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Capital structure and Firm performance: Empirical evidence from IT Sector

Sonika Chaudhary

Research Scholar

Department of Commerce,
Maharishi Dayanand University,
Rohtak (Haryana, India)

E-mail: sonikachaudhary@gmail.com

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Abstract:

The Purpose of this paper is to examine the impact of capital structure on firms' performance using a dataset of Information technology Firms in India. This paper carries out a panel data analysis of 190 observations from 19 IT firms listed on the Bombay stock exchange over the period 2011-2020. Accounting performance is assessed through three different Performance measures: Return on assets (ROA), Return on equity (ROE) and Return on capital employed (ROCE). Study documents a significant and Positive impact of debt measures on performance. The result exhibit high debt ratio is beneficial for accounting performance of selected firms. Long term debt shows positive relation with performance. Therefore, it is suggested to IT firms to adopt long term debt to achieve higher performance. This study uses panel regression technique to analyse the data. The role of control variables is also established in this paper. Study contributes to the awareness by giving evidence to the policy makers that sample firms should discourage Short term debt in their capital structure. The findings of this research can help IT firms to improve their knowledge of financial management and use resources efficiently.

Keywords: Capital structure, Information Technology, Performance, Debt, Financing

1.1: Introduction:

Technology sector includes firms that make or distribute electronically based products or services. The opportunity for Technology firms is massive. Firms in every sector and country can invest in technology to help improve the products and services they offer or even make business operations more efficient. For example, a Financials firm may invest in new data storage systems to

back up client information. Or it could purchase faster servers to process the data and respond to client needs more quickly. Firms may risk falling behind in the global economy if they don't periodically invest in upgrading their technology-which is why businesses are the leading spenders on technology. The most crucial component of starting a business is capital. It acts as the foundation of the company. Debt and Equity are the two primary types of capital sources for a business. Capital structure is defined as the combination of equity and debt that is put into use by a company in order to finance the overall operations of the company and for its growth. When analysts refer to capital structure, they are most likely referring to a firm's Debt to equity (D/E) ratio, which provides insight into how risky a company's borrowing practices are. Usually, a company that is heavily financed by debt has a more aggressive capital structure and therefore poses a greater risk to investors.

1.2: Research Objective:

To see the effect of capital structure on Performance of IT companies listed on the Bombay Stock Exchange.

2: Literature Reviews:

Jensen and Meckling, (1986) asserted that interest of Manager and shareholders are generally different. Managers generally prefer to invest in risky projects to increase earnings, therefore want to invest in debt instruments. On the other hand shareholders insist on reducing risk by issuing low debt. These conflicting interests between manager and shareholders increase Agency costs.

El-sayed-Ebaid, (2009) investigated negative relation of return on assets and Short term, total debt. **Salim and Yadav (2012)** examine impact of capital structure on profitability of 237 Malaysian firms. Sample includes six diverse sectors listed on Bursa Malaysia from 1995-2011. Result indicate negative impact of debt ratios on Profitability. Size positively linked with EPS and Tobin's Q. Firm Growth positively related with ROE, ROA and EPS. **Of et al., (2014)** examined Nairobi Stock exchange listed 30 firms as sample studied from 2007-2011. Findings shows that long term and short term debt found positive relation with all performance measure except with Return on assets. Total debt negatively related with performance except ROA.

3.1: Data and Methodology:

Data and Sample: Our study mainly considers firms listed on Bombay stock exchange. Total 21 companies belonging to Information technology sector are analyzed during 2010-2020. Further we have to eliminate firms due to unavailability of data. A final sample of 19 IT companies is analyzed for the study. These firms are observed for Ten Years allowing us to form 190 panel data observations. Data is gathered from PROWESS database.

3.2: Variables:

Variables used in this study are as follows:

Variables	Measures
Dependent variables:	
Return on Assets (ROA)	Net Profit to Total Assets
Return on capital employed(ROCE)	Net profit to Capital employed
Return on equity (ROE)	Net Profit to Total Equity
Independent variables:	
Debt to Equity (DE)	Total Debt to Total Equity
LTDTA	Long term Debt to Total assets
STDTA	Short term Debt to Total assets
Tangibility	Net Fixed Assets to total assets
Size	logarithm of Total Assets
Age	Number of Years since Incorporation

4.1: Result and Discussion:

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	179	16.61	7.28	2.16	36
ROCE	175	22.272	10.012	2.38	45.27
ROE	168	23.56	10.52	3.96	51.92
LTDTA	64	.002	.002	0	.007
STDTA	190	.022	.038	0	.2
DE	104	.097	.094	.01	.36
Tangibility	173	.102	.054	.009	.237
Size	190	4.549	.738	2.737	6.027
Age	170	22.794	5.947	10	39

Descriptive result shows that Average ROE is 23.56 which are highest among other performance measures. Firms maintain comparatively higher proportion of STDTA with average value of .002. Mean DE .097 shows that firms generally employ 9% debt as comparison to equity in their capital structure. Average IT firms are 22 years old as per the descriptive analysis.

