An Examination and Its Effect on Profitability with Regard to Particular India's Private Sector Fertilizer Enterprises

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Abstract

The primary objective of this study is to evaluate and understand that how leverage affects the profitability of private sector fertilizer companies in India. For the analysis's sake, seven (07) private sector businesses across a ten-year period were chosen. The research was carried out between 2010 and 2020. The study's methodology is predicated on secondary data that was taken from the company's annual reports and financial statements. The data were analyzed using two-way ANOVA, ratio analysis, mean, standard deviation.

Keywords: Profitability, Fertilizer, Enterprises, Examination, Private Sector.

1. INTRODUCTION

Businesses' profitability is a key sign of their long-term viability and financial health, particularly in capital-intensive sectors like fertilizer manufacturing. It is imperative for policymakers and industry stakeholders to comprehend the elements that impact profitability in the context of India's private sector fertilizer firms.

Figure 1: Some of the top leading fertilizer companies of india

The objective of this research is to examine how leverage influences the profitability of a group of Indian commercial fertilizer firms. This study aims to understand the complex relationship between capital structure and profitability by examining financial data over a ten-year period. By doing so, it provides insights into how decisions about leverage impact these businesses' financial performance. The results of this study should deepen our understanding of financial management in the fertilizer sector and have ramifications for developing policies and making strategic decisions.

1.1.Impact of Financial Leverage on Fertilizer Profitability

This study looks at how financial leverage affects Indian private fertilizer companies' profitability. By enabling greater initiatives without depleting capital, financial leverage—the use of debt to finance operations—can increase profitability. But it also brings financial risk, which can result in increased interest costs and possible liquidity problems. Capital-intensive businesses must effectively manage their financial leverage in order to optimize returns and preserve their financial stability. The goal of the research is to determine the best leveraging strategies for long-term sustainability and profitability in the cutthroat fertilizer industry.

1.2.Contribution of the Fertilizer industry to the Indian economy

The Indian economy is greatly influenced by the fertiliser business, which makes substantial contributions to many different areas of the economy. Fertilizers have a significant impact on agricultural development since they increase crop yields and guarantee food security. Additionally, the sector draws large amounts of capital investment, which promotes innovation and economic progress.

- Agricultural Development
- Capital Investment
- Corporate Development
- Regional Development
- Employment

Within the sector, corporate growth promotes technological improvement and commercial expansion, while the building of manufacturing facilities and distribution networks stimulates regional development. Furthermore, the fertilizer sector creates jobs, sustaining livelihoods and promoting socioeconomic stability. All things considered, the fertilizer sector is essential to India's economic development and agricultural sustainability.

1.3. Research Objectives

The primary objectives of this study are as follows:

1. To understand and examine the leverage effects of the selected fertilizers enterprises.
2. To compare the performance of selected private sector fertilizer enterprises.
3. To evaluate the impact of leverage on profitability.

2. LITERATURE REVIEW

AI Dalayeen (2017) carried out a financial performance assessment of a subset of Jordanian businesses, utilizing a range of financial metrics to gauge the productivity and efficacy of the companies in question. The study underscores the importance of performance evaluation in comprehending the financial well-being of companies and proposes that regular financial analysis can facilitate strategic decision-making. The research also underscores the significance of financial performance indicators in preserving the viability and expansion of businesses.

Bansal, Kumar Kar, and Kaur (2020) investigated the DuPont Decomposition for fertilizer firms, providing a thorough financial performance analysis by breaking out return on equity (ROE). The study sheds light on the various ways that financial leverage, asset turnover, profit margin, and other aspects of ROE affect fertilizer firms' total profitability. This breakdown makes it possible to comprehend the elements influencing the fertilizer industry's financial performance more deeply.

Bhooshan et al. (2020) explored the development of cyanobacterial biofertilizers in India, from village technology to commercial company. Their study highlights the potential of biofertilizers as a commercial product and their effect on sustainable agriculture. The study emphasizes how cutting-edge technologies can boost agricultural output and encourage ecologically friendly farming methods.

Birner, Gupta, and Sharma (2011) studied the political economy of India's overhaul of agricultural policy, with a special emphasis on fertilizers and energy for irrigation. Their study clarifies the nuances of Indian agriculture policy, the difficulties in putting reforms into practice, and the effects on the industry. The study emphasizes the necessity of well-balanced legislative interventions to guarantee the efficiency and sustainability of agricultural practices in India.

Biswas (2018) studied the effect of capital structure on profitability by contrasting Indian fertilizer companies that are privately owned and public. This research demonstrates how capital structure affects profitability differently for various kinds of businesses and provides information about how financial leverage affects business performance. According to Biswas's research, capital structure choices are essential for maintaining competitive advantage and maximizing profitability in the fertilizer sector.

3. METHODOLOGY

Specifically, Chambal Fertilizers & Chemicals Ltd, Gujarat State Fertilizers & Chemicals Ltd, Khaitan Chemicals & Fertilizers Ltd, Mangalore Chemicals & Fