpretation of the results in accordance with the objectives of this study. Section 5.1 is devoted to reporting preliminary descriptive and comparative analysis of Shariah-compliant and conventional firms on various measures of financial characteristics. The main objective of this analysis is to establish the understanding of the key differences between Shariah-compliant and conventional firms for the later more specific and detailed analysis based on the hypotheses formulated in this study. The second half of this chapter is devoted to the more formal regression-based analysis of capital structure and debt maturity structure of shariah and conventional firms. Section 5.2 provides the findings analysis of the first objective determinants of capital structure in Shariah-compliant and conventional firms. The additional analysis "industry-wise evaluation" of the capital structure in Shariah and conventional firms in Pakistan is also carried out. Section 5.3 discusses the findings of the second objective of managerial trustworthiness in the capital structure of Shariah-compliant and conventional firms. Invoking the agency theory, the second objective aims to explore whether the managerial self-interest influences the capital structure in the shariah and conventional firms. Section 5.4 provides the analysis of objective three, determinants of debt maturity structure in Shariah-compliant and conventional firms. The analysis is also extended to sector-level. Finally, section 5.5 analyses the fourth objective, which seeks whether debt maturity structure in shariah and conventional firms is partially influenced by managerial ownership under the motivation of self-interest. In the end, Section 5.6 provides the summary of the chapter.

5.1 Descriptive analysis

The preliminary analysis of data is carried out through descriptive analysis. First, a summary of descriptive statistics for the whole sample, shariah, and conventional samples

is provided. Second, the statistical tests of equality of means were performed to determine the differences between characteristics of Shariah-compliant and conventional firms. Finally, correlation analysis is carried out for the variables used in this summary.

5.1.1 Descriptive Statistics

Table 5.1 presents the descriptive statistics for the whole sample including both Shariah-compliant and conventional firms. The mean value for the total debt ratio is 21%, varying between 0% and 77%. The standard deviation is 27% for all firms sample. The managerial ownership in the firms varies between 0% and 93%, showing that in some cases firms are almost entirely owned by the owner-managers. The mean ownership of management in the entire sample is 22% which indicates that management owns one-fourth of the ownership of the average firms in the sample. The average size of the firms is Rs. 22.73 billion indicating that the sample firms are mostly larger firms with sufficient amount of asset base. The tangibility, measured as the ratio of net fixed assets to total assets, ranges from 2% to 87% with a mean of about 44%, showing that nearly half of the assets of the firms are invested in fixed assets other than liquid assets. Profitability measured as the mean of ROA over past five years stood at the average of almost 8% for the period. It deviates between -19.85% and 105.47%. The average firm's growth was found to be 17.90% with a very high deviation of almost 37% during the sample period.

In addition to these variables, the descriptive of some financial performance measures were taken. These measures include gross profit (GP), return on assets (ROA), return on equity (ROE), and earnings per share (EPS). The mean gross profit gross profit of an average firm in the sample is PKR 3.78 bn. Regarding ratios, the ROA varies between negative 90% and 78%, whereas the mean ratio for ROE is 15.7%. The EPS hovered between negative 352.81 and 289.97. However, the mean EPS was 12.41 during the sample period.

Table 5.1 Descriptive statistics for all firms

	Variable	Obs	Mean	Std. Dev.	Min	Max	CV
1	Debt Ratio (%)	713	21.00	27.00	0.00	77.00	1.28
2	Managerial Ownership (%)	712	22.42	26.84	0.00	93.11	1.19
3	Total Assets (PKR in million)	714	22700.0	50800.00	9.001	414000.00	2.23
4	Tangibility (%)	713	44.00	25.00	2.00	87.00	0.56
5	Profitability (%)	712	7.88	12.57	-19.85	105.47	1.59
6	Risk	712	6.87	9.53	0.00	164.76	1.38
7	Liquidity (%)	714	46.00	23.00	0.00	1.00	0.50
8	Growth (%)	703	17.90	37.48	-98.30	172.90	2.09
9	Tax Shield	713	0.20	2.70	0.00	57.93	13.50
10	Gross Profit (PKR in ml)	715	3782.67	12400.00	-6632.3	158000.00	32.78
11	ROA (%)	715	7.75	15.54	-90.16	77.74	2.00
12	ROE (%)	715	15.72	78.61	-823.35	791.90	5.00
13	EPS	715	12.41	34.70	-352.81	289.97	2.79

Note: CV= Coefficient of variation

5.1.2 Comparative analysis of conventional and Shariah-compliant firms

In this section, the descriptive statistics for various firm characteristics of Shariah-compliant and conventional firms are provided. The statistics are summarized in Table 5.2 and 5.3 for conventional and Shariah-compliant firms respectively. In addition, for each of the firm characteristic, a comparative analysis is carried out through formal statistical tests of equality of characteristic means. The study performed the comparative analysis between the Shariah-compliant and conventional firms on their key financial variables. To achieve this objective, the independent sample t-test for difference of means is performed. The null hypothesis (H_0) of the equality of means was rejected for most of the variables, suggesting that the two types of firms are significantly different from each other in many characteristics. The results from the independent sample t-test are summarized in Table 5.4. The main testable hypothesis for the variable "i" for the comparative analysis between the Shariah-compliant and conventional firms is as follows.

H_0: The conventional firms and Shariah-compliant firms do not differ significantly on means of i.

$$(\text{Ho: } \mu_{i,\text{Conventional}} = \mu_{i,\text{Shariah-compliant}})$$

$H_{1:}$ The conventional firms and Shariah-compliant firms differ significantly on means of i.

$$(H_1: \quad \mu_{i,\,\text{Conventional}} \neq \mu_{i,\,\text{Shariah-compliant}})$$

where *i* represents various variables (like size, growth, debt ratio, etc.) for Shariah-compliant and conventional firms.

The null hypothesis H_0 was rejected for most of the variables suggesting that the two types of firms are significantly different from each other. The results from the independent sample t-test are summarized in Table 5.4.

Table 5.2: Descriptive statistics for conventional firms

	Variable	Obs	Mean	Std. Dev.	Min	Max	CV
1	Debt Ratio (%)	375	25.00	33.00	0.00	97.00	1.32
2	Managerial Ownership (%)	375	28.73	27.96	0.00	93.11	0.97
3	Total Assets (PKR in millions)	375	13,900	35,000	93.326	279,000	2.51
4	Tangibility (%)	375	47.00	23.00	0.00	99.00	0.48
5	Profitability (%)	372	5.15	11.05	-17.46	55.00	2.14
6	Risk	372	6.35	6.20	0.03	59.24	0.009
7	Liquidity	375	43.00	21.00	0.00	85.00	0.48
8	Growth (%)	366	16.19	40.48	-98.30	172.90	2.50
9	Tax Shield	374	0.34	3.72	0.00	57.93	10.94
10	Gross Profit (PKR in Mn)	375	1242.9	2750.0	-6632.3	28800.0	19.91
11	ROA (%)	375	5.30	15.78	-89.49	77.74	2.97
12	ROE (%)	375	9.84	97.80	-823.35	791.90	9.93
13	EPS (%)	375	11.92	43.03	-352.81	289.97	3.60

CV= Coefficient of variation

Table 5.3 Descriptive statistics for Shariah-compliant firms

	Variable	*Obs*	*Mean*	*Std. Dev.*	*Min*	*Max*	*CV*
1	Debt Ratio (%)	338	17.00	18.00	0.00	37.00	1.05
2	Managerial Ownership (%)	337	15.41	23.67	0.00	77.13	1.53
3	Total Assets (PKR ml)	339	32500.0	62500.0	9.001	414000.0	1.92
4	Tangibility (%)	338	40.00	26.00	1.00	99.00	0.65
5	Profitability (%)	340	10.87	13.44	-19.85	105.47	1.23
6	Risk	340	7.44	12.16	0.00	164.76	1.63
7	Liquidity (%)	339	49.00	24.00	5.00	80.00	0.48
8	Growth (%)	337	19.76	33.89	-87.90	172.90	1.71
9	Tax Shield	339	0.03	0.04	0.00	0.55	1.33
10	Gross Profit (PKR in ml)	340	6583.8	17300.0	-509.6	158000.0	2.62
11	ROA (%)	340	10.46	14.82	-90.16	58.23	1.41
12	ROE (%)	340	22.21	48.82	-302.57	602.9	2.19
13	EPS (PKR)	340	12.95	22.21	-67.39	164.50	1.71

CV= Coefficient of variation

Table 5.4: Comparative analysis of conventional and Shariah-compliant firms

Tabulated below are the mean of different variables for the conventional and Shariah-compliant firms. Standard errors are parenthesized. The independent sample t-test is applied to test the difference of each mean, after testing the assumption of equality of variance.

Variable	**Conventional**	**Shariah-Compliant**	**Difference**
Debt Ratio (%)	25.40	16.49	0.09***
	(0.016)	(0.009)	(0.019)
Managerial ownership (%)	28.729	15.40	13.32***
	(1.444)	(1.289)	(1.935)
Total Assets (PKR ml)	13892.32	32511.03	-18618.7***
	(1806.61)	(3394.60)	(3844.9)
Size	15.20	15.79	-0.591***
	(0.078)	(0.105)	(0.129)
Tangibility	47.00	40.00	7.00***
	(0.011)	(0.013)	(0.018)
Profitability	5.15	10.87	-5.716***
	(0.572)	(0.728)	(0.918)
Risk	6.35	7.44	-1.088***
	(0.321)	(0.659)	(0.714)
Liquidity	43.00	49.00	-0.060***
	(0.011)	(0.013)	(0.016)
Growth	19.75	16.19	3.56
	(2.11)	(1.84)	(2.82)
Gross Profit	1242.92	6583.86	-5340.94***
	(142.01)	(936.53)	(947.24)
ROA (%)	5.29	10.46	-5.16***
	(0.814)	(0.803)	(1.144)
ROE (%)	9.843	22.21	-12.36**
	(5.056)	(2.647)	(5.702)
EPS (PKR)	11.91	12.95	-1.03
	(2.221)	(1.204)	(2.527)

*** indicates significance at 1% level, while ** indicates significant at 5% level.

5.1.2.1 Debt Ratio/ Leverage

The mean and standard deviation of the debt ratio in the conventional sample is 25% and 33% respectively. The debt ratio ranges from the lowest 0% to the highest 97%. The year-wise analysis of the debt ratio for conventional firm shows a slight variation from 28% in the 2009 to 26% in 2013, registering a minor decline. This further suggests that firms in this period have retired more debt than acquiring a new one. Overall, this range of mean debt ratio in the shariah firm does not cause a worry for the creditors and the shareholders as it is almost the one-fourth of the total assets of the sampled conventional firms.

The shariah firms, as expected, maintain a lower debt ratio than the conventional firms. The mean debt ratio for the shariah firms during the sample period is 17% compared to the 25% for the conventional firms. The year-wise break up further suggests that the mean debt ratio is highest in 2009 with 20%, whereas it is lowest in the year 2012, i.e., 14%. For the sample period, the debt ratio in Shariah-compliant firms trends downward.

(a) ***Comparison***

An average conventional firm had a debt ratio of almost 25%, which is relatively larger than the sample average of Shariah-compliant firms. As a whole, Shariah-compliant firms are less levered than their conventional peers, and the difference is highly significant as shown in Table 5.4. The difference between the mean debt ratio of Shariah and conventional firms is 8%, conventional firms having the larger debt ratio. It is also observed that conventional firms have greater variation in their debt level as indicated by the standard deviation for these firms.

One of the possible reasons for this is that the Shariah-compliant firms have an absolute limit posed by Shariah guidelines according to which their debt cannot exceed the upper limit of 37%. Apart from this, it is also observed that the overall debt ratio for the entire sample is relatively low during the sample period. This may be due to relatively

underdeveloped public debt and bond markets in Pakistan. Moreover, it appears that Shariah-compliant firms have larger asset base, which could possibly affect their debt ratio to be lower than the conventional firms. The past studies also indicate that smaller firms rely more on debt for their inability to use equity markets (Dang 2005; Krishnan & Moyer 1996; Titman & Wessels 1988; Deesomsak et al. 2004; Cook and Tang, 2010). As the conventional firms in Pakistan on average have a smaller size, this could also be among the reasons for higher debt level in these companies. Managerial Ownership

The managerial ownership (i.e., the fraction of the total equity held by managers) in conventional firms is about 29% as against 15% in the shariah firms. This suggests that the conventional firms have more concentrated ownership than the shariah firms. The variation in the managerial ownership among the conventional firms ranges between 0% and 93% with a deviation of around 28% in conventional firms. In contrast, the managerial ownership among shariah firms varies from 0% to 77% with the variation of 23.6%.

(b) ***Comparison***

On average, the managerial shareholding in Shariah-compliant firms is less than what it is in the conventional firms. Specifically, on average managerial ownership of Shariah-compliant firms is almost half of what it is in the conventional firms. The fraction of equity held by managers in conventional firms is about 29%, whereas the same for Shariah-compliant firm is only 15%. Our statistical test results show that these differences are significant at 1% level.

For the managerial ownership of Shariah-compliant and conventional firms, the results show interesting fact. On average, as reported by the sample, managerial shareholding in Shariah-compliant firms is 15.41% which is lower by 14% than in conventional firms. Conventional firms seem to have more concentrated ownership with about 29% shares

held by insiders while Shariah-compliant firms' ownership seemed to be more diverse with only 15% of the shares in control of the insiders. The difference of concentration in managerial shareholding among the Shariah-compliant and conventional firms can affect the capital structure decisions differently.

5.1.2.2 Size

The average size of the conventional firm in the sample is about Rs. 14 bn, which is almost less than the half of the average size of Shariah firm with total assets of Rs 32.50 bn. Firms in the shariah sample thus are larger as compared to conventional sample.

(a) ***Comparison***

The results suggest that on average Shariah-compliant firms are larger than conventional firms in the sample in Pakistan. To be specific, the difference is twice as much as the conventional firms' size. The t-test results suggest that this difference is statistically and highly significant at 1%.

The size of conventional firms is smaller by 42.76% than Shariah-compliant firms, simply showing that the Shariah-compliant firms are much bigger than conventional firms. Similarly, the deviation in conventional firms is lower by 56% than in Shariah-compliant firms. The Larger size is generally correlated with the higher degree of diversification in different markets and products, which may serve as a safeguard against immediate insolvency (Nagano, 2003).

5.1.2.3 Tangibility

Tangibility is the proportion of net fixed assets in the total assets. Figures about tangibility show that conventional firms have larger fixed assets base than the shariah firms. On average, a conventional firm holds about a half (47%) of its total assets in fixed assets.

Shariah firms, in contrast, have on average 40% of the total assets in fixed assets on their balance sheet.

(a) ***Comparison***

That ratio of tangibility in Shariah-compliant firms is slightly lower than conventional firms. The difference in the means is statistically significant at 1% level in Table 5.4.

The value of tangible assets of the firm is an important determinant of its debt to equity ratio. Firms with more fixed assets have greater ability to acquire debt. By this count, conventional firms might use their fixed asset base as collateral to finance their operations through debt. However, Shariah firms are restrained to keep the debt within the stipulated limit set by shariah advisory boards of the country. Also, as Ahmed (2007) argues that the maximum limit of debt within shariah firm cannot exceed the value of its tangible assets. Therefore, shariah firms are constrained to use their tangibility to the level until their maximum allowed limit of debt is reached. Therefore, it can be argued that advantages of tangibility vary for the shariah and conventional firms.

5.1.2.4 Profitability

The average profitability of conventional firms for five years is 5.15% with the variation of 11.05%, and it ranges from negative 17.5% (losses) to 55% (profits). The average profitability of Shariah-compliant firms is 10.87, whereas standard deviation is 13.44%.

(a) ***Comparison***

The average profitability of conventional firms for five years is 5.15% while the average profitability in Shariah-compliant firms is 10.87%, which is twice that of conventional firms. The difference is statistically significant at 1% level as reported in Table 5.4.

Higher profitability is connected with the lower amount of debt (Myers and Majluf 1984). This outcome is consistent with the pecking order theory. Therefore, Shariah-compliant

firms have an advantage, being more profitable, to use their internal financing for investment need and rely less on debt as compared to conventional firms. It could be argued that the concurrence of higher profitability, larger size, and lower growth among shariah firms in Pakistan might be allowing shariah firms to maintain their debt ratio within the shariah-prescribed limits.

5.1.2.5 Risk

The average risk, measured as the standard deviation of the ROA, over the sample period for conventional companies is 6.35% in comparison to 7.44% for the Shariah firms Moreover; it is also observed that shariah firms have greater variability of risk than conventional firms. Overall, these figures indicate that shariah firms are relatively riskier in Pakistan.

(a) ***Comparison***

The literature suggests firms experiencing greater volatility in profits; generally avoid risky financing or debt (Bradley, Jarrell and Kim, 1984; Hirota, 1999). As the incidence of risk appears to be higher in Shariah firms while their debt ratios are also low, this shows consistency with risk-debt relationship explored in earlier studies.

5.1.2.6 Liquidity

Liquidity is related to firm's ability to meet its short-term financial obligations becoming due. The descriptive on liquidity show that conventional firms on average keep almost 40% of their assets in current and liquid form. The Shariah firms, however, have slightly higher liquidity as they tend to retain almost half of their assets in current or liquid form.

(a) ***Comparison***

The average liquidity of conventional firm is 43%, and the deviation is 21%, and in the Shariah-compliant firms, the average and standard deviation is 49% and 24%

respectively. The difference in liquidity between shariah and conventional firms is significant statistically at 1% level as suggested by the t-test in Table 5.4.

A firm must have an ability to meet its financial obligations and can translate its short-term assets into the cash whenever credit matures. Better liquidity, therefore, lessens the risk for both short term and long term debt obligations. The figure shows that the liquidity in Shariah-compliant firms is better, although these companies are not heavily indebted. Higher liquidity also allows the firm to use its internally generated funds to finance its projects (Deesomsak et al., 2004; Ahmed Sheikh & Wang, 2011). Therefore, it could be argued that thanks to their better liquidity, shariah-compliant firms rely more on their internal funds more than going for the long-term external debt, for any future investment due to higher liquidity in Shariah-compliant firms as compared to their counterparts.

5.1.2.7 Growth

Growth is computed as the annual percentage change in the sales. The figure indicates that rate of growth in the conventional sample is higher than the shariah-compliant sample. The mean growth of conventional firms is about 20%, while the mean growth for the shariah sample is 16% during the sample period.

(a) ***Comparison***

The figures on growth are suggestive of higher growth in the conventional sample than the shariah firms during the same period. Realizing the fact, Shariah-compliant firms rely more on their profits or internal funding (i.e., retained earnings) for their capital formation or growth (Hasan, 2008). They do not freely invest relying on unlimited or unrestricted debt as used by conventional firms. Hence, due to that constraint, the Shariah-compliant firms' managers also strive to minimize the cost of financing and maximize the efficiency (Ahmed, 2007). Therefore Shariah-compliant firms may have a lower ratio in growth.

5.1.2.8 Non Debt Tax Shield

Tax shield on average is 34%, and 3.72% is the standard deviation of conventional firms. It ranges from 0% to 58%. The mean tax shield of Shariah-compliant firms is 20% with standard deviation of 2.70%. It ranges from 0% to 58%.

(a) ***Comparison***

The average tax shield in conventional firms is 34%, and the standard deviation is 3.72%, so far Shariah-compliant firms the mean is 20% with standard deviation of 2.70%. The higher non-debt tax savings in a firm lead to the lower debt financing. Thus, the need to issue the debt decreases substantially (Titman and Wessels, 1988; Krishan and Moyer, 1996). The non-debt tax shields compete with interest as a tax deduction (Akhtar, 2005). Therefore, it is negatively related to debt. Here the tax shield of the conventional firms is higher than that of Shariah-compliant companies. The conventional firms tend to have high tax shield from depreciation and the interest on debt due to save their income from deductions of tax payments and thus increase net profit.

5.1.3 Trend Analysis for financial performance of firms

Table 5.5 below shows the trend of some important financial performance measure and leverage ratio for both conventional and Shariah-compliant firms over the period of analysis from 2009 to 2013. The year-wise break-up shows that Shariah-compliant firms register overall better financial performance as indicated by their EPS, ROA, and ROE.

Moreover, shariah firms have experienced a greater decline in debt level than conventional firms during the period of study. The trends of debt ratio and financial performance are shown graphically in Figure 5.1 to 5.3.

Table 5.5: Year-wise trend for firm performance indicators

The table shows the trend of the financial performance of Shariah and conventional firms during 2009 to 2013 which is the sample period of our study.

	2009	2010	2011	2012	2013	2009-2013

Debt Ratio	*NSH*	0.28	0.25	0.23	0.24	0.26	0.252
	SH	0.20	0.18	0.16	0.14	0.14	0.168
EPS	*NSH*	1.16	12.74	17.22	8.20	20.28	11.92
	SH	7.84	11.84	13.54	13.93	17.63	12.956
ROA	*NSH*	2.57	7.34	6.76	4.51	5.31	5.298
	SH	7.24	10.34	11.87	10.87	12.00	10.464
ROE	*NSH*	-36.24	21.62	21.80	10.39	31.64	9.842
	SH	11.95	29.28	24.25	19.17	26.41	22.212

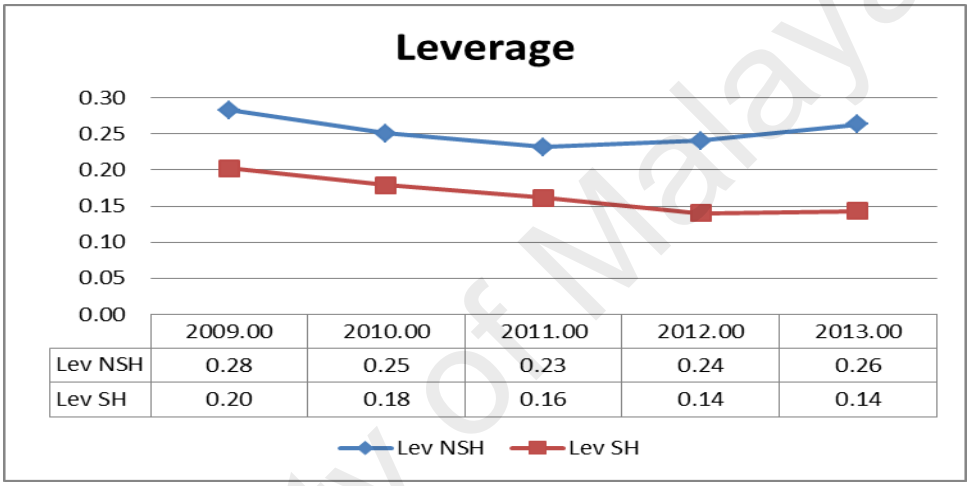


Figure 5.1: Trend analysis of Leverage /Debt ratio

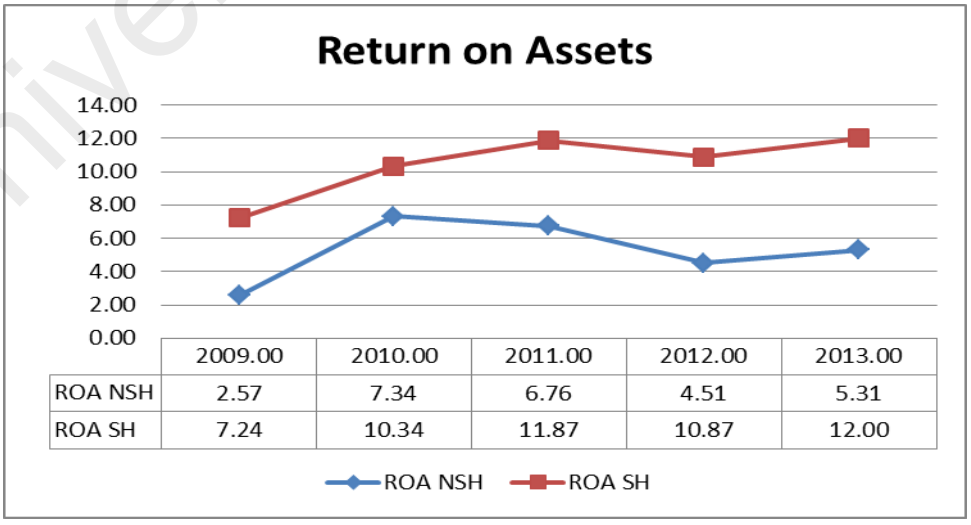


Figure 5.2: Trend analysis of Return on Assets

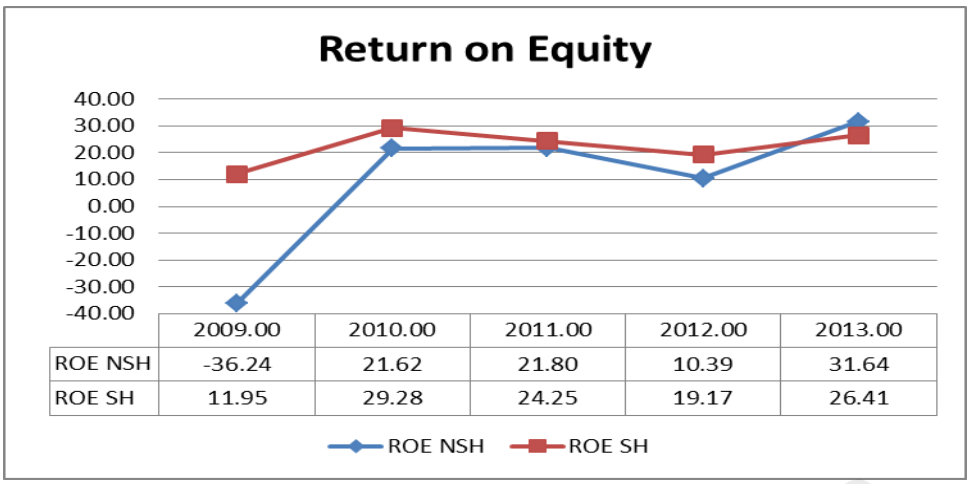


Figure 5.3: Trend analysis of Return on Equity

5.1.4 Correlation Analysis for Shariah-compliant & conventional firms

Pearson's correlation was performed to investigate the relationship between variables used in this study. Panel A of Table 5.6 presents the correlation for all firms. Panel B and C of the table contain the correlation for the conventional firms and the Shariah-compliant firms.

Correlation matrix helps as a tool for the diagnosis of the problem of multicollinearity in regression analysis. The analysis suggests that none of the variables is strongly correlated with other variable used as an independent variable to cause the problem of multicollinearity. Tabachnick and Fidell (2007) state that very high correlation (.9 or above) between the independent variables causes the statistical problems of singularity and multicollinearity. None of the variables in our sample has correlation coefficient above .90. Overall, the low correlation between the independent variables indicates that multicollinearity is not a potential problem in our estimations.

Managerial ownership in all firms (illustrated in Table 5.6) is positively correlated to debt ratio and asset tangibility whereas it is negatively correlated with size, profitability, risk, liquidity and growth in all firms sample. This shows that with an increase in Shares (ownership) of managers the debt ratio also increases. The correlation between managerial ownership and debt ratio is also positive for the conventional and shariah

samples. However, as shown in the table, the coefficient is significant for the conventional sample, while it is insignificant for the shariah sample.

The table shows that size is negatively correlated with debt ratio in all the whole samples and the subsamples of conventional and shariah firms, indicating that larger firms have lesser debt ratio as compared to the smaller firms. The size is negatively and significantly correlated also with managerial ownership in conventional and Shariah-compliant firms. It shows that larger firms have less concentrated managerial ownership.

Asset tangibility shows consistently positive and significant correlation with debt ratio for the whole sample, and the shariah and conventional subsamples.This is according to the past studies, such as Williamson and Oliver (1988); Wald (1999); and Jong et al. (2008).

The results show that profitability is negatively correlated with debt ratio for all the samples in Panel A, B, and C. The negative association between profitability and leverage is consistent with pecking order hypothesis of Myers and Majulf (1984), which suggests that debt comes next to retained earnings in the order of choice of financing.

Risk has a positive correlation with debt ratio in the sample of all firms as well as that of shariah and conventional firms. This result supports the argument that riskier firms may tend to avoid reliance on much debt. Debt entails a fixed cost of interest every year, which could be difficult for firms with unreliable or highly variable profits and cash-flow patterns. The likelihood of insolvency increases with the volatility of earnings. Therefore, the riskier firms tend to avoid getting into the higher levels of debt (Bradley et al. 1984; Hirota 1999).

There is a negative correlation between liquidity and debt ratio in the whole sample and the subsamples, which is consistent with the argument that liquidity reduces the reliance on debt (Jensen and Meckling, 1976; Myers, 1977; Titman and Wessels, 1983).

Overall, the correlation results suggest that debt ratio has a positive correlation with managerial ownership, risk, and growth, while it has a negative correlation with size, profitability, and liquidity. It is however noticed that while the correlation between managerial ownership and debt is significant for the conventional sample, it is found insignificant for the shariah-compliant sample. Managerial ownership has a negative correlation with profitability, risk, liquidity, and growth. Size is positively correlated with profitability and growth, while negatively with liquidity and risk. Finally, the results show that profitability is positively related to risk but negatively related to growth.

Table 5.6: Correlation matrix

The table reports a correlation between the variables used in the study.

	Debt Ratio	Managerial Ownership	Total Assets	Tangibility	Profitability	Risk	Liquidity	Growth	Tax Shield
Panel A: All firms									
Debt Ratio	1.00								
Managerial Ownership	0.12**	1.00							
Total Assets	-0.15**	-0.28**	1.00						
Tangibility	0.37**	0.24**	-0.11**	1.00					
Profitability	-0.22**	-0.19**	0.13**	-0.38**	1.00				
Risk	0.35**	-0.04	-0.23**	-0.03	0.25**	1.00			
Liquidity	-0.34**	-0.16**	-0.12**	-0.71**	0.32**	0.06	1.00		
Growth	0.01	-0.02	0.03	-0.06	-0.04	-0.01	-0.05	1.00	
Tax Shield	0.60**	-0.04	-0.12**	-0.01	-0.03	0.27**	0.04	-0.01	1.00
Panel B: Conventional Firms									
Debt Ratio	1.00								
Managerial Ownership	0.03**	1.00							
Total Assets	-0.17**	-0.21**	1.00						
Tangibility	0.30**	0.15**	-0.07	1.00					
Profitability	-0.25**	-0.15**	-0.14**	-0.38**	1.00				
Risk	0.55**	-0.16**	-0.25**	-0.11**	0.09	1.00			
Liquidity	-0.25**	-0.08	-0.25**	-0.71**	0.35**	0.18**	1.00		
Growth	0.00	-0.04	0.06	-0.10**	-0.04	-0.02	-0.06	1.00	
Tax Shield	0.68**	-0.07	-0.17**	-0.01	-0.03	0.56**	0.04	-0.01	1.00
Panel C: Shariah-compliant Firms									
Debt Ratio	1.00								
Managerial Ownership	0.21	1.00							
Total Assets	-0.08	-0.30**	1.00						
Tangibility	0.51**	0.29**	-0.11**	1.00					
Profitability	-0.15**	-0.13**	0.26**	-0.36**	1.00				
Risk	0.34**	0.06	-0.25**	0.01	0.33**	1.00			
Liquidity	-0.52**	-0.21**	-0.06	-0.69**	0.264**	-0.00	1.00		
Growth	0.13**	0.19**	-0.09	0.11**	-0.06	0.03	-0.15**	1.00	
Tax Shield	0.46**	0.06	-0.07	0.37**	-0.05	0.07	-0.22**	-0.01	1.00

** denotes significant at 5% level

5.2 Objective one: Determinants of capital structure in shariah compliant and conventional firms

5.2.1 Multivariate analysis

The first objective of this study seeks to investigate the firm-level determinants of capital in Shariah and conventional firms. The results are compared to determine if the two firms differ significantly on their capital structure determination process. The following panel data model (4.5) discussed in chapter 4 is estimated for the two groups.

$$Leverage_{it} = \alpha_o + \beta_1 Size_{it} + \beta_2 Tangibility_{it} + \beta_3 Profitability_{it} + \beta_4 Risk_{it} + \beta_5 Liquidity_{it} + \beta_6 Growth_{it} + \beta_7 Tax\ Shield + \varepsilon_i \quad (4.5)$$

The results based on pooled OLS, fixed effects, and random effects are reported in Table 5.7. The Hausman test was applied to select between the appropriateness between the random and fixed effects models. The results below indicated that the test was significant ($\chi^2 = 44.05$, $p < 0.05$) for the conventional sample as well as for the shariah-compliant sample ($\chi^2 = 55.83$, $p < 0.05$). Therefore, according to the Hausman test fixed effect model is preferred for both samples. However, for comparison purpose, the results for all the methods are presented in Table 5.7. All the findings are summarized in Table 5.9.

5.2.1.1 Size

Firm size is important in determining the level and capacity of the firm for borrowing. Large firms have an advantage of greater assets base which could be used as collateral for acquiring debt. Bigger firms are therefore expected to have more debt in their capital structure. The results show that the coefficient for size is positive and significant ($\beta = 0.007$, $p < 0.05$) for the Shariah-compliant firms, which is in accordance with the trade-off theory of capital structure and supporting the findings of the previous studies of Rajan and Zingales (1995), Huang and Song (2002) Friend and Lang (1988), and Scott Jr and Martin (1975). However, for conventional companies, the firm size enters statistically insignificant with the negative coefficient ($\beta = -0.020$, $p>0.05$).

5.2.1.2 Tangibility

Asset tangibility is positive and significant for both Shariah-compliant and conventional firms. These findings are according to what trade-off theory and agency cost theory predicts. The results of this study are consistent with various empirical studies (Titman & Wessels, 1988; Friend and Lang, 1988; and Rajan & Zingales, 1995). The strikingly noticeable difference is, however, the value of the coefficient of tangibility for conventional firms ($\beta = 0.119$), which is greater than the one observed in the shariah sample ($\beta = 0.057$) suggesting the higher influence of tangibility of debt level of the conventional firms. This is plausible given the fact that tangibility has a limited role in determining Shariah-compliant firms' leverage ratios as once the maximum level of debt ratio is reached after that tangibility would be insignificant to the leverage ratio. These findings support this argument.

5.2.1.3 Profitability

Profitability is negatively and significantly correlated with the leverage of all firms regardless of shariah compliance. This result suggests that more profitable firms are less levered. The negative relationship of profitability supports pecking order theory according to which given the growth opportunities, the more profitable firms have greater ability to generate internal funds and hence lesser need to issue debt. Most of the studies find an inverse relation between profitability and leverage empirically[28]. Looking at the magnitude of the slope of profitability, a similar tendency is found as in the case of tangibility. The degree of the debt ratio of the conventional firms is more sensitive to the profitability as evidenced by its coefficient $\beta = -0.005$ as against -0.002 for shariah-

[28] (Titman & Wessels, 1988; Friend and Lang, 1988; Rajan & Zingales, 1995; Huang & Song, 2002; Booth et al., 2001; Kester, 1986).

compliant firms. Again, this may be caused by the upper cap on the debt ratio for shariah compliance.

5.2.1.4 Risk

The results show that the relationship between risk and leverage is positive and significant for both shariah and conventional firms. Whenever the debt ratio increases beyond the optimal level it exerts the risk of bankruptcy hazard. These findings are inconsistent with the previous studies that suggest that debt increases risk; therefore risky firms are less likely to borrow more (Bradley, Jarrell & Kim, 1984; and Hirota, 1999). The findings, however, are consistent with the view that as the variance of the value of the firm's assets increases the systematic risk of equity decreases (Hsia, 1981; Huang & Song, 2004). Therefore, riskier firms are expected to borrow more. These findings are consistent with Huang and Song (2004).

5.2.1.5 Liquidity

The results suggest that liquidity affected firm's debt negatively and was found significant also consistent with the Ahmed Shaikh et al. (2011). This suggests that firms with higher liquid assets are less inclined to borrowing. If the firm has more liquid assets, its reliance on debt declines (Jensen and Mackling 1976; Myers, 1977).

Moreover, these findings show empirical support to the earlier findings by Titman and Wessels (1988).

5.2.1.6 Growth

The coefficient for growth returns statistically insignificant for both Shariah-compliant and conventional firms, suggesting that the leverage ratios in the sample firms are insensitive to growth.

Table 5.7: Regression results on determinants of capital structure for Shariah and Conventional firms

Model 4.5: $Leverage = \alpha_o + \beta_1 Size_{it} + \beta_2 Tangibility_{it} + \beta_3 Profitability_{it} + \beta_4 Risk_{it} + \beta_5 Lliquidity_{it} + \beta_6 Growth_{it} + \beta_7 Non\text{-}debt\ Tax\ Shield + \varepsilon_i$

Variables defined: *Leverage* is the ratio of total debt to total assets. *Size* is natural log of total assets. *Tangibility* is the ratio of net property plant and equipment to total assets. *Profitability* is earnings before interest and taxes by total assets. *The risk* is the standard deviation of firm's return on assets over a 5-year period. *Liquidity* is the ratio of cash and cash equivalents to total current assets. *Growth* is sales growth each year. *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets. Robust t-statistics are parenthesized.

Variables	Conventional Firms			Shariah Compliant Firms		
	Pooled OLS	Fixed Effects	Random Effects	Pooled OLS	Fixed Effects	Random Effects
Size	-0.007	-0.020	-0.051	0.0113	0.007	-0.064
	(0.88)	(1.73)	(1.74)	(2.77)***	(2.17)**	(2.89)***
Tangibility	0.189	0.119	0.102	0.084	0.057	0.092
	(2.68)***	(3.62)***	(1.27)	(2.10)**	(4.07)***	(1.94)
Profitability	-0.004	-0.005	-0.006	-0.002	-0.002	-0.001
	(4.47)***	(4.03)***	(3.14)***	(3.40)***	(2.53)**	(1.36)
Risk	0.017	0.009	0.000	0.006	0.004	0.003
	(8.88)***	(4.02)***	(0.31)	(9.46)***	(5.79)***	(2.88)***
Liquidity	-0.255	-0.172	-0.118	-0.256	-0.135	0.010
	(3.28)***	(2.14)**	(1.32)	(6.39)***	(3.15)***	(0.18)
Growth	0.000	0.000	0.000	0.000	0.000	-0.000
	(0.48)	(0.73)	(0.69)	(1.69)	(0.31)	(0.50)
Non-debt tax shield	0.024	0.020	0.019	1.645	1.380	1.137
	(13.34)***	(14.30)***	(13.79)***	(8.11)***	(7.87)***	(6.30)***
Constant	0.269	0.536	1.050	-0.007	-0.015	1.091
	(1.65)*	(2.57)**	(2.33)**	(0.10)	(0.14)	(3.02)***
F / Wald statistic	100.15***	54.91***	483.74***	59.37***	17.37***	210.30***
R-squared	0.66	0.58	0.64	0.56	0.32	0.54
Hausman test			44.05***			55.83***
			(0.000)			(0.000)
Observations	362	362	362	334	334	334

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

Moreover, these findings show empirical support to the earlier findings by Titman and Wessels (1988).

5.2.1.7 Non-debt tax shield (NDTS)

The study found non-debt tax shields affect leverage level of both Shariah-compliant and conventional firms significantly. However, our findings are inconsistent with the notion that non-debt tax savings items like depreciation are a substitute for debt tax shield. Hence firms with higher NDTS are expected to use debt more sparingly for tax-savings motives (De Angelo & Masulis, 1980). This argument establishes a negative relationship between debt ratio and NDTS. However, our results show consistency with those of (Bradley et al. 1984; Chaplinsky & Niehaus 1993). Bradley et al. (1984) argue that firms that invest heavily in the tangible assets generate relatively higher levels of depreciation and tax credits. Therefore tend to have higher financial leverage establishing a positive relationship between NDTS and leverage level. A possible explanation of this result is non-debt tax shield is an instrumental variable for the secure ability of the firm's assets, with more securable assets leading to higher leverage ratios (Bradley, Jarrell and Kim 1984).

Also, we found a noticeably high influence of NDTS on Shariah-compliant firms (β = 1.380) as compared to conventional firms (β =0.020). This suggests that the economic importance of NDTS is much higher in Shariah-compliant firms' case than on conventional firms' case. One of the possible explanations for this is that Shariah-compliant firms with relatively limited ability to rely on debt as tax shield make heavy use of NDTS (like depreciation) in parallel with debt. In the face of Shariah compliance resulting in the relatively lesser use of debt, Shariah-compliant firms would have to pay much higher taxes; hence, NDTS provide a good source of tax shield for Shariah-compliant firms.

5.2.2 Regression for determinants of capital structure using dummy variable

In this section, the study examines whether the influence of various determinants of capital structure has significantly higher or lower effect for shariah and conventional sample firms. Table 5.8 shows the results of regression from the model (4.6) using the determinants regressed on debt ratio. Interaction terms with Shariah-compliant dummy are used to examine the effects of the determinants of capital structure of Shariah-compliant and conventional firms. The Shariah-compliant dummy assumes 1 for Shariah-compliant firms and 0 otherwise.

The interaction terms are used to compare the regression results for conventional firms with Shariah-compliant firms. The study finds Shariah-compliant dummy interaction with tangibility, risk, and tax shield significant. The magnitude of the coefficients of these variables suggests whether the effect is higher or lower for Shariah-compliant firm, while the sign suggests the direction of this effect. We found the tangibility (β_9) and risk (β_{11}) negative, which indicates that influence of these variables on debt ratio is lesser for Shariah-compliant firms than conventional firms. Both tangibility and risk enter positive in the regression for the conventional firms. Therefore, it is concluded that although these variables affect capital structure of Shariah-compliant firms, the magnitude of their impact is less than that of conventional firms. The effect of tax shield, however, is magnified in the case of Shariah-compliant firm as indicated by the sign of Shariah-compliant dummy and tax shield interaction term (β_{14}).

Table 5.8: Regression for determinants of capital structure using dummy variable

Model (4.6): $Leverage_{it} = \alpha_o + \beta_1 Size_{it} + \beta_2 Tangibility_{it} + \beta_3 Profitability_{it} + \beta_4 Risk_{it} + \beta_5 Liquidity_{it} + \beta_6 Growth_{it} + \beta_7 Non\text{-}Debt\ Tax\ Shield_{it} + \beta_8 DUM \times Size_{it} + \beta_9 DUM \times Tangibility_{it} + \beta_{10} DUM \times Profitability_{it} + \beta_{11} DUM \times Risk_{it} + \beta_{12} DUM \times Lliquidity + \beta_{13} DUM \times Growth_{it} + \beta_{14} DUM \times Tax\ Shield\beta + \varepsilon_{it}$

Variables defined: *Leverage* is the ratio of total debt to total assets. *Size* is natural log of total assets. *Tangibility* is the ratio of net property plant and equipment to total assets. *Profitability* is earnings before interest and taxes by total assets. *The risk* is the standard deviation of firm's return on assets over a 5-year period. *Liquidity* is the ratio of cash and cash equivalents to total current assets. *Growth* is sales growth each year. *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets. *DUM* is a dummy with value 1 for Shariah-compliant firms and 0 otherwise, which is used to create interactions with all firm-level determinants. Robust t-statistics are parenthesized.

Variables	Coefficients (T-values)
Size (β_1)	0.001
	(0.32)
Tangibility (β_2)	0.251
	(4.90)**
Profitability (β_3)	-0.004
	(4.98)**
Risk (β_4)	0.018
	(10.40)**
Liquidity (β_5)	-0.214
	(3.89)**
Growth (β_6)	0.000
	(0.74)
Tax Shield (β_7)	0.044
	(15.62)**
DUM*Size (β_8)	0.005
	(1.57)
DUM*Tangibility (β_9)	-0.190
	(2.90)**
DUM*Profitability (β_{10})	0.002
	(1.91)
DUM*Risk (β_{11})	-0.012
	(6.43)**
DUM*Liquidity (β_{12})	-0.072
	(1.10)
DUM*Growth (β_{13})	0.000
	(1.09)
DUM*Tax shield (β_4)	1.582
	(5.90)**
Constant	0.094
	(1.13)
R-squared	0.65
F statistics	43.564***
Observations	696

.* $p<0.01$; ** $p<0.05$; * $p<0.1$**

Table 5.9: Summary of findings for determinants of capital structure

Variable	Measurement	Shariah-compliant	Conventional
Leverage	Total debt to total assets	----	----
Size	Log of assets	Positive sig	insig
Tangibility	Fixed assets/total assets	Positive sig	Positive sig
Profitability	EBIT to total assets.	Negative sig	Negative sig
Risk	SD Return on asset	Positive sig	Positive sig
Liquidity	Ratio of cash and cash equivalent to total current assets	Negative sig	Negative sig
Growth	%age change in sales	insig	insig
Non-debt tax shield	Tax charge/taxable income	Positive sig	Positive sig

5.2.3 Sector-wise analysis for determinants of capital structure

This study also extends the analysis of capital structure for shariah and conventional firms to the sector level. The sectors included in the analysis are *Cement*, *Chemical*s, *Automobile, Sugar, Oil and Gas, Textile, and Miscellaneous*. The classification of sectors is based on the Pakistan Stock Exchange guidelines. Results are summarized in Table 5.10. The model applied is as follows.

***Model* (4.5):** $Leverage_{it} = \alpha_o + \beta_1 Size_{it} + \beta_2 Tangibility_{it} + \beta_3 Profitability_{it} + \beta_4 Risk_{it} + \beta_5 Liquidity_{it} + \beta_6 Growth_{it} + \beta_7 Non\text{-}Debt\ Tax\ Shield_{it} + \varepsilon_i$

A. Shariah-compliant Firms (Chemical)

For the Shariah-compliant firms in the chemical sector, Hausman test suggests fixed effect as a better choice. In the chemical sector, size is negatively correlated with the dependent variable leverage designating that larger Shariah-compliant firms depend lesser on the debt. However, tangibility is insignificant showing no much effect on leverage in the capital structure of Shariah-compliant firms in this sector. For Shariah chemical firms, profitability is negative and significantly correlated with leverage showing that profitable firms obtain lesser debt. This result is consistent with the basic argument of pecking order theory regarding priorities in the usage of funds for profitable firms. However, liquidity is positively and significantly related to the dependent variable

leverage displaying that the liquid firms may avail more debt because they are not having the risk of illiquid position to pay off the expenses or debt that is in a current position or maturing within a year. The firms of chemical sector seem safer to get debt with better liquidity position.

B. Shariah-compliant Firms (Miscellaneous)

For the Shariah-compliant firms in the miscellaneous sector, the fixed effect results suggest that the size is negatively and significantly related to the dependent variable. The result signposts that big firms tend to get lesser leverage which is consistent with previous studies (Gupta, 1969). Similar to the chemical sector, the tangibility in this sector is also insignificant having no such impact on the debt in the capital structure. Tangibility and profitability show consistency with Haron et al. (2012) study on Shariah-compliant firms in Malaysian listed companies. This suggests that these factors are inconsistent for Shariah-compliant firms determining the capital structure of public listed firms in this sector in Pakistan too. However, the risk is positively and significantly correlated with leverage and consistent with the idea that high levered firms are risky. It specifies that with increasing debt ratio, firms will increase the risk of bankruptcy and other hazards of managing funds and credibility. Like Shariah-compliant firms in other sectors, liquidity is also positive and significant with debt indicating that liquidity increases with the increase in debt and vice versa.

However, Non-debt tax shield is positive and significant presenting that non-debt tax shield (i.e., depreciation, depletion allowances, and investment tax credits) will increase with the increase of debt in firms and decrease otherwise. Thus it seems that firms in this sector may have invested heavily in borrowing. As it is argued that if a firm invests heavily and borrows to invest, a positive relation non-debt tax shield and debt may occur (Graham, 2003). A positive mechanical relationship of this type overwhelms and renders

unobservable any substitution effects between debt and non-debt tax shields (NDTS). The findings are similar to Bradley et al. (1984) they found a positive relationship between debt and non-debt tax shields. Hence, there are mix results about the non-debt tax shield (Omet et al. 1990). They explore that Non-debt tax shield is not a significant determinant factor of leverage in the Saudi case; the non-debt tax shields do not exert an impact on the capital structure choice of the taxpaying listed Jordanian firms.

C. Conventional Firms (Miscellaneous)

In contrast, for conventional firms fixed effect approach suggests that size, liquidity, and growth are negative but insignificant with the relation of dependent variable leverage in this sector. Converse to the Shariah-compliant firms the profitability is negatively and significantly correlated with the leverage in the miscellaneous sector in Pakistan. It poses that profitable firms prefer retained earnings over debt and thus following pecking order arrangements. Similar to Shariah-compliant firms in the same sector of miscellaneous and consistent with (Bradley et al. 1984). NDTS is positively and significantly related to dependent variable showing the same behaviour. It seems the firms borrow heavily for the investment (Graham, 2003). Tangibility also behaves differently in the same sector for conventional firms from Shariah-compliant firms and showing inverse and significant relation with leverage, which is insignificant in the Shariah-compliant firms. The negative relationship designates the lesser impact of liquidity on leverage. The risk is negatively and significantly correlated with the leverage.

D. Shariah-compliant Firms (Oil & Gas)

According to the chosen random effects size has a positive and significant relationship with leverage. It points out that in Shariah-compliant firms of oil and gas sector, larger firms tend to obtained more debt. This variable behaves differently from Shariah-compliant firms in the miscellaneous sector. This positive relationship between size and

leverage is consistent with (Ferri & Jones 1979; Berger et al. 1997; Rajan & Zingales 1995). They argue that "larger firms tend to be more diversified and fail less often, so size may be an inverse proxy for the probability of bankruptcy. Large firms are also expected to incur lower costs in issuing debt or equity; therefore, these firms are expected to hold more debt in their capital structure than small firms". However, profitability has negative and significant relation with leverage, similar to the findings of conventional firms in the miscellaneous sector. Thus it poses that profitable firms prefer retained earnings over debt and thus following pecking order arrangements. Liquidity is positive and significant in the companies in this sector. Nonetheless, tangibility, risk, growth, and NDTS are negative but insignificant to the leverage.

E. Shariah-compliant Firms (Automobile)

According to random effect method size, tangibility, profitability, risk and non-debt tax shield for the automobile sector are insignificant presenting no effective impact on the Shariah-compliant firms in this sector. However, for the growth of the firms in the automobile sector, it is positive and significant to leverage indicating that the growing firms need more finance thus they avail more debt to satisfy their needs.

F. Conventional Firms (Sugar)

The fixed effect model suggests that profitability has a negative and significant relationship with leverage. The result is similar to other sectors mentioned above and follows pecking order theory prioritizing the internal finance and obtained lesser debt when firms earn more profit. Results demonstrate that NDTS has a positive and significant relationship with leverage. However, size, tangibility, risk, liquidity, and growth are insignificant and thus direct no effect on the dependent variable in the capital structure.

Table 5.10: Sector-wise analysis of determinants of capital structure of Shariah-compliant and conventional firms

Model (4.5): $Leverage_{it} = \alpha_o + \beta_1 Size_{it} + \beta_2 Tangibility_{it} + \beta_3 Profitability_{it} + \beta_4 Risk_{it} + \beta_5 Liquidity_{it} + \beta_6 Growth_{it} + \beta_7 Non\text{-}Debt\ Tax\ Shield_{it} + \varepsilon_i$

Variables defined: *Leverage* is the ratio of the book value of debt over book value of assets. *Size* is natural log of total assets. *Tangibility* is the ratio of net property plant and equipment to total assets. *Profitability* is earnings before interest and taxes by total assets. *The risk* is the standard deviation of firm's return on assets over a 5-year period. *Liquidity* is the ratio of cash and cash equivalents to total current assets. *Growth* is sales growth each year. *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets. Robust t-statistics are parenthesized. *** $p<0.01$; ** $p<0.05$; * $p<0.1$

Sector	Firms	SIZE	TANG	PROF	RISK	LIQ	GROW	NDTS	Constant	R-squared	Hausman test
Chemical	SH	-0.206**	0.306	-0.017*	0.002	0.731***	-0.000	0.356	3.547	0.793	(F.E) 16.681**
		(-2.08)	(1.422)	(-2.015)	(0.295)	(2.706)	(-1.141)	(0.145)	(2.215)		(0.019)
Miscellaneous	SH	-0.113**	0.221	-0.003	0.008***	0.664***	0.000	1.905***	1.6778**	0.907	(F.E)22.641***
		(-2.517)	(1.474)	(-1.37)	(3.452)	(4.152)	(1.155)	(7.804)	(2.278)		(0.002)
Miscellaneous	CON	-0.000	-0.258**	-0.005**	-0.01***	-0.156	-0.0003	0.061***	0.875	0.931	(F.E)22.728***
		(-0.010)	(-1.956)	(-2.490)	(-2.941)	(-0.998)	(-0.479)	(3.544)	(1.421)		(0.001)
Oil and gas	SH	0.037**	0.242	-0.010***	-0.004	0.375**	-0.001	-0.299	-0.115	0.752	(R.E) 13.009**
		(2.555)	(1.488)	(-9.135)	(-1.482)	(3.513)	(-1.551)	(-0.355)	(-0.427)		(0.071)
Cement	SH	-0.034	0.216	-0.000	0.002	-0.298	-0.0007	2.624	0.894*	0.301	(R.E) 4.550
		(-0.909)	(1.113)	(-0.009)	(0.495)	(-1.104)	(-0.525)	(1.132)	(1.331)		(0.714)
Automobile	SH	0.017	-0.063	-0.006**	0.004	0.408*	0.000**	0.507	-0.027	0.290	(R.E) 6.109
		(0.456)	(-0.271)	(-2.305)	(0.968)	(1.654)	(2.021)	(0.562)	(-0.044)		(0.527)
Sugar	CON	-0.305	0.316	-0.041**	0.040	0.240	-0.000	0.038***	5.092	0.979	(F.E) 9.102***
		(-1.243)	(0.792)	(-2.246)	(1.487)	(0.417)	(-0.398)	(4.481)	(1.332)		(0.000)
Textile	CON	-0.116*	-0.188	-0.022***	0.009*	-0.088	0.000**	0.054***	2.630**	0.918	(F.E) 9.375***
		(-1.639)	(-1.206)	(-4.044)	(1.602)	(-0.422)	(2.850)	(21.737)	(2.544)		(0.000)

G. Conventional Firms (Textile)

The fixed effect model suggests that size has a negative and significant relationship with debt representing lesser debt ratio in the capital structure as firms grow larger. The behaviour of the size is identical to the size of Shariah-compliant firms in chemical, miscellaneous and oil & gas sectors but the variable behaves differently in other sectors. Whereas, tangibility and liquidity exert no effect on the dependent variable as they appear insignificant. In conventional firms, the relationship between profitability and leverage is inverse and significant hinting that whenever the firms earn more profits, they tend to avail lesser debt. This result is also similar to the Shariah-compliant firms in the chemical sector, conventional firms in the miscellaneous sector, Shariah-compliant firms in oil & gas sector and conventional firms in the sugar sector. Similar to these sectors, the conventional firms in the textile sector also follow the pecking order arrangement and prefer internal financing for their needs before going to external financing. Risk has positive and significant relation with leverage displaying that risk level increases with the debt level. Hence, due to growing burden of debt risk of bankruptcy increases. Accordingly, the growth is also positively and significantly related to the leverage, and this result is comparable with the result of Sharia firms in the automobile sector. The variable expresses that whenever firms grow, they need more financing to satisfy their needs and refer to different sources of funding, therefore, attaining more debt to meet their prerequisites. Equally, the non-debt tax shield also increases with surging the debt ratio.

5.3 Objective two: Managerial trustworthiness or self-interest in capital structure

This part of the thesis contains the multivariate regression analysis for the second main objective of this research, which is to assess the managerial trustworthiness or self-interest in the capital structure decisions of the shariah and conventional firms. The study

applies various approaches to test the research hypothesis. The study applies panel regression methods, i.e., pooled OLS, fixed and random effects. The outcomes are discussed based on the appropriate model in the light of Hausman test. The robustness of the findings is verified by using the Tobit regression and M-estimation regressions.

5.3.1 Managerial trustworthiness in capital structure of Shariah and conventional firms

This part of study begins with panel data models to assess the impact of managerial ownership on the capital structure of Shariah-compliant and conventional firms. For this purpose, the sample is split into Shariah-compliant and conventional firms. The results for the conventional firms and Shariah-compliant firms are summarized in Table 5.11. The following panel data model described in Chapter 4 was estimated.

$$\boldsymbol{Leverage_{it} = \alpha_o + \beta_1\ Managerial\ Ownership_{it} + \beta_2 Size_{it} + \beta_3 Tangibility_{it} + \beta_4 Profitability_{it} + \beta_5 Risk_{it} + \beta_6 Liquidity_{it} + \beta_7 Growth_{it} + \beta_8\ Tax\ Shield_{it} + \varepsilon_i}$$

The model above was estimated for the shariah and conventional samples separately. The Hausman test was applied to select between the appropriateness between the random and fixed effects models. The results below indicated that the test was significant ($\chi^2 = 29.56$, $p < 0.05$) for the Shariah samples. Also, it was significant ($\chi^2 = 23.08$, $p < 0.05$) for the conventional sample. Therefore, fixed effect models are appropriate for both samples.

Turning to the results for our main variable the managerial ownership, the coefficient for the conventional firms is positive and statistically highly significant ($\beta = 0.01517$, $p<.01$), suggesting that the managerial ownership positively and significantly affects the debt ratio of in the conventional firms. Moreover, the coefficient is significant across all the estimations based on pooled and random effects as well. This result indicates that as a managerial share of ownership increases in the conventional firms they tend to

Table 5.11: Managerial trustworthiness in capital structure

Model (4.7) : $Leverage_{it} = \alpha_o + \beta_1 Managerial\ Ownership_{it} + \beta_2 Size_{it} + \beta_3 Tangibility_{it} + \beta_4 Profitability_{it} + \beta_5 Risk_{it} + \beta_6 Liquidity_{it} + \beta_7 Growth_{it} + \beta_8 Tax\ Shield_{it} + \varepsilon_i$

Variables defined: *Leverage is* the book value of debt over book value of assets. *Managerial Ownership* is a fraction of managerial ownership in firm i equity. *Size* is natural log of total assets. *Tangibility* is the ratio of net property, plant, and equipment to book assets. *Profitability* is mean returns on assets for 5 years. *The risk* is the standard deviation of return on assets. *Liquidity* is the ratio of cash and cash equivalents to total current assets. *Growth* is sales growth each year. *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets. Robust t-statistics are parenthesized. *** $p<0.01$; ** $p<0.05$; * $p<0.1$

Variables	**Conventional**			**Shariah**		
	Pooled OLS	**Fixed Effects**	**Random Effects**	**Pooled OLS**	**Fixed Effects**	**Random Effects**
Managerial ownership	0.00365	**0.01517**	0.00435	0.00207	0.00012	0.00098
	(2.56)**	**(3.89)*** **	(2.55)**	(1.24)	(0.16)	(1.60)
Control variables						
Size	-0.01737	-0.22303	-0.02221	0.05095	**0.09498**	0.03394
	(0.56)	(1.32)	(0.60)	(7.48)***	**(3.15)*** **	(3.03)***
Tangibility	0.38287	**0.29393**	0.34124	0.21792	**0.21395**	0.31200
	(1.65)*	**(2.87)** **	(1.36)	(3.45)***	**(3.32)*** **	(5.67)***
Profitability	-0.01211	**-0.00343**	-0.01121	-0.00816	**-0.00559**	-0.00580
	(3.21)***	**(3.29)*** **	(2.45)**	(8.46)***	**(2.93)*** **	(4.37)***
Risk	0.03970	-0.00667	0.03534	0.00925	**0.00916**	0.00945
	(5.18)***	(0.42)	(4.03)***	(9.32)***	**(4.99)*** **	(7.16)***
Liquidity	0.29752	0.00162	0.28306	0.35524	**-0.48579**	0.41383
	(1.11)	(0.00)	(0.95)	(5.62)***	**(5.98)*** **	(6.42)***
Growth	0.00002	0.00002	0.00002	0.00002	0.00001	0.00004
	(0.56)	(0.51)	(0.56)	(0.19)	(0.07)	(0.46)
Non-debt tax shield	0.05728	**0.04832**	0.05515	2.24920	**1.72573**	1.97741
	(8.29)***	**(5.60)*** **	(7.87)***	(7.12)***	**(7.02)*** **	(8.21)***
Constant	0.37556	3.56707	0.47836	-0.64659	1.62071	-0.44651
	(0.61)	(1.38)	(0.68)	(5.00)***	(3.30)***	(2.34)**
F-statistic	33.29***	12.34***	200.70***	29.59***	30.31***	242.93***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-squared	0.43	0.26	0.42.	0.43	0.49	0.3942
Hausman test			23.08			29.56
			0.001***			0.000***
Observations	362	362	362	327	327	327

Influence the firm's indebtedness. However, for the Shariah-compliant firms, the managerial ownership coefficient is statistically insignificant having a very small magnitude ($\beta = 0.0012$, $p>.05$). These results suggest that the capital structure of the shariah-compliant firms is independent of the high or low concentration of managerial ownership in the firm.

Our analysis suggests that in Shariah-compliant firms capital structure is independent of the level of the ownership by the management, which is to say that it is on the Islamic principles of *(Amanah)* trustworthiness and the in the spirit of *Musharikah* contract. However, we conclude that in the case of conventional firms, the effect of managerial ownership is significant indicating the element of managerial self-interest or opportunism in these firms. These results for conventional firms are consistent with the findings of Kim and Sorensen (1986); and Florackis and Ozkan (2009). The authors argue that managers prefer higher debt in their own interest to (a) to avoid agency cost of external equity and (b) to perpetuate their control over firm's operations. However, our analysis yields unique characteristic of Shariah-compliant companies that their capital structure is independent of the level of managerial ownership for the sample from Pakistan and the period of our analysis.

5.3.1 Robustness analysis: Managerial trustworthiness in capital structure

The relationship between managerial ownership and leverage is analysed further for robustness check. Various tests of sensitivity checks are applied to ensure that the findings are robust to methodological and sampling bias.

The likelihood that the findings are due to the method used in the study is addressed by re-estimating the model above with alternative methods that include the Tobit regression and M-estimation techniques. M-estimation is a well-known method of robust estimation. The M-Estimation is an extension of the maximum likelihood method. An alternative to

the least square, the M-estimation method is robust even when the fundamental regression assumptions are violated.

Shariah screening in Pakistan requires firms to have less than 37% of debt in their capital structure. Therefore, comparing Shariah firms with conventional firms with no such restriction might possibly cause the sampling bias. This possible sampling selection bias by performing regression analysis on a matched sample of conventional firms whose debt ratio was 37% at maximum. This ensured that the shariah firms with restricted debt ratios at 37% were compared with their likes in the conventional samples.

The results for the full sample, the restricted matched sample of conventional and shariah firms based on alternative methods are presented in Table 5.12.

Column (1) of Table 5.12 reports the results for the matched sample of the conventional firms (conventional firms having a maximum debt ratio of 37%) based on the panel data techniques. The analysis was performed using all the pooled, fixed, and random effects models. The Hausman test results return significantly in favour of fixed effect model. Therefore only the results based on fixed effects model are reported. Column (2) to (4) of the table contains the Tobit regression results for the regression model 4.6. Column (2) shows results for the entire sample of conventional firms, while column (3) presents the results for the matched sample of the conventional firms (firms with maximum 37% of debt ratio). Column (4) summarized the results for the shariah sample. Finally, in column (5) and (6), the results based on for the conventional and Shariah samples based on M-estimation are reported.

Table 5.12: : Managerial trustworthiness in capital structure

Model (4.7) : $Leverage_{it} = \alpha_o + \beta_1 Managerial\ Ownership_{it} + \beta_2 Size_{it} + \beta_3 Tangibility_{it} + \beta_4 Profitability_{it} + \beta_5 Risk_{it} + \beta_6 Liquidity_{it} + \beta_7 Growth_{it} + \beta_8 Tax\ Shield_{it} + \varepsilon_i$

Variables defined: *Leverage* is the ratio of the book value of debt over book value of assets. *Managerial Ownership*$_{it}$ is a fraction of managerial ownership in firm i equity. *Size* is natural log of total assets. *Tangibility* is the ratio of net property, plant, and equipment to book assets. *Profitability* is mean returns on assets for 5 years. *The risk* is the standard deviation of return on assets. *Liquidity* is the ratio of cash and cash equivalents to total current assets. *Growth* is sales growth each year. *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets. To avoid sample selection bias, regression (1) and (3) restrict the sample to only those conventional firms whose debt ratio is less than 37% to match the firms with Shariah-compliant sample, the debt ratio of which cannot exceed this limit according to shariah screening methodology in Pakistan. *** $p<0.01$; ** $p<0.05$; * $p<0.1$

Variables	**Fixed Effects**	**Tobit Regression**			**M-Estimations**	
	Conventional matched (Debt ratio <37%)	**Conventional**	**Conventional matched (Debt ratio <37%)**	**Shariah compliant**	**Conventional**	**Shariah**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Managerial ownership	**0.00479**	**0.00038**	**0.00067**	**0.00068**	**0.0008****	**0.0003**
	(2.82)***	**(2.06)****	**(2.94)*****	**(1.03)**	**(2.4103)**	**(1.5025)**
Control variables						
Size	0.10412	0.00707	-0.00049	0.01245	0.0356***	0.0459***
	(2.37)**	(1.57)	(0.07)	(2.68)***	(4.7560)	(7.5281)
Tangibility	1.92940	0.13986	0.19658	0.09545	0.2624***	0.1709**
	(5.38)***	(3.63)***	(3.08)***	(2.14)**	(4.6542)	(2.9248)
Profitability	-0.00782	-0.00097	-0.00382	-0.00155	-0.0182***	-0.0092***
	(1.66)*	(1.93)*	(4.20)***	(2.36)**	(-19.853)	(-10.252)
Risk	-0.01241	-0.00209	0.01346	0.00599	0.0019	0.0110***
	(0.97)	(1.60)	(7.09)***	(8.98)***	(1.0686)	(11.852)
liquidity	0.05572	-0.14982	-0.26623	-0.28349	0.5896***	0.2603***
	(0.13)	(3.51)***	(3.76)***	(6.68)***	(9.0001)	(4.4729)
Growth	0.00009	0.00001	0.00001	0.00010	5.80E-06	-7.19E-05
	(1.89)*	(1.24)	(0.53)	(1.24)	(0.5620)	(-0.5362)
Non-debt Tax Shield	-0.04989	-0.01429	0.02154	1.65546	0.0810***	0.1456
	(0.47)	(1.24)	(2.64)***	(5.44)***	(48.5884)	(0.4928)
Constant	-4.69587	0.05141	0.16877	-0.04344	-0.2666*	-0.4054***
	(5.20)***	(0.56)	(1.09)	(0.49)	(-1.7945)	(-3.4896)
R_sq / Pseudo R_sq	0.27	0.35	0.29	0.34	0.37	0.29
Log-likelihood		99.765	281.320	165.428		
F statistic / LR Chi-Square	12.69	200.15	126.84***	267.47***	211.29*** (0.000)	199.126*** (0.000)
Observations	277	362	289	331	362	327

It is interesting to note that the results regarding the impact of managerial ownership on firm's capital structure concerning managerial self-interest are consistent regardless the method applied. The coefficient for the managerial ownership in the conventional sample is consistently positive and significant, whereas, the same for the shariah-compliant firms is consistently insignificant. Hence, it is concluded that in the case of conventional firms, the effect of ownership is positive and significant, while the same for Shariah-compliant firms is not significant. Unlike the conventional firms, it evidences no influence of managerial ownership on Shariah-compliant firms' capital structure. Therefore, the results show a similar pattern as in the Table 5.11 above. Thus, we conclude that in Shariah-compliant firms, the issue of managerial self-interest is not as much as in conventional firms in Pakistan.

5.4 Objective three: Determinants of debt maturity structure

This objective investigates the determinants of debt maturity structure in conventional and Shariah-compliant firms in Pakistan. This area of research has been ignored in the current literature on Shariah-compliant firms. Considering the growing importance of Shariah-compliant firms in the Muslim world, this research fills this gap in the literature by examining the characteristics explaining debt maturity structure in Sariah compliant firms and comparing them with those of conventional firms.

The analysis is carried out using the univariate and multivariate methods. Section 5.4.1 presents the descriptive statistics. The next section 5.4.2 performs a statistical test on the hypothesis that Shariah-compliant firms have significantly different (i.e., shorter) debt maturities than conventional firms. The next section 5.4.3 performs basic equality tests to determine the statistical significance of the differences between Shariah-compliant and conventional firms on the various financial characteristic. Section 5.4.4 investigates the determinants of debt maturity structure. The determinants are tested based on four

theories of debt maturity structure mentioned earlier in introduction and literature review sections.

5.4.1 Descriptive statistics for determinants of debt maturity structure

The summary statistics for the variables used in this objective are reported in Table 5.13. The descriptive for the whole sample, the conventional sample, and the shariah firms sample are presented in Panel A, B, and C of the table respectively.

The table shows that the mean of debt maturity for the whole sample is 32%. However, it is observed that the average debt maturity of 30% in the shariah-compliant sample is shorter than that of the conventional sample, which is 34%. This indicates that Shariah-compliant firms on average borrow on the relatively short-term basis. We also found a similar picture on the debt ratio which is higher for our conventional sample. Both these findings are expected to owe to the Shariah-compliant compliance see Table 5.13. These relationships are tested more formally in the next section.

5.4.2 Comparison of debt maturity structure in the Shariah-compliant and conventional firms

This study argues that that debt maturity structure of Shariah-compliant firms differ from conventional firms in that the conventional firms have longer debt maturity than Shariah-compliant companies. This argument has been tested at country level by Gunn et al. (2014), who found that debt maturity structures in the Muslim countries are significantly shorter than those the non-Muslim countries. This study extends this argument to firm level and tests whether; an average Shariah-compliant firm is likely to have shorter debt maturity than its conventional counterparts.

Table 5.13: Descriptive statistics for determinants of debt maturity structure

Variable	DR	DEM	SIZ (PKR ml)	TANG	PROF	RISK	LIQ	GROW	NDTS	ASSM	OPCY	TAX
						Panel A: All Firms						
Mean	0.21	0.32	22700	0.44	7.88	6.87	0.46	45.49	0.2	392.35	4.72	0.
Std. Dev.	0.27	0.24	50800	0.25	12.57	9.53	0.23	649.57	2.7	4336.05	16.42	10.47
Min	0	0	9.001	0	-19.85	0	0	-145.92	0	0	-0.07	-139.27
Max	0.77	1	414000	0.87	105.47	164.76	1	17144.38	57.93	60143.25	362.54	232.94
CV	1.28	0.75	2.23	0.56	1.59	1.38	0.5	14.27	13.5	11.05	3.47	29.08
						Panel B: Conventional Firms						
Mean	0.25	0.34	13,900	0.47	5.15	6.35	0.43	63.2	0.34	724.27	3.09	-0.24
Std. Dev.	0.33	0.23	35,000	0.23	11.05	6.2	0.21	896.42	3.72	5966.9	5.11	7.42
Min	0	0	93.326	0	-17.46	0.03	0	-145.92	0	0.01	-0.07	-139.27
Max	0.97	1	279,000	1	55	59.24	1	17144.38	57.93	60143.25	75.07	21.27
CV	1.32	0.67	2.51	0.48	2.14	0.97	0.48	14.18	10.94	8.23	1.65	-30.9
						Panel C: Shariah-Compliant Firms						
Mean	0.17	0.30	32500	0.4	10.87	7.44	0.49	26.26	0.03	25.07	6.54	1.04
Std. Dev.	0.18	0.25	62500	0.26	13.44	12.16	0.24	88.92	0.04	37.02	23.13	13.02
Min	0	0	9.001	0.01	-19.85	0	0.05	-87.9	0	0	0	-4.77
Max	0.37	1	414000	1.5	105.47	164.76	1	955	0.55	439.96	362.54	232.94
CV	1.05	0.83	1.92	0.65	1.32	1.63	0.48	3.38	1.33	1.47	3.53	12.51

Note: DR= debt ratio, DEM=debt maturity, SIZ= size, TANG= tangibility, PROF=profitability, LIQ= liquidity, NDTS=Non-debt-tax-shield, ASSM=Asset maturity, OPCY=Operating cycle, CV= Coefficient of variance.

