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Capital Structure and Profitability of Foreign Direct Investment Companies in the Indian Pharmaceutical Industry

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Abstract: **The financial performance of a company is also influenced by a good amalgamate of debt and equity portions in the financing patterns of that particular company. Using firm-level data, the current study has examined the relationship between capital structure and profitability of FDI (foreign direct investment)-based enterprises in the Indian pharmaceutical industry. 25 FDI-accepted companies in the Indian pharmaceutical sector were selected as a sample for an 11-yearlong study; from 2010–2011 to 2020–2021. To investigate the impact of capital structure on the profitability of FDI-based companies, multiple regression analysis has been utilised. The profitability was assessed using the following metrics: Return on Net Worth (RONW), Return on Total Assets (ROTA), and Return on Total Income (ROTI). In order to investigate how capital structure affects profitability of FDI firms, two debt indicators are used. These are Debt/Equity (D/E), Short Term Debt/Total Net Assets (STD/TNA), and Total Outside Liabilities/Total Net Assets (TOL/TNA). The findings show that the Debt/Equity ratio significantly effects negatively the profitability of FDI companies, but the Total Outside Liabilities/Total Net Assets (TOL/TNA) and Short-Term Debt/Total Net Assets (STD/TNA) have no discernible effect on profitability. The findings show that capital structure has a substantial effect on profitability and the success of the FDI firms in the Indian pharmaceutical sector may be dependent on the financing patterns they choose.**

Index Terms: **Capital Structure, Profitability, Foreign Direct Investment, Debt/ Equity Ratio, and Indian Pharmaceutical Industry.**

I. Introduction

Foreign Direct Investment (FDI)

Foreign Direct Investments (FDI) is a prime driver for economic growth and non-debt financial source for the economic development of India. Foreign direct investment is not only transfers money from one country to another. Besides being a significant driver of economic growth, FDI also brings in increased employment opportunities, managerial expertise, technology, and infrastructure (Vidyasagar Mani Thota and B. Sai Griridhar, 2016[1].

In the pharmaceutical industry 100% of FDI's are allowed (RBI, Press Note N0. 4 (2001 Series) automatically in greenfield pharmaceuticals and 74% through automatic route & 100% under government route in brownfield pharmaceuticals. India is the world's largest supplier of generic medications. Over 50% of the global demand for various vaccines, 40% of the US market for generic drugs, and 25% of the UK market for all medications are supplied by the Indian pharmaceutical industry. In the world, India is ranked 14th by value and third by volume in terms of pharmaceutical output. Approximately 10,500 manufacturing facilities and 3,000 pharmaceutical businesses make up the domestic pharmaceutical industry. According to the FDI India Report, India holds a prominent place in the global pharmaceutical business. Additionally, the nation boasts of an excellent pool of scientists and engineers who can propel business to new heights. Currently, Indian pharmaceutical companies supply more than 80% of the antiretroviral medications used worldwide to combat AIDS (Acquired Immunodeficiency Syndrome).

The pharmaceutical industry in India is one of the country's most promising science-based businesses, with enormous potential for both drug production and technological advancement. In terms of the quality of medicine produced in India, the pharmaceutical industry here ranks third in the world. In India, the pharmaceutical industry has over 20,000 registered companies and is severely fragmented. It has expanded exceptionally in the last two decades (Priyadharshini.R and Sunil Vakayil, 2018) [2]

According to an Economic Survey, in the year 2020-21, Foreign direct Investment in India's pharmaceutical industry witnessed a rapid growth, particularly on account of investments to meet COVID-19 related demands for treatments and vaccines. FDI inflows play a vital role in compounding domestic capital and help to boost industrial growth and employment generation across various sectors and industries. India has received total foreign direct investment of USD 54.1 billion during April-November 2021-22 (Business Standard Report).

II. Literature Review

Vidyasagar Mani Thota, B. Sai Griridhar, (2016),[1] studied the relationship between foreign investment and capital structure by using secondary data. The study analysed whether there is any influence of foreign presence on the leverage of domestic companies. It is revealed from the study that leverage of automobile industry of India has been negatively influenced by foreign presence. **Atif Ghayas, Javaid Akhter, (2018),[3]** explain the impact of

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capital structure decisions on company's profitability by taking the sample of 35 pharmaceutical firms listed in the Bombay Stock Exchange (BSE) for a period of 5 years from 2012 to 2016. Regression analysis was applied to analyse the relationship between capital structure and profitability, and it was concluded that Profitability and short-term debt are significantly correlated, whereas long-term debt and return on equity are not significantly correlated. **Anshu Handoo A, Kapil Sharma, (2014),[4]** analysed about the determinants of capital structure of 870 companies both in the private sector and government sector from 2001 to 2010. It was understood that the company's capital structure is dependent on various determinants. **Narinder Pal Singh, Mahima Bagga, (2019),[5]** focus on the effect of capital structure on profitability of NIFTY 50 companies from 2008-2017. They concentrated on the unique impact of the ratios of total debt to total equity on return on equity and return on assets. As a result, an increase in equity indicates an increase in return on total assets, whereas an increase in debt indicates a loss in return on total assets. **Chandrika Prasad Das, Rabindra Kumar Swain, (2018),[6]** basically talk about the determinants of capital structure and its impact on the financial performance. 50 manufacturing companies are covered for this study, and it is revealed from the findings that capital structure has considerable impact on financial performance. A study was carried out by **Rupali S. Ambadkar, (2019),** on the impact of capital structure on profitability of foreign direct investment companies in the Indian manufacturing industry. This study was conducted by taking into account "54 foreign direct investment firms from the S&P BSE 500 Index" as a sample. The findings showed that capital structure ratios significantly reduce profitability and support the Pecking-Order Theory's prediction. **Nagendra Marisetty (2017), [8]** studied the relevance of capital structure on profitability of 10 BSE SENSEX companies from different industries and concluded that the financing patterns do not have an impact on the profitability. The capital structure is a mixture of equity and debt, and every company profitability is not dependent on source of finance.

III. Study Objectives

- To Study the correlation between capital structure and profitability of FDI-based companies in the Indian pharmaceutical industry.
- To determine the impact of capital structure on the FDI based firm's profitability in the Indian pharmaceutical industry.

A. Study Hypothesis

Following are the hypothesis framed in this study

H01: "There is no significant impact of total outside liabilities/ total net assets ratio of a selected FDI based company on its Profitability".

H02: "There is no significant impact of debt/ equity ratio of a selected FDI based companies on its Profitability".

H03: "There is no significant impact of short-term debt / total net assets ratio of a selected FDI based companies on its Profitability".

B. Research Gap

According to the literature review, majority of the research is about the manufacturing sector as a whole, which is used to analyse the association between profitability and capital structure. The primary objective of this study is to determine how capital structure and profitability are related to the pharmaceutical business in India.

IV. Data Research Methodology

A. Sample and Data Collection

This study is based on secondary data and the data is obtained from PROWESS Database (Prowess IQ, 1.96) maintained by "Center for Monitoring Indian Economy (CMIE)". Based on the presence of foreign investment, 25 FDI based firms in Indian Pharmaceutical industry were selected for the study. The study was conducted from the period 2010-2011 to 2020-2021 (11 years). Regression analysis is used to examine how capital structure affects FDI firms' profitability in the Indian pharmaceutical sector. A Multiple Regression model was used to assess the effect of "capital structure on the profitability of foreign direct investment (FDI) firms in the Indian pharmaceutical sector".

B. Profitability Measures

Three profitability measures (dependent variables) were used in this study. They are as follows:

i. Return on Net worth (RONW)
ii. Return on Total Assets (ROTA)
iii. Return on Total Income (ROTI)

C. Measures of Capital Structure

Two measures of Capital Structure (Independent Variables) were employed based on the previous studies:

i. Total Outside Liabilities /Total Net Assets (TOL/TNA)
ii. Debt /Equity (D/E)
iii. Short Term Debt /Total Net Assets (STD/TNA)

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V. Analysis and Results

TABLE-I.

Descriptive Statistics

	TOL/T (%)		Debt/ Equity Ratio (times)	STD/TNA (%)	(ROE) Return on net worth	(ROTA) Return on total assets	ROTI Return on total income
N	Valid	263	247	263	246	263	262
	Missing	12	28	12	29	12	13
Mean	7638.415653		0.7	2171.334166	12.63	5.79	-5.21
Std. Error of Mean	5151.867813		0.109	1354.3390727	1.746	0.726	5.919
Median	42.745178		0	119.114719	14	7	11
Mode	.4153[a]		0	124.0000	14	8	15
Std. Deviation	83549.25574		1.711	21963.6888335	27.389	11.781	95.804
Range	1226499.585		16	329284.1221	476	118	836
Minimum	0.4153		0	15.8779	-172	-70	-793
Maximum	1226500		16	329300.0000	304	48	43

A. Correlation

TABLE-II.

Independente Variables

		TOL/T(%)	Debt/ Equity ratio(times)	STD/TNA (%)
TOL/TNA(%)	Pearson Correlation	1	-0.038	-.043
	Sig. (2-tailed)		0.551	.489
	N	263	246	263
	Sig. (2-tailed)	0.505	0	
Debt/ Equity ratio(times)	Pearson Correlation	-0.038	1	-.042
	Sig. (2-tailed)	0.551		.511
	N	246	247	246
STD/TNA (%)	Pearson Correlation	-.043	-.042	1
	Sig. (2-tailed)	.489	.511	
	N	263	246	263

It is observed from the Table II, correlation coefficient between two independent variables TOL/ TNA (%) and Debt/ Equity ratio(times) is -0.038 which indicates that there is no association between these two independent variables.

