



Evidence of Capital Structure Discipline in Financial Markets: A Study of Leasing and Insurance Companies of Pakistan

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Abstract

This paper examines the explanatory power of optimal capital structure theories. The study extends empirical work on capital structure determinants of leasing and insurance companies of Pakistan over the period of ten years from 2001 to 2010. The study presents evidences on financial sector determinants with respect to capital structure. Findings of the study validated that both static trade-off theory and pecking order theory are pertinent to financial sector of Pakistan; in particular leasing and insurance sectors. Results for insurance and leasing companies in terms of profitability and liquidity have predicted pecking order theory; whereas, static trade-off model is predicted the financial behavior of firms in terms of size, tangibility and growth.

Keywords: Static Trade-off, packing order, capital structure, financial market, insurance companies, leasing companies.

Introduction

The modern theory of corporate finance was born with the publication of seminal work of Miller and Modigliani¹. In spite of widespread research of five decades; the theory of irrelevancy of capital structure Miller and Modigliani still considered the fertile area for discussion in corporate finance. Although theory based on certain propositions but it has provided grounds for further theoretical developments in the area of capital structure; namely, agency cost theory, static trade-off theory, signaling theory and pecking order hypothesis^{2,3,4}. In the purview of seminal work of Miller and Modigliani, substantial part of literature on capital structure based on listed firms from non-financial sector; however financial sector of both developed and developing markets has received limited attention.

Studies on capital structure up to now have mostly focused on non-financial sectors. Mostly the strand of literature on capital structure has excluded financial sectors (Banks, Leasing and Insurance Companies, and Development Finance Corporation) on the grounds that Financial Institutions are highly leveraged and in particular to capital structure; there are certain regulatory constraints on Financial Institutions. According to World Bank Development Indicators (2010), Pakistan is secondary emerging economy but the importance of capital structure is as significant as in developed markets but unfortunately there seems a limited work on capital structure to focus on financial sector of Pakistan. Little evidence in this context is found where studies have investigated the financing patterns of financial sectors. Highlighted the determinants of target capital structure in Asian capital markets,⁵ found that financing patterns of capital structure decisions vary across different industries. Likewise; as consequence of financial sector importance in the development of economy; to fill the existing research gap, the study in hand

is focused on financial sector to investigate the financing patterns of leasing and insurance companies in Pakistan.

Generally the contribution of this study is manifold. Larger thread is consisted on determinants of capital structure and financing behavior of leasing and insurance companies. Sub-section reveals brief overview of leasing and insurance sector in Pakistan. According to Pakistan Economic Survey (2011-2012), leasing is a mature business model in Pakistan. Since its incorporation in 1985, the leasing sector has shown significant growth and contribution in the economic development of Pakistan (Leasing Association of Pakistan). Remarkable increase in capital formation and investment in lease finance witnessed during 1995 to 2008; recorded investment in lease finance from PKR 2.95 billion in 1997 to PKR 83.3 billion in 2008. In the beginning, leasing industry was only focused on agriculture sector but consistent travelling towards maturity business stage, leasing companies enhanced their breadth and operations into heavy machinery, transportation, plants and industrial equipments. In particular, after the outbreak of global financial crisis, leasing companies engaged themselves in business portfolios to uplift the economy during economic downturn by helping other financial institutions in capital formation⁶. However, since the global economic turmoil, leasing industry is going through multitude of challenges, like low limited resources for mobilization, high level of non-performing assets and limited outreach.

On the other hand, the insurance market in Pakistan is generally, divided into two major components: life insurance and non-life insurance companies. In Pakistan insurance is regulated under the Insurance Ordinance 2000. In the past few years, it has transformed into a developing and fast growing market. Out of 54% contribution to GDP by services sector of Pakistan,

insurance, communication and financial sectors contributed 24 % share. According to Insurance Year Book (2012), there are 5 life insurance and 50 non-life insurance companies working under the regulatory governance of Securities and Exchange Commission of Pakistan. Analysis of firm specific and sector specific determinants of capital structure is a time needed issue to explore in order to generate valuable insights and erudite implications because the insurance companies are increasingly interested in capital structure financing patterns as they require optimal funds to settle contingency claims. Portfolio risk management is the prime area of every business today. The current business world cannot survive without using effective insurance tools as they need to hedge their multidimensional business risks, especially unsystematic risks associated with their investments and business operations to avoid potential business threats and unpredicted bankruptcy risk⁷.

The study organization is as follows: Section 2 comprised of theoretical framework and empirical literature review, Section 3 consisted on research methodology, Section 4 described the analysis and empirical findings; whereas, Section 5 is given study conclusion, provided policy directions and practical implications.

Literature Review: Following the seminal work of Miller and Modigliani¹, three conflicting theories have been developed, namely; pecking order hypothesis, agency cost and static trade off model. According to static trade-off theory (tax based theory), optimal capital structure could be obtained where the net debt tax benefit in the form of tax shield balances the leverage related costs that is called financial distress and bankruptcy costs^{8, 9}. According to tax-based theory, term 'issuance equity' refers that firm is moving away from optimum capital structure. Unleash the agency cost arisen due to divergence of control between management and sponsors of firms² regarded such financial setting of firms as target debt-ratio, however, he explained that managers are reluctant to issue equity when they feel it could be undervalued. In general, external stakeholders (investors) negatively react to 'fresh equity issue', therefore as consequence management also becomes reluctant to issue equity to minimize generalized undervaluation effects on existing shareholders. On the other hand, the pecking order theory proposed by Myers⁴ stated that firms follow financial order to finance new investment using first preference to retained earnings, then bank debts and finally with equity issue.

According to Jensen and Meckling² firm can achieve optimal capital structure by minimizing agency costs arising from the agency conflicts. Larger part of capital structure studies are based on data from developed countries^{10, 11, 12}. Few studies provided evidences from developing market^{13, 14, 15, 16}. Based on data from particular regions, few studies carried on cross-country and cross-industry comparison^{13, 17}. Other stand of studies focused on firm-level determinants of capital structure^{14, 29}. To analyze capital structure determinants of European banks⁷ executed a significant study and found that as compare to non-

financial sectors; banks have stable capital structure but their study could not validate the stark distinction between book and market value of banks' leverage that appeared to be the significant capital structure determinant in case of banks. In contrast to developed economies, Booth et al.¹³ investigated capital structure determinants of banks in the developing economies. Their study validated that capital structure determinants in terms of both book and market value of leverage are statistically significant. Discussion sources of capital¹⁸ indicated that FDI has significant impact on technology, management and capital generation in the transaction economies like India, Pakistan. In the purview of financial sector studies, determinants of capital structure of insurance companies were investigated by¹⁹ in which they found negative relationship between capital structure and insurers. They also explained that insurance firms respond to the shocks of higher risks by taking appropriate actions like raising more equity, raising policy premiums, and placement of limits on the numbers or the coverage of contracts. Furthermore, to ascertain the pertinence of pecking order and static trade-off theory, optimal capital structure was investigated by¹⁹ in perspective of insurance companies. Findings of their study revealed that as compare to pecking order hypothesis trade off theory is more validated in determination of capital structure in insurance companies.

Pakistan is secondary emerging economy as per World Bank Financial Indicators (2010), but in the context of capital structure, only few studies up to now have been conducted and majority of these studies focused on industrial or non-financial firms; whereas, a limited research is witnessed on financial sector^{16, 20}. Intention of this study is to find out determinants of capital structure in order to create awareness among business and stock investors to take prudent investment decisions in equity markets of Pakistan^{21, 22, 23}. The study in hand explores the capital structure determinants of leasing and insurance companies over the period 2001 to 2010. The study contributes by adding value to existing literature in many ways. In perspective of theory development, this study will provide path breaking insights for academic researchers by extending existing capital structure literature on financial sector which currently seems limited; whereas, in practical perspective, policy implications and important guidelines are given to credit analysts, financial managers, and business investors for prudent decision making.