Table 5.14 reports the results from test the equality of means hypothesis using two-sample t-test. Consistent with the previous findings of Gunn et al. (2014), the results show a significant difference in the maturity periods of Shariah-compliant and conventional firms. Conventional firms on average have 34.25% of long-term in their total debt. On the other hand, the Shariah-compliant firms have only 30.16% of the same. This yields the difference of almost 4%. This difference is not too high in absolute terms; however, it is highly significant at 5% level statistically supporting the hypothesis that Shariah-compliant firms have shorter debt maturity structure than conventional companies.

The above observation has some important insight to understand the capital structure for Shariah-compliant firms in comparison with conventional firms. First, the Shariah-compliant firms tend to have significantly lower debt ratio than conventional companies, which can be attributed to the Shariah-compliant limitation of 37% or less debt ratio to follow to qualify as Shariah-compliant firm. However, there is no such restriction on maturity structure to be eligible as Shariah-compliant firm. Therefore, maintaining a shorter debt maturity structure is a unique characteristic of a Shariah-compliant firm, which supports an argument that Shariah-compliance not only leads to lower leverage but also shorter maturity structure of debt.

Table 5.14: Comparison of debt maturity structure for Shariah-compliant and conventional firms

		N	Mean	Diff	p-Value	Sig
Debt Maturity	Conventional	375	0.3425	0.0409	0.0226	**
	Shariah-Compliant	340	0.3016			

5.4.3 Univariate Analysis of firm characteristics and debt maturity among Shariah-compliant and conventional firms

The univariate analysis was performed to investigate whether debt maturity among the shariah and conventional firms is systematically related to the various firms' characteristics found significant in the previous studies. The results are then compared to

determine if the relationships between the debt maturity and its determinants differ for the shariah and the conventional samples.

The findings on the nature of debt maturity of Shariah-compliant and conventional firms are reported in Table 5.15. The two samples (shariah and conventional firms) are divided into quartiles based on their specific firm characteristics (such as size, growth). The first row (NSH) of each characteristic gives the mean debt maturity for the conventional firms across the various quartiles of the respective characteristic. To avoid sample selection bias, the second row (NSH<37%) shows the similar statistics for a restricted sample that included the conventional firms whose debt ratio is less than 37%, to match firms with our Shariah sample, the debt ratio of which cannot exceed this limit. The third row (SH) shows the results for the shariah-compliance samples. All the firm characteristics have been selected on the basis of previous literature on the determinants of corporate debt maturity. Findings suggest that, in most of the cases, the change in debt maturity across the characteristic quartiles is meaningfully significant.

Size is considered an influential variable in debt maturity choice. The mean debt maturity of Shariah-compliant firms is higher for smaller companies (quartile 1 of size). The results from Table indicate that larger Shariah-compliant firms have relatively shorter debt maturity structure which is statistically significant at 5% level. The conventional firms, on the other hand, seem to be borrowing more for a longer term than their smaller counterparts.

Larger companies with broader asset base have inherently greater ability to raise longer-term debt and enter long-term public maturity. Size is usually considered an important factor in dictating firm's debt maturity choice. Size facilitates long-term borrowing capacity through better collateral and easier access to debt markets. The results for the conventional sample confirm this hypothesis as the tendency of longer maturity of debt

is observed at higher quartile. For example, average debt maturity of a firm at the lower tail of the quartile is 33% while the same for highest size quartile (representing largest firms in the sample) is over 40%. This suggests that debt maturity is increasing with the size of the firm among conventional firms. Empirically these findings are in favour of agency theory based on moral hazard problems, which construe that smaller firms are more likely to issue short-term debt as they are already exposed to higher agency costs, hence issuing long-term debt could exacerbate this exposure even further[29]. Shariah-compliant firms, in contrast, show a different picture of size and maturity relationship. An average Shariah-compliant firm in highest quartile borrows for the briefer period than its counterpart in the lowest quartile, suggesting an inverse continuum of debt maturity with size.

This contrast is supported more emphatically in the extended analysis involving the 37% or lower levered conventional sample, where the result for the conventional sample continues to show positive relation now even significant at 1% level. The result for the Shariah-compliant firm affirms liquidity risk hypothesis. Barclay and Smith suggest that size is also a proxy for firm credit risk. Larger firms tend to have lower credit risk, and thus greater probability of survival, hence larger firm would be at ease with short-term debt as they have relatively better credit quality due to better liquidity.

The next significant contrasting result is that of growth. The conventional sample suggests that high growth quartile also tends to have a higher proportion of longer-term debt with the difference between the fourth and first quartiles statistically significant at 5% level. The Shariah-compliant firms, on the other hand, depict a negative trend on the growth opportunities quartiles; however, the results are statistically insignificant. High

[29] Financial theories suggest that agency cost of long term debt is considered higher than short term debt (Jensen and Meckling 1976).

growth firms have greater tendency to rely on shorter-term debt to lessen their agency costs problems, i.e., underinvestment, risk shifting, and substitution, arising from growth (Myers, 1977). Growth also entails severer information asymmetry costs. This develops the theoretically negative relationship between maturity and firm's growth. The findings of Shariah-compliant firms confirm this relationship, though at lower than desirable statistical significance. In contrast, the results of the conventional firms conform to the liquidity risk hypothesis, which suggests that a growth firm is more likely to borrow at the longer spectrum of maturity if it conceives the growth option of new investments risky. Long-term debt lowers liquidity risk of reshuffling debt frequently.

Business risk is the third contrasting result between the Shariah-compliant and the conventional samples. The riskier conventional firms tend to borrow short-term debt more often. Additional risk or volatility diminishes the optimal level of debt. Therefore, firms experiencing higher earnings volatility are likely to have more of short-term debt in their capital structure (Kane et al. 1985). Shariah-compliant firms, on the other hand, have debt maturity higher when the risk factor is higher. This is however not significant.

The analysis provides an identical outcome for the relationship of debt maturity with asset maturity, tangibility, leverage, and liquidity. Firms (both Shariah-compliant and conventional) have longer debt maturity when they belong to the highest quartiles of asset maturity, tangibility, leverage, and liquidity. Maturity matching principle suggests that higher costs of agency and monitoring could be avoided by aligning the timing of inflows from the project with outflows of the debt. This suggests asset maturity correspond with debt maturity structure of the firms. In the same vein, more tangible assets provide the firm with the ability to borrow more and for a more extended period (Myers, 1977). Similarly, high levered firms tend to have longer-term debt. The results of liquidity are identical too, conforming to the liquidity risk hypothesis.

Table 5.15: Univariate Analysis of determinants of debt maturity structure**.**

Size is total assets of firm's assets. *Growth* is sales growth each year. *Asset maturity* is the ratio of net fixed assets over depreciation. *The tax rate* is effective tax rate for firm worked out as the ratio of the tax bill and taxable income. *Profitability* is earnings before interest and taxes by total assets. *The risk* is the standard deviation of firm's return on assets over a 5-year period. *Tax shield* in non-debt tax saving as a ratio of depreciation to total assets. *Tangibility* is the ratio of net property plant and equipment to total assets. *Leverage* is the ratio of total debt to total assets. Finally, *liquidity* is the ratio of cash and cash equivalents to total current assets. (SH = Shariah-compliant firms, CON=Conventional firms). *** $p<0.01$; ** $p<0.05$; * $p<0.1$

Sample	**Firm Characteristics**	**Characteristic Quartiles**				**Diff (Q4-Q1)**	**p-Value**	**Sig**
		1 (smallest)	2	3	4 (largest)			
CON	Size	0.330	0.310	0.346	0.404	0.074	0.631	
CON (<37%)	Size	0.237	0.256	0.292	0.347	0.109	0.000	***
SH	Size	0.352	0.258	0.265	0.330	-0.022	0.027	**
CON	Growth	0.315	0.323	0.297	0.381	0.066	0.030	**
CON (<37%)	Growth	0.258	0.253	0.264	0.322	0.063	0.045	**
SH	Growth	0.351	0.243	0.268	0.339	-0.011	0.776	
CON	Asset Maturity	0.290	0.286	0.320	0.457	0.167	0.000	***
CON (<37%)	Asset Maturity	0.234	0.249	0.234	0.373	0.139	0.000	***
SH	Asset Maturity	0.210	0.281	0.364	0.359	0.149	0.000	***
CON	Tax rate	0.401	0.400	0.273	0.261	-0.140	0.000	***
CON (<37%)	Tax rate	0.267	0.357	0.256	0.219	-0.048	0.149	
SH	Tax rate	0.399	0.379	0.273	0.191	-0.207	0.000	***
CON	Profitability	0.395	0.313	0.331	0.307	-0.087	0.012	**
CON (<37%)	Profitability	0.252	0.256	0.308	0.277	0.025	0.475	
SH	Profitability	0.371	0.331	0.270	0.262	-0.108	0.011	**
CON	Risk	0.349	0.361	0.345	0.298	-0.051	0.157	
CON (<37%)	Risk	0.278	0.290	0.294	0.204	-0.073	0.026	**
SH	Risk	0.304	0.279	0.302	0.318	0.014	0.733	
CON	Tax Shield	0.373	0.295	0.318	0.387	0.014	0.725	
CON (<37%)	Tax Shield	0.286	0.242	0.265	0.311	0.024	0.511	
SH	Tax Shield	0.259	0.219	0.324	0.395	0.135	0.000	***
CON	Tangibility	0.227	0.234	0.358	0.518	0.290	0.000	***
CON (<37%)	Tangibility	0.174	0.215	0.313	0.425	0.251	0.000	***
SH	Tangibility	0.189	0.213	0.355	0.488	0.298	0.000	***
CON	Leverage	0.100	0.193	0.382	0.578	0.477	0.000	***
CON (<37%)	Leverage	0.100	0.193	0.382	0.540	0.439	0.000	***
SH	Leverage	0.050	0.248	0.442	0.628	0.578	0.000	***
CON	Liquidity	0.538	0.373	0.265	0.132	-0.406	0.000	***
CON (<37%)	Liquidity	0.435	0.326	0.246	0.098	-0.337	0.000	***
SH	Liquidity	0.544	0.381	0.236	0.107	-0.436	0.000	***

High business risk firms face higher agency costs related problems, which could be avoided by issuing short-term debt. If liquidity position betters, the firm is more likely to issue long-term debt. The findings on tax and debt maturity indicate higher tax firms maintain shorter maturity of the debt. The result is consistent with tax hypothesis, which predicts debt maturity relates tax rate inversely (Kane et al., 1985). If marginal tax rate increases, the firm is more likely to relocate their capital more often, and hence they prefer debt with a shorter maturity. Finally, low profitability quartile has higher maturity than in high profitability quartile firms, indicating the pecking order of leverage and maturity (i.e., lower and shorter) for profitable companies (Myers, 1984).

5.4.4 Regression analysis for determinants of debt maturity

The main objective of this analysis is to establish the understanding about the key differences between Shariah-compliant and conventional firms based on their debt maturity structures. This section is devoted to the more formal regression-based analysis which is aimed at testing the main hypotheses of this study based on the set objective. The analysis is performed by using panel data techniques, pooled OLS, fixed effects, and random effects. The following regression equation (4.7) is estimated for the two groups.

$$\textit{Debt Maturity}_{it} = \beta_o + \beta_1\, \textit{Size}_{it} + \beta_2\, \textit{Growth}_{it} + \beta_3\, \textit{Asset Maturity}_{it} + \beta_4\, \textit{Operating Cycle}_{it} + \beta_5 \textit{Tangibility}_{it} + \beta_6\, \textit{Profitability}_{it} + \beta_7\, \textit{Risk}_{it} + \beta_8\, \textit{Tax rate}_{it} + \beta_9\, \textit{Non-debt tax shield}_{it} + \varepsilon_{it} \qquad (4.8)$$

The results are reported in Table 5.16. The results for the Hausman test suggest that fixed effects model is appropriate. Therefore, the findings based on the fixed effects are discussed. All the findings are summarized in Table 5.18.

5.4.4.1 Size

By virtue of their size, larger firms have lower bankruptcy, contracting, monitoring and transactions cost. Size also ameliorates firm's credit quality and reduces default risk. According to agency theory and information asymmetry theories, smaller firms face

higher agency and informational costs. Short-term financing can help lower these costs, while long-term financing by smaller firms could exacerbate agency costs. This predicts a positive relationship between debt maturity structure and size of the firm. Similarly, the positive relationship is suggested by the hypothesis of information asymmetry. Moreover, the access of smaller firms to capital market becomes difficult due to fixed flotation costs of long-term securities that again suggest a positive relationship between the size of the firm and debt maturity structure.

Like various other studies, our proxy for the size of the firm is the natural log of total asset. For both the samples of Shariah and conventional firms, we find the significant and positive relationship of size with debt maturity structure, which is consistent with the agency cost and asymmetric information theories. These findings also support the previous findings by Barclay and Smith (1995), Guedes and Opler (1996), and Cai et al. (2008). This reports that the size of firms in our sample is a very important factor in deciding maturity of debt, i.e., larger firms tend to issue longer-term debt. Stohs et al. (1996) conclude that debt maturity is positively related to firm size.

5.4.4.2 Growth

This study measures growth as a change in sales. The theories of debt maturity suggest that debt maturity increases with growth opportunity for the firm. Consistent with this, in the sample of Shariah-compliant firm, growth variable appears positive and significantly correlated with debt maturity. This shows some importance of growth opportunity in the choice of corporate debt maturity. Our findings on growth support liquidity hypothesis, which predicts a positive relation between growth and debt maturity. Growth exposes the firm to higher default and liquidity risk. One way to overcome this risk is to issue long-term debt.

The findings suggest that the growing firms use long-term debt. For the sample of the conventional firms, the growth variable has a positive but insignificant relationship with the dependent variable. This indifferent behaviour of growth for debt maturity decision is also documented by some authors in the literature such as Billett et al., (2007), Kim et al. (1995), Stohs and Mauer, (1996) for US firms and by Cai et al. (1999) for Japanese companies. Similarly, the findings of this research support Hart and Moore's (1995) with the over-investment argument that companies tend to use long-term debt to control managers' incentives to invest in negative NPV projects. It may be that underinvestment problem is of less concern for the firms in our sample than overinvestment inefficiencies.

5.4.4.3 Asset maturity

For the Shariah-compliant firms, our results show the positive but insignificant coefficient of the variable of asset maturity. It suggests that assets have indifferent behaviour for the debt maturity structure of the firm. In contrast to this result, in conventional firms, a positive and significant relationship is found between asset maturity and debt maturity structure. It provides the evidence that firms with long-term asset maturity tend to have long-term debt. Thus the results for our sample of conventional firms are consistent with that of (Myres 1977; Stohs and Mauer 1996; Korner 2007; Khemaies 2010; Shah and Khan 2009; Cai et al. 2008; Guedes & Opler, 1996; Antoniou et al. 2006).

These findings are consistent with the matching principle hypothesis which suggest that firms match their debt maturity with their assets maturity. Stohs and Mauer (1996) argue that when a firm has the longer maturity of assets than its debt maturity, the cash

Table 5.16: Determinants of debt maturity structure

Model (4.8): Debt Maturity$_{it}$ = β_o + β_1 Size$_{it}$ + β_2 Growth$_{it}$ + β_3 Asset Maturity$_{it}$ + β_4 Operating Cycle$_{it}$ + β_5Tangibility$_{it}$ + β_6 Profitability$_{it}$ + β_7 Risk$_{it}$ + β_8 Tax rate$_{it}$ + β_9 Non-debt tax shield$_{it}$ + ε_{it}

Variables: *Debt maturity* is the ratio of long-term debt to total assets. *Size* is natural log of total assets. *Growth* is sales growth each year. *Asset maturity* is the ratio of Net fixed assets over depreciation. *Operating cycle* is sales divided by fixed assets. *Tangibility* is the ratio of net property plant and equipment to total assets. *Profitability* is earnings before interest and taxes by total assets. *Risk* is the standard deviation of firm's return on assets over a 5-year period. *Tax rate* is effective tax rate for firm worked out as the ratio of the tax bill and taxable income. *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets. *** p<0.01; ** p<0.05; * p<0.1

Variables	Conventional firms			Shariah-compliant firms		
	Pooled OLS	Fixed effects	Random effects	Pooled OLS	Fixed effects	Random effects
Size	0.024	0.017	0.025	0.029	0.010	0.018
	(3.47)***	(2.59)**	(2.28)**	(4.48)***	(3.35)***	(1.70)*
Growth	0.000	0.000	0.000	0.000	0.000	0.000
	(1.39)	(1.10)	(1.59)	(3.25)***	(2.30)**	(1.46)
Asset maturity	0.000	0.000	0.000	0.000	0.000	0.000
	(3.10)***	(2.12)**	(2.84)***	(0.33)	(1.06)	(0.94)
Operating cycle	-0.006	-0.002	0.000	-0.002	-0.000	-0.001
	(3.12)***	(1.25)**	(0.14)	(3.42)***	(2.49)**	(1.68)*
Tangibility	0.475	0.276	0.397	0.473	0.097	0.257
	(10.48)***	(4.06)***	(7.50)***	(9.63)***	(2.52)**	(4.74)***
Profitability	0.131	0.173	0.159	0.037	0.037	0.014
	(1.91)*	(2.48)**	(2.46)**	(3.42)***	(2.43)**	(0.18)
Risk	0.002	-0.000	-0.000	0.006	0.000	0.001
	(0.89)	(0.03)	(0.10)	(4.69)***	(3.05)***	(2.03)**
Tax rate	0.002	-0.000	0.000	-0.001	-0.000	-0.000
	(1.34)	(0.09)	(0.40)	(1.02)	(0.09)	(0.14)
Non-debt tax shield	0.007	0.004	0.004	0.538	-0.036	0.040
	(1.94)*	(1.18)	(1.36)	(1.57)	(0.16)	(0.17)
Constant	-0.265	-0.087	-0.248	-0.416	0.101	-0.103
	(2.32)**	(0.19)	(1.43)	(3.92)***	(0.22)	(0.60)
F / Wald statistic	17.42***	23.24***	66.87***	20.52***	10.58***	31.02***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-squared	0.31	0.10	0.27	0.37	0.02	.32
Hausman test			324.50***			74.93***
			(0.000)			(0.000)
Observations	361	361	361	330	330	330

flow from its assets would not be sufficient to meet the obligation of its debt. On the other hand, if a firm finances its short-term assets with longer maturity debt, then the funds will remain useless in periods of low activity.