B. Results of Regression Analysis

1. Multiple Regressions Results (Return on Net worth: Dependent Variable):

TABLE-III.

MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.480[a]	.231	.209	30.2835

Predictors: (Constant), Debt/ Equity ratio(times), TOL/TNA (%), STD/TA

TABLE-IV.

COEFFICENTS

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	17.044	1.730		9.850	.000
TOL/TNA (%)	.000	.000	.374	.337	.736
Debt/ Equity ratio(times)	-10.631	1.312	-.665	-8.103	.000
STD/TNA (%)	.000	.001	-.389	-.351	.726

Dependent Variable: (ROE) Return on Net worth

Table-III, the value of R^2 is 0.231 which specify that 23.1 % variations in Return on Net worth are explained by independent variables. The results in Table-IV indicates that TOL/TNA and STD/TNA do not consist of any significant impact on Return on Net worth which is a dependent variable. The regression calculations in Table-IV depict that Return on Net Worth is significantly impacted negatively by the debt-to-equity ratio.

2. Multiple Regressions Results (Return on Total Assets: Dependent Variable)

TABLE-V.

MODEL SUMMERY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.444[a]	.197	.175	9.0910

Predictors: (Constant), Debt/ Equity ratio(times), TOL/TNA (%), STD/TA

TABLE-VI.

COEFFICIENTS

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.547	0.598		14.301	0
	TOL/TNA (%)	7.65E-05	0	0.714	0.631	0.528
	Debt/ Equity ratio(times)	-3.069	0.455	-0.565	-6.739	0
	STD/TNA (%)	.000	.000	-.731	-.646	.519

Dependent Variable: (ROTA)Return on total assets

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Table-V, R2 is 0.197, meaning that independent variables account for 19.7% of the variability in Return on Total Assets. Return on Total Asset, the dependent variable, is not significantly impacted by TOL/TNA or STD/TNA, according to Table VI data. The only ratio shows negative influence on return on total assets is the debt-to-equity ratio.

3. *Multiple Regressions Results (Return on Total Income: Dependent Variable:)*

TABLE-VII.

MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.353[a]	.125	.101	84.56086738

Predictors: (Constant), Debt/ Equity ratio(times), TOL/TNA (%), STD/TNA (%)

TABLE-VIII.

COEFFICIENTS

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	6.118	4.771		1.282	.201
TOL/TNA (%)	4.680E-05	.001	.057	.048	.961
Debt/ Equity ratio(times)	-20.989	3.628	-.507	-5.786	.000
STD/TNA (%)	.000	.004	-.034	-.029	.977

Dependent Variable: (ROTI)Return on total income

Table-VII, With an R2 value of 0.125, it is inferred that independent variables account for 12.5% of the variances in Return on Total Income. Return on Total Income, the dependent variable, is not significantly impacted by TOL/TNA or STD/TNA, according to Table-VIII results. Table-VIII regression results show that the debt-to-equity ratio negatively impacts the return on total income.

VI. FINDINGS

- Study results indicate that the capital structure indicator TOL/TNA do not have substantial effect on profitability indicators.
- Study results indicates that the capital structure indicator STD /TNA do not have significant impact on profitability indicators.
- Debt to Equity ratio has substantially negative impact on profitability indicators, which indicates that when the amount of Debt/ Equity increases, Profitability decreases.

As per the results it can be stated that

- The study adopts the null hypothesis H01, which states that a selected FDI-based company's profitability is not significantly impacted by its total outside liabilities/total net assets ratio.
- The examination supports the alternative hypothesis H02 that Debt/Equity Ratio has a considerable negative impact on the profitability of selected FDI-based companies.
- The analysis supports the alternative hypothesis H03, which states that the Short-Term Debt / Total Net Assets Ratio of selected FDI-based companies have no significant impact on profitability.

VII. CONCLUSIONS

A suitable capital structure is an important decision for every company because it affects the firm's value and financial success. This research study attempts to evaluate 'the relationship between capital structure and profitability' of 25 Foreign Direct Investment firms of Indian Pharmaceutical Industry. It may be concluded that capital structure has a big influence on profitability and that choosing the right financing mix increases earnings. Businesses that rely on foreign direct investment favour insider capital over outside capital when determining their capital structure. From Debt- Equity ratio, it is concluded that with the increase in the quantity of debt, level of profitability decreased as the capital structure indicator showed negative significant impact on profitability indicator's return on net worth, return on total assets and return on total income. FDI based firms in Indian Pharmaceutical Industry prefer inside funds for investments. Since just 25 FDI-based companies were examined in this study, it is advised that future research projects include more pharmaceutical companies and expand to other industries.

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