



## Capital structure analysis: A study of selected fertilizer companies in India

Hingu Kajalben Gunvantray<sup>1</sup>, Sonal Nena<sup>2</sup>

<sup>1</sup> Research Scholar, Department of Commerce, Saurashtra University Rajkot, Gujarat, India

<sup>2</sup> Assistant Professor, Department of Commerce, J J Kundaliya Arts and Commerce College Rajkot, Gujarat, India

### Abstract

The Indian fertilizer market size reached INR 898.5 Billion in 2022. Looking forward, IMARC Group expects the market to reach INR 1,188.3 Billion by 2028, exhibiting a growth rate (CAGR) of 4.85% during 2023-2028. Capital structure is the particular combination of debt and equity used by a company to finance its overall operations and growth. The main Objective of the study is to analyse Capital Structure Position of Fertilizer Industry through Debt to Equity Ratio analysis. For the Sample Selection is judgemental non parametric sampling method. The study period for the study is 2018-19 to 2022-23. Data collection is based on secondary data. For Analysis there Anova F Test is used to analyse a Capital Structure of Companies. The results found that there is no significant difference between Debt to Equity Ratio of Selected Fertilizer Companies in India during the study period.

**Keywords:** D/E Debt to Equity

### Introduction

The Indian fertilizer market size reached INR 898.5 Billion in 2022. Looking forward, IMARC Group expects the market to reach INR 1,188.3 Billion by 2028, exhibiting a growth rate (CAGR) of 4.85% during 2023-2028. The growing population, rapid urbanization, and increasing food consumption are escalating the demand for fertilizers, emerging technological advancement, and the implementation of favourable government initiatives are some of the major factors propelling the market.

“Justus von Liebig (1803-1873)” The father of Fertilizer. Urea fertilizer is the king of Fertilizer. Famous Fertilizer Industry in India in Sindri, Sindri is an industrial semi urban township within the Dhanbad district of Jharkhand. The history of the Indian Fertilizer Industry dates back to 1906 when the first Fertilizer Company opened at Ranipet Tamilnadu.

Gujarat is the largest producer of Fertilizer in India and accounts for more than one fourth of the production of nitrogenous as well as phosphatic fertilizers. More than 14% of the total Fertilizer Factories are located in Gujarat.

### Capital structure

Capital structure is the particular combination of debt and equity used by a company to finance its overall operations and growth.

Equity capital arises from ownership shares in a company and claims to its future cash flows and profits. Debt comes in the form of bond issues or loans, while equity may come in the form of common stock, preferred stock, or retained earnings. Short-term debt is also considered to be part of the capital structure.

The debt-to-equity ratio (D/E ratio) shows how much debt a company has compared to its assets. It is found by dividing a company's total debt by total shareholder equity. A higher D/E ratio means the company may have a harder time

covering its liabilities. The optimal D/E ratio varies by industry, but it should not be above a level of 2.0. A D/E ratio of 2 indicates the company derives two-thirds of its capital financing from debt and one-third from shareholder equity.

### Literature review

(Kumar 2017) <sup>[10]</sup> “Research on capital structure determinants: a review and future directions” The purpose of this paper is to study the status of studies on capital structure determinants in the past 40 years. This paper highlights the major gaps in the literature on determinants of capital structure and also aims to raise specific questions for future research. Major findings show an increase of interest in research on determinants of capital structure of the firms located in emerging markets.

(Pandey, A. and Singh, M. 2015) <sup>[11]</sup> ‘Capital structure determinants: a literature review’ In this paper, we present the literature review on determinants of capital structure of the research being done, both in India as well as internationally, in the last one and a half decade. We divide our study in two ways: one review for international research and second from Indian research. We further subdivide the research (both Indian as well as international) in two parts. In first part we review articles on determinants of capital structure being done at economy level and in the second part we provide literature review of papers on determinants of capital structure done at sector level. Finally, on the basis of our literature review, we provide a list of eleven common capital structure determinants found out of various studies.

(Kruk, Sylwia. 2021) <sup>[12]</sup> “Impact of Capital Structure on Corporate Value—Review of Literature” This work is an attempt at a synthetic presentation of the theory of capital structure. The aim of the article was to review and try to organise the most important theories of capital structure, paying attention to the influence of capital structure on the

processes of creating value. The paper also highlights the most important theoretical works in this area. The study consists of two main parts. The first part indicates the diversity of defining the concepts of capital structure and indicates the approaches in classifying this structure. The second part characterises the theories of capital structure in the context of value creation.

(P Aishwarya, Sudharani R, Dr N Suresh, 2020) [13], "A Study on Impact of Capital Structure on Profitability of Companies Listed in Indian Stock Exchange with Respect to Automobile Industry" Current research helps in understanding both positive and negative impact of capital structure on profits of Indian automobile companies by using variables like Return On Capital Employed, Return on Long Term Funds, Return on Net Worth, Gross Profit Margin, Operating Profit and Return on Asset. The study hypothesized that RoCE, RoLT and RoNW has a positive effect and GP, OP and ROA has a negative impact on debt equity and interest coverage ratios i.e capital structure of the companies. Also the study proves that the relationship between profitability and capital structure variables are strongly significant. Hypothesis were tested by using fixed effect and random effect models by considering 10 years data (from 2010-2019) of 17 automobile companies. The result of the study recommends that the firms can improve their performance by using an optimal capital structure.

**Objective of the study**

There are mainly Objective of the study.

- To analyse the Capital Structure Position of Selected Fertilizer Companies in India.
- To compare the Debt to Equity ratios of Selected Fertilizer Companies in India.

**Hypothesis of the study**

**H0:** There is a no significant difference between Debt to Equity Ratio of Selected Fertilizer Companies in India during the study period.

