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Capital Structure Payoff: An Analysis of the Non-Financial Sectors of Pakistan

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Abstract:

The primary objective of this research is to explore the measures related to capital structure that have a major influence on firm performance. The sample in this study comprises of the top 100 non-financial companies listed in Karachi Stock Exchange (Pakistan) based on market capitalization. This study used six measures of performance (return on equity, return on assets, Tobin's Q, earning per share, market to book value and PROF) as dependent variables. And used short term debt to total assets, total debt to total assets, long term debt to total assets, total debt to total equity, firm size and firm growth as independent variables. Data from 2002 to 2012 has been analyzed. By using the ordinary least square (OLS) regression, the results show that (STDTA), (TDTA) and (LTDTA) have a negative and significant

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effect on (EPS), (ROA) and (TOBIN). Firm growth has a significant and positive impact on (ROA). Firm size has a significant and positive effect on (EPS), (ROA), (MBVR), (TOBIN) and (PROF).

Key words: capital structure, firm performance, firm size, firm growth.

1. INTRODUCTION

Capital structure play a pivotal function in the financial decision making process of any modern company. It is known to maximize the performance and value of a firm. Capital structure is the mixture of diverse sources of funds that a firm utilizes to financing its capital investments and operations. These mixes of diverse financing ways issued by a firm are called firm's capital structure. These sources consist of debt financing (long term debt and short term debt) and equity financing (common stock and preferred stock). The firms regulate their short-term debt financing decision in the form of working capital conditions of the firm and long-term debt financing decision by issuing bonds to the general public including the specific set of interest rate or by taking loan from the banks in the form of notes payable. When the firms are financed through equity then they give dividends to the shareholders while when they are financed through debt then they have to pay interest.

The capital structure choice is really important because it is directly linked with the return and risk of a firm. The capital structure decision plays a crucial function in maximizing the performance of the firm and its value. If the firm capital structure decision were effective then the firm cost of capital decreased while if the firm capital structure decision were ineffective then the firm cost of capital increased. Therefore, the relationship among the firm performance and capital structure has been largely observed in the past few

decades. The value of a firm is maximized when its cost of capital is reduced. The mixture of equity and debt will reduce the firms cost of capital and maximize the firm's value. And for financial managers there is not well-defined formula to take decision on optimal capital structure (Gitman, 2003).

Pakistan is a developing country and its debt market is extremely small and undeveloped so the firms needs to rely generally on the banks to finance their capital investment and its operations. The major banks in Pakistan are privatized and they do not issue debt finance on attractive appearances. Firms which have more unsure earnings it is complicated for them to get these sources of finances. In Pakistan the equity markets are inadequate and constantly on lesser levels of trading, which bound the firms to mainly rely on their internal sources of funds. And to run their business efficiently the cost of raising finances is also high. According to Sheikh and Wang (2011), in Pakistani market the capital structure decision has a major concern with the information asymmetry problems. According to Eldomiaty (2007) the capital market in developing countries is less capable and inadequate and practices higher level of information asymmetry than capital markets in developed countries.

Moreover, besides the capital structure, there are some other factors, that might influence the firm performance such as firm growth, firm size, industrial sector and macroeconomic environment of the country. These variables are measured in this research.

2. LITERATURE REVIEW

The review of relevant literature suggests that many researchers have worked on exploring the link among firm performance and capital structure. However, the empirical evidences presented by the researchers show contradictory and inconsistent results. Some research papers document a positive

link among firm performance and capital structure, while others contest this nexus. In this literature review, effort has been made to present both the view points and then determine the research gap and objectives.

2.1 Capital structure theories

The link among firm performance and capital structure was high-lighted through a number of theories. Mostly; Modigliani and Miller theory (1958) and (1963), agency theory (1976), trade off theory (1977), pecking order theory (1984), signaling and information asymmetry theory, stakeholder theory (1984), corporate control (1988) and market timing theory (1990).

In (1958) Professors Franco Modigliani and Merton Miller had given capital structure irrelevancy theory, which states that the value of a firm is not affected by its capital structure. They believed on restrictive set of assumptions such as efficient capital markets, investors' identical belief, no taxes and no transaction cost. Afterward (1963) they give capital structure relevancy theory by eliminating the statement of no taxes since under the tax policy interest payments are tax deductible. They presented that firm value is affected by its capital structure.

Jensen &Meckling (1976) reveals that the optimal capital structure is the mix of equity and debt that will minimize the total agency costs (agency problem). The agency theory tells the relationship among the principal (shareholders of the company) and the agent of the principal (firm managers). They believe that there are two types of agent problems. One is the agent connection comprise through equity financing, that is the relationship among shareholders and management. And second is the agent connection comprise through debt financing, which is the relation among creditors and shareholders. For the optimal capital structure it is essential that make a trade-off among these two types of agent relationships.

Financial distress indicates that the firm is incapable to meet up its financial obligations, which lead to insolvency. Financial distress cost plays an important function in defining the optimal mix of debt and equity.

The trade-off theory (1977) gives the idea to the firms that how much equity finance and how much debt finance they are used, to balance their costs and benefits. Highly profitable firms would prefer debt financing which give them the more tax benefits while if low profitable firms uses more debt then they leads towards bankruptcy.

Myers and Majluf pecking order theory (1984) defines that for the financing decision, firms initially focus on internal funds and while that is utilized debt is issued, and when it is not reasonable to issue any additional debt equity is issued. Pecking order theory attempts to confine the costs of asymmetric information.

The signaling and information asymmetry theory states that managers usually have better information about their firm's than external investors. Managers have clear incentive to use signals of the firm to differentiate their firm from weaker rivals. For the improvement of the firm, the well-informed manager tends to communicate the positive information about the firm to the poorly inform outside investors.

In (1984) R. Edward gives stakeholder theory, according to this theory for the financing decision the firm must consider not only the equity holders but also the other stakeholders (customers, suppliers, competition and employees). These stakeholders provide the help to the corporation in building up their activities.

The theories of capital structure that are based on the corporate control are suggested by Israel (1988), Harris &Raviv (1988) and Stulz (1988). According to this theory the debt is employed to repurchase the equity from outsiders enhance the voting power of the current management. This adds to voting power; enhance the possibility that the firm will go insolvent

and the current management will lose the advantages it gains from control.

In (1990) Lucas and McDonald give market timing theory. According to market timing theory, firm base on market evaluation for financing decisions. When market value is high then the firms issue equity in spite of debt, and when market value is low then firms repurchase the equity.

2.2 Empirical studies on firm performance and capital structure

Dessi & Robertson (2003) studied the performance and capital structure of UK firms from 1967 to 1989. They used Tobin's Q as a measure of performance. They establish that there is a positive and significant link among debt and corporate performance. The researches which establish there is a positive relation among firm performance and capital structure include: Abor (2005); Coleman (2007); Chowdhury and Chowdhury (2010); Saeedi and Mahmoodi (2011); Ahmad et al. (2012); Goyal (2013); Saeed et al. (2013); and Mujahid & Akhtar (2014). Many studies observe the relation among size and performance. Those who find the positive relation among size and performance, support the argument that size reflects economies of scale production, greater diversification, cheaper sources of funds and greater access to new technology. In these studies include the study of (Orser et al. 2000) they used gross revenue to reflect the performance of Canadian firms, (Shergill & Sarkaria, 1999) they also determine the positive relation among firm's performance and size of firms. The studies which establish the positive relation among firm performance and firm size include: Pouraghajan et al. (2012); Bokhari & Khan (2013); Zeitun & Tian (2007).

Those who find the negative relation among performance of firm and debt level provide the support to Myers and Majluf (1984) argument. This states that external financing is more expensive than internal financing but high

portion of debt may adversely affect the firm performance. And they also provide support to agency conflicts because if firms utilize more than appropriate level of debt then it negatively affect the performance of firms.

The studies which establish the negative link among short-term debt and firm performance include: Salawu (2007); Zhou et al. (2009); Manawaduge et al. (2011); Salim & Yadav (2012); Bokhari& Khan (2013).The studies which establish the negative link among long-term debt and firm performance include: Mesquita & Lara (2003); Huang and Song (2006); Abor (2007); Amjed (2011); Salim & Yadav (2012); Ebimobowei (2013).

The studies which conclude the negative relation among total debt and firm performance include: Huang and Song (2006); Abor (2007); Amjed (2011); Salim & Yadav (2012); Patel & Bhatt (2013).The studies which establish the positive relationship among firm performance and firm growth include: Pouraghajan et al. (2012); Bokhari& Khan (2013); Zeitun& Tian (2007).

2.3 Research objectives

The objectives of this study are followings:

1. To examine the influence of capital structure on non-financial firms performance listed in Karachi Stock Exchange.
2. To study how firms size influence on the performance of firms.
3. To study how firms growth influence on the performance of firms.
4. To determine the effect of the industrial sector on the performance of firms.

2.4 Motivation of research and research gap

While substantive study has been completed on this topic in the past but the majority of them was in the developed country and

incomplete practical verification is obtain from the developing countries, especially in Pakistan. That's why we choose this topic. There is no work done on capital structure and firm's performance in Pakistan by observes the top 100 non-financial firms listed in KSE based on market capitalization. And the capital structure theories which are related to corporate sector in Pakistan are not experienced by previous studies. It is a research gap that is filled by this study.

3. DATA AND RESEARCH METHODOLOGY

3.1 Data

Mainly the data used in this study are collected from secondary sources such as from financial statements of the non financial companies listed in KSE, and from KSE market summary for the period 2002-2012. This study covers a period of ten years. To depict sound statistical evaluations for the relation picked to be tested in this research, it was essential to choose a long period. The things of concern were: balance sheets, income statements and market valuation. The data set is a reasonably sized balanced panel.

3.2 Research sample

The sample size consists of top 100 non-financial companies listed in KSE based on market capitalization. This study takes firms from 19 sectors of KSE. The financial companies such as financial firms, banks and insurance firms are not taking in this research because their characteristics are different.

3.3 Proxy variables

We used diverse measures of firm performance: return on equity (ROE), return on assets (ROA), earning per share (EPS), Tobin's Q (TOBIN), market to book value (MBVR) and profit (PROF). In this research Tobin's Q, EPS and MBVR are employed to evaluate the market performance of firms, while

the ROA, ROE and PROF are used to evaluate the accounting performance of firms. The independent variables are short-term debt, total debt, long-term debt, firm size and firm growth. These variables measurement are shown in Table 10.

3.4 Hypotheses

If capital structure has impact on firm's value and performance, subsequently a strong relationship among firm's performance and capital structure would be establish. Thus, Hypothesis 1 can be stated as follows:

H1: A firm's capital structure does influence its performance.

Short-term debt has negative impact on the performance of firms, since short-term debt leads the firms to the risk of refinancing. It is be expecting that due to the banking credit policy debt maturity ratios (long-term debt and short-term debt) will have a major influence on firm performance. Thus, Hypothesis 2, 3 & 4 can be stated as follows:

H2:Short-term debt has negative impact on firm performance.

H3: Long- term debt has negative impact on firm performance.

H4: Total debt has positive impact on firm performance.

Growth opportunities are calculated by growth of assets. It is anticipated that firms performance high when they have high growth opportunities and make profit from investment. Thus, Hypothesis 5 can be stated as follows:

H5: Firms growth has positive impact on firm performance.

A firm's size is calculated by natural log of total book value of assets. The firm's size is theorized to be positively link to the firm's performance, as firm size increases bankruptcy costs decreases. Thus, Hypothesis 6 can be stated as follows:

H6: A firm's size has positive impact on a firm's performance.

The capital structure decision for firms differs from one sector to another sector (Bradley et al. 1984). In view of the fact that business cycle, capital structure, growth, risk, a firm's admittance to outside sources of funds be different across industries. The profitability of firm is influenced through the industries sector. So, the industrial sector is estimated to have an influence on firm performance. In this study 19 industrial sectors are used as dummy variables to manage for the outcome of industrial sectors on the performance of firms that industrial sectors are shown in Table 11. The value of dummy variable is 1 if the firm is in that sector otherwise it gets the value 0.

To manage the impact of macroeconomic aspects, 10 dummy variables are employed to control for the time outcome (DUM2002, DUM2003, DUM2004, DUM2005, DUM2006, DUM2007, DUM2008, DUM2009, DUM2010, DUM2011 and DUM2012). The value of dummy variable is 1 and 0.

To direct for the impact of the industrial sectors and time on the performance of firm, the random effects model is better suitable to this study data set. The fixed effects model does not permit us to manage these things. The explanation is that the dummies of industrial do not vary over time that's why are not being accounted in the fixed effects model. The Hausman's Chi-square statistics for testing whether the fixed effects model is a suitable choice to the random effects model, are calculate for each model (Judge et al., 1985).

3.5 Research model

We estimate Equation (1) and (2) to test the relationship among dependent variables and independent variables. The empirical models to be estimated as follows:

$$y_{it} = \beta_0 - \beta_1 STDTA_{it} - \beta_2 LTDTA_{it} + \beta_3 TDTA_{it} + \beta_4 TDTE_{it} + \beta_5 Size_{it} + \beta_6 Growth_{it} + \mu_{it} \quad (1)$$

$$y_{it} = \beta_0 - \beta_1 STDTA_{it} - \beta_2 LTDTA_{it} + \beta_3 TDTA_{it} + \beta_4 TDTE_{it} + \beta_5 Size_{it} + \beta_6 Growth_{it} + DUM(INDUST) + DUM(YEAR) + \mu_{it} \quad (2)$$

Where y_{it} is ROA, ROE, EPS, TOBIN, MBVR and PROF for firm i as the performance measure.

The independent variables are characterized by total debt to total assets, long-term debt to total assets, short-term debt to total assets, total debt to total equity, firm size and firm growth for firm i in year t. INDUST refers to the dummy variables for industry. μit = error term.

4. RESULTS

4.1 Correlation matrix and descriptive statistics

Table 1, explains the summary statistics for the variables used in this study. The mean of ROA for the complete sample is 6.712%, while the mean of ROE is about 14.225%. The mean values of EPS, MBVR and Tobin's Q are 7.235%, 12.031% and 5.459% respectively. The two measures of market performance (EPS and TOBIN) illustrate that the sample companies encompass extremely low market performance. The two accounting measures of performance illustrate a high proportion of performance match up to the market measures. The mean values of STDT, LTDTA and TDTA are 46.3%, 18.8% and 65.5% respectively. This proves that firms rely more on STD to finance their assets as compared to LTD. The mean of TDTE explains that firm takes 58.1% from external parties to finance their assets.

Table 1: Descriptive statistics

Descriptive Statistics of the Explanatory Variables, 2002-2012							
Variables	**Mean**	**Std. Dev.**	**Min**	**Max**	**Skewness**	**Kurtosis**	**Probability**
ROA	6.712	17.678	-123.2	122.86	0.019	15.121	0
ROE	14.225	163.857	-3264.57	2893.03	-3.244	311.163	0
EPS	7.235	36.576	-174.39	886.8	17.040	408.303	0
MBVR	12.031	54.239	-39.275	1501.024	25.169	688.741	0
TOBIN	5.459	8.539	0.180	157.226	8.171	125.775	0
PROF	666385.7	4426634	-16004652	65290334	6.843	82.193	0
STDTA	0.463	0.370	0.014	4.053	4.414	34.718	0
LTDTA	0.188	0.238	0	2.350	2.908	17.171	0
TDTA	0.655	0.475	0.024	5.477	4.449	32.877	0
TDTE	0.581	62.734	-1604.517	808.953	-17.700	552.868	0
SIZE	6.812	0.747	4.530	8.541	-0.204	2.704	0.0126
Growth	0.133	0.318	-2.869	1	-1.928	26.795	0

Note: ROA= return on assets; ROE= return on equity; EPS=earnings per share; MBVR= Market value of equity/ Book value of equity; Tobin's Q= Market value of equity+ book value of debt/ book value of assets; Prof=earnings before interest and tax + depreciation / total assets; STDTA =short-term debt to total assets; LTDTA= long-term debt to total assets; TDTA= total debt to total assets TDTE= total debt to total equity; Size= natural log of total book value of assets; Growth=assets of current year - assets of previous year / assets of current year.

The Table 2 shows the correlation matrix for the study variables**,** in order to check the relationship among the variables. The outcomes explain that there is a positive link among size and growth. There is a negative relation among leverage and growth. And there is a negative relation among size and leverage. There is a negative link among leverage (STDTA, LTDTA and TDTA) and firm performance (ROE, ROA, EPS, MBVR, TOBIN and PROF) except STDTA and ROE which is positive.

Table 2: Correlation matrix of the explanatory variables, during 2002-2012

	STDTA	LTDTA	TDTA	TDTE	SIZE	GROWTH	ROA	ROE	EPS	MBVR	TOBIN	PROF
STDTA	1											
LTDTA	0.176	1										
TDTA	0.863	0.639	1									
TDTE	0.016	-0.054	-0.015	1								
SIZE	-0.184	-0.196	-0.246	-0.028	1							
GROWTH	-0.184	-0.112	-0.198	-0.014	0.123	1						
ROA	-0.251	-0.204	-0.296	0.021	0.130	0.232	1					
ROE	0.000077	-0.058	-0.028	0.095	0.018	0.041	0.126	1				
EPS	-0.082	-0.106	-0.117	0.003	0.081	0.054	0.300	0.073	1			
MBVR	-0.005	-0.050	-0.029	0.438	0.107	0.023	0.080	0.029	0.006	1		
TOBIN	-0.103	-0.128	-0.144	0.007	0.168	0.082	0.425	0.069	0.060	0.238	1	
PROF	-0.143	-0.067	-0.145	0.100	0.247	0.067	0.384	0.082	0.170	0.046	0.319	1

Note: STDTA =short-term debt to total assets; LTDTA= long-term debt to total assets; TDTA= total debt to total assets TDTE= total debt to total equity; Size= natural log of total book value of assets; Growth=assets of current year - assets of previous year / assets of current year; ROA= return on assets; ROE= return on equity; EPS=earnings per share; MBVR= Market value of equity/ Book value of equity; Tobin's Q= Market value of equity+ book value of debt/ book value of assets; Prof=earnings before interest and tax + depreciation / total assets;

4.2 Results discussion

The estimation outcomes of the panel data models with all of the measures of performance and for the whole sample of study for the period 2002-2012 are showed in Tables 3 to 6. The ordinary least squares method of regression was used in taking out this analysis.

The hypothesis 1, the capital structure of firm's has impact on its performance. Four capital structure variables are used STDTA, LTDTA, TDTA, and TDTE. From the regression results in Table 3, Table 4 and Table 5 estimated that the coefficients of STDTA, LTDTA and TDTA have significantly negative relation to the performance measure ROA, EPS and TOBIN. For example, there is a significant negative link among them demonstrate that high level of leverage direct to lower ROA, EPS and TOBIN. In addition, this result give the support to the suggestion that due to agency conflicts firms over-leveraged themselves, consequently negatively affect their performance. *Therefore, we accept the hypothesis that the capital structure of firm's has influence on the firm's performance.*

Table 3: Estimation results for panel data models using STDTA

	ROA	ROE	EPS	MBVR	TOBIN	PROF
Constant	-0.6601	-11.6265	-11.4701	-50.5490	-6.4277	-6577769
	(-0.13)	(-0.21)	(-1.13)	(-3.32)***	(-2.70)***	(-5.47)***
STDTA	-10.4197	4.4627	-5.7641	1.9639	-1.1809	-861800.5
	(-7.17)***	(0.28)	(-2.00)**	(0.45)	(-1.74)*	(-2.51)**
Size	1.6636	3.0811	3.0903	8.8295	1.7618	1114472
	(2.31)**	(0.40)	(2.16)**	(4.10)***	(5.25)***	(6.56)***
Growth	6.1827	21.3599	2.3435	-0.9876	-0.6612	180294.8
	(4.29)***	(1.17)	(0.82)	(-0.23)	(-0.98)	(0.53)
No. Observation	998	829	997	997	998	998
R-Square	0.0889	0.0020	0.0125	0.0170	0.0361	0.0578
P-value	(0.000)***	(0.655)	(0.006)***	(0.001)***	(0.000)***	(0.000)***
Hausman Test	30.0987	1.9317	5.0664	3.5328	23.2787	2.0260
	(0.000)***	(0.587)	(0.167)	(0.317)	(0.000)***	(0.567)

Notes: ***Significant at 1% level, ** Significant at 5% level, and *Significant at 10% level. Numbers in parentheses are asymptotic t-values. ROA= return on assets; ROE= return on equity; EPS=earnings per share; MBVR= Market value of equity/ Book value of equity; Tobin's Q= Market value of equity+ book value of debt/ book value of assets; Prof=earnings before interest and tax + depreciation / total assets; STDTA =short-term debt to total assets; Size= natural log of total book value of assets; Growth=assets of current year - assets of previous year / assets of current year.

Table 4: Estimation results for panel data models using LTDTA

	ROA	ROE	EPS	MBVR	TOBIN	PROF
Constant	-5.5113	14.9436	-11.2604	-43.9584	-6.5489	-7432750
	(-1.13)	(0.28)	(-1.16)	(-3.01)***	(-2.88)***	(-6.42)***
LTDTA	-16.1370	-36.9587	-14.4850	-7.8993	-2.6552	-459690.6
	(-7.18)***	(-1.51)	(-3.26)***	(-1.18)	(-2.54)**	(-0.86)
Size	2.0821	0.5648	3.0563	8.2305	1.7700	1190648
	(2.94)***	(0.07)	(2.18)**	(3.89)***	(5.37)***	(7.10)***
Growth	6.7009	18.0430	2.2999	-1.7357	-0.6516	275172.2
	(4.68)***	(1.00)	(0.81)	(-0.41)	(-0.978)	(0.81)
No. Observation	998	829	997	997	998	998
R-Square	0.0890	0.0046	0.0190	0.0181	0.0394	0.0525
P-value	(0.000)***	(0.282)	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Hausman Test	31.5622	0.7649	9.2792	1.0014	21.9529	2.4811
	(0.000)***	(0.858)	(0.026)**	(0.801)	(0.000)***	(0.479)

Notes: ***Significant at 1% level, ** Significant at 5% level, and *Significant at 10% level. Numbers in parentheses are asymptotic t-values.ROA= return on assets; ROE= return on equity; EPS=earnings per share; MBVR= Market value of equity/ Book value of equity; Tobin's Q= Market value of equity+ book value of debt/ book value of assets; Prof=earnings before interest and tax + depreciation / total assets; LTDTA= long-term debt to total assets; Size= natural log of total book value of assets; Growth=assets of current year - assets of previous year / assets of current year.

Table 5: Estimation results for panel data models using TDTA

	ROA	ROE	EPS	MBVR	TOBIN	PROF
Constant	6.1714	4.0253	-4.8695	-46.5352	-5.2530	-6437912
	(1.21)	(0.07)	(-0.47)	(-2.99)***	(-2.17)**	(-5.24)***
TDTA	-11.1489	-6.6738	-7.7199	-0.8449	-1.4862	-685705.8
	(-9.68)***	(-0.53)	(3.32)***	(-0.24)	(-2.72)***	(-2.47)**
Size	1.0382	1.7772	2.4882	8.4685	1.6548	1101134
	(1.46)	(0.23)	(1.73)*	(3.90)***	(4.90)***	(6.43)***
Growth	5.4390	18.8092	1.6233	-1.4344	-0.7898	165879.8
	(3.84)***	(1.03)	(0.57)	(-0.33)	(-1.18)	(0.49)
No. Observation	998	829	997	997	998	998
R-Square	0.1244	0.0022	0.0194	0.0168	0.0403	0.0576
P-value	(0.000)***	(0.610)	(0.000)***	(0.001)***	(0.000)***	(0.000)***
Hausman Test	24.0995	2.1790	3.1728	2.8016	22.3714	1.7243

	(0.000)***	(0.536)	(0.366)	(0.423)	(0.000)***	(0.632)

Notes: ***Significant at 1% level, ** Significant at 5% level, and *Significant at 10% level. Numbers in parentheses are asymptotic t-values. ROA= return on assets; ROE= return on equity; EPS=earnings per share; MBVR= Market value of equity/ Book value of equity; Tobin's Q= Market value of equity+ book value of debt/ book value of assets; Prof=earnings before interest and tax + depreciation / total assets; TDTA= total debt to total assets; Size= natural log of total book value of assets; Growth=assets of current year - assets of previous year / assets of current year.

Table 6: Estimation results for panel data models using TDTE

	ROA	**ROE**	**EPS**	**MBVR**	**TOBIN**	**PROF**
Constant	-14.0055	-11.0974	-18.8642	-52.8322	-7.9648	-7771989
	(-2.87)***	(-0.21)	(-1.99)**	(-4.13)***	(-3.59)***	(-6.94)***
TDTE	0.0073	0.2506	0.0031	0.3839	0.0012	7396.686
	(0.75)	(2.77)***	(0.17)	(15.22)***	(0.28)	(3.35)***
Size	2.8670	3.2922	3.7575	9.2636	1.9021	1226628
	(3.99)***	(0.43)	(2.70)***	(4.91)***	(5.81)***	(7.43)***
Growth	7.6690	21.0555	3.1641	-0.8252	-0.4921	311084.8
	(5.25)***	(1.17)	(1.12)	(-0.22)	(-0.74)	(0.93)
No. Observation	997	828	996	997	997	997
R-Square	0.0424	0.0111	0.0085	0.2027	0.0334	0.0625
P-value	(0.000)***	(0.027)**	(0.036)**	(0.000)***	(0.000)***	(0.000)***
Hausman Test	30.6085	1.1479	4.5168	3.6050	22.9332	9.5948
	(0.000)***	(0.766)	(0.211)	(0.307)	(0.000)***	(0.022)**

Notes: ***Significant at 1% level, ** Significant at 5% level, and *Significant at 10% level. Numbers in parentheses are asymptotic t-values. ROA= return on assets; ROE= return on equity; EPS=earnings per share; MBVR= Market value of equity/ Book value of equity; Tobin's Q= Market value of equity+ book value of debt/ book value of assets; Prof=earnings before interest and tax + depreciation / total assets; TDTE= total debt to total equity; Size= natural log of total book value of assets; Growth=assets of current year - assets of previous year / assets of current year

The hypothesis 2, short-term debt has negative impact on firm performance. This shows that if firms in their capital structure have high short-term debt be likely to have low performance. From the regression results in Table 3, the capital structure measured by STDTA has a significant and negative influence on ROA, EPS, TOBIN and PROF. The STDTA has an insignificant and positive impact on ROE and MBVR. The short-term debt showing firms to the risk of refinance since it

has a negative influence on ROA, EPS, TOBIN and PROF. *Therefore, we accept the hypothesis that short-term debt decreases the firm performance.*

The hypothesis 3, long- term debt has negative impact on firm performance. This shows that if firms in their capital structure have high long-term debt be likely to have low performance. From the regression results in Table 4, the capital structure measured by LTDTA has a significant and negative influence on ROA, EPS and TOBIN. The LTDTA has a negative and insignificant influence on ROE, MBVR and PROF. *Therefore, we accept the hypothesis that long-term debt decreases the firm performance.*

The hypothesis 4, total debt has positive impact on firm performance. This shows that if firms have high total debt in their capital structure be likely to have high performance. From the regression results in Table 5, the capital structure measured by TDTA has a significant and negative influence on ROA, EPS, TOBIN and PROF. The TDTA has negative and insignificant impact on ROE and MBVR. Firms in their capital structure with high total debt tend to have lower performance. *Therefore, we reject the hypothesis that total debt increases the firm performance.*

From the regression results in Table 6, the capital structure measured by TDTE has a significant and positive influence on ROE, MBVR and PROF. There is a significant and positive link among TDTE and MBVR demonstrate that in the capital structure higher levels of TDTE are linked with a higher level of market performance (MBVR). The TDTE has a positive but insignificant influence on ROA, EPS and TOBIN.

The hypothesis 5, firm's growth has positive impact on firm performance. This shows that if firm's have high growth opportunities then it has positive impact on firm performance. From the regression results in Table 3 to Table 6, there is a significant and positive impact of growth on the measure of performance ROA only, not linked significantly with other

performance measures. *Therefore, we accept the hypothesis that growth opportunity increases firm performance.*

The hypothesis 6, firm's size has positive impact on a firm's performance. This shows that larger the firm has positive impact on firm performance. From the regression results in Table 3 to Table 6, there is a significant and positive influence of firm size on firm performance ROA, EPS, TOBIN, MBVR and PROF. Firm size has positive but insignificant influence on firm performance ROE. *Therefore, we accept the hypothesis that firm size increases the firm performance.*

4.3 Industrial sector

The study additional examines the impact of the industrial sector on the performance of firm. Table 7, demonstrate the industry dummy variables for sector 1 (Cement), sector 2 (Refinery), sector 3 (Oil and Gas Exploration Companies), sector 4 (Oil and Gas Marketing Companies), sector 5 (Chemicals), sector 6 (Fertilizer), sector 7 (Food & Personal Care Products), sector 8 (Sugar & Allied Industries), sector 9 (Textile Composite), sector 12(Automobile Assembler, Parts & Accessories), sector 13 (Pharmaceuticals), sector 15 (Engineering), sector 16 (Paper Board & Jute), sector 17 (Technology & Communication), sector 18 (Miscellaneous) are positively and significantly linked to the accounting measure of performance ROA with TDTA as a measure of capital structure. The significant and positive influences of these industrial dummy variables show that a high level of investment in these sectors might be related with a high ratio of ROA. For some industries the negative sign might be as an impact of the negative equity value for various companies comprised in the study as outcome of distress. By considering industrial dummy variables in the regression analysis enhanced the model accuracy and robustness.

Table 7: Estimation results for panel data models including dummy variables for industrial sectors

TDTA							TDTE					
	ROA	ROE	EPS	MBVR	TOBIN	PROF	ROA	ROE	EPS	MBVR	TOBIN	PROF
Constant	-2.62	71.52	-16.88	-33.87	-3.35	-6292817	-23.93	70.22	-33.35	-40.20	-4.01	-7259022
	(-0.4)	(0.8)	(-1.1)	(-1.5)	(-1.0)	(-3.9)***	(-3.5)***	(0.9)	(-2.3)**	(-2.0)**	(-1.3)	(-4.9)***
Leverage	-10.13	1.38	-7.84	-0.28	-0.34	431726.1	0.00	0.22	-0.00	0.38	0.00	6221.75
	(-8.4)***	(0.1)	(-3.0)***	(-0.1)	(-0.6)	(-1.6)	(0.5	(2.4)**	(-0.1)	(14.9)***	(0.0)	(3.2)***
Size	0.35	15.63	3.10	5.49	0.78	887980.9	2.40	15.97	4.68	6.30	0.84	981719.7
	(0.4)	(1.4)	(1.6)	(1.8)*	(1.9)*	(4.3)***	(2.7)***	(1.5)	(2.5)**	(2.4)**	(2.1)**	(5.0)***
Growth	4.83	24.84	1.28	-2.40	-0.98	60679.91	6.61	25.10	2.66	-1.76	-0.93	141713.7
	(3.7)***	(1.4)	(0.4)	(-0.6)	(-1.6)	(0.2)	(4.9)***	(1.4)	(0.9)	(-0.5)	(-1.6)	(0.5)
Dummy for sector 1	8.13	-177.48	0.47	6.53	2.50	459598.8	9.56	-178.17	1.57	6.31	2.56	520598.1
	(2.0)**	(-3.9)***	(0.1)	(0.5)	(1.4)	(0.5)	(2.3)**	(-3.9)***	(0.2)	(0.5)	(1.4)	(0.6)
Dummy for sector 2	11.65	-191.72	17.02	50.31	2.26	359892.5	9.81	-198.71	15.74	40.01	2.21	33621.97
	(2.5)**	(-3.6)***	(1.7)*	(3.3)***	(1.1)	(0.3)	(2.0)**	(-3.7)***	(1.5)	(2.9)***	(1.0)	(0.0)
Dummy for sector 3	36.14	-145.81	15.14	26.82	21.08	12260432	38.28	-145.35	16.37	26.27	21.87	12752395
	(7.5)***	(-2.7)***	(1.4)	(1.7)*	(9.6)***	(11.2)***	(7.6)***	(-2.6)***	(1.5)	(1.8)*	(9.9)***	(11.6)***
Dummy for sector 4	13.41	-174.37	15.65	2.65	1.24	1069099	10.88	-175.61	13.70	0.84	1.17	941878
	(3.0)***	(-3.3)***	(1.6)	(0.2)	(0.6)	(1.0)	(2.3)**	(-3.4)***	(1.4)	(0.1)	(0.6)	(0.9)
Dummy for sector 5	8.73	-169.08	3.34	8.51	2.18	958277.8	10.50	-169.63	4.72	8.38	2.24	1031719
	(2.1)**	(-3.6)***	(0.4)	(0.6)	(1.2)	(1.0)	(2.4)**	(-3.6)***	(0.5)	(0.7)	(1.2)	(1.1)
Dummy for sector 6	21.46	-149.70	11.94	23.19	9.42	1798309	21.24	-150.55	11.77	22.42	9.43	1783667
	(4.9)***	(-2.9)***	(1.2)	(1.6)	(4.7)***	(1.8)*	(4.6)***	(-3.0)***	(1.2)	(1.7)*	(4.7)***	(1.8)*
Dummy for sector 7	15.97	-160.03	16.65	6.50	2.57	1203353	19.94	-160.17	19.70	7.58	2.70	1387595
	(3.5)***	(-3.0)***	(1.7)*	(0.4)	(1.2)	(1.1)	(4.2)***	(-3.1)***	(2.0)**	(0.6)	(1.3)	(1.3)
Dummy for sector 8	16.21	-167.19	9.13	4.05	2.15	1375756	11.19	-166.77	5.24	4.04	1.98	1163698
	(3.9)***	(-3.5)***	(1.0)	(0.3)	(1.2)	(1.5)	(2.7)***	(-3.6)***	(0.6)	(0.3)	(1.1)	(1.3)
Dummy for sector 9	8.85	-177.80	2.47	1.85	1.30	495311.9	9.61	-178.44	3.06	1.74	1.33	530108.1
	(2.2)**	(-3.8)***	(0.3)	(0.1)	(0.7)	(0.5)	(2.3)**	(-3.9)***	(0.3)	(0.1)	(0.7)	(0.6)
Dummy for sector 10	5.80	-155.66	11.11	2.77	0.56	1238904	6.55	-155.38	11.68	3.82	0.58	1286359
	(1.4)	(-3.4)***	(1.3)	(0.2)	(0.3)	(1.4)	(1.6)	(-3.4)***	(1.3)	(0.3)	(0.3)	(1.4)
Dummy for sector 11	6.44	-267.12	0.06	-1.02	0.85	-1910689	4.78	-260.40	-1.38	8.49	0.80	-1820472
	(1.5)	(-5.4)***	(0.0)	(-0.1)	(0.4)	(-1.9)*	(1.1)	(-5.3)***	(-0.1)	(0.7)	(0.4)	(-1.9)*
Dummy for sector 12	15.94	-151.49	14.12	0.43	2.81	999952.6	16.89	-151.78	14.85	0.98	2.85	1050599
	(4.0)***	(-3.3)***	(1.6)	(0.0)	(1.6)	(1.1)	(4.1)***	(-3.3)***	(1.7)*	(0.1)	(1.6)	(1.2)
Dummy for sector 13	26.17	-148.40	9.51	15.60	10.66	996252.9	30.24	-148.96	12.60	16.15	10.80	1177804
	(6.2)***	(-3.0)***	(1.0)	(1.1)	(5.5)***	(1.0)	(6.9)***	(-3.1)***	(1.4)	(1.3)	(5.7)***	(1.2)
Dummy for sector 14	7.94	-179.86	2.78	1.05	0.65	1710405	7.67	-180.53	2.57	0.50	0.63	155948.7
	(1.3)	(-2.6)***	(0.2)	(0.1)	(0.2)	(0.1)	(1.3)	(-2.6)***	(0.2)	(0.0)	(0.2)	(0.1)
Dummy for sector 15	14.38	-165.90	8.37	8.93	3.61	696646.6	15.99	-166.56	9.61	8.81	3.67	766572.4
	(3.0)***	(-3.0)***	(0.8)	(0.6)	(1.6)	(0.6)	(3.2)***	(-3.0)***	(0.9)	(0.6)	(1.7)*	(0.7)
Dummy for sector 16	17.27	-159.81	16.73	4.54	1.91	1345875	20.34	-160.35	19.09	4.91	2.02	1482696
	(4.0)***	(-3.2)***	(1.8)*	(0.3)	(1.0)	(1.4)	(4.5)***	(-3.2)***	(2.0)**	(0.4)	(1.0)	(1.5)
Dummy for sector 17	8.27	-172.30	0.57	1.76	2.61	1930465	9.76	-173.24	1.72	1.24	2.67	1990192
	(1.9)*	(-3.5)***	(0.1)	(0.1)	(1.3)	(2.0)**	(2.2)**	(-3.5)***	(0.2)	(0.1)	(1.4)	(2.0)**
Dummy for sector 18	15.82	-157.01	6.63	8.41	3.81	1142503	16.04	-157.08	6.79	8.64	3.82	1156158
	(2.7)***	(-2.9)**	(0.5)	(0.4)	(1.4)	(0.9)	(2.6)***	(-2.9)**	(0.5)	(0.5)	(1.4)	(0.9)
No. Observation	829	997	997	997	998	998	828	996	997	997	997	997
R-Square	0.28	0.04	0.05	0.05	0.28	0.31	0.23	0.05	0.04	0.23	0.28	0.32
P-value	(0.00)***	(0.02)**	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***	(0.00)***
Hausman Test	18.80	5.49	4.08	2.77	14.64	0.39	25.91	3.92	5.58	1.02	15.35	10.39
	(0.000)***	(0.140)	(0.253)	(0.492)	(0.002)***	(0.943)	(0.000)***	(0.271)	(0.134)	(0.796)	(0.002)***	(0.014)**

Notes: ***Significant at 1% level, ** Significant at 5% level, and *Significant at 10% level. Numbers in parentheses are asymptotic t-values. ROA= return on assets; ROE= return on equity; EPS=earnings per share; MBVR= Market value of equity/ Book value of equity; Tobin's Q= Market value of equity+ book value of debt/ book value of assets; Prof=earnings before interest and tax + depreciation / total assets; TDTA= total debt to total assets TDTE= total debt to total equity; Size= natural log of total book value of assets; Growth=assets of current year - assets of previous year / assets of current year. Dummy refers to the dummy variables for sector. . Leverage refers to TDTA or TDTE.

4.4 Economic environment and regional risk

The economic environment, policy and regional risk influence the firm's performance. Table 8, shows the outcomes of the evaluation including year (time) dummy variables to manage for the effect of economic environment and macroeconomic variables on firms performance. From 2002 to 2012, there is a

significant and positive impact of time dummies on the performance of firms measured by ROA and MBVR (by TDTA). The positive and significant impact on MBVR is due to the high market value of equity at which shareholders estimated firm performance to be positive. Thus the price of share increased throughout these years.

Table 8: Estimation results for panel data models including dummy variables for years

TDTA						TDTE					
	ROA	ROE	EPS	MBVR	TOBIN	PROF	ROA	ROE	EPS	MBVR	TOBIN	PROF
Constant	-16.24	65.97	-21.11	-89.8	-2.39	-5346756	-41.06	35.8	-38.5	-87.69	-5.8	-7217352
	(-2.3)**	(0.8)	(-1.4)	(-4.0)***	(-0.7)	(-3.0)***	(-6.0)***	(0.5)	(-2.8)***	(-4.8)***	(-1.9)*	(-4.5)***
Leverage	-9.59	-9.63	-6.71	1.58	-1.31	-706056.6	0.00	0.26	0.00	0.38	0.00	7222.79
	(-8.3)***	(-0.7)	(-2.8)***	(0.4)	(-2.5)**	(-2.5)**	(0.5)	(2.9)***	(0.0)	(15.2)***	(0.4)	(3.2)***
Size	1.03	3.65	3.42	7.66	1.71	1080684	2.49	5.66	4.45	8.1	1.91	1201679
	(1.4)	(0.4)	(2.3)**	(3.4)***	(5.0)***	(6.0)***	(3.4)***	(0.7)	(3.0)***	(4.1)***	(5.8)***	(6.9)***
Growth	9.11	16.31	1.07	1.6	0.57	370428.8	11.51	19.18	2.74	2.27	0.9	507587
	(5.1)***	(0.9)	(0.3)	(0.3)	(0.7)	(0.8)	(6.3)***	(1.0)	(0.8)	(0.5)	(1.1)	(1.3)
Dummy 2002	12.54	-17.68	8.29	38.73	-7.41	-1488439	19.46	-9.07	13.16	33.5	-6.47	-1054358
	(2.2)**	(-0.2)	(0.7)	(2.2)**	(-2.8)***	(-1.1)	(3.3)***	(-0.1)	(1.1)	(2.1)**	(-2.5)**	(-0.8)
Dummy 2003	25.6	-38.29	11.44	39.67	-6.58	-1135098	34.45	-25.92	17.66	35.24	-5.78	-537404
	(4.6)***	(-0.3)	(1)	(2.3)**	(-2.7)***	(-0.8)	(6.1)***	(-0.2)	(1.6)	(2.3)**	(-2.3)**	(-0.4)
Dummy 2004	22.51	-70.39	21.59	51.48	-1.27	-921020.4	31.16	-59.97	27.66	46.84	-0.1	-342886
	(4.1)***	(-1.0)	(1.9)*	(3.0)***	(-0.5)	(-0.7)	(5.5)***	(-0.9)	(2.5)**	(3.1)***	(-0)	(-0.3)
Dummy 2005	24.43	-66.81	12.54	54.29	1.47	-583201	33.17	-56.45	18.64	49.51	2.65	-803.609
	(4.4)***	(-1.0)	(1.1)	(3.2)***	(0.6)	(-0.4)	(5.9)***	(-0.9)	(1.7)*	(3.3)***	(1)	(0.00)
Dummy 2006	26.4	-63.87	12.7	48.39	-2.17	-711770.8	34.91	-54.13	18.67	43.7	-1.01	-145259
	(4.8)***	(-1.0)	(1.1)	(2.8)***	(-0.8)	(-0.5)	(6.2)***	(-0.8)	(1.7)*	(2.9)***	(-0.4)	(-0.1)
Dummy 2007	21.53	-74.59	7.87	51.13	-0.86	-915411.3	30.03	-61.97	13.84	46.62	0.3	-351647
	(3.9)***	(-1.1)	(0.7)	(3.0)***	(-0.3)	(-0.7)	(5.3)***	(-1.0)	(1.2)	(3.1)***	(-0.1)	(-0.3)
Dummy 2008	19.95	-80.82	6.29	43.4	-4.69	-1408643	28.34	-71.17	12.18	38.83	-3.55	-849148
	(3.6)***	(-1.2)	(0.6)	(2.5)**	(-1.8)*	(-1)	(5)***	-1.1	(1.1)	(2.6)***	-1.4	(-0.6)
Dummy 2009	16.08	-66.27	4.06	44.3	-4.22	-1489959	24.07	-52.89	9.63	45.94	-3.12	-829704
	(2.9)***	(-1)	(0.4)	(2.6)***	(-1.6)	(-1.1)	(4.3)***	-0.8	(0.9)	(3)***	-1.2	(-0.6)
Dummy 2010	21.22	-67.57	7.48	43.24	-4.44	-869064.5	29.27	-58.38	13.13	38.57	-3.35	-337771
	(3.9)***	(-1.0)	(0.7)	(2.5)**	(-1.7)*	(-0.6)	(5.2)***	(-0.9)	(1.2)	(2.5)**	(-1.3)	(-0.3)
Dummy 2011	20.36	-96.21	7.43	56.35	-5.34	-914332.7	28.35	-89.2	13.06	48.54	-4.26	-444141
	(3.7)***	(-1.4)	(0.7)	(3.3)***	(-2.1)**	(-0.7)	(5.0)***	(-1.4)	(1.2)	(3.2)***	(-1.7)*	(-0.3)
Dummy 2012	20.15	-71.3	6.79	43.85	-4.14	-538498.8	27.9	-62.4	12.2	39.2	-3.07	-17048.8
	(3.7)***	(-1.1)	(0.6)	(2.6)***	(-1.6)	(-0.4)	(5.0)***	(-1.0)	(1.1)	(2.6)***	(-1.2)	(0.00)
No. Observation	997	828	996	996	997	997	996	827	995	996	996	996
R-Square	0.175	0.008	0.037	0.036	0.134	0.064	0.118	0.017	0.029	0.219	0.129	0.068
P-value	(0.00)***	(0.96)	(0.00)***	(0.00)***	(0.00)***	(0.000)***	(0.00)***	(0.44)	(0.01)**	(0.00)***	(0.00)***	(0.00)***
Hausman Test	50.576	0	0	0	0	0	0	0	0	0	0	0
	(0.000)***	1	1	1	1	1	1	1	1	1	1	1

Notes: ***Significant at 1% level, ** Significant at 5% level, and *Significant at 10% level. Numbers in parentheses are asymptotic t-values. ROA= return on assets; ROE= return on equity; EPS=earnings per share; MBVR= Market value of equity/ Book value of equity; Tobin's Q= Market value of equity+ book value of debt/ book value of assets; Prof=earnings before interest and tax + depreciation / total assets; TDTA= total debt to total assets TDTE= total debt to total equity; Size= natural log of total book value of assets; Growth=assets of current year - assets of previous year / assets of current year. Dummy refers to the dummy variables for year. Leverage refers to TDTA or TDTE.

The regression results in Table 9, shows the outcomes for the expected model comprises both time and industrial dummies variables, to manage the year's and industrial impact. Due to this the significant level of the results increased. This shows that there is a significant relation among capital structure

variables and firm performance. Also, the R-squared value improved for all models.

