

SECTOR ANALYSIS ON DETERMINANTS OF CAPITAL STRUCTURE AND
HUMAN CAPITAL AMONG NON-FINANCIAL LISTED FIRMS IN
PAKISTAN

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DEDICATION

This thesis work is dedicated to my parents Dr. Iqbal Ahmed and Mrs. Iqbal, who have always loved me unconditionally and whose good examples have taught me to work hard for the things that I aspire to achieve. I would also like to dedicate this work to my siblings Haris, Juveria and Bilal who have always loved and encouraged me. Lastly, I'd also like to dedicate my work to my love, Aisha, who has been a constant source of support and encouragement during this challenging time.

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ABSTRACT

Capital structure provides a way of controlling and directing financial mechanism that helps a firm in achieving its desired objectives for maximizing stakeholders' wealth. Past studies on aligning the reasonable or optimal capital structure with firm's operating, investing and financial requirements are still rare in developing countries and in Pakistan particularly. The current study provides a dynamic framework to investigate the sensitivity of capital structure and how various factors influence the nature of debt and equity financing. The study investigates the relationship of several independent firm-level variables such as, size, tangibility, profitability, growth, non-debt tax shield, dividend payout, firm age, business risk, uniqueness and liquidity with capital structure of firm. Furthermore, this study explores the different dimensions where human capital relation was also examined with all the three measures of dependent variable, i.e., short-term debt, long-term debt and total debt ratios. Analysis was conducted by using the ten years (2003-2012) data of 176 non-financial companies from eight different sectors (i.e., automobile and parts, chemicals, construction and materials, electricity, food processors, oil and gas, personal goods and household goods) listed on Karachi Stock Exchange (KSE). Three different methodologies were employed, i.e., pooled data estimation, panel data estimation and dynamic panel data estimation. Analysis showed that the different sectors behaved differently towards capital structure. However, overall analysis of 176 companies showed that the firm size, profitability, dividend payout and liquidity remained significantly correlated to capital structure. While applying Generalized Method of Moments (GMM), results of long-term debt show that all the variables remained significant except uniqueness of firm. Moreover, firm size also played significant role as a moderator between human capital and capital structure. The findings of this study are discussed in terms of theoretical, practical and conceptual implications for both scholars and policy makers to better understand decisions related to capital structure with a view for future researchers.

ABSTRAK

Struktur modal adalah satu cara mengawal dan mengarah mekanisma kewangan untuk membantu syarikat dalam mencapai objektif yang dikehendaki dalam memaksimumkan kekayaan pemegang kepentingan. Kajian lalu dalam menjajarkan struktur modal yang wajar atau optima dengan operasi, pelaburan, dan kewangan syarikat masih kurang di negara-negara membangun terutamanya Pakistan. Kajian ini menyediakan kerangka yang dinamik untuk menyiasat sensitiviti struktur modal dan bagaimana pelbagai faktor mempengaruhi sifat pembiayaan hutang dan ekuiti. Kajian ini juga menyiasat hubungan beberapa pembolehubah tidak bersandar tahap syarikat, seperti saiz, ketaraan, kebolehtungan, pertumbuhan, perisai cukai bukan-hutang, pembayaran dividen, umur syarikat, risiko perniagaan, keunikan, dan kecairan, dengan struktur modal syarikat. Seterusnya, kajian ini meneroka dimensi berlainan di mana hubungan modal insan juga diperiksa dengan semua tiga pengukur pembolehubah bersandar, contohnya hutang jangka pendek, hutang jangka panjang, dan nisbah jumlah hutang. Analisis dijalankan menggunakan data sepuluh tahun (2003-2012) daripada 176 syarikat bukan kewangan yang terdiri daripada laman sektor berlainan (contohnya, otomobil dan komponen, kimia, pembinaan dan bahan, elektrik, pemprosesan makanan, minyak dan gas, barangan peribadi, dan barangan isi rumah) yang tersenarai di *Karachi Stock Exchange* (KSE). Tiga metodologi telah digunakan dalam kajian ini iaitu *pooled data estimation*, *panel data estimation* dan *dynamic panel data estimation*. Analisis menunjukkan sektor berlainan memberi kesan berbeza terhadap struktur modal. Walau bagaimanapun, analisis keseluruhan 176 syarikat menunjukkan bahawa saiz syarikat, kebolehtungan, pembayaran dividen, dan kecairan tunai masih berkorelasi secara signifikan terhadap struktur modal. Apabila dikenakan *Generalized Method of Moment* (GMM), keputusan hutang jangka panjang menunjukkan bahawa kesemua pembolehubah masih signifikan kecuali keunikan syarikat. Disamping itu, saiz syarikat juga memainkan peranan yang signifikan sebagai moderator antara modal insan dan struktur modal. Dapatan kajian ini dibincangkan secara teoretikal, praktikal, dan implikasi konseptual supaya pengkaji dan pembuat polisi lebih memahami keputusan berkaitan dengan struktur modal dengan memberi ruang kepada pengkaji akan datang.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENT	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xiv
	LIST OF FIGURES	xvii
	LIST OF SYMBOLS	xviii
1	INTRODUCTION	1
	1.1 General Overview	1
	1.2 Background of the Study	3
	1.3 Problem Statement	8
	1.4 Research Questions	13
	1.5 Research Objectives	14
	1.6 Significance	15
	1.7 Justification for Choosing Pakistan	16
	1.8 Scope of Study	16
	1.9 Limitations of the Study	17
	1.10 Operational Definitions of Variables	18
	1.11 Thesis Outline	21