The findings on asset maturity for shariah firm deserve special attention. Assets maturity, while significant in case of conventional firms, is insignificant in shariah sample. One of the possible reasons for these findings is that although asset maturity enables companies to borrow more and on a longer-term basis, shariah firm is restricted to a certain permissible debt ratio limit in the capital structure. Once this borrowing limit is reached, the asset maturity would no longer be an important factor to influence maturity structure within a shariah compliant firm.

5.4.4.4 Operating cycle

Operating cycle is measured as a ratio of net sales to net fixed assets (Demirguc-Kunt and Maksimovic, 1999). It captures the yearly fluctuations in operational activities. In this study, operating cycle is negatively and significantly related to debt maturity. This result elucidates that the firms avail 'shorter-term financing' as an alternate of account receivables if payments are delayed from customers. In case of the extended account receivable period or longer cash conversion period, firms tend to acquire short-term debt to maintain firm's liquidity requirements. A high ratio of operating cycle shows that the firm may need short-term financing to support sales because this variable is measured as the ratio of sales to fixed assets. The negative relationship between debt maturity and operating cycle also suggests that short-term debt can fulfil the current needs of firms up until the firms receive cash from the customers. This research found the same outcome by both methods OLS and fixed and random effect technique, hence consistent as well as robust.

5.4.4.5 Tangibility

The tangibility in this research is measured as fixed assets divided by total assets following Krich et al. (2012) and Fan et al. (2002). In both samples of Shariah-compliant and conventional firms in this study, tangibility is positively and significantly associated with the debt maturity. The results of this research are consistent with those of Krich et al. (2012) suggesting a positive and significant relationship between tangibility and debt maturity.

Tangibility is directly linked with firm's collateral ability, which in turn is key to leverage level and duration. Agency theory states that having more of fixed assets on balance sheet reduces agency and bankruptcy costs. Therefore, as expected, tangibility return positive in our analysis of debt maturity.

5.4.4.6 Profitability

The results show that profitability is insignificant in both of the samples Shariah-compliant and conventional firms. Hence, the profitability shows no relationship with the debt maturity in either case. These results are consistent with the findings of Krich et al. (2012) observing the insignificant behaviour of profitability with the debt maturity. The results are also stable through OLS and fixed effect methods. Converse to this, Deesomsak et al. (2009) find that Profitability is likely to be positively related to debt maturity. They argue that positive relationship occurs due to higher taxable income of profitable firms. Therefore, they receive higher tax benefits from long-term debt.

5.4.4.7 Risk

The higher the business risk, the higher the probability of default. The trade-off theory thus proposes the use of long-term debt to reduce expected bankruptcy. Regarding risk, the findings are different in both samples. For the Shariah-compliant firms, the risk is positive and significant with debt maturity which is consistent with the liquidity risk

hypothesis. The hypothesis states that firms can reduce the probability of inefficient liquidation of their risky growth opportunities by issuing long-term debt. Krich et al. (2012) found similar results. However, in conventional firms, the risk is positive but insignificant suggesting no relationship with debt maturity structure. These results are consistent with Deesomsak et al. (2009).

5.4.4.8 Tax rate

Taxes can influence firms' debt maturity because choosing long-term debt over short-term debt can create tax timing option to repurchase and re-issue debt. However, this study finds no significant relationship between tax rate and debt maturity for both the Shariah-compliant and the conventional samples. This insignificant behaviour of tax rate suggests that tax rate does not affect the debt maturity structure of bit the shariah and the conventional firms in Pakistan. Empirically, the results are consistent with Korner (2007). In contrast, Guedes and Opler (1996) find a meaningful and positive relationship between tax rate and debt maturity, whereas, Krich et al. (2012) and Shah and Khan (2009) found the relationship negatively significantly.

The tax hypothesis of debt maturity suggests that the optimal debt maturity structure is determined by a trade-off that exists between three factors, flotation costs, bankruptcy costs and the benefits of tax shields (Stohs & Maur, 1996; Shah & Khan, 2009; and Kane et al., 1985). Therefore, with the benefits of the tax shield the maturity of debt decreases, while it increases with flotation costs. Therefore, in the literature, different findings are observed.

5.4.5 Regression analysis for determinants of debt maturity using dummy variable

The results of regression analysis confirm that the importance of some of the determinants of debt maturity is higher/lower for shariah firms than for conventional firms. For

example, growth and risk have a significantly positive impact on debt maturity of conventional firms, whereas their impact on debt maturity of Shariah-compliant firms was insignificant. These findings hint at the varying degree of importance of firm characteristics in shariah and conventional determinants of debt maturity. In order to test whether there exists such difference which is statistically significant too, the slope dummy variable approach (4.9) was applied.

Results show that coefficients of Shariah dummy interactions with tangibility, risk, and non-debt tax shield are significantly different from zero. Tangibility shows a positive relationship with debt maturity in case of conventional firms, and so is the case with Shariah-compliant firms. However, the significance of Shariah dummy interaction with tangibility indicates that the economic impact of tangibility on Shariah-compliant firms' debt maturity is relatively less pronounced than conventional firms (β_{15} = -0.168). This suggests that Tangibility has relatively less effect on debt maturity of Shariah-compliant firms than on conventional firms. Another firm characteristic whose impact on Shariah-compliant-compliant firms' debt maturity is different from conventional debt maturity is non-debt tax shield. The coefficient for the interaction term DUM*Risk (β_{17} = 0.012) is negative and statistically significant. Finally, the results show that in case of Shariah-compliant firms, the impact of non-debt tax shield (β_{18} = 1.604) is stronger than the conventional firms in our sample. None of the other characteristics is found to have a significantly different impact on the Shariah-compliant and conventional firms' debt maturity. These results could be interpreted that although there appears homogeneity among firm-level determinants of debt maturity among Shariah and conventional firms, the relative importance of some characteristics vary given the type of firm at hand.

Table 5.17: Regression analysis for debt maturity structure using dummy variables

Model (4.9) : Debt maturity$_{it}$ = β_o + β_1 Size$_{it}$ + β_2 Growth$_{it}$ + β_3 Asset Maturity$_{it}$ + β_4 Operating Cycle$_{it}$ + β_5Tangibility$_{it}$ + β_6 Profitability$_{it}$ + β_7 Risk$_{it}$ + β_8 Tax rate$_{it}$ + β_9 Non-debt tax shields$_{it}$ + β_{10} DUM×Size$_{it}$ + β_{11}DUM×Growth$_{it}$ + β_{12} DUM×Asset maturity$_{it}$ + β_{13} DUM×Operating cycle$_{it}$ + β_{14} DUM ×Tangibility$_{it}$ + β_{15} DUM ×Profitability$_{it}$ + β_{16} DUM ×Risk$_{it}$ + β_{17} DUM ×Tax rate$_{it}$ + β_{18} DUM ×Non-debt tax shields$_{it}$ + ε_{it}

Variables: *Debt maturity* is the ratio of long-term debt to total assets. *Size is natural log of total assets. Growth is sales growth each year. Asset maturity is the ratio of Net fixed assets over depreciation. Asset maturity is the ratio of net fixed assets over depreciation. Operating cycle is sales divided by fixed assets. Tangibility is the ratio of net property plant and equipment to total assets. Profitability is earnings before interest and taxes by total assets. The risk is the standard deviation of firm's return on assets over a 5-year period. The tax rate is effective tax rate for firm worked out as the ratio of the tax bill and taxable income. Non-debt tax shield is non-debt tax saving as a ratio of depreciation to the total asset.*

*** p<0.01; ** p<0.05; * p<0.1

Variables	**Coefficient (T values)**
Size *(β_1)*	0.011
	(2.55)*
Growth (β_2)	0.000
	(1.65)
Asset Maturity *(β_3)*	0.000
	(0.21)
Operating Cycle *(β_4)*	-0.004
	(2.15)*
Tangibility *(β_5)*	0.456
	(11.00)**
Profitability *(β_6)*	0.050
	(0.78)
Risk *(β_7)*	0.017
	(9.57)**
Tax Rate *(β_8)*	0.000
	(0.38)
Non-debt tax shield *(β_9)*	0.046
	(13.85)**
DUM*Size *(β_{10})*	0.002
	(0.81)
DUM*Growth *(β_{11})*	0.000
	(1.47)
DUM*Asset maturity *(β_{12})*	0.000
	(0.81)
DUM*Operating cycle *(β_{13})*	0.004
	(1.95)
DUM*Tangibility *(β_{14})*	-0.168
	(2.92)**
DUM*Profitability *(β_{15})*	-0.180
	(1.81)
DUM*Risk *(β_{16})*	-0.012
	(5.54)**
DUM*Tax rate *(β_{17})*	-0.001
	(0.63)
DUM Non-debt tax shield (β_{18})*	1.604
	(5.49)**
Constant	-0.252
	(3.64)**
R-squared	0.61
F *statistic*	26.99***
Observations	691

Table 5.18: Summary of findings for determinants of debt maturity structure

Variable	Measurement	Shariah-compliant	Conventional
Debt Maturity	Long-term debt to total assets	----	----
Size	Log of assets	Positive sig	Positive sig
Growth	%age change in sales	Positive sig	insig
Asset maturity	Fixed assets/depreciation	insig	Positive sig
Operating cycle	Sales/fixed assets	Negative sig	Negative sig
Tangibility	Fixed assets/total assets	Positive sig	Positive sig
Profitability	EBIT to total assets.	insig	insig
Risk	SD Return on asset	Positive sig	Insig
Tax rate	Ratio of tax bill to taxable income	insig	Insig
Non-debt tax shield	Tax charge/taxable income	insig	Insig

5.4.6 Sector-wise analysis for determinants of debt maturity

This section provides the sector-wise analysis of the determinants of debt maturity among shariah and conventional firms. Model 4.7 is estimated for shariah and conventional firms separately for each sector. The sectors include in the analysis are Chemical, Oil and Gas, Cement, Automobiles, Sugar, Textile, and Miscellaneous.

A. Shariah-compliant Firms (Chemical)

According to the fixed effects model, Size in Shariah-compliant firms in the chemical sector is negative and significant with the dependent variable debt maturity. This also shows large firms tend to issue short-term debt. The growth shows inverse relation to debt maturity but insignificant in this sector. Similarly, assets maturity, operating cycle, tangibility, profitability, risk, tax rate and non-debt tax shield are insignificant and pose no relation with dependent variable debt maturity in the chemical sector.

B. Shariah-compliant firms (Miscellaneous)

There is a positive and significant relation between size and debt maturity in Shariah-compliant firms for the miscellaneous sector. This result is similar to the overall findings of the study. According to agency theory, the agency cost is higher for small firms. Moreover, the control on these costs can be possible with the help of short-term financing. This predicts that there should be a positive relationship between debt maturity structure and size of the firm. Similarly, the positive relationship is suggested by the hypothesis of

information asymmetry. Moreover, the access of smaller firms to capital market becomes difficult due to fix flotation costs of long-term securities this also suggests a positive relationship between the size and debt maturity structure of the firm. The result is consistent across various studies in the literature (Barclay and Smith, 1995; Guedes and Opler 1996; Stohs et al. 1996; Cai et al. 2008). The findings report that the size is a significant factor in deciding debt maturity as larger firms tend to issue longer-term debt. However, growth, asset maturity, profitability and tax rate are negative and insignificant. Nevertheless, operating cycle and non-debt tax shield are positive but insignificant. Conversely, tangibility is positively and significantly correlated with the debt maturity in the two Shariah-compliant and conventional samples. This result is parallel to (Krich et al. 2012). Interestingly, the result of Shariah-compliant firms in the miscellaneous sector is also similar to the overall regression results. Also, the risk is positive and significant same as in overall Shariah-compliant sample performing the substantial relationship with the dependent variable debt maturity consistent with (Krich et al. 2012).

C. Conventional Firms (Miscellaneous)

The fixed effects model suggests that size, growth, asset maturity, operating cycle, tax rate and non-debt tax shield are insignificant in the conventional of the miscellaneous sector. However, tangibility and debt maturity are positively and significantly related postulating that more tangible firms avail longer-term debt. The findings are parallel to the results of an overall sample of the conventional firms also consistent with Krich et al. (2012). Profitability is also positively and significantly related to the debt maturity showing that conventional profitable firms in miscellaneous sector prefer longer-term debt. This result is converse to the results of the overall conventional firms. However, the results are consistent with (Deesomsak et al. 2009). Positive relationship specifies that profitable firms have higher taxable income, and thus receive greater tax benefits from long-term debt. The risk is negatively and significantly related to the debt maturity. This

result is also different from the result of overall conventional firms that is insignificant however consistent with (Guedes and Opler 1996; Stohs & Maur 1996).

D. Shariah-compliant Firms (Oil & Gas)

The size and growth of Shariah-compliant firms of oil & gas sector have an insignificant relationship with the debt maturity. The result is similar to that of Shariah-compliant companies in the automobile sector. However, asset maturity, operating cycle, profitability, risk, and NDTS are negatively related to the dependent variable. It is important to note that, the tangibility and tax rate are indifferent to the debt maturity in this sector.

E. Shariah-compliant Firms (Cement)

Size is positively but insignificantly related to the dependent variable in Shariah-compliant firms of cement sector. As well, asset maturity, operating cycle, and risk are negative but insignificant in the Shariah-compliant firms of the cement sector. While the profitability, tax rate, and NDTS are positive and insignificant in this sector. Growth also has positive and insignificant relation to dependent variable debt maturity. These findings are comparable to the numerous studies which mention that firms tend to use long-term debt to control managers' incentives in investing for negative NPV projects (Billett et al. 2007; Kim et al. 1995; Stohs and Mauer, 1996; Cai et al. 1999; Hart & Moore 1995).

F. Shariah-compliant Firms (Automobile)

Fixed effect illustrates that in the Shariah-compliant firms of automobile sector, the size, asset maturity, operating cycle, profitability, risk, and NDTS are insignificant having no relation to debt maturity in this sector. Similarly, the growth variable is negative but insignificant. Parallel to the findings, Diamond's (1991) predicts that

Table 5.19: Sector-wise analysis for determinants of debt maturity structure of Shariah-compliant and conventional firms

Model : (4.8) $Debt\ Maturity_{it} = \beta_o + \beta_1\ Size_{it} + \beta_2\ Growth_{it} + \beta_3\ Asset\ Maturity_{it} + \beta_4\ Operating\ Cycle_{it} + \beta_5 Tangibility_{it} + \beta_6\ Profitability_{it} + \beta_7\ Risk_{it} + \beta_8\ Tax\ rate_{it} + \beta_9\ Non\text{-}debt\ tax\ shield_{it} + \varepsilon_{it}$

Variables defined: *Debt maturity* is the ratio of long-term debt to total assets. *Size* is natural log of total assets. *Growth* is sales growth each year. *Asset maturity* is the ratio of Net fixed assets over depreciation. *Asset maturity* is the ratio of net fixed assets over depreciation. *Operating cycle* is sales divided by fixed assets. *Tangibility* is the ratio of net property plant and equipment to total assets. *Profitability* is earnings before interest and taxes by total assets. *The risk* is the standard deviation of firm's return on assets over a 5-year period. *The tax rate* is effective tax rate for firm worked out as the ratio of the tax bill and taxable income. *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets.

Sector	Size	Growth	Asset maturity	Operating cycle	Tangibility	Profitability	Risk	Tax rate	NDTS	Constant	R-squared	Hausman
Chemical (SH)	-0.555***	-0.000	0.015	-0.001	-0.177	-0.009	-0.009	0.114	-4.926	9.439***	0.984	(F.E) 94.917***
	(-8.051)	(-0.891)	(1.179	(-0.081)	(-0.424)	(-1.129)	(-1.288)	(1.586)	(-1.156)	(8.205)		(0.000)
Miscellaneous (SH)	0.039**	-0.000	-0.000	0.0003	0.444***	-0.003	0.012***	-0.0004	0.082	-0.546**	0.3023	(R.E) 15.646
	(2.446)	(-0.210)	(-0.222)	(0.344)	(3.807)	(-1.306)	(3.535)	(-0.194)	(0.312)	(-2.252)		(0.074)
Misc. (C)	0.065	0.000	0.000	0.000	0.471***	0.011***	-0.014**	-0.000	0.115	-0.921	0.811	(FE) 29.485***
	(1.032)	(0.538)	(-0.285)	(0.320)	(3.375)	(3.414)	(-2.615)	(-0.480)	(1.501)	(-0.959)		(0.000)
Oil & gas (SH)	0.106	-0.002	-0.007**	-0.0263**	-0.525	-0.028**	-0.038**	-0.000	-6.925*	0.039	0.994	(F.E)302.95***
	(0.612)	(-1.901)	(-2.616)	(-3.305)	(-0.634)	(-4.707)	(-3.755)	(-1.701)	(-2.016)	(0.013)		(0.000)
Cement (SH)	-6.530	0.012	-0.166	-18.03	-103.91**	0.082	-0.853	1.482	536.170	189.572	0.221	(R.E) 9.163
	(-0.790)	(0.391)	(-0.197)	(-1.293)	(-2.633)	(0.099)	(-0.692)	(0.084)	(1.308)	(1.138)		(0.422)
Automobile (SH)	0.010	-0.000	-0.000	-0.000	0.278***	-0.000	0.001	-0.011*	-0.167	-0.168	0.993	(F.E)14.913**
	(0.844)	(-1.457)	(-0.882)	(-0.820)	(4.662)	(-0.862)	(1.606)	(-1.980)	(-0.674)	(-0.838)		(0.037)
Sugar (C)	0.119	0.001**	-0.002	0.001	0.295**	0.003	0.012	0.068	0.002	-1.740	0.797	(F.E)57.699***
	(1.310)	(2.900)	(-0.965	(0.276)	(2.594)	(0.585)	(1.438)	(0.736)	(0.741)	(-1.242)		(0.000)
Textile (C)	-0.034	0.000	0.000	-0.047***	0.330**	0.008**	0.005	-0.000	0.177	1.085	0.837	(F.E)19.074**
	(-0.761)	(0.543)	(1.4196)	(-3.872)	(-2.275)	(2.268)	(1.646)	(-0.080)	(1.620)	(1.601)		(0.024)

Note: SH= Shariah-Compliant, C= Conventional, F.E= Fixed effect is selected, R.E= Random effect is selected

* $p<0.1$; ** $p<0.05$; *** $p<0.01$

growth opportunities are insignificantly or positively related to debt maturity. Profitability is also indifferent in this sector and behaves same as in the results of the overall sample.