Table 9: Estimation results for panel data models including dummy variables for industrial sectors and years

	TDTA						TDTE					
	ROA	ROE	EPS	MBVR	TOBIN	PROF	ROA	ROE	EPS	MBVR	TOBIN	PROF
Constant	-34.68	112.76	-47.07	-76.23	-2.03	-5394455	-58.10	105.95	-64.98	-71.35	-2.22	-6754661
	(-4.0)***	(1.0)	(-2.4)**	(-2.6)***	(-0.5)	(-2.6)***	(-7.2)***	(1.0)	(-3.7)***	(-3.0)***	(-0.6)	(-3.7)***
Leverage	7.75	-1.01	5.90	2.64	-0.12	-405560	0.00	0.23	0.00	0.37	0.00	5994.882
	(-6.5)***	(-0.1)	(-2.2)**	(0.6)	(-0.2)	(-1.6)	(0.2)	(2.5)**	(-0.3)	(14.8)***	(0.1)	(3.1)***
Size	0.44	19.43	5.06	3.97	0.88	809574.3	1.95	20.37	6.22	4.28	0.87	957087.7
	(0.5)	(1.6)	(2.4)**	(1.2)	(2.1)**	(3.9)***	(2.1)**	(1.8)*	(3.0)***	(1.5)	(2.2)**	(4.5)***
Growth	8.63	21.44	0.51	0.88	0.47	153404.8	10.14	22.30	1.63	1.60	0.50	268577.4
	(5.3)***	(1.1)	(0.1)	(0.2)	(0.6)	(0.4)	(6.2)***	(1.2)	(0.4)	(0.3)	(0.7)	(0.7)
Dummy for sector 1	8.17	-180.89	-0.68	8.01	2.30	411525	9.25	-181.36	0.13	7.29	2.23	475926.8
	(2.1)**	(-3.9)***	(-0.1)	(0.6)	(1.3)	(0.4)	(2.3)**	(-4.0)***	(0.0)	(0.6)	(1.3)	(0.5)
Dummy for sector 2	10.84	-196.30	14.45	51.49	1.65	225456.1	9.46	-204.30	13.55	41.57	1.64	-7828.108
	(2.4)**	(-3.6)***	(1.4)	(3.3)***	(0.8)	(0.2)	(2.0)**	(-3.8)***	(1.3)	(3.0)***	(0.8)	(-0.0)
Dummy for sector 3	35.97	-151.97	13.21	28.74	20.31	12198261	37.81	-151.44	14.11	27.62	21.06	12718914
	(7.7)***	(-2.8)***	(1.3)	(1.8)*	(9.8)***	(11.0)***	(7.9)***	(-2.7)***	(1.3)	(1.9)*	(10.1)***	(11.5)***
Dummy for sector 4	12.82	-180.61	12.73	5.31	0.97	1039769	10.90	-182.80	11.27	4.10	0.98	914925.2
	(2.9)***	(-3.4)***	(1.3)	(0.4)	(0.5)	(1.0)	(2.4)**	(-3.5)***	(1.1)	(0.3)	(0.5)	(0.9)
Dummy for sector 5	8.87	-169.35	3.31	8.95	2.13	901201.3	10.21	-169.53	4.35	8.28	2.14	971549.4
	(2.2)**	(-3.5)***	(0.4)	(0.7)	(1.2)	(1.0)	(2.5)**	(-3.6)***	(0.5)	(0.7)	(1.2)	(1.0)
Dummy for sector 6	21.46	-154.95	9.73	25.58	9.21	1761395	21.31	-156.06	9.61	24.74	9.23	1751981
	(5.0)***	(-3.0)***	(1.0)	(1.8)*	(4.8)***	(1.7)*	(4.9)***	(-3.1)***	(1.0)	(1.9)**	(4.9)***	(1.7)*
Dummy for sector 7	16.34	-159.06	17.81	6.81	2.52	1122883	19.35	-158.19	20.11	6.84	2.54	1368216
	(3.7)***	(-3.0)***	(1.8)*	(0.4)	(1.3)	(1.1)	(4.3)***	(-3.0)***	(2.0)**	(0.5)	(1.3)	(1.3)
Dummy for sector 8	14.66	-165.84	7.72	2.48	1.94	1350207	10.77	-166.55	4.77	3.97	1.87	1112594
	(3.7)***	(-3.5)***	(0.9)	(0.2)	(1.1)	(1.4)	(2.7)***	(-3.5)***	(0.5)	(0.3)	(1.1)	(1.2)
Dummy for sector 9	8.85	-181.33	1.13	3.32	1.14	456799.2	9.40	-181.88	1.55	2.98	1.16	492355.9
	(2.3)**	(-3.9)***	(0.1)	(0.3)	(0.7)	(0.5)	(2.4)**	(-3.9)***	(0.2)	(0.2)	(0.7)	(0.5)
Dummy for sector 10	5.74	-157.19	11.60	2.48	0.58	1197060	6.29	-156.69	12.02	3.31	0.57	1236052
	(1.5)	(-3.4)***	(1.5)	(0.2)	(0.3)	(1.3)	(1.6)	(-3.4)***	(1.4)	(0.3)	(0.3)	(1.4)
Dummy for sector 11	5.98	-270.71	2.10	0.47	0.53	-1957767	4.70	-284.15	-3.23	10.39	0.54	-1874723
	(1.4)	(-5.4)***	(-0.2)	(0.0)	(0.3)	(-2.0)**	(1.1)	(-5.3)***	(-0.3)	(0.8)	(0.3)	(-1.9)*
Dummy for sector 12	18.80	-158.96	15.14	6.14	2.45	882111.9	20.24	-159.02	16.23	5.85	2.47	971370
	(4.8)***	(-3.4)***	(1.7)*	(0.5)	(1.4)	(1.0)	(5.1)***	(-3.4)***	(1.8)*	(0.5)	(1.4)	(1.1)
Dummy for sector 13	26.64	-150.53	9.50	17.06	10.54	936937.8	29.70	-150.13	11.80	16.42	10.58	1124630
	(6.5)***	(-3.1)***	(1.0)	(1.2)	(5.8)***	(1.0)	(7.1)***	(-3.1)***	(1.3)	(1.3)	(5.9)***	(1.2)
Dummy for sector 14	7.56	-183.69	0.93	2.55	0.36	131243.3	7.33	-184.61	0.76	2.01	0.37	115892.7
	(1.3)	(-2.6)***	(0.1)	(0.1)	(0.1)	(0.1)	(1.3)	(-2.7)***	(0.1)	(0.1)	(0.1)	(0.1)
Dummy for sector 15	14.09	-167.32	7.74	9.71	3.35	614020.7	15.50	-167.61	8.66	9.19	3.37	6832802.2
	(3.0)***	(-3.0)***	(0.7)	(0.6)	(1.6)	(0.6)	(3.2)***	(-3.0)***	(0.8)	(0.6)	(1.6)	(0.6)
Dummy for sector 16	17.25	-161.44	16.66	5.41	1.67	1282331	19.53	-161.38	18.40	4.84	1.70	1419420
	(4.1)***	(-3.2)***	(1.8)*	(0.4)	(0.9)	(1.3)	(4.6)***	(-3.2)***	(1.9)*	(0.4)	(0.9)	(1.4)
Dummy for sector 17	7.93	-175.60	-0.51	2.93	2.02	1865707	9.04	-176.37	0.34	1.83	2.05	1927505
	(1.9)*	(-3.5)***	(-0.1)	(0.2)	(1.1)	(1.9)*	(2.1)**	(-3.6)***	(0.0)	(0.1)	(1.1)	(2.0)**
Dummy for sector 18	15.22	-157.31	6.11	8.37	3.56	1091125	15.32	-157.64	6.20	8.52	3.56	1095538
	(2.7)***	(-2.3)**	(0.5)	(0.4)	(1.4)	(0.8)	(2.6)***	(-2.3)**	(0.5)	(0.5)	(1.4)	(0.8)
Dummy 2002	20.97	-10.68	16.46	40.46	-6.03	-979191.2	27.82	-12.85	21.74	33.91	-5.94	-636447.9
	(3.9)***	(-0.1)	(1.3)	(2.2)**	(-2.5)**	(-0.8)	(5.1)***	(-0.1)	(1.8)*	(2.1)**	(-2.5)**	(-0.5)
Dummy 2003	33.69	-30.48	19.10	40.97	-5.66	-868556.1	41.71	-29.28	25.26	35.26	-5.54	-709221
	(6.4)***	(-0.3)	(1.6)	(2.3)**	(-2.4)**	(-0.6)	(7.9)***	(-0.3)	(2.2)**	(2.2)**	(-2.4)**	(-0.3)
Dummy 2004	30.75	-56.39	29.44	52.50	-0.01	-661832.3	38.58	-56.61	35.45	46.72	0.10	-241205.8
	(5.8)***	(-0.8)	(2.5)**	(2.9)***	(-0.0)	(-0.5)	(7.3)***	(-0.8)	(3.1)***	(3.0)***	(0.0)	(-0.2)
Dummy 2005	32.56	-52.88	20.23	55.65	2.68	-415084.3	40.44	-53.28	26.28	49.64	2.79	2320.566
	(6.2)***	(-0.7)	(1.7)*	(3.1)***	(1.1)	(-0.3)	(7.7)***	(-0.8)	(2.3)**	(3.1)***	(1.2)	(0.0)
Dummy 2006	34.77	-52.57	20.15	50.27	-0.82	-510627	42.42	-53.02	26.03	44.36	-0.71	-104776
	(6.6)***	(-0.8)	(1.7)*	(2.8)***	(-0.3)	(-0.4)	(8.1)***	(-0.8)	(2.2)**	(2.8)***	(-0.3)	(-0.1)
Dummy 2007	29.89	-64.26	15.14	53.56	0.54	-715010.5	37.48	-64.82	20.97	47.55	0.66	-313210.7
	(5.6)***	(-0.9)	(1.3)	(3.0)***	(0.2)	(-0.6)	(7.1)***	(-1.0)	(1.8)*	(3.0)***	(0.3)	(-0.3)
Dummy 2008	28.44	-71.23	13.49	45.74	-3.23	-1200218	35.89	-71.68	19.22	39.99	-3.12	-801524.9
	(5.4)***	(-1.0)	(1.1)	(2.5)**	(-1.4)	(-1.0)	(6.8)***	(-1.1)	(1.6)	(2.5)**	(-1.4)	(-0.7)
Dummy 2009	24.73	-57.07	11.23	46.78	-2.74	-1231420	31.82	-53.95	16.58	47.05	-2.62	-760021.3
	(4.7)***	(-0.8)	(0.9)	(2.6)***	(-1.2)	(-1.0)	(6.0)***	(-0.8)	(1.4)	(3.0)***	(-1.2)	(-0.6)
Dummy 2010	29.93	-58.83	14.59	45.88	-2.91	-619741.9	37.08	-59.52	20.08	39.97	-2.80	-240870.4
	(5.7)***	(-0.8)	(1.2)	(2.6)***	(-1.2)	(-0.5)	(7.0)***	(-0.9)	(1.7)	(2.5)**	(-1.2)	(-0.2)
Dummy 2011	29.15	-87.46	14.46	59.30	-3.72	-609476.9	36.25	-90.15	19.96	50.22	-3.61	-282773.3
	(5.5)***	(-1.3)	(1.2)	(3.3)***	(-1.6)	(-0.5)	(6.9)***	(-1.3)	(1.7)*	(3.3)***	(-1.6)	(-0.2)
Dummy 2012	28.71	-61.66	13.67	46.99	-2.57	-243481.5	35.82	-62.13	19.00	41.03	-2.26	248761.5
	(5.4)***	(-0.9)	(1.2)	(2.6)***	(-1.1)	(-0.2)	(6.8)***	(-0.9)	(1.6)	(2.6)***	(-1.0)	(0.2)
No. Observation	997	828	996	996	997	997	996	827	995	996	996	996
R-Square	0.335	0.049	0.072	0.073	0.362	0.311	0.308	0.057	0.067	0.245	0.368	0.326
P-value	(0.00)***	(0.133)	(0.0)***	(0.0)***	(0.0)***	(0.0)***	(0.0)***	(0.038)	(0.0)***	(0.0)**	(0.0)***	(0.0)***
Hausman Test	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	1	1	1	1	1	1	1	1	1	1	1	1