2	LITERATURE REVIEW	22
2.1	Intorduction	22
2.2	MM Theorem	23
2.3	Trade-off Theory	23
2.4	Pecking Order Theory	28
2.5	Agency Cost Theory	35
2.6	Independent Variables	36
2.6.1	Firm Size	36
2.6.2	Tangibility	43
2.6.3	Profitability	46
2.6.4	Growth	51
2.6.5	Non-Debt Tax Shield	55
2.6.6	Dividend	57
2.6.7	Firm Age	60
2.6.8	Business Risk	62
2.6.9	Uniqueness	65
2.6.10	Liquidity	67
2.7	Human Capital	69
2.8	Moderating Role of Firm Size on Capital Structure and Human Capital	71
2.9	Research Framework	73
2.10	Summary	74
3	DATA AND METHODOLOGY	75
3.1	Introduction	75
3.2	Research Design	75
3.3	Data Collection	76
3.4	Target Population and Sampling Technique	76
3.5	Dependent Variable	76
3.6	Book Value vs Market Value of Leverage	80
3.7	Independent Variables	80
3.7.1	Firm Size	81

3.7.2	Tangibility	81
3.7.3	Profitability	82
3.7.4	Growth	83
3.7.5	Non-debt Tax Shield	83
3.7.6	Dividend	84
3.7.7	Firm Age	85
3.7.8	Business Risk	85
3.7.9	Uniqueness	86
3.7.10	Liquidity	87
3.8	Human Capital	88
3.9	Methodology	88
3.10	Model	89
3.10.1	Pooled Ordinary Least Square Analysis	89
3.10.2	Fixed Effects Analysis	90
3.10.3	Generalized Method of Moments	91
3.11	Summary	96
4	FINDINGS	97
4.1	Introduction	97
4.2	Capital Structure and Sector-wise Classification	97
4.3	Descriptive Statistics	100
4.4	Correlation Marix	102
4.4.1	Correlation Matrix of CS Determinants and Human Capital for Overall Sample	102
4.4.2	Correlation Matrix of CS Determinants and Human Capital for Automobile and Parts	104
4.4.3	Correlation Matrix of CS Determinants and Human Capital for Chemical Sector	106
4.4.4	Correlation Matrix of CS Determinants and Human Capital for Construction & Materials Sector	108
4.4.5	Correlation Matrix of CS Determinants and Human Capital for Construction & Materials	

	Sector	110
4.4.6	Correlation Matrix of CS Determinants and Human Capital for Food Processing Sector	112
4.4.7	Correlation Matrix of CS Determinants and Human Capital for Food Processing Sector	114
4.4.8	Correlation Matrix of CS Determinants and Human Capital for Textile Sector	116
4.4.9	Correlation Matrix of CS Determinants and Human Capital for Household Goods Sector	118
4.5	Regression Analysis	120
4.5.1	Effects of CS Determinants on Debt with Overall Sample	120
4.6	The Effect of Human Capital on Short-term Debt by Moderating Size of Firm	143
4.7	The Effect of Human Capital on Long-term Debt by Moderating Firm Size	146
4.8	The Effect of Human Capital on Total Debt by Moderating Firm Size	149
4.9	Summary	163
5	DISCUSSIONS AND CONCLUSION	164
5.1	Introduction	164
5.2	Overview of the Study	164
5.3	Discussion of Findings	165
5.4	Empirical Findings and Discussions	166
5.4.1	Findings from Overall Sample Analysis	166
5.4.2	Findings from Automobile & Parts Sector	167
5.4.3	Findings from Chemical Sector	167
5.4.4	Findings from Construction & Materials Sector	168
5.4.5	Findings from Electricity Sector	168
5.4.6	Findings from Food Processing Sector	169
5.4.7	Findings from Oil & Gas Sector	169

5.4.8	Findings from Textile Sector	170
5.4.9	Findings from Household Goods Sector	170
5.5	Summary of Capital Structure Determinants	171
5.5.1	Impact of Size	171
5.5.2	Impact of Tangibility	172
5.5.3	Impact of Profitability	172
5.5.4	Impact of Growth	173
5.5.5	Impact of Non-debt Tax Shield	174
5.5.6	Impact of Dividend Payout	175
5.5.7	Impact of Firm Age	175
5.5.8	Impact of Business Risk	176
5.5.9	Impact of Uniqueness	176
5.5.10	Impact of Liquidity	177
5.6	Impact of Human Capital	178
5.7	Moderating Effect of SIZE between HC and CS	179
5.8	Summary of Research Questions	180
5.8.1	Research Question 1	180
5.8.2	Research Question 2	180
5.8.3	Research Question 3	181
5.8.4	Research Question 4	182
5.8.5	Research Question 5	182
5.9	Contribution to the Knowledge	183
5.10	Implications of the Study	184
5.11	Limitations of the Study	185
5.12	Suggestions for Future Research	186

REFERENCES

188

LIST OF TABLES

TABLE NO.	TITLE	PAGE
2.1	Overview of Literature	72
3.1	Definitions of Dependent Variables	79
3.2	Measures of Variables and Hypothesized Signs	95
4.1	Distribution by Sectors	98
4.2	Descriptive Statistics	100
4.3	Correlation Matrix of CS Determinants and HC for Overall Sample	103
4.4	Correlations Matrix of CS Determinants and HC for Automobile & Parts Sector	105
4.5	Correlations Matrix of CS Determinants and HC for Chemical Sector	107
4.6	Correlations Matrix of CS Determinants and HC for Construction & Materials Sector	109
4.7	Correlations Matrix of CS Determinants and HC for Electricity Sector	111
4.8	Correlations Matrix of CS Determinants and HC for Food Processing Sector	113
4.9	Correlations Matrix of CS Determinants and HC for Oil & Gas Sector	115
4.10	Correlations Matrix of CS Determinants and HC for Textile Sector	117
4.11	Correlations Matrix of CS Determinants and HC for Household Goods Sector	119
4.12	Multicollinearity Test Results for All Sectors	121

4.13	Results of Heteroscedasticity Test of CS Determinants and Short-term Debt	123
4.14	Results of Heteroscedasticity Test of CS Determinants and Long-term Debt	124
4.15	Results of Heteroscedasticity Test of CS Determinants and Total Debt	125
4.16	Results of OLS Regression of CS Determinants and Short-term Debt	127
4.17	Results of OLS Regression of CS Determinants and Long-term Debt	128
4.18	Results of OLS Regression of CS Determinants and Total Debt	129
4.19	Results of Heteroscedasticity Test of Human Capital and Short-term Debt	130
4.20	Results of Heteroscedasticity Test of Human Capital and Long-term Debt	131
4.21	Results of Heteroscedasticity Test of Human Capital and Total Debt	132
4.22	OLS Regression between Human Capital and Short-term Debt	133
4.23	OLS Regression between Human Capital and Long-term Debt	134
4.24	OLS Regression between Human Capital and Total Debt	135
4.25	Heteroscedasticity Test between CS Determinants, Human Capital and Short-term Debt	137
4.26	Heteroscedasticity Test between CS Determinants, Human Capital and Long-term Debt	138
4.27	Heteroscedasticity Test between CS Determinants, Human Capital and Total Debt	139
4.28	Results of OLS Regression between CS Determinants, Human Capital and Short-term Debt	140
4.29	Results of OLS Regression between CS Determinants, Human Capital and Long-term Debt	141

4.30	Results of OLS Regression between CS Determinants, Human Capital and Total Debt	142
4.31	VIF and Tolerance Tests	144
4.32	Heteroscedasticity Test	144
4.33	The Result of the Least Square Regression with Robust Standard Errors to Examine the Effect of HC on CS by Moderating SIZE	145
4.34	VIF and Tolerance Tests	147
4.35	Heteroscedasticity Test	147
4.36	The Result of the Least Square Regression to Examine the Effect of HC on LTD by Moderating SIZE	148
4.37	VIF and Tolerance Tests	150
4.38	Heteroscedasticity Test	150
4.39	The Result of the Least Square Regression to Examine the Effect of HC on LTD by Moderating SIZE	152
4.40	Results of Fixed or Random Effects Analysis of CS Determinants, Human Capital and Short-term Debt	154
4.41	Results of Fixed or Random Effects Analysis of CS Determinants, Human Capital and Long-term Debt	155
4.42	Results of Fixed or Random Effects Analysis of CS Determinants, Human Capital and Total Debt	156
4.43	Results of Generalized Method of Moments (GMM) of CS Determinants, Human Capital and Short-term Debt	157
4.44	Results of Generalized Method of Moments (GMM) of CS Determinants, Human Capital and Long-term Debt	158
4.45	Results of Generalized Method of Moments (GMM) of CS Determinants, Human Capital and Total Debt	159
4.46	OLS, Fixed Effects, Random Effects and GMM analyses for STD	160
4.47	OLS, Fixed Effects, Random Effects and GMM analyses for Long-term Debt	161
4.48	OLS, Fixed Effects, Random Effects and GMM analyses for Total Debt on Overall Sample	162

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
2.7	Conceptual Framework	74

LIST OF ABBREVIATIONS

MM	-	Modigliani and Miller
TOT	-	Trade-off Theory
POT	-	Pecking Order Theory
STD	-	Short-term Debt
LTD	-	Long-term Debt
TD	-	Total Debt
SIZE	-	Firm Size
TANG	-	Tangibility
PROF	-	Profitability
GROW	-	Growth
NDTS	-	Non-debt Tax Shield
DPO	-	Dividend Payout
AGE	-	Firm Age
RISK	-	Business Risk
LIQ	-	Liquidity
UNIQ	-	Uniqueness
HC	-	Human Capital
OLS	-	Ordinary Least Square
GMM	-	Generalized Method of Moments
PES	-	Pakistan Economic Survey

CHAPTER 1

INTRODUCTION

1.1 General Overview

Today's competitive environment has made the managers cautious and more aware about how to finance their business activities and manage capital structure. Capital structure has widely been discussed during the last five decades in the field of corporate finance after the originative work of Modigliani and Miller (1958). After the inclusion of MM irrelevance theorem, pecking order and trade-off theories came into being as the basic theories in the area of capital structure that firms have always been following. Literature pertaining to determinants of capital structure has widely been categorized in these two theories (Atiyet, 2012). Corporate finance has been explained by each theory differently. This development encourages the managers to focus on how to maximize the firm's overall value. Capital structure is usually being managed with the help of two major theories, i.e. trade-off theory and pecking order theory. Trade-off theory actually supports the leverage to construct capital structure by assuming leverage-benefits. Through balancing the gains from interest payments and costs of issuing debt, the most advantageous level of leverage can be achieved. Financially, debt is considered beneficial because of the debt-tax-shields that help to minimize expected tax bills and maximize the after-tax cash flows (Modigliani and Miller, 1958). Trade-off theory hence predicts the cost and benefit analysis of debt financing to achieve optimal capital structure (Graham, 2000). On the contrary, the other prominent theory related to capital structure is pecking order theory that focuses to finance firm operations with its internally generated sources first, i.e.

retained earnings rather than issuing debt and equity (external financing). Pecking order theory (Myers, 1984; Myers and Majluf, 1984) argues to minimize the firm's insiders-outsiders issues related to information asymmetry by following a particular financing hierarchy. The theory gives a clear idea that the managers first prioritize the retained earnings to finance their activities and if they need more funds, they choose to issue debt; lastly, when issuing more debt makes no sense, equity is issued. Pecking order theory, on one side, supports the assumption that high profitable firms would most likely finance their activities with internal funds and would tend to lower the level of debt ratio. Whereas trade-off theory also depicts the positive relation between leverage and profitability by reporting that the high profitable firms prioritize their investments with external finance to shield the income from taxes with the help of leverage. Almost a decade ago, a new theory has been developed called market timing theory (Baker and Wurgler, 2002). This theory suggests corporations favour external equity, and favour debt otherwise, once the charge of equity is low down. There is a perception among business directors that their dodgy securities are mispriced by marketplace.

Since MM Theorem (1958) was presented, various studies have been presented by researchers to explain the variations in leverage ratios across firms among different countries. As explained by DeAngelo and Masulis (1980), trade-off theory explicated the relevance of debt with existence of bankruptcy costs and taxes. Generally, it is explained by this theory that the combination of tax advantages of debt and leverage costs creates an optimum capital structure below 100% debt financing, as the tax advantage of debt is traded against the likelihood of incurring bankruptcy costs (Wijst and Thurik, 1993).

Research work on capital structure determinants in the beginning was being mainly contributed by United States. However, studies based on merely one country may not represent the whole lot of developing or developed countries and their economic or traditional environments (Antoniou *et al.*, 2002). During 1980s, this research work widened to Japan and Europe (Nagano, 2003). To extend this research, Rajan and Zingales (1995) further broadened the scope and presented the results on

G-7 countries, which remained similar to those factors that influenced leverage of U.S firms.

No any particular theory has been successful to provide empirical evidence to measure leverage ratios in time-series and cross-sectional patterns (Parson and Titman, 2009; Graham and Leary, 2011). Nevertheless, firm level factors have been identified by several theories, which reliably explain the changes in financial debt ratios (Lemmon *et al.*, 2008; Frank and Goyal, 2009a). Capital structure theories are determined with the help of proxies and observable leverage factors that drive these theories, for instance, information asymmetry and financial distress. However, such relationships and expected signs are not yet clear, therefore to examine such factors that are relevant to corporate leverage is very important (Drobetz *et al.*, 2013).

1.2 Background of the Study

By going through the literature on traditional theories of capital structure, it has been noticed that every financing decision is a heedful move around the leverage ratio. Nevertheless, actual and optimal leverage ratios might differ due to changes in information asymmetry, growth opportunities, level of investment, past stock returns, market conditions and macroeconomic conditions. On the other hand, pecking order theory predicts that information asymmetry costs overcome the trade-off costs. Those firms seeking investment opportunities to finance their projects borrow from financial institutions and face an adverse selection problem. If managers know about the opportunities for firm to invest, then the securities issued by the firm that are sensitive to market will be penalized by the market (Myers, 1984). Hence, hierarchal pecking order choices are made: internal funds are preferred over external funds, and then debt is preferred over equity (Frank and Goyal, 2005; Lemmon and Zender, 2008; Mazen, 2012).

This debate about how a firm opts its capital structure, started around five decades ago when Modigliani and Miller (1958) presented their groundbreaking

study (Myers, 2001). Their study diverted the researchers' attention towards capital structure. In modern times, theory of business finance begins with the irrelevance proposition of capital structure by Modigliani and Miller (1958). Before their study, there was no any generally accepted and published theory regarding capital structure. According to them, "the market value of any firm is independent of its capital structure" and that a firm has a special set of expected cash flows. To finance its assets, when a firm selects a certain proportion of equity and debt, it divides up cash flows among investors. Both the firms and investors are supposed to have equal opportunities to access financial markets that allow homemade leverage. Consequently, firm's leverage has no impact on firm's market value. Their theory shaped the early development of capital structure.

For a long time, practitioners and scholars have given much importance to the subjects related to the capital structure of the companies. The questionable issue here is whether the capital structure of the companies is managed knowingly (trade-off theory) or random processes are involved to pursue optimal capital structure determined by investment options, dividend policy, historical profitability and the conditions related to capital market (pecking order and market timing theories). According to Gaud *et al.* (2005) and Graham *et al.* (1998), several authors argue that there is no consensus among the capital structure theories which could provide the satisfactory description to take appropriate financing decisions. A few studies (for example, Mayer and Sussman, 2004; Tucker and Stoja, 2004; Farhat *et al.*, 2006) conclude that the companies in long run don't actually pursue the target leverage ratio, but seems like pecking order behaviour dominates on capital structure decisions in short-run. It is observed that the gap between target and observed capital structure is gradually reduced by the companies once they are driven away from their target level. When the adjustment speed is higher, the partial adjustment behaviour leads to trade-off theory. In other case, those determinants remain dominant which are related to pecking order theory. Again, contradictory results can be seen in studies, this might be happening because different authors use different leverage specifications in different ways. In recent studies, for example, results by Flannery *et al.* (2004) depict the adjustment speed of one third per year, whereas the results by

Farhat *et al.* (2006) and Huang and Ritter (2009) show that the firms keep on moving slowly towards their target leverage. However, the puzzle still remains unsolved.

During recent decades, the finance has gained much importance in accordance with economic growth, where the researchers have been trying to determine the strong financial markets and enhance the economic growth (for instance, Amable and Chatelain, 2001; Durham, 2002; Wurgler, 2000; Rousseau and Xiao, 2008). Efficient financial markets hence can mobilize foreign and domestic financial resources and can also allocate these resources to the most profitable and productive investments. By enforcing market discipline economic growth can also be contributed by facilitating transactions, pooling risks and enhancing corporate governance (ESCWA, 2004). Usually, two different sources of financing are chosen by firms to finance their projects from financial markets: by debt issuance (bond or credit markets) or stock issuance (equity market). The term “capital structure” in this regard, pertains to the way that how corporations decide the combination of debt and equity to finance their projects. Although, these two sources (debt and equity) complement each other when it comes to finance investments projects, but at the same time, differ in nature. It’s important to look for the best alternate to finance each investment. A firm would seem financially risky if it has got too much debt. By getting too much debt, firm can be endangered to downfalls in business and changes in interest rates. On the other hand, if a firm gets too much equity, this would dilute the ownership interest and external control will dominate the firm. This generally shows that business assets are not being utilized properly to run the business effectively. This discourages the investors, because in this way less profit would be distributed among them. This is why one cannot come up with a perfect recipe with respect to best debt-equity choice. Financial economic literature is full of so many theorems describing attainment of optimal capital structure. Each theorem describes different approaches and methods of corporate financing under certain propositions, assumptions and conditions (Eldomiaty, 2008). That is why literature on capital structure theories and determinants does not contain any single explanation or finding.

