

The Impact of Corporate Leverage on Profitability: Evidence from IT Industry in India

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Abstract

The term 'leverage' is used to utilize the fixed cost or funds to increase the returns to the owners of the firm. The study is an attempt to analyze the determinants of corporate leverage in IT industry in India. In order to test the hypotheses and to address the objectives of the study, the present study has chosen 28 sample firms from IT industry in India, which are listed in National Stock Exchange. The study used correlation and regression analysis to find the relationship and the impact of corporate leverage on profitability. The study proves that there is a significant impact of operating Leverage *and Financial Leverage on Return on Net worth*. Hence, based on the results, the study rejects H_0^1 and H_0^2 , revealing that the Operating Leverage *and Financial Leverage* have impact, of course the Operating Leverage negatively while the Financial Leverage positively, on Return on Net worth of IT Industry as a whole in India. However, the impact of Combined Leverage on Return on Net worth is not significant due to negative impact of Operating Leverage on Return on Net worth.

Key words: Capital Structure, Corporate Leverage, Profitability

JEL: G32

Introduction

A lever is a rigid piece that transmits and modifies force or motion where forces are applied at two points and it turns around a third. The physical principle of the lever is intuitively appealing to most; hence it is the principle that permits the magnification of force when a lever is applied to a fulcrum. Therefore, it is an increased means of accomplishing some purpose. Generally it brings an increase in income volatility. In business, leverage is the means of increasing profits, which may be *favourable* or *unfavourable*. The former reduces profit, while the latter increases it. Hence, it is essentially related to a profit measure which may be a return on investments or on earnings before taxes, etc. hence it is an important tool of financial planning.

Further, 'leverage' is the ability of a firm in employing *long-term* (LT) funds having a fixed interest, to enhance returns to the owners. Therefore, it is a means of accomplishing power for gaining

an advantage. It also represents the impact of one financial variable over some other related financial variables. In other words, it is the employment of *fixed assets* (FA) or funds for which a firm has to meet fixed cost (FC) or fixed rate of interest obligation irrespective of the level of activities attained or the level of *operating profit* (OP) earned. The higher the leverage, higher will be the profit and *vice versa*. However, a higher leverage obviously implies higher outside borrowings and hence riskier if the business activity of the firm suddenly takes a dip. But a low leverage does not necessarily indicate prudent financial management, as the firm might be incurring opportunity cost for not having borrowed funds at FC to earn higher profits. There are many ratios used to measure the leverage effect on the profitability of a firm, which is broadly classified in to two categories viz *operating leverage* and *financial leverage*.

Review of Literature

Shahar (1968) stated that in a perfect capital market, where the interest rate is constant, any Capital Structure (CS) is efficient and that the cost of capital is, therefore, constant. **Bhat** and **Ramesh** (1980) found a negative relationship between dividend payout and leverage ratio, though cause-and-effect was related with leverage the degree of Operating Leverage (OL) did not influence the use of debt the Financial Leverage (FL) and debt service capacity were found to be negatively related.

Barton and Gordon (1988) found that a corporate strategy perspective, with its emphasis on managerial choice, might provide a behavioral basis for understanding the CS of large US firms at the firm level which was complementary to the traditional finance paradigm at the level of the economy. **Harris and Raviv** (1991), in a study titled "*The theory of capital structure*" surveyed CS theories based on *agency costs, asymmetric information, product / input market interactions, and corporate control considerations* (but excluding tax based theories). For each type of model, a brief overview of the papers surveyed and their relation to each other's type is provided.

Safieddine and Titman (1999) made a study titled "*A study in leverage and its determinants*" and presented results, which are consistent with the use of debt being positively associated with an alignment of interest between shareholders and managers that subsequently increased their leverage ratios, tend to experience significantly better performance than those that do not.

Raheman et al. (2007), in a research paper titled "*Capital structure and profitability*" examined the effect of CS on the profitability of firms listed on Islamabad stock exchange and selected a sample of 94 non-financial firms for a period of six years from 1999 to 2004. Pooled ordinary

least square model of regression was used in the estimation of a function relating to the net operating profitability with the predictor variables viz. *debt ratio, long-term debt to liabilities, equity to liabilities and size of the firm* measured in terms of natural logarithm of sales. The results showed that the CS of the non-financial firms listed on *Islamabad stock exchange* has a significant effect on the profitability of the firms.

Objectives of the Study

1. To study the relationship between the leverage and profitability of firms of IT sector in India.
2. To study the impact of the leverage on profitability of IT sector in India.