Notes: ***Significant at 1% level, ** Significant at 5% level, and *Significant at 10% level. Numbers in parentheses are asymptotic t-values. ROA= return on assets; ROE= return on equity; EPS=earnings per share; MBVR= Market value of equity/ Book value of equity; Tobin's Q= Market value of equity+ book value of debt/ book value of assets; Prof=earnings before interest and tax + depreciation / total assets; TDTA= total debt to total assets TDTE= total debt to total equity; Size= natural log of total book value of assets; Growth=assets of current year - assets of previous year / assets of current year. Dummy refers to the dummy variables for sector and year. Leverage refers to TDTA or TDTE.

5. CONCLUSION

This study checks the influence, which capital structure measure has on non-financial firm's performance listed in KSE in Pakistan. There is no sole research originated in Pakistan that examines the relationship among capital structure and firm's performance by taking top 100 non-financial firms listed in KSE, this research strives to fill the gap in this field.

The results demonstrate that the TDTA, LTDTA and STDTA have significant and negative impact on (ROA), (EPS) and (TOBIN). The capital structure of firms has a negative and significant influence on the performance of firms measures in both the market and accounting measures. Growth has a positive and significant effect on (ROA). Size has a positive and significant impact on firm performance measured by (ROA), (EPS), (MBVR), (TOBIN) and (PROF).

The conclusion is that firm's capital structure has a significant and negative impact on the firm's performance measures in both the accounting and market measures. The results showed that firm's growth increases the firm performance. The results also illustrate that there is a positive relation among firm size and firm's performance. The larger the firms size lower its insolvency costs, as firm size reduces the bankruptcy costs increases, so the bankruptcy costs has negative impact on firm performance. In general the research finds that the sample firms are mainly financed by short term debt due to weak debt market and ineffective equity market.

The limitation of this research is that not consider the influence of corporate governance structure, geographical place of the firms, inflation, exchange rate and political changes on the firm performance. We can recommend future studies which emphasize on the impact of corporate governance structure, geographical place of the firms, inflation, exchange rate and political changes on the firm performance. This research for easiness uses industry as a dummy variable. However, future

research can be predict for this research model between industry sectors to observe if there are any differences in the study relation among different industries, and thus, additional thorough analysis on a specific industry would be interesting.

APPENDICES

Table 10: Variables measurement

Main Variables	Code	Measurement
Short term Debt to total assets	(STDTA)	Short term debt / total assets
Long term Debt to total assets	(LTDTA)	Long term debt / total assets
Total Debt to total assets	(TDTA)	Total debt / total assets
Total Debt to total equity	(TDTE)	Total debt / total equity
Firm Size	Size	natural log of total book value of assets
Firm's Growth	Growth	(assets of current year - assets of previous year) / assets of current year.
Return on Assets	(ROA)	net income / avg. of total assets
Return on Equity	(ROE)	net income / avg. of total shareholders' equity
Earnings per Share	(EPS)	net earnings after tax / number of shares
Tobin's Q	TOBIN	(Market value of equity+ book value of debt) / book value of assets
Market to book value	(MBVR)	Market value of equity / Book value of equity
Profit	(PROF)	(earnings before interest and tax + depreciation) / Total assets

Table 11: Industrial Sectors

Sr. No.	Sector Name
Sector 1	Cement
Sector 2	Refinery
Sector 3	Oil and Gas Exploration Companies
Sector 4	Oil and Gas Marketing Companies
Sector 5	Chemicals
Sector 6	Fertilizer
Sector 7	Food & Personal Care Products
Sector 8	Sugar & Allied Industries
Sector 9	Textile Composite
Sector 10	Textile Spinning & Weaving

Sector 11	Power Generation & Distribution
Sector 12	Automobile Assembler, Parts & Accessories
Sector 13	Pharmaceuticals
Sector 14	Cable & Electrical Goods
Sector 15	Engineering
Sector 16	Paper Board & Jute
Sector 17	Technology & Communication
Sector 18	Miscellaneous
Sector 19	Synthetic & Rayon

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