**Period of the study**

Period of the study has been considered from 2018-19 to 2022-23.

**Scope of the study**

There are mainly two scope of study 1) Functional Scope: In this Capital Structure and their analysis is covered. And 2) Geographical Scope: Whole India is Geographical scope for the study.

**Sample selection**

There are mainly top five companies are selected as sample based on market capitalisation as on (23/09/2023) and listed on National Stock Exchange of Fertilizer Industry in India. That is also called Non parametric judgemental sampling method.

1. Fertilizers and Chemicals Travancore
2. Chambel Fertilizers and Chemicals
3. Deepak Fertilizers and Petrochemicals Ltd
4. Rashtriya Chemicals and Fertilizers Ltd
5. National Fertilizers Ltd

**Data collection**

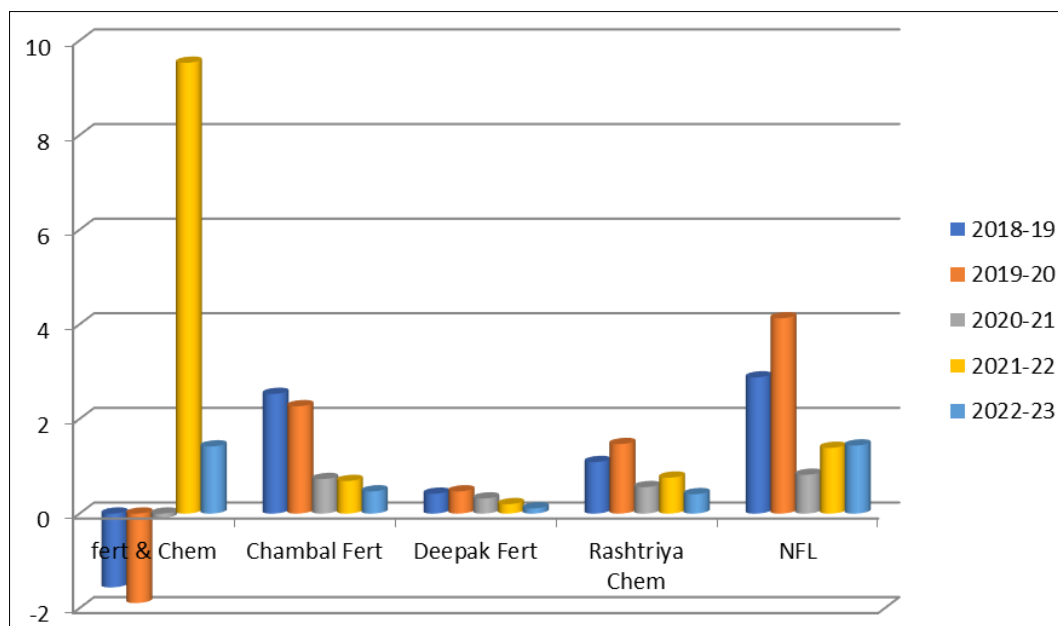
Data collection for this study is mainly based on secondary data collection method. Which published in annual reports of the company and official website of company and Government.

**Data analysis**

**Debt to Equity Ratio**

**Table 1**

Year	Fert and Chem	Chambel Fertilizers	Deepak Fertilizers	Rashtriya Chemicals	NFL
2018-19	-1.56	2.53	0.42	1.09	2.88
2019-20	-1.89	2.27	0.47	1.47	4.13
2020-21	-0.09	0.73	0.32	0.56	0.82
2021-22	9.53	0.69	0.20	0.76	1.39
2022-23	1.42	0.47	0.11	0.41	1.44



**Fig 1**

According to above table For Fertilizers and Chemicals Travancore there are negative Debt to Equity from 2018-19 to 2020-21 and highest 9.53 in Year 2021-22.

For Chambal Fertilizers and Chemicals there are 2.53 is highest Debt to Equity Ratio in 2018-19 and 2.27 in 2019-20 after this year it is showing normal.

For Deepak Fertilizers and Petrochemicals Ltd there are normal Debt to Equity Ratio during the study period. It is showing standard.

For Rashtriya Chemicals and Fertilizers Ltd highest Debt to Equity Ratio is 1.47 in 2019-20 and lowest 0.41 in 2022-23.

For National Fertilizers Ltd there are highest Debt to Equity Ratio is 4.13 in 2019-20 and lowest 0.82 in 2020-21.

**Anova f test**

**Table 2**

Source of Variance	SS	DF	MS	F	F Crit
Between Group	12.34	4	3.08	0.56	3.00692
Within Group	9.42	4	2.35	0.43	3.00692
Error	87.47	16	5.46		
Total	109.24	24			

The above ANOVA table indicate that calculate value of ANOVA test is 0.56 Between Group and 0.43 Within Group the critical value (table value) of ANOVA is 3.00692 at the 5% level of significance. The F-calculated value is less than the table value, So that Null hypothesis is Accepted. Therefore it concluded that there is a no significant difference between Debt to Equity Ratios among the selected Fertilizer Companies in India during the study period.

**Findings**

- The key finding of ANOVA test that there is a no significant difference between Debt to Equity Ratio of Selected Fertilizer Companies in India during the study period.
- Debt to Equity Ratio of Fertilizers and Chemicals Travancore is too fluctuating during study period. First three year is showing negative and in forth year of the study is highest from all company. It is not Good for any company so Company have to manage their Debt and Equity.
- Deepak Fertilizers and Petrochemicals Ltd have continuously Debt to Equity Ratio is good.
- National Fertilizers Ltd have highest 4.13 in 2019-20 than it's showing normal so it's good sign for Company Management of Capital Structure.

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