Hypotheses

The following hypotheses are developed to study the impact of the selected financial variables on operating leverage.

H_0^1 : There is no significant impact of *Operating Leverage* (OL) on *Return on Net Worth* (RONW)

H_0^2 : There is no significant impact of *Financial Leverage* (FL) on *Return on Net Worth* (RONW)

Research Methodology

The study is based on the secondary data, which are collected from the Bombay Stock Exchange (www.bseindia.com), National Stock Exchange (www.nseindia.com) and are supplemented with other published sources in the form of journals and magazines.

Sampling Design

In order to test the stated hypotheses and to address the objectives of the study, the present study has chosen 28 sample firms from IT industry in India, which are listed in NSE. The reason for choosing these firms from the listing flag of NSE is due to the fact that the NSE has the largest number of quoted domestic firms on any stock exchanges in the world.

Research Methods

The study used descriptive statistics, viz mean, standard deviation, multiple correlation and regression for analysis of data.

Ratios

(i) Operating Leverage (OL)

The OL refers to the existence of fixed cost (FC) element in total cost structure of a firm and its impact on

firm's ability. It is expressed as *Contribution / EBIT*. A high OL indicates a larger proportion of FC causing low net profit and the EBIT will tend to vary more with sales.

$$OL = \frac{EBIT}{Sales} \quad \text{or} = \frac{Contribution}{EBIT}$$

(ii) Financial Leverage (FL)

The FL refers to the use of debt component in capital structure (CS) and the effect of payment of fixed interest on firm's profitability. It is expressed as EBIT / EBT. A high FL indicates a higher percentage of debt in the CS when compared to the equity.

$$FL = \frac{EBIT}{EBT}$$

(iii) Net worth (NW)

Net worth is an important determinant of the value of a firm, considering it is composed of primarily of all the money that has been invested since its inception, as well as the retained earnings for the duration of its operation. The net worth can be used to determine credit worthiness of a firm because it gives a snapshot of the firm's investment history also called owners' equity, shareholders' equity and net assets.

(iv) Return on Net worth (RONW)

It is the ratio of an individual or business taxpayer's income to their overall net worth.

$$RONW = \frac{Net\ Income}{Shareholders'\ Equity} \times 100$$

(V) Profitability Ratio

Profitability ratio is a class of financial metrics that are used to assess a business's ability to generate earnings when compared to its expenses and other relevant costs incurred during a specific period of time. For most of these ratios, a higher value relative to a competitor's ratio or the same ratio from a previous period is found to be indicative that the firm is doing well.

$$Profitability = \frac{Net\ Income}{Shareholders'\ Equity} \times 100$$

Regression

The linear regression uses one predictor variable to explain and / or predict the outcome of Y, while multiple regression uses two or more predictor variables to predict the outcome. The general form of each type of regression is:

Linear regression: $Y = a + bX + u$

Multiple regression: $Y = a + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_iX_i + u$

“b” is called the slope

“a” is called the intercept

“X” is the predictor variable

“Y” is the criterion variable

Y = RONW (Return on Net Worth)

X₁ = OL (Operating Leverage) a = Regression Constant

X₂ = FL (Financial Leverage) b₁ = Regression Coefficient

X₃ = CL (Composite Leverage) u = Error Term

Industry Analysis and Discussion

The selected sample of 28 firms of IT industry in India is presented in table 1.

Table 1
List of Firms Selected for the Study

Sl. No.	Firm Name	Sl. No.	Firm Name
1	Tech Mahindra	15	Wipro
2	AurionPro Solutions	16	Zensar Technologies
3	EClerx Services	17	Zylog
4	Financial Technologies	18	ORACLE
5	IICI. Technologies	19	Aftek
6	Hinduja Global Solutions	20	Megasoft
7	Infosys	21	Xchanging Sol.
8	MindTree	22	Axis IT&T
9	Nucleus Software	23	Firstsour.Solu
10	Polaris	24	Melstar Info.
11	RS Software (India)	25	Onward Technologies
12	Rollta India	26	Ramco System
13	Sasken Communication Technologies	27	Visesh Infotechnics
14	TCS	28	Subcx

Source: www.nse.com

Table 2
Descriptive Statistics of Return on Net worth, Operating, Financial and Combined Leverage of IT Industry in India from 2010 to 2014

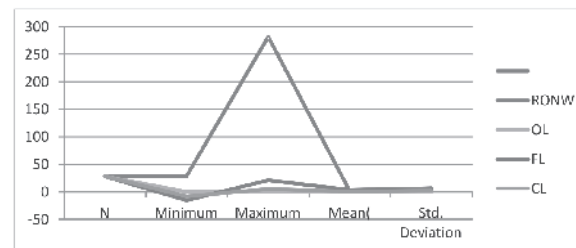
Variables	N	Minimum	Maximum	Mean(\bar{X})	Std. Deviation(σ)
RONW	28	28.90	281.69	1.20	6.45
OL	28	-0.06	0.82	0.26	0.19
FL	28	-15.33	21.03	3.40	6.68
CL	28	-8.29	5.28	0.71	2.33

Source: Computed results based on collected data from NSE.

The descriptive statistics of Return on Net Worth, Operating, Financial and Combined Leverage of IT industry in India are presented in table 2. It is inferred that variable, RONW has the minimum value as 28.90 and maximum value as 281.69, while the \bar{X} is 1.20 and σ is 6.45. It is seen that the variable, OL has the minimum value as -0.06 and the maximum value

as 0.82, while the \bar{X} is 0.26 and σ is 0.19. It is inferred that the variable, FL has the minimum value as -15.33 and maximum value as 21.03, while the \bar{X} is 3.40 and σ is 6.68. It is found that the variable, CL has minimum value as -8.29 and maximum value as 5.28, while \bar{X} is 0.71 and σ is 2.33.

Figure - A
Descriptive Statistics of Return on Net worth, Operating, Financial and Combined Leverage of IT Industry in India from 2010 to 2014



Source: Computed results based on collected data from NSE.

Figure A reveals the descriptive statistics of Return on Net worth, Operating, Financial and Combined Leverage of IT Industry in India.

Correlation Analysis

Pearson's correlation analysis is used to study the

relationship between predictor variables and response variable, and the relationship between CL and FL (0.806) is highly significant positively at 1% level; whereas the relationship between RONW and OL (-0.376) is significant negatively at 5% level (*vide table 3*).

Table 3
Results of Correlation Analysis for Selected Variables of IT firms in India from 2010 to 2014
(₹ in crore)

Variables		RONW	FL
OL	Pearson Correlation	-.376*	
	Sig. (2-tailed)	.049	
	N	28	
CL	Pearson Correlation		.806**
	Sig. (2-tailed)		.000
	N		28

Source: Computed results based on collected data from NSE.

*. Correlation is significant at 0.05 level (2-tailed).

** Correlation is significant at 0.01 level (2-tailed)

Table 4
Multiple Regression Results of selected Financial Variables of IT Industry in India from 2010 to 2014

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	β		
<i>RONW</i>	32.48**	144.315		6.785	.000
<i>OL</i>	-0.05*	-125.548	-.370	-2.048	.042
<i>FL</i>	0.27*	5.141	.532	1.770	.049
<i>CL</i>	41.08	-11.673	-.423	-1.399	.174
R					0.49
R ²					0.24
F					2.530*(0.030)

Source: Computed results based on collected data from NSF

Table 4 shows that the OL has significant negative co-efficient (-0.05) on RONW in IT firms in India. Hence, H_0^1 : “there is no significant impact of OL on RONW” is rejected at 5% level; the FL has significant positive co-efficient (0.27) on RONW of IT firms in India. Hence, H_0^2 : “there is no significant impact of FL on RONW” is rejected at 5% level. However, the CL has insignificant positive co-efficient (41.08) on RONW, which may be due to the significant negative coefficient of OL on RONW. The value of *F statistics* is 2.53, which shows a good fit of regression and is significant at 5% level with R^2 0.24.

Conclusion

As far as the corporate leverage (*OL*, *FL* and *CL*) is concerned, the study concludes that there is a significant impact of *OL and FL on RONW*. Hence, based on the results, the study rejects H_0^1 and H_0^2 , revealing that the *OL and FL* have impact, of course the OL negatively while the FL positively, on *RONW* of IT Industry as a whole in India. However, the impact of CL on RONW is not significant due to the negative impact of OL on RONW.

Limitations and Scope for Further Studies

➤ In the present study, a sample of 28 firms of IT Industry has been considered for analysis. In future, researchers can consider inclusion of more number of firms by referring to the other data sources like *capital plus* etc to take up a study with large sample units to explore further

results.

- In the present study, *descriptive statistics, correlation and multiple regressions* are only used for analysis; therefore analysis by use of appropriate advanced models like *Chow Test* etc., if applied may bring a differing inference.

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