G. Conventional firms (Sugar)

The conventional firms in sugar sector show a positive and significant relationship with debt maturity which is different from the overall conventional sample. Growth is positive and significantly correlated showing its importance in the choice of corporate debt maturity. The debt maturity increases with growth opportunity of the firm suggesting positive relationship as growing firms use long-term debt. The growth variable here behaves converse to the results of the overall conventional sample but akin to overall Shariah-compliant companies. Corresponding to the overall conventional firms, the result of sugar sector finds a positive and significant relationship between asset maturity and debt maturity structure. It provides the evidence that firms with long-term asset maturity tend to have long-term debt. Thus the results for our sample of conventional firms are consistent with various studies. Similar to the overall conventional firms, the sugar sector also shows that profitability is insignificant having no relation with debt maturity consistent with the findings of (Krich et al. 2012). Likewise, the tangibility is positively and significantly correlated with the debt maturity in the conventional firms of the sugar sector also similar to (Krich et al. 2012). In the case of risk, in conventional firms of this sector, the results are parallel to the overall conventional sample. The finding is positive but insignificant suggesting no relationship between risk and debt maturity structure. Also, the tax rate is positive but insignificant in conventional firms of this sector. The result is similar to the results of overall conventional firm sample suggesting that tax rate has no relation to the dependent variable ‘debt maturity.' The results are consistent with the findings of (Korner 2007).

H. Conventional firms (Textile)

In the conventional firms of textile sector size, asset maturity, risk, tax rate and non-debt tax shield are insignificant showing no effect on debt maturity. However, operating cycle and tangibility exert a negative and significant effect on debt maturity. Similar to results in an overall sample of the conventional firms the growth has a positive but insignificant relationship with the dependent variable. This indifferent behaviour of growth for debt maturity decision is also documented by various authors[30] also consistent with Hart and Moore's (1995). They argue on overinvestment that firms tend to use long-term debt to control managers' incentives to invest in negative NPV projects. It may be that underinvestment problem is of less concern for the firms in our sample than overinvestment inefficiencies.

However, operating cycle is negative and significantly related to the debt maturity. It is argued that a high ratio of Operating cycle will show that the firm may need short-term financing to support sales because this variable is measured as the ratio of sales to fixed assets (Demirguc-Kunt and Maksimovic 1999). Tangibility is negatively and significantly associated with the debt maturity in conventional firms of textile sector converse to the overall sample of conventional firms thus behaving differently. It shows that in textile sector conventional firms avail longer-term debts on relatively lesser fixed assets. They may avail insecure long-term financing and do not use much collateral for long-term borrowing. Profitability has positive and significant relation with debt maturity converse to overall results but similar to conventional firms in the miscellaneous sector and equivalent to (Deesomsak et al. 2009).

[30] Billett et al. (2007), Kim et al. (1995) and Stohs and Mauer (1996) for US firms and Cai et al, (1999) for Japanese companies

5.5 Objective four: Managerial trustworthiness or self-interest in debt maturity structure

Continuing the analysis of managerial trustworthiness in the capital structure decisions of the conventional and shariah-compliant firms, the fourth objective investigates how managerial ownership affects the debt maturity structures of the Shariah and conventional firms. The following regression equation (4.10) is estimated using panel data techniques. The following regression equation is developed.

$$\textit{Debt Maturity}_{it} = \beta_o + \beta_1 \textit{Managerial Ownership}_{it} + \beta_2 \textit{Size}_{it} + \beta_3 \textit{Growth}_{it} + \beta_4 \textit{Asset Maturity}_{it} + \beta_5 \textit{Operating Cycle}_{it} + \beta_6 \textit{Tangibility}_{it} + \beta_7 \textit{Profitability}_{it} + \beta_8 \textit{Risk}_{it} + \beta_9 \textit{Tax Rate}_{it} + \beta_{10} \textit{Non-Debt Tax Shield}_{it} + \varepsilon_{it} \quad (4.10)$$

Where the managerial ownership is the main explanatory variable calculated as the ratio of shares held by the managers and insiders to the total shares. The other variables in the model are used as the control variables, following previous studies on debt maturity.

The results of the regression analysis with robust standard errors are summarized in the Table 5.20. Column (1) to (3) reports the pooled OLS, fixed effects and random effects results for the conventional sample. The results for Shariah-compliant firms are summarized in the column (4) to (6). The long-term debt to total debt ratio, which proxies firm's debt maturity structure of firms in the sample, is regressed on the managerial ownership in equity and other control variables. The F statistic reported for all the regressions is quite high and significant at 1% level, indicating the regressions as a good fit. Thus, the null hypothesis of the explanatory variables being equal to zero simultaneously is rejected. The R-squared value is above 40% for conventional sample and above 50% for Shariah-compliant sample, indicating the model explains almost half a variation in debt maturity structure of Pakistani firms.

Table 5.20: Managerial trustworthiness in debt maturity

Model (4.8): Debt Maturity$_{it}$ = β_o + β_1 Managerial Ownership$_{it}$ + β_2 Size$_{it}$ + β_3 Growth$_{it}$ + β_4 Asset Maturity$_{it}$ +β_5 Operating Cycle$_{it}$ +β_6 Tangibility$_{it}$ + β_7 Profitability$_{it}$ + β_8 Risk$_{it}$ + β_9 Tax Rate$_{it}$ + β_{10} Non-Debt Tax Shield$_{it}$ + ε_{it}

Variables defined: *Debt maturity* is the ratio of long-term debt to total assets. *Managerial Ownership* is a fraction of managerial ownership in firm's equity. *Size* is natural log of total assets. *Growth* is sales growth each year. *Asset maturity* is the ratio of Net fixed assets over depreciation. *Asset maturity* is the ratio of net fixed assets over depreciation. *Operating cycle* is sales divided by fixed assets. *Tangibility* is the ratio of net property plant and equipment to total assets. *Profitability* is earnings before interest and taxes by total assets. *The risk* is the standard deviation of firm's return on assets over a 5-year period. *The tax rate* is effective tax rate for firm worked out as the ratio of the tax bill and taxable income. *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets. *** p<0.01; ** p<0.05; * p<0.1

Variables	Conventional Firms			Shariah Firms		
	Pooled OLS	Fixed effects	Random effects	Pooled OLS	Fixed Effects	Random Effects
Managerial ownership	0.002	0.001	0.001	-0.000	0.000	0.000
	(4.51)***	(2.46)***	(2.80)***	(0.77)	(0.12)	(0.10)
Control variables						
Size	0.030	0.016	0.028	0.029	0.009	0.018
	(4.25)***	(0.54)	(2.63)***	(4.42)***	(0.34)	(1.67)*
Growth	0.000	0.000	0.000	0.000	0.000	0.000
	(1.23)	(0.99)	(1.42)	(3.32)***	(1.00)	(1.60)
Asset maturity	0.000	0.000	0.000	0.000	0.000	0.000
	(3.73)***	(2.10)**	(3.01)***	(0.28)	(1.04)	(0.92)
Tax rate	0.001	-0.000	0.000	-0.001	0.000	-0.000
	(1.16)	(0.11)	(0.38)	(0.81)	(0.08)	(0.14)
Operating cycle	-0.006	0.002	0.000	-0.002	-0.000	-0.001
	(3.21)***	(1.23)	(0.10)	(3.42)***	(0.47)	(1.66)*
Tangibility	0.441	0.273	0.385	0.478	0.094	0.256
	(9.78)***	(3.99)***	(7.29)***	(9.47)***	(1.46)	(4.68)***
Profitability	0.148	0.173	0.163	0.042	-0.039	-0.018
	(2.20)**	(2.47)**	(2.53)**	(0.47)	(0.45)	(0.22)
Risk	0.003	-0.000	0.000	0.006	0.000	0.001
	(1.50)	(0.02)	(0.13)	(4.67)***	(0.06)	(1.04)
Non-debt tax shield	0.007	0.004	0.005	0.519	-0.034	0.040
	(2.08)**	(1.22)	(1.47)	(1.50)	(0.15)	(0.17)
Constant	-0.394	-0.094	-0.341	-0.412	0.103	-0.103
	(3.36)***	(0.21)	(1.95)*	(3.83)***	(0.23)	(0.59)
F / Wald statistic	18.22***	23.11***	76.40***	18.41***	15.49***	30.92
R-squared	0.35	0.10	0.31	0.37	0.02	0.32
Hausman test			157.64***			60.15***
			(0.000)			(0.000)
Observations	356	356	356	327	327	327

The main variable of interest in this study is the managerial ownership which captures the change in equity ownership and relates it to the debt maturity of the firm. Our interest is to find whether variation in managerial stock ownership causes any significant change in debt maturity structure in Shariah-compliant and conventional firms. Following Friend and Lang (1988), Berger et al. (1997) and Datta et al. (2005), this study assumes that if managers determine the optimal level of firm's debt maturity structure, it should be indifferent to the varying level of managerial stockholding and hence may be statistically insignificant. However, the significant influence of managerial stock ownership on debt maturity structure would indicate evidence of managerial self-interest in debt maturity decisions of the firm and hence suboptimal level of debt maturity.

Our results show that the coefficient of managerial ownership is statistically significant and positive in the full sample and conventional sample regressions at 1% level. This implies that with increasing managerial stock ownership the ratio of the long-term borrowing changes upward by 1%. Further, the comparison between Shariah-compliant and conventional firms reveals an interesting fact about these firms. The results suggest that in Shariah-compliant firms' case the coefficient of managerial ownership is not significant. This indicates that debt maturity structure of Shariah-compliant firms is determined independent changes in managerial stockholding in the firm.

The economic implication of the above findings is that managerial stock holding is a major factor in debt maturity structure of conventional firms in Pakistan; while in the case of Shariah-compliant firms' level of managerial stock ownership does not play a major role. This corroborates managerial opportunism hypothesis that managers with strong control over firm decision making (through greater stock ownership) use this to prolong the maturity of debt in the firm's leverage to shun more frequent vigilance of the lenders

arising from shorter maturity (Datta et al. 2005). However, we cannot conclude this for Shariah-compliant firms.

5.5.1 Robustness analysis: Managerial trustworthiness in debt maturity structure

Table 5.20 revealed that managers of conventional firms prefer long-term debt as the ratio of their ownership increases in firm's equity. Based on the interpretation of prior literature (Brailsford et al., 2002; Datta et al., 2005), the significant effect of managerial ownership on debt maturity structure is indicative of the opportunistic behaviour of managers in these firms. However, there is no such evidence for the managers of the shariah firms, which is consistent with the argument of this study that shariah compliance reduces incentives for managers to behave opportunistically. The results are robust to all the three methods of panel regression. Nevertheless, to address the concern for possible sampling bias resulting from comparing the conventional firms having no limit for debt with shariah firms having debt screening of 37%, additional regressions were performed on the matched sample of conventional firms resembling shariah firms in debt level.

The results of the robustness analysis are summarized in Table 5.21. Column (1) of the table reports the fixed effects estimates for the matched conventional sample with debt ratio below 37%. Column (2) to (4) contains the Tobit regression results for the conventional full sample, conventional matched sample, and shariah-compliant sample. The last two columns show M-estimation results. The results suggest that the coefficient for managerial ownership is significant regardless of the sample and method used, whereas the coefficient for shariah sample is consistently insignificant. This further support the findings reported in Table 5.20.

Table 5.21 Robust analysis : Managerial trustworthiness in debt maturity

Model (4.7). Debt Maturity$_{it}$ = β_o + β_1 Managerial Ownership$_{it}$ + β_2 Size$_{it}$ + β_3 Growth$_{it}$ + β_4 Asset Maturity$_{it}$ +β_5 Operating Cycle$_{it}$ +β_6 Tangibility$_{it}$ + β_7 Profitability$_{it}$ + β_8 Risk$_{it}$ + β_9 Tax Rate$_{it}$ + β_{10} Non-Debt Tax Shield$_{it}$ + ε_{it}

Variables: *Debt maturity* is the ratio of long-term debt to total assets. *Managerial Ownership* is a fraction of managerial ownership in firm's equity. *Size* is natural log of total assets. *Growth* is sales growth each year. *Asset maturity* is the ratio of Net fixed assets over depreciation. *Asset maturity* is the ratio of net fixed assets over depreciation. *Operating cycle* is sales divided by fixed assets. *Tangibility* is the ratio of net property plant and equipment to total assets. *Profitability* is earnings before interest and taxes by total assets. *The risk* is the standard deviation of firm's return on assets over a 5-year period. *The tax rate* is effective tax rate for firm worked out as the ratio of the tax bill and taxable income. *Non-debt tax shield* is non-debt tax saving as a ratio of depreciation to total assets. *** p<0.01; ** p<0.05; * p<0.1

Variables	Fixed Effects	Tobit Regression			M-Estimation	
	Conventional Matched (Debt < 37%) (1)	Conventional (2)	Conventional Matched (Debt < 37%) (3)	Shariah compliant (4)	Conventional (5)	Shariah-compliant (6)
Managerial ownership	0.002	0.002	0.002	-0.000	0.0009	0.0003
	(2.29)**	(4.69)***	(4.73)***	(0.71)	(2.6263)**	(1.2863)
Control variables						
Size	-0.007	0.031	0.029	0.032	0.0278	0.0318
	(0.25)	(4.50)***	(3.72)***	(4.73)***	(3.9101)***	(4.2814)***
Growth	0.001	0.000	0.001	0.000	4.73E-05	0.0003
	(3.20)***	(1.25)	(2.39)**	(3.37)***	(2.9590)**	(2.8465)**
Asset maturity	0.000	0.000	0.000	0.000	3.72E-05	-0.0008
	(1.65)*	(3.82)***	(3.46)***	(0.19)	(0.2912	(-1.8579)*
Operating cycle	0.002	-0.006	-0.007	-0.002	-0.0044	-0.0019
	(1.35)	(3.27)***	(3.32)***	(3.34)***	(-2.3551)**	(-2.5462)**
Tangibility	0.158	0.447	0.364	0.508	0.4881	0.4282
	(2.51)**	(9.96)***	(6.86)***	(9.82)***	(10.1657)***	(7.2416)***
Profitability	0.102	0.155	0.114	0.081	-0.0004	-0.0041
	(1.49)	(2.33)**	(1.37)	(0.89)	(-0.4480	(-3.2474)**
Risk	0.004	0.003	0.004	0.006	0.0054	0.0076
	(1.45)	(1.54)	(1.62)	(4.86)***	(2.7940)**	(3.5991)***
Tax rate	-0.001	0.001	0.001	-0.001	-0.0019	-0.0010
	(1.00)	(1.14)	(0.95)	(0.89)	(-1.6360)*	(-1.3446)
Non-tax debt shield	0.003	0.008	0.007	0.533	0.0002	0.2780
	(0.91)	(2.18)**	(1.84)*	(1.52)	(0.1415)	(0.8706)
Constant	-0.328	-0.427***	-0.368	-0.485	-0.3827	-0.4140
	(2.45)***	(3.64)***	(2.75)***	(4.32)***	(-3.1665)***	(-3.4410)***
F / LR Chi-sq	12.71***	153.29	110.15***	153.36***	209.85***	231.057***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R-sq. /Pseudo R-sq.	0.32	0.18	0.47	.49	0.29	0.44
Observations	279	356	279	327	356	327

5.6 Chapter Summary

This chapter presents the findings and statistical analysis of all the objectives of the study. The chapter also contains the interpretations of the results of each objective. The first section 5.1 reports the preliminary descriptive statistics, trend analysis and comparative analysis of Shariah-compliant and conventional firms on different financial measures and variables. The next section shows the trend analysis of important financial measures. The chapter then provides the comparative analysis between Shariah-compliant and conventional firms on their key financial variables to distinguish among them. To achieve this objective t-test for difference of means is performed. This test determines whether the two groups differ significantly from each other in their characteristics. The correlation analysis was carried out to find out the correlation between the variables and for the diagnosis of multicollinearity. The findings show that the correlation was too high to cause the multicollinearity problem.

The results for determinants of capital structure among Shariah-compliant and conventional firms are presented and analyzed. The pooled OLS and the dummy variable approach have been applied to compare the effect of various determinants of capital structure on the Shariah-compliant and conventional firms. It also contains the findings of managerial trustworthiness (or opportunism/self-interest) in the capital structure of Shariah-compliant and conventional firms. For an additional check of robustness, regression analysis was performed on the matched sample on 37% debt limit on conventional companies. Apart from that the Tobit regression, fixed and random effects and M-Estimation methods are applied for the further robust check.