Table 2: Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) ROA	1.000								
(2) ROCE	0.967	1.000							
(3) ROE	0.953	0.996	1.000						

(4) LTDTA	-0.191	-0.194	-0.210	1.000					
(5) STDTA	-0.193	-0.198	-0.150	-0.250	1.000				
(6) DE	-0.197	-0.166	-0.108	-0.226	0.973	1.000			
(7) Tangibility	-0.082	-0.001	-0.002	-0.179	0.170	0.134	1.000		
(8) Size	0.500	0.535	0.521	-0.093	-0.334	-0.270	-0.323	1.000	
(9) Age	-0.239	-0.201	-0.200	0.580	-0.190	-0.083	-0.258	0.316	1.000

Correlation result shows there was negative relation of all Capital structure ratios with Performance measures. Tangibility and Age were also negatively related to Performance. Size only was positively related to all Performance measures which indicated that bigger firms perform better than smaller firms. Negative relation of Age depict that older the firm, lower would be the performance as per correlation result.

Table 3: Dependent Variable: ROA

	OLS	FE	RE
LTDTA	971.426 (829.713)	335.937 (440.687)	563.174 (598.901)
STDTA	-63.287 (207.08)	-352.89** (117.97)	-259.65* (145.30)
DE	41.427 (138.251)	137.142 (86.577)	155.089 (100.947)
Tangibility	6.253 (25.727)	-38.1* (21.061)	-29.697 (25.261)
Size	10.19*** (2.635)	3.971 (14.71)	7.244* (3.742)
Age	-.895** (.323)	-.731 (1.042)	-.787** (.32)
constant	-13.372 (14.11)	21.335 (48.178)	3.556 (16.767)
Observations	27	27	27
Pseudo R ²	0.5318	0.6850	0.4425
F-stat	3.786	3.986	13.17

Note: Standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 4: Dependent Variable: ROCE

	OLS	FE	RE
LTDTA	1302.038 (1157.833)	397.055 (686.788)	689.438 (800.703)
STDTA	-336.615 (280.417)	-664.427*** (180.659)	-563.363*** (190.981)
DE	226.656 (187.406)	331.869** (132.469)	357.884*** (133.83)
Tangibility	31.084 (34.775)	-47.235 (32.08)	-32.777 (33.817)
Size	14.134*** (3.83)	7.386 (22.417)	11.549** (5.469)
Age	-1.227** (.463)	-1.024 (1.588)	-1.19*** (.457)
constant	-23.928 (19.499)	17.836 (72.487)	-3.182 (23.753)
Observations	26	26	26
R-squared	0.5149	0.7177	0.4149
F-stat	3.361	4.238	18.59

Note: Standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 5: Dependent Variable: ROE

	OLS	FE	RE
LTDTA	1463.503 (1142.036)	312.862 (705.65)	693.046 (810.229)
STDTA	-425.3 (285.037)	-750.29*** (188.902)	-647.64*** (197.184)
DE	299.664 (190.291)	409.178** (138.632)	427.476*** (138.042)
Tangibility	30.841 (35.411)	-50.483 (33.724)	-34.955 (35.03)
Size	15.067*** (3.628)	4.395 (23.555)	12.084** (5.613)

Age	-1.366*** (.444)	-.857 (1.669)	-1.283*** (.464)
constant	-25.743 (19.421)	28.955 (77.145)	-3.439 (24.518)
Observations	27	27	27
R-squared	0.5714	0.7212	0.4799
F-stat	4.444	4.743	21.26

Note: Standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Table 3 illustrated regression result by taking ROA as dependent variable. Hausman test result shows Random effect was appropriate with P value 0.9626. There was no sign of multicollinearity as mean VIF value was less than 10. As per Random effect; LTDTA, DE and Size were positively related to ROA. STDTA and Age were found significant variables. Table 4 showed regression result by taking ROCE as dependent variable. Hausman test found fixed effect was consistent. STDTA, Tangibility and Age were negatively related to ROCE. Table 5 shows regression result with ROE as dependent variable. Hausman test result suggests fixed effect model was consistent. Result showed that LTDTA and DE were positively related to Performance, whereas STDTA was negatively affecting performance in all the three models.

5: Conclusion and Suggestion:

An effort has been made to analyze the impact on IT firms. Result of this study indicates there is positive impact of Debt on Performance of IT companies as higher the debt, higher will be the performance. Regression result showed that LTDTA and DE were positively related to Performance, While STDTA was negatively influencing firm performance. Therefore it was suggested to IT firms to employ more Debt Financing and use long-term debt in their capital structure for higher Performance.

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