During recent years, in corporate finance, optimal capital structure has been considered as a fundamental problem, due to which researchers have given it much importance and attention. Managers related to the field of corporate finance attempt to determine the best mix of the money that how much should be from banks or lenders without jeopardising the business or to find the best capital structure choice in terms of paying their shareholders risk/reward. It has also been noticed that many researchers are trying to figure out the determinants that affect the optimal capital structure of a firm. This study, hence, tries to provide the results which will help the top management of the firms to make financial decision-making while considering the importance of these determinants.

There is no doubt that Modigliani and Miller theorems (1958; 1961; 1963) laid the foundation stone to begin the research on capital structure theories, optimal capital structure and financial decision making. Generally, it is considered to be purely theoretical assumption established on another assumption that capital structure is not influenced by important elements.

The core issue discussed and investigated inside the literature of business finance is capital structure (Kouki and Said, 2012). When Modigliani and Miller (1958) offered their article “The Cost of Capital, Corporation Finance and the Theory of Investment”, at that point of time the new theory of capital structure set off. According to their demonstration, the preference among debt financing, equity financing and the firm’s value is incompatible to its structure of capital. They also presumed resistance less and ideal capital markets (Myers, 2001). Moreover, the suppositions of the best capital marketplace and development of two vital propositions concerning decisions of business finance regarding the risk and worth of the firms’ equity and debt securities (Ogden *et al.*, 2003) is also affirmed by Modigliani and Miller. Ever since the Modigliani and Miller’s article, investigators have talked about how fresh investment be supposed to financed, how quantity of debt of firm must be recognized, in addition to if firms have the best possible capital structure. An affluent theoretical structure has been completed by this to materialize and shape the preference of structure of capital of firm by means of utilizing diverse theoretical structures. These theories provide matching and probable details to the

firm's preference of capital structure. The theories depend on conventional aspects for instance returns of tax shield, whereas asymmetric facts are integrated by other theories involving the administration and the owners of the company, and it is also recommended by added theories that for indicating rationales to exteriors the capital structure can be utilized (Bancel and Mittoo, 2004).

On the issue related to human capital's impact on capital structure, a few studies have been conducted, and that even relate to developed countries only. Akyol *et al.* (2013) in this regard, examined the relationship between leverage and employee wages of unlisted firms of Netherlands. Insight into the commonality of their outcomes is provided by this test, for instance, Netherlands is a nation with an extra inclusive system of social security, which out-turns in on average lesser bankruptcy costs for workers in the Netherlands. Another pioneer study from United States in this regard, conducted by Chemmanur *et al.* (2013), showed that the employee pay has significant and positive impact on leverage.

These both studies tried to investigate the impact of leverage on human capital. However, this study tried to explore the reverse relationship, i.e. impact of human on leverage. Human capital is considered the most important asset for any organization. There exists lack of empirical studies which may help the management consider this variable while making financial decisions. Hence, this study tried to explore the role of human capital in corporate financial decision-making in non-financial firms of Pakistan. The issue is further discussed in problem statement. Furthermore, previous studies show that there is somewhat relationship between firm size and human capital. Therefore, this study also used firm size as a moderator between the human capital and leverage to investigate whether this strengthens or weakens the relationship between the dependent and independent variables.

1.3 Problem Statement

This study chooses a developing country from Asian markets, Pakistan. During 1960s Pakistan was considered to be a successful economic model around the globe, but during the past few decades the country has been victim of fast growing population, steady foreign remittances, slow growth rate and political disruption. Pakistan was affected by global financial slow-down during 2008-09, and the country had to seek financial assistance from International Monetary Fund (IMF). Although, many other Asian developing countries, i.e. India, Malaysia, China, etc managed to tackle financial conditions without opting any financial assistance from IMF.

In modern corporate finance, the problem of corporate capital structure is still controversial (Lim, 2012). Since the study of Modigliani and Miller (1958), a superfluity of research has been executed to identify the determinants of capital structure. Corporate investments have important effects on both financing decisions (Lang *et al.*, 1996) and adjustment toward optimal capital structure (Clark *et al.*, 2009; Flannery and Hankins, 2007; Lemmon *et al.*, 2008) because capital expenditures tend to be mainly funded by internally generated cash flow (Myers, 1984). Myers (1984) explains that to retire the debt surplus may be used or to retire equity investment can be made on marketable securities. Hence, this concept of raising debt is coherent with the theory of free cash flow (Jensen, 1986) not with the pecking order theory. In addition, firms may be less/more sensitive to financial deficit than financial surplus, making the impulse of expanding debt for financing higher (lower) than that of retiring debt for soaking up financial surplus (free cash flow) (Zurigat, 2009).

Recent international studies of capital structure show that the financial orientation of the economy in which firms operate has a significant impact on the sources of financing available to them and hence their target adjustment behavior (Antoniou *et al.*, 2008; Mahajan and Tartaroglu, 2008; De Jong *et al.*, 2008). Antoniou *et al.* (2008) further show that firms' adjustments toward target leverage are also dependent on the macroeconomic system. For example, more creditor-

friendly bankruptcy laws, higher levels of ownership concentration, and closer relationships between firms and their banks may lead to firms' relative preference for debt financing among firms in bank-oriented economies. However, this strand of research remains silent on how firms' adjustment speeds may be asymmetrically determined by costs of deviations from target leverage and costs of adjustment toward such targets.