The hypothesis is tested, and results are given about the Shariah-compliant firms having significantly different debt maturities compared to conventional companies. This section also determines the statistical significance of the differences between Shariah-compliant

and conventional firms on various financial performances, leverage, liquidity and other characteristics. The determinants are tested based on four theories of debt maturity structure. Moreover, this chapter examined the managerial trustworthiness (or opportunism/self-interest) in the debt maturity structure of capital structure in Shariah-compliant and conventional firms. Apart from OLS and fixed and random effects, Tobit regression, and M-estimation methods are also applied for robustness of results. The results by different methods match and prove the hypothesis with consistency.

The sector-wise analysis is performed for different sectors used in data sample, for example, automobile, textile, chemical, sugar, oil and gas, cement and miscellaneous sector. This additional analysis was performed in order to identify whether the individual sector behaves in accordance with overall results to compare similarities and differences. The OLS, fixed and random effect models were applied to this analysis. On the whole, the results of the sector-wise analysis matched the overall findings of the study.

CHAPTER 6: CONCLUSIONS

This chapter concludes this thesis. The chapter consists of two main parts. The first part recaps the main points discussed in the earlier chapters of the thesis, while the second part, section 6.1, summarizes the main findings for each objective of this study. Section 6.2 highlights the contribution of the study. Section 6.3 provides the limitations of this study. Finally, Section 6.4 presents the possible extension of this research in future.

Several studies have focused on the capital and debt maturity structure of conventional firms. However, very few studies have investigated these important aspects of corporate finance from the shariah compliance perspective. This study fills this gap in the literature by conducting a detailed empirical analysis of the determination of capital and debt maturity structures in Shariah-compliant firms in Pakistan. Moreover, this study also provides the basis for investigating one of the important tenets of shariah compliance called *Amanah* (trustworthiness) in the capital and debt maturity decision of shariah-compliant firms in comparison to conventional firms.

The research in Islamic Finance has extensively dealt with banking and financial institutions with relatively much-felt need of including the corporate finance literature on Shariah-compliant firms. This is despite the emergence of some well-defined and reputed local and international Shariah-compliant screening methodologies such as Dow Jones Islamic World Market Index (DJIWM) [31]and Financial Times Stock Exchange (FTSE) Shariah Global Equity Index[32]. The importance of Shariah-compliant firms has increased over the years. In the corporate finance literature, a Shariah complying firm could be

[31]The DJIWM is a global index of *Shariah-Compliant* -compliant stock.

[32]The FTSE Shariah-Compliant Global Equity Index Series covers all regions across both developed and emerging markets, to create a comprehensive Shariah-Compliant indexing solution.

regarded as a type of ethical firm which follows strict ethical and moral standards set by the Islamic law. Thus, the implications of its functioning are not confined merely to the Muslims but also to the new and rapidly growing breed of ethical investors. Considering the importance of this in Finance and the dearth of empirical research on Shariah-compliant firms, this thesis carried out a detailed analysis of issues relating to the capital structure of Shariah-compliant firms in comparison with the conventional firms in Pakistan.

The Shariah screening distinguishes firms as Shariah-compliant mainly on their nature of the business and some key financial characteristics, which includes their debt ratios in capital structure, and level of tangibility and liquidity in their asset structure. The uniqueness of the Shariah-compliant firms makes a valid case for investigating capital structure determination of these firms. Moreover, prior research in conventional finance has investigated some of these characteristics in great detail and has identified them as having a considerable impact on firm's agency cost and information asymmetries. Based on these arguments and theoretical foundations, this study investigates in length the dynamics of Shariah-compliant firms' capital structure.

Specifically, the thesis addressed the two widely researched capital structure issues, namely, the determination of *capital structure* and *debt maturity structures*, from Shariah compliance perspectives. The thesis also extended this analysis to investigate the role of *managerial opportunism*, also known as self-interest, in the above two processes. The very topic of managerial opportunism has gained immense attention in modern finance literature both theoretically and empirically. The issue deserves an equal consideration from the Islamic Shariah principles of *Amanah* or trustworthiness, which dictates fair dealings, trust, justice, and moral integrity at all levels of business and commercial dealings. The thesis thus builds on the argument that in the true spirit of Shariah

compliance management of the Shariah firms should refrain from opportunistic and selfish managerial behaviour.

6.1 Main Findings

This section discusses the main empirical findings on the four main research question addressed in this study.

6.1.1 The characteristics of conventional and Shariah-compliant firms

In the first part of chapter 5, the study performed a detailed comparative analysis between the shariah and conventional firms in Pakistan. Before formally testing the firm-level factors determining leverage level among Shariah-compliant firms; the study performed several tests of hypothesis regarding the mean difference in firm characteristics of Shariah-compliant and conventional firms. Findings suggest that Shariah-compliant and conventional firms share considerably significant differences on almost every feature. The independent sample t-test revealed that Shariah-compliant firms were relatively larger than their conventional counterparts in Pakistan. The average total assets (size) are found Rs. 13.90 billion and Rs. 32.50 billion respectively in conventional and Shariah-compliant firms. According to expectation, Shariah-compliant firms were significantly less levered than conventional companies. The average debt ratio for conventional firms is 25%, and for the Shariah-compliant firms, the ratio is 17%. Our results also suggest significant differences in the shareholding of patterns of Shariah-compliant and conventional firms, whereby Shariah-compliant firms had considerably less concentrated shareholding than conventional companies. Managers retain on an average 29% of the equity in the conventional firms, whereas the managers in the sample of Shariah-compliant firms hold only 15% of the equity shares. Finally, the findings suggest that Shariah-compliant firms had superior performance than conventional firms as indicated by their gross profits, return on assets, returns on equity, and earnings per share during

the period of study. The statistical tests show that most of the differences in characteristics of Shariah-compliant and conventional firms are significant at 1% level.

6.1.2 The determinants of capital structure in Shariah-compliant and conventional firms

The research aimed to study various firm-level characteristics of capital structure determinants of Shariah-compliant and conventional firms in Pakistan. The study pursued the key research question about the significance and relative importance of these factors in determining the capital structure in Shariah-compliant and conventional firms. Based on the mainstream finance theories of capital structure, the study tested several hypotheses related to firm-level determinants of capital structure in Shariah-compliant and conventional firms in Pakistan. The analysis was carried out using OLS-based regressions, fixed and random effect and other methods for each group. The study finds that the debt ratios of both Shariah and conventional firms are directly and significantly related to the asset tangibility, risk, and non-debt tax shields, whereas, the debt ratios in both samples is negatively related to profitability and liquidity. Firm size, however, was found significant only in the case of a shariah-compliant firm. Therefore, the findings indicated that the factors dictating the capital structure of Shariah-compliant and conventional firms are almost identical in Pakistan. However, further analysis suggests that that the importance of each of these factors differs significantly across the two groups. Explicitly, the results indicate that tangibility and liquidity (though statistically significant) were less important in capital structure determination of Shariah-compliant firms, on the other hand, the relative importance of non-debt tax shield is much higher in Shariah-compliant firms case than in conventional companies. While these findings are important to understand the nature of capital structure determination especially in the Shariah-compliant sector in Pakistan, they also provide the stage for future analysis for the two groups on capital structure and other financial matters.

6.1.3 Managerial trustworthiness or self-interest in capital structure of Shariah-compliant and conventional firms

The second objective of this study was to test managerial self-interest through influencing firm‘s capital structure as their proportion of ownership varies within the firm and make a comparative analysis of this phenomenon for Shariah and conventional firms in Pakistan. Relying on the hypothesis based on the fundamental Islamic principles of *Amanah* (trustworthiness), the studies argue that managers of a Shariah-compliant firm might behave differently than their counterparts in conventional firms. Based on some of the main requirements of Shariah compliance, which require firms to maintain a lower level of cash and other liquid assets, the study argues that this tendency of maintaining a low level of free cash flows by default in Shariah firms leads to lower the severity of agency conflicts within the firm. As a result, managers would be inclined to behave less opportunistically than in the case otherwise. Consistent with this hypothesis, the results show significant differences between the managerial influence on leverage ratios in Shariah and conventional firms. The results indicate that degree of managerial ownership affects debt level of the firm significantly in conventional firms indicating the element of opportunism and lack of trustworthiness, while we observe no such tendency in case of Shariah firms. Based on the prior literature, these findings could be attributed to the low degree of agency costs in shariah firms achieved through shariah compliance (maintaining lower liquidity and investments in cash), which help alleviate conflicts between shareholders and managers and persuade management to behave more trustworthily. The findings showed robustness to various methods and subsamples of matched conventional firms with debt ratio not exceeding 37% as in Shariah firms in Pakistan.

6.1.4 Determinants of debt maturity structure in Shariah-compliant and conventional firms

After addressing the questions various determinants of the debt-equity mix in the capital structure of Shariah-compliant in contrast with the conventional firms, the study turned to address one of the equally important questions regarding capital structure literature, which is the debt maturity choice of firms. Although this issue has gained much attention in conventional corporate finance theoretical and empirical literature, rarely has it been addressed from the perspective of Shariah-compliant firms.

This research applied univariate and multivariate analysis to investigate whether debt maturity structure varies across Shariah-compliant and conventional firms. We also studied how firm-level characteristics affect debt maturity choice of Shariah-compliant firms in contrast with the conventional firms. The univariate analysis indicated that Shariah-compliant firms had significantly shorter debt maturity structure than conventional firms. These findings are consistent with the Shariah compliance supporting an argument that Shariah-compliance not only leads to lower leverage but also shorter maturity structure of debt. Based on this argument one can argue that restricted use of debt, owing to Shariah compliance, yields the debt maturity structure.

Next, the study tested various firm-level factors of debt maturity structure among Shariah-compliant and conventional firms and compared the findings. In a univariate analysis, we first sorted firms on all the possible influencing firm-level determinants drawn from debt maturity structure theories and divided the Shariah-compliant conventional sample into equal quartiles and compared the debt maturity structure of each characteristic quartile for Shariah-compliant and conventional sample separately. Our results revealed some notable differences among the Shariah-compliant and conventional firms' sample, especially for size and growth. As for size, Shariah-compliant firms tend to have shorter

debt maturity as their size quartile increases, while conventional firms have the longer maturity for larger firms. The significance of result shows contrasting empirical facts about the two types of firms. The similar tendency but with the lack of statistical significance was emerged in the case of growth quartile indicating that higher growth conventional firms borrow on a longer-term basis, while higher growth firms in Shariah-compliant firms tend to have lower debt maturity. On other variables, our results showed similarities of varying patterns of debt maturity across various quartiles of these variables. Asset maturity, tangibility, tax shield, and leverage showed a positive and increasing trend of longer-term maturity in higher quartiles of these characteristics. Risk, tax rate, and profitability showed the inverse pattern of debt maturity pattern in their quartiles. Further analysis suggests that impact of tangibility risk and non-debt tax shield was significantly higher for the conventional sample than for the shariah sample. The regression analysis based on panel data methods suggest size, growth, and risk have a significantly positive impact on the debt maturity of shariah firms, while conventional firms debt maturity was also related to asset maturity and profitability in addition to these factors. Therefore, the study found some important differences in the factors influencing the debt maturity in these firms.

6.1.5 Managerial trustworthiness (or self-interest) in debt maturity of Shariah-compliant and conventional firms

In continuation of our objective of investing managerial opportunism in financing decisions of Shariah-compliant and conventional firms, the empirical analysis of debt maturity structure of these firms was conducted. Since debt maturity has a direct effect on firm interaction with its lenders and the degree of its frequency, debt maturity does involve agency related problems between managers and shareholders (Datta et al. 2005). Our main interest in this objective revolves around whether entrenched managers with

greater control and liberty in choosing firm's debt specifications; use this control for their self-interest. If so, one would expect managerial stock ownership is significantly influencing the debt maturity choice of firms. Consequently, long-term debt offers a better option to management to avoid getting involved in excess external monitoring more frequently than at desired level given management's interests.

The results of this study showed that unlike conventional firms, debt maturity level was determined independently by the managerial ownership among Shariah-compliant companies. However, it was found that managerial ownership was significant in influencing debt maturity of conventional firms with a positive relationship. In other words, in conventional firms, as managerial ownership rose so did the concentration of long-term debt in their capital structure. This suggested that optimal debt maturity structure of these companies changed as managerial ownership varied; indicating an element of self-interest in managerial preferences as shown in previous studies (Kim & Sorensen,1986; Florackis & Ozkan, 2009). This indicates that managers in the conventional firms seem to be avoiding higher agency cost of equity to perpetuate their control over firm's operations. However, the study finds no significant relationship between the managerial ownership and debt maturity among the shariah firms. This suggests that managers of shariah firms behave less opportunistically, which is consistent with the principle of *Amanah* or trustworthiness. This outcome could be attributed to the shariah compliance which results in some particular characteristics, such as lower level of debt and free cash flows, among the firms which help mitigate agency costs of debt and free cash flows (Jensen 1986), and hence leave little room for managerial opportunism. These findings were robust to various sensitivity checks that included the use of (a) different methods, pooled, fixed effects, random effects, Tobit regression, and

M-estimation, and (b) the subsample of conventional firms matching with the debt ratio below 37% to match the maximum limit of debt in the shariah firms in Pakistan.

6.2 Contributions and implications

The current Shariah screening methods only use superficial criteria to identify Shariah compliance. By invoking the principle of *Amanah* (trustworthiness), this study tests whether the Shariah-compliant compliance discourages the managerial opportunism and leads to the true spirit of Islamic teachings. By focusing on Shariah-compliant firms, the study contributes to the still-developing literature on the capital structure of Shariah-compliant firms. By comparing the results with conventional firms, the study depicts the inherent cross-sectional differences between these two types of firms, which could pave the way for further research in capital structure differences between them. The research findings are also expected to benefit large and growing clientele of the Shariah firms by providing better insights on the capital and debt maturity structure of these firms. Further, regarding the implications of this research, it will create and develop the sense of responsibility for the management as well as concerned authorities to make socially responsible investment. This research will pave the way not only for the Shariah-compliant firms but also non Shariah-compliant firms for the ethical enhancement to meet the growing completion under ethical, responsible, trustworthy and safer investments. It is because this study provides and evidence that there is the difference in the management decision making in Shariah-compliant firms and conventional firms concerning the level and duration of leverage. This fact is also realised by recent study conducted on Shariah-compliant and non Shariah-compliant firms by (Naz, Shah, & Kutan, 2017).

6.3 Limitations of the study

Like any other empirical study, the findings from this study are also subject to a few limitations. Some of them are as follows. First, the focus of this study is solely on single

country Pakistan. Corporate financial strategies differ across countries due to the diversity in policy and practice in these countries. Therefore, the findings of this study cannot be generalized to other countries. Another notable limitation of this study is the constraint of data availability for Shariah-compliant firms. In Pakistan, the first Shariah-based stock index, KMI 30 index, commenced in 2008 which limits the sample period for this study between 2009 and 2013. Also, due to some missing data for some firms, the final sample included 68 Shariah and 75 conventional firms.

Moreover, the data source for this study, the Balance Sheet Analysis of non-financial sector in Pakistan published by the State Bank of Pakistan, does not provide the break-up of long, medium, and short-term debt maturities of the sample firms. Hence, the study has relied on the classification of the short and long-term debt based on the current and non-current liabilities as reported in the database. The availability of more detailed data would have been an added advantage for the analytical purposes.

6.4 Future study recommendations

There exists a noticeable dearth of empirical investigation on financial policies of Shariah firms. To address this gap, this study has covered some important aspects of capital and debt maturity structures about conventional and Shariah-compliant firms. Towards this end, the scope of current research can be broadened through investigating various other dimensions. Some of these considerations are recommended here for future research.

First, future research can be extended to include a larger sample for a longer period. The sample for this study covers five years from 2009 to 2013, which is due to the fact that Shariah compliance index came into effect in 2008 in Pakistan and this research started in 2014. Thus the future research can overcome this limitation.

Second, in future, survey-based analysis can be applied to carry out this study as implemented by (Graham & Harvey, 2001). The survey method may augment the findings reported in this study. Thus, applying survey-based approach would be interesting and valuable for further research. For that, an instrument can be developed to measure the degree of managerial self-interest in the capital structure decisions of Shariah and conventional firms in future.

Third, the scope and effectiveness of this research can be enhanced if the detailed break-up is provided regarding different debt maturities. In future, therefore, the different classes of debt such as short term, medium term, and long-term can be used for more comprehensive analysis. Fourth, the evidence and application of this study is based on the single and developing country Pakistan. Future research in this regard can be based on the multi-country sample to broaden the scope and applications of findings. It is also recommended that the focused research could be carried out on the region-wise samples.

Fifth, this study focuses on the micro level firm-specific factors determining the capital and debt maturity structures among Shariah-compliant and conventional firms. In future, the research can be conducted on the institutional and macroeconomic factors on a country level. Moreover, managerial trustworthiness and its influence may be explored on different levels, i.e., cross-country level and regional level to discover differences in financing practices of firms.

Finally, the comparative studies incorporating the cultural difference within Muslim countries and their influence on the capital structure and debt maturity structure can be carried out showing cultural differences with micro and macro influencing factors. In this regard, Gleason, Mathur, and Mathur (2000) also point out to the possibility that

managers in different cultures may be conditioned to opt for firm-specific strategies that are culturally oriented, which may result in capital structures unique to the cultures.

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LIST OF PUBLICATIONS AND SYMPOSIUM ATTENDED

1. Katper, N. K., Madun, A., & Syed, K. B. S. (2015). Does shariah compliance lead to managerial trustworthiness? Evidence from empirical analysis of capital structure of shariah and non-shariah firms in Pakistan. *Journal of Applied Economic Sciences*, *10*(7), 1028–1045. *(SCOPUS-Indexed Publication)*.

2. Katper, N. K., Madun, A., & Syed, K. B. S, Tunio, M.N. (2017). Determinants of debt maturity structure in shariah and non-shariah firms in Pakistan: A comparative study. Journal of Applied Economic Sciences, Volume XII, Summer, 4(50): 1210-1225. *(SCOPUS-Indexed Publication)*.