Research Methodology

Data Collection: This study attempts to investigate the determinants of external financing of Leasing and Insurance Markets of Pakistan. A time period of 10 years from 2001-2010 is used for this empirical analysis. Data for insurance companies is taken from the publication of State Bank of Pakistan (Insurance Year Book). This data source provides useful information on key accounts of financial statements of all listed firms. For leasing companies, data are driven annual audited financials of leasing companies over the period 2001 to 2101. To include in the population, only those firms are selected which remained operational for the whole study period. It is also considered that

neither firm should be de-listed by KSE nor it should be in process of merger and acquisition during the span of study. Firms are also excluded from population where complete financial data was not available in any one of the study years.

Reliability of Data: To ensure the reliability of financial data used in the analysis, official statistics of central bank of Pakistan are used that are considered most reliable source of data. Following future research direction of existing studies, most significant explanatory variables are taken to develop the study model.

Variables of Study: Based on existing research gap, to inquire the capital structure determinants in leasing and insurance sectors, most significant predictors are selected to find maximum explained variance on endogenous variables. The model put leverage as dependent variable; size of firm, growth, profitability, tangibility, liquidity and risk are taken as independent variables. Brief discussion and measurement of independent and dependent variables are as follows:

Size of the firm: Various researchers are suggested that leverage may be related to size of the firm. Evidence provided by Ang et al²⁴. Suggested that cost of direct insolvency (bankruptcy) appears to comprise a larger fraction of firm's value as that value decreases. According to Harris and Raviv²⁵ size of the firm is positively correlated with leverage. Due to highly diversified business dimensions, default ratio in larger firms are relatively less than small firms, therefore size of the firm may be inverse proxy for the probability of insolvency. This is why size of the firm normally tends to show positive effect on supply of debt. On the other hand, size may also be proxy of information for outsiders, who can increase their preference for equity as compare to debt. In the purview of analysis by various authors, present study measures the size of the firm as the natural log of total assets and we expect a positive relationship of firm size and leverage²⁵.

Growth: It is argued by different studies on non-financial sectors that growth is inversely related with leverage of the firm. According to Myers³ the firms with more growth opportunities tend to kept non-tangible assets for future investments in comparison with firms having low growth opportunities. In this study, we measured growth as percentage of change in firms' total asset.

Profitability: According to pecking order hypothesis, firms follow a financial order and intend to use internal funds preferably, following by external mode of financing in shape of debt and market equity. Hence firms with greater profitability tend to use lesser leverage. Using Return on Assets (ROA) as proxy of profitability we predicted negative relationship between leverage and profitability.

Tangibility: Since tangible assets are used by firms as prime security, therefore by greater tangibility the firm can borrow on favorable terms. We measured tangibility as ratio of fixed assets to total assets. Like existing findings of Titman and Wessels²⁶; Wald²⁷ and Chen²⁸, this study is predicted positive relationship between leverage and tangibility.

Liquidity: Liquidity is the sign of short term solvency of firm. Liquidity ratio indicates ability of the firm to meet its short term obligations. According to Ozkan²⁹, firms with great liquidity tend to have lower level of leverage. We have measured liquidity as ratio of current assets to current liabilities.

Risk: The most important concern of insurance market is risk factor. Therefore this factor is taken as a significant determinant of capital structure in the context of insurance market. We measured risk as standard deviation of total claims divided by total premiums.

Table-1
Determinants of Capital Structure, measures and expected relationship with Leverage

Significant capital structure determinants	Measures	Expected effects
Size (<i>Leasing and Insurance Market</i>)	Natural Log of total assets	Positive
Growth (<i>Leasing and Insurance Market</i>)	% change in total assets	Positive
Profitability (ROA) (<i>Leasing and Insurance Market</i>)	Return before tax/Total Assets	Negative
Tangibility (<i>Leasing and Insurance Sector</i>)	Ratio of tangible fixed assets/total assets	Positive
Liquidity (<i>Leasing and Insurance Market</i>)	Ratio of Current assets/Current liabilities	Negative
Risk (<i>Insurance Market</i>)	Standard deviation of total claims divided by total premiums	Negative

Table-2
Descriptive Analysis

Variables	TDTA	Size	Growth	ROE	Tangibility	Liquidity
Mean	0.582047	8.367585	0.135981	0.022024	0.037628	2.614897
Median	0.635778	7.21332	0.21124	0.014258	0.012751	1.331286
SD	0.273604	1.265513	0.568754	0.076450	0.301231	5.338741
N	162	162	162	162	162	162

Table-3
Correlation Matrix

Variables	ROA	Size	Liquidity	Growth	Tangibility
ROA	1.000000				
Size	0.077909	1.000000			
Liquidity	0.093212	-.0467366	1.000000		
Growth	0.266301	0.14631	-.0129638	1.000000	
Tangibility	-.0275076	-.0126195	-.000992	0.160792	1.000000

Table-4
Regression Model

Variables	Standardized Coefficients	Sig.
Constant	0.1850*	0.121
Size	0.051**	0.000
Growth	0.087**	0.002
ROA	-.0854**	0.000
Tangibility	0.181	0.483
Liquidity	-.020**	0.000

Regression Statistics	
R. Square	0.600
Adjusted R. Square	0.421
F-statistics	132.205
*Significant	1% level
** Significant at 5% level	5% level

Table-5
Descriptive Analysis

Variables	Leverage	Size	Growth	ROA	Tangibility	Liquidity	Risk
Mean	0.482042	6.367581	0.145981	0.023023	0.027627	3.614897	0.057622
Median	0.735771	8.21331	0.21124	0.015256	0.0122752	1.331282	0.0322755
SD	0.373608	3.265513	0.448754	0.066451	0.201232	4.338742	0.401239

Table-6
Regression Model

Variables	Standardized Coefficients	Sig.
Constant	.728**	.001
Size	.738**	.000
Growth	.068	.160
ROA	-.189**	.004
Tangibility	.028	.511
Liquidity	-.249**	.005
Risk	.150*	.017

Regression Statistics	
R. Square	0.972
Adjusted R. Square	0.920
F-statistics	113.102
*Significant	1% level
** Significant at 5% level	5% level

Leverage: Leverage refers to the dependency of firm on external financing against sponsors' invested capital. The explain variable is measured as ratio of total debt to total assets.

Whereas: Leverage = Total Debt/Total Assets, TA = Total Assets, TD = Total Debt, ROA = Return on Assets, B_0 = Intercept of the equation, μ = Error Term

Specification of the Model: The multiple regression analysis which is also known as *common effect model* has been used in the study. This model has also been used in various studies of relevancy which facilitates to analyze the cross-sectional and time series data. Model equations for leasing and insurance sector are given:

Model Equation. "Leasing Market"

$$\text{Leverage} = \beta_0 + \beta_1 (\text{Size}) + \beta_2 (\text{Growth}) + \beta_3 (\text{ROA}) + \beta_4 (\text{Tangibility}) + \beta_5 (\text{Liquidity}) + \mu$$

Model Equation. "Insurance Market"

$$\text{Leverage} = \beta_0 + \beta_1 (\text{Size}) + \beta_2 (\text{Growth}) + \beta_3 (\text{ROA}) + \beta_4 (\text{Tangibility}) + \beta_5 (\text{Liquidity}) + \beta_6 (\text{Liquidity}) + \mu$$

Data Analysis: Descriptive Analysis/Correlation/ Regression Analysis: (Leasing Market): The following tables represent the 10 years summary of Mean, Median, Standard Deviation, correlation and Regression Analysis of Leasing Firms

Using multiple regression model, impact of six explanatory variables i.e. size, growth, profitability, liquidity, tangibility and risk on capital structure of leasing and insurance companies of Pakistan has investigated. In case of leasing companies, results of size, growth, ROA and liquidity variables have shown significant impact on firm leverage; whereas, tangibility reflected insignificant impact. According to findings of regression results, ROA has highly negative relationship with leverage that explained 85.4 % variance in relationship; whereas, firm size,

growth, liquidity found positive relationship with leverage. Results of all predictors are according to expectations except tangibility which found insignificant relationship with firm leverage. The model value of R square depicted 60 percent explained variance; whereas, rationale value of adjusted R square represented 42.1 percent impact of predictors on firm leverage.

Descriptive Analysis/Correlation/ Regression Analysis (Insurance Market): The following tables represent the 10 years summary of Mean, Median, Standard Deviation, and correlation and Regression Analysis of Insurance Firms.

Analysis of Findings: Regression results of Insurance companies are depicted in table 6 which indicated that firm size and risk factors have positive relationship with leverage; whereas ROA and liquidity have significant negative relationship with dependent variable. Contrary to findings of leasing companies, growth found insignificant relationship with firm leverage; whereas in both leasing and insurance companies tangibility found insignificant relationship with firm leverage. In selected predictors, firm size demonstrated highly significant relationship and indicated an explained value of 73.8 percent. Consolidated regression findings explicated 97.2 percent impact of predictors on endogenous variables; whereas, 92 percent explained value of adjusted R square also endorsed significant impact of independent variables on firm leverage.

In both leasing and insurance market analysis in respect with size of the firm, our results are consistent with earlier studies of ³⁰ which suggested that firm's size is positively correlated with leverage and confirmed static trade off theory. The co-efficient of size is positive and statistically significant at 1%. This predicted that large size firms in financial sector of leasing and insurance preferred to utilize more debt in capital formation. It confirmed the notion of static-trade off theory that large firms used more leverage because they are more diversified and utilized large debt in capital formation. For both types of firms, positive relationship of growth with leverage is evident, this relationship is however; statistically significant for leasing firms but insignificant for insurance sector firms. These results are consistent and supported the findings of ³¹. Though positive sign confirms the notion of static trade off theory, which confers the validity of static trade off theory in both sectors, comparatively more strong in leasing. The coefficient of profitability (ROA) in both leasing and insurance companies' analysis is found negative and statistically significant at 1 % level of significance. The results validated the notion of pecking order theory^{3, 30} which indicated that leasing and insurance companies preferred to finance their investments by retained earnings. Results for liquidity showed its inverse relationship with firm leverage and this association is statistically significant for both type firms, which suggested that Pakistani leasing and insurance companies preferred to finance their investments by using their higher liquidity. As expected and showed by various studies, beta value depicted that tangibility is positively related with leverage for both firms analysis but in our analysis for both types of firms, tangibility is not proved as

powerful explanatory variable to determine leverage because of its insignificant relationship with leverage. Risk factor used as determinant of leverage for insurance firms which depicted positive and statistically significant relationship with leverage. In consistent with Rafiq et al.³² positive relationship between risk and capital structure of insurance companies indicated that debt ratio increases with the increase of claim ratio.

Conclusion

The study investigated the capital structure determinants of leasing and insurance companies of Pakistan over the period of ten years from 2001 to 2010. Empirical results indicated that size of the firm; growth, profitability, liquidity; tangibility and risk are important determinants of capital structure. Results validated that both static trade off theory and pecking order theory are pertinent to financial sector of Pakistan, in particular leasing and insurance sectors. Results for insurance and leasing companies in terms of profitability and liquidity have predicted pecking order theory; whereas, static trade off model is predicted in terms of firm size, tangibility and growth. This study contributes to two interconnected strand of research. In theoretical perspective, giving new dimensions for capital structure theory; this study provides valuable insights and knowledge for academic researchers; whereas, in practical point of view, study recommendations have significant importance for regulatory bodies, especially in enforcement of various regulations regarding equity requirements. Furthermore, potential investors for investment purpose can use these findings as yardstick for prudent investment decisions.

Our results have a bearing on key dimension of the policy debate on how key predictors impact on firm leverage but this study is limited to country specific research; however, the scope of future research may be extended by including other regional economies to understand direct manipulation or comparativeness.

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