Al-Najjar (2011) determines that the recent development in explanations and theories has provoked empirical research in this field. Like other authors, Al-Najjar (2011) also describes the same that no consensus has been achieved yet. He further adds that most of the studies have been conducted in developed countries, i.e. UK and U.S. and not many studies have used the data from developing countries to test the capital structure theories (Ba-Abbad and Ahmad-Zaluki, 2012). Likewise, Chang *et al.* (2014) also mention in their study that vast literature on capital structure relates to United States. Hence, the empirical evidence on capital structure has limited evidence from developing countries and that the most of the studies are restricted to developed countries only.

Although, number of studies have been conducted in developed countries on this issue, but the studies among developing countries are still scarce. Very few studies (e.g. Booth *et al.*, 2001; Bessler *et al.*, 2011) have included Pakistan along with other developing countries to see the impact of factors that affect capital structure. Until now, there is lack of concrete evidences that could answer these questions:

- (i) What is the debt ratio adopted by non-financial companies in Pakistan?
- (ii) What are the determinants which affect leverage choices of these firms?
- (iii) Are they (factors) same which have been pointed out in literature by studies from developed countries or from other developing countries?

There are still controversial results shown by the researchers. These differences can be seen in the results from one study to another study. Below is the example of few classical researchers depicting disagreements:

- (i) **Results from U.S.** (Titman and Wessels, 1988): Leverage is not affected by tangibility, financial distress (volatility), non-debt tax shield and growth. However, impact of firm size is positive on leverage.
- (ii) **Results from developing countries** (Haris and Raviv, 1991): Tangibility, firm size, non-debt tax shield and growth increase level of leverage, and profitability and volatility (financial distress) decrease leverage.
- (iii) **Results from ten different developing countries** (Booth *et al.*, 2001): Volatility (financial distress) and tangibility are positively correlated to leverage in 4 out of 10 countries.

It can be noticed that such classical studies in the field of corporate finance also differ in terms of findings when it comes to the optimal capital structure or its determinants. In accordance with the results, it is still questionable that which model best defines the determinants of capital structure. On the basis of such contradictory findings, this study employed several firm-level determinants including human capital as independent variables to address this issue.

Nonetheless, the concerns of most capital structure studies are in developed countries (Bevan and Danbolt (2002) (the UK), Antoniou *et al.* (2002) (UK, Germany, and France), Hall *et al.* (2004) (European SMEs), Akhtar (2005) (Australia), Akhtar and Oliver (2009) (Japan), Muradoğlu and Sivaprasad (2012) (UK), Kouki and Said (2012) (France), Hernádi and Ormos (2012) (Europe)). Previous research on the capital structure of Pakistani enterprises is limited. Pakistan is absent in international analyses of capital structure in developing markets (e.g. Deesomsak *et al.*, 2004; Harvey *et al.*, 2004) and only a few country specific peer-reviewed studies are discernible (Booth *et al.*, 2001; Bessler *et al.*, 2011).

There are few studies that offer evidence from developing countries such as, Wiwattanakantang (1999) (Thailand), Booth *et al.* (2001) (Brazil, Mexico, India, South Korea, Jordan, Malaysia, Pakistan, Thailand, Turkey, and Zimbabwe), Pandey (2001) (Malaysia), Chen (2004) (China), Omet and Nobanee (2001) (Jordan), Al-Sakran (2001) (Saudi Arabia), and Buferna *et al.* (2005) (Libya), Newman *et al.* (2012) (China), Chakraborty (2010) (India), Al-Najjar (2011) (Jordan), Mouamer (2011) (Palestine), Dawood *et al.*, (2011) (Egypt). In addition, some capital structure studies have used cross-country comparisons between developed and developing countries such as Deesomsak *et al.* (2004) (Thailand, Malaysia, Singapore, and Australia), Supanvanij (2006) (Japan, Hong Kong, Singapore, Korea, Thailand, Malaysia, Taiwan, and Philippines), and Kim and Berger (2008) (the US and Korea).

Among the developing countries, especially in Pakistan, there is still lack of research on capital structure's puzzling issue. Quite a few studies are available on this issue and that even with limited scope. Hence, the problems still exist for the managers while dealing with capital structure and financial decision-making. Umar *et al.* (2012) tried to demonstrate that the capital structure is still controversial and puzzling, particularly in emerging markets, such as Pakistan. Further studies should examine the determinants of capital structure of the Pakistani companies, such as growth and size and business risk, etc. Such facts motivate to conduct a comprehensive study on capital structure with a broad scope and large data set.

Research conducted by Ahmad *et al.* (2011) used Pakistani non-financial firm's data, so the results of this study could not be generalized according to sectors. They determined that future studies can be conducted by using the data from other sectors of Pakistan economy or other developing country non-financial data. Their study used five previously studied variables (profitability, size, growth, tangibility of assets, non-debt tax shield), and added three new variables (tax, liquidity and payout), which were not used previously in Pakistani context. According to Umar *et al.* (2012), more studies should examine the determinants of capital structure of the Pakistani companies, such as growth and size and business risk.

In addition, studies in Pakistan in this area are not only rare but controversial as well. Mahmud and Qayyum (2003) focused on factors that affect firm's capital structure decisions in Malaysia, Japan and Pakistan. He found that high leverage ratio was shown by Japan and Pakistan because of under developed market of Pakistan and developed market of Japan which provokes banks to choose bank loans rather than equity. Qureshi and Azid (2006) identified that the public sector preferred financing through debts due to low corporate governance, favourable terms and conditions of commercial banks and lesser accountability than private sector. It has been examined by Shah and Khan (2007) that the leverage ratio for textile industry was higher and due to family controlled businesses average profitability of textile industry has been found negative, as family controlled businesses state low profitability. By examining the cement sector of Pakistan, Hijazi and Tariq (2006) found that the results were highly significant except the size of the firm and he has rejected static trade-off theory. Kanwar (2007) examined the sugar industry of Pakistan and he found that asset tangibility, return on assets, size and market to book ratio are significant except tax rate. Chemical industry of Pakistan was examined by Rafiq *et al.* (2008) and noticed that chemical sectors prefers more equity financing over debt financing.

Furthermore, there is a lack of comprehensive studies on leverage on sectors in Pakistan. There are quite a few studies available and that even with limited data, limited scope and limited findings, which do not resolve the problems that are being faced by the finance managers to deal with leverage. This study conducts analysis on several non-financial sectors. Not only this, the study also sheds light (in Chapter 5) on the problems that currently or during past few years have been faced by every sector. This will assist the managers, firm owners and investors to make financial decisions in accordance with the findings available on particular sector.

In addition, another important dimension of this study is to look into human capital's interaction with capital structure which has rarely been investigated (Chemmanur *et al.*, 2013; Akyol and Verwijmeren, 2013). Chemmanur *et al.* (2013) claim that they are the first to examine whether the human capital cost is an important determinant of capital structure as described in literature. This has not been

investigated in any developing country yet; hence, this study further looks into the insights by using data from a developing country, i.e. Pakistan, whose results can further be generalized in developing economies. In addition, Akyol and Verwijmeren (2013) tried to investigate the impact of leverage on human capital costs whereas this study tried to investigate the reverse impact, i.e. impact of human capital on leverage to have a closer and better insight on the relation.

Moreover, researchers generally accept this fact that human capital is considered the most important part of any organization and different sized companies pay different wages to their employees (Ahn, 2006; Arbache, 2001; Fox, 2009). Akyol and Verwijmeren (2013) also concluded that the firms with higher level of leverage tend to pay more to their employees.

It can be said that there exists a relationship between size and human capital. This study contributes more to the limited literature and findings available, by investigating the moderating role of firm size between human capital and capital structure to examine whether the firm size plays any role between human capital and leverage. There is a need to understand what happens with the leverage when firm size significantly plays role. This investigation would help the managers and investors to further understand the complex relationship between firm size, human capital and leverage.

1.4 Research Questions

The present study is aimed to examine the impact of determinants of capital structure among non-financial firms listed on Karachi Stock Exchange and to examine the impact of human capital on capital structure. Following research questions were focused in this study:

1. What is the relationship between firm- and sector-level variables, human capital and leverage?

2. To what extent determinants of capital structure influence significantly to firm leverage across the non-financial firms listed on Karachi Stock Exchange?
3. To what extent the determinants of capital structure impact the leverage among different non-financial sectors?
4. To what extent human capital influences the capital structure of the firms across different non-financial sectors?
5. Does firm size play moderating role on the relationship between human capital and capital structure?

1.5 Research Objectives

Present study is an endeavour to investigate empirically the following research objectives among firms listed on Karachi Stock Exchange.

1. To determine the relationship between firm- and sector-level variables, leverage and human capital.
2. To examine empirically the intensity of capital structure determinants influence significantly to the leverage of the firms among the non-financial firms listed on Karachi Stock Exchange.
3. To what extent capital structure determinants predict significantly the firm leverage across different non-financial sectors.
4. To investigate the impact of human capital on the capital structure across different non-financial sectors.
5. To determine the moderating role of firm size on the relationship between human capital and capital structure.

1.6 Significance of the Study

This proposed study helps to investigate and understand the mechanism of capital structure. This study fills the theoretical gap by investigating the relation between capital structure and human capital, which has not been investigated in any developing country yet. The study further enriches the empirical evidence on the relationship of determinants of capital structure and leverage, which has been seen controversial in literature.

Most of the studies have been conducted in developed markets. Hence, this study provides an authentic knowledge to the financial managers related to developing markets, importantly, Pakistan. As Umar *et al.* (2012) explain that more research is required in this field to better understand the complexity of capital structure. This study tried to fill up this gap left in literature by testing and extending the existing models (i.e. addition of human capital in existing model) to monitor leverage ratio.

No consensus has been made regarding the financial decision making of firms, with respect to leverage. This study also provides the knowledge to understand about how firms decide their leverage policies and which theory of capital structure is significant in terms of Pakistan. Determinants also play vital role here, since the complexity of developing markets differ from those of developed ones. Hence this study also helps to understand the complexity of determinants in terms of financial decision making by firms as there is lack of consensus again in literature. This study tried to fill the gap in empirical evidence in terms of developing markets, as most of the studies focus on merely developed markets.

A few studies (world-wide) have been conducted on developing countries which included Pakistan as well (See e.g. Booth *et al.*, 2001; Bessler *et al.*, 2011). This study enriches the literature on those factors affecting capital structure. This study will probably be helpful for top managements of firms conducting their business in Pakistan to take financial decisions more efficiently and to understand the significance of leverage and human capital.

1.7 Justification for Choosing Pakistan

Like any other country in the world, Pakistan has also distinct features, i.e. language, religion, rules, regulations, laws, ethnicity, culture, GDP, growth rate, inflations rate, literacy rate and geographic location etc. These features guide production and restrict the individuals' consumption behaviour. This study was conducted in Pakistan, which is a developing country with different institutions setting that affects the firms' financing decisions. Institutional setting in Pakistan consists of fixed income/bond market, tax laws and economic conditions.

According to Klynveld Peat Marwick Goerdeler (KPMG) international survey (2008), corporate tax rate in Pakistan has remained 35% from 2002 onward. Still, the corporate tax rate for public, private and banking companies is still 35% in 2012-13. Income tax for small companies is 20%. In Pakistan, a small company means a company having less than 250 workers and less than PKR 250 million turnover. Corporate tax rate remained 35% in Pakistan in 2013 as compare to 33.99%, 25%, 27.5%, 25% and 20% in India, Malaysia, Bangladesh, China and Afghanistan respectively (KPMG, 2013). This shows that many countries have decreased their corporate tax rates to attract foreign direct investment. This study employed a variable, i.e. non-debt tax shield, which will act like a proxy to see this tax-related impact. The findings will provide much understanding of leverage in a developing country like Pakistan, which may also be generalized in other developing countries as well.

1.8 Scope of the Study

This study was conducted regarding the investigation of determinants of capital structure that are related to 'leverage' chosen by the listed non-financial Pakistani firms. The proposed study was to conduct research on capital structure determinants and the impact of human capital on capital structure. Secondary data

was employed to conduct research on non-financial firms listed on Karachi Stock Exchange (KSE).

This study was conducted on a wider and broader scope. Several variables have been investigated over capital structure. Not only this, the study also employed a unique variable in the field of corporate finance, i.e. human capital. Their impacts have not only been investigated on overall data, but also among different non-financial sectors. The companies for which the data was gathered belong to eight different sectors namely, automobile and parts, chemicals, constructions & materials, electricity, food processors, oil & gas, textile, and household goods. The classification is provided in Table 4.1.

1.9 Limitations of the Study

Below are few limitations of the study:

1. Results specially relate to Pakistani market, but they do illuminate generality of capital structure rival models. Many structural characteristics of Pakistan's capital market are present in other developing countries as well. Thus, the findings from this study may assist to furnish the basis for comparative studies both in the region and in other developing markets.
2. Second limitation might be the usage of proxies in this study. Even though, these proxies were defended theoretically and empirically, but still, proxies might not accurately represent theoretical propositions. In addition, it is difficult to look for those proxies that are not related to one another. However, this problem of proxy variable is common in all empirical studies regarding the field of capital structure.

1.10 Operational Definitions of Variables

Operational definitions of variables that are considered in this study are as follows:

1.10.1 Capital Structure

The term capital structure refers as to how an organization finances its assets via debt and equity (Al-Farisi and Hendrawan, 2012). Moreover, it can be explained as an organization's financial framework that is the mixture of equity and debt. Growth and performance of an organization depend upon the selection of the capital structure. Hence, it is important for an organization to choose optimal or near to optimal capital structure for better performance (Arbabiyan and Safari, 2009).

1.10.2 Firm Size

The bigger the firm, the more it has capability to acquire debt financing (Fama and French, 2002). This study used natural logarithm of total sales to measure the firm size (Hernadi and Ormos, 2012).

1.10.3 Tangibility

According to Harris and Raviv (1991), a firm's tangible assets have greater value of liquidation. More tangible a firm acquires, the more it can acquire debt. This study measured tangibility of a firm by fixed assets over total assets (Chen *et al.*, 2013).

1.10.4 Profitability

Profitability of a firm can also be considered as an important determinant of capital structure (Chen and Chen, 2011b). This study measured profitability of a firm as earnings before interest and tax over total assets (Nadaraja *et al.*, 2011).

1.10.5 Growth

Companies with greater growth opportunities look forward to external sources of financing (Hall *et al.*, 2004). This study measured growth of a firm by applying the geometric average of five-year sales growth to total asset growth (Delcoure, 2007).

1.10.6 Non-Debt Tax Shield

According to DeAngelo and Masulis (1980), non-debt tax shield (NDTS) is an alternative for the debt financing tax benefit similar to investment tax credits and depreciation tax deduction. This study measured NDTS by total depreciation expense over total assets (Dang *et al.*, 2012).

1.10.7 Dividend

It has been suggested by Chen and Chen (2011b) that dividends are signal of financial health to outsiders. This study measured dividend payout ratio by dividend per share over earning per share (Al-Najjar, 2011).

1.10.8 Firm Age

Age of a firm may also be linked to capital structure as a determinant. Here, age of a firm means the date of incorporation (Akhtar and Oliver, 2009).

1.10.9 Business Risk

Business risk or probability of bankruptcy may be considered as an important determinant of capital structure. This study measured business risk by taking standard deviation of return on assets (Hernadi and Ormos, 2012).

1.10.10 Uniqueness

Firms which manufacture specialized or unique products suffer from more costs in the event that they liquidate (Titman and Wessels, 1988). Because their suppliers and workers have certain specialized skills related to their jobs that might be hard for them to cash out in any other operation (Hsu and Hsu, 2011). This study measured uniqueness as selling expense over sales (Shahjahanpour *et al.*, 2010).

1.10.11 Liquidity

Liquid assets increase firms' ability to obtain debt finances. Liquid assets can be sold without significant loss of their value, making better collateral for the lender. Therefore, debt is used as lenders face lower costs in financing such assets (Al-Najjar, 2011). This study measured liquidity by current assets over current liability (Mouamer, 2011).

1.10.12 Human Capital

Human capital is considered as an important element for any organization. Every organization requires having this asset in order to sustain. This study measured human capital as by total wages of employees over total assets (Ting and Lean, 2009; Pratt, 2011).

1.11 Thesis Outline

The outline of the thesis is as follows; first chapter describes the general overview, problem statement and objectives. Second chapter presents the detailed literature for capital structure determinants, human capital and prevailing theories. Third chapter describes the methodology. Sample is presented together with explanations of proxies and statistical models. Data analysis has been carried out in fourth chapter where results have been reported. Last chapter concludes the thesis with explanation of empirical findings and suggestions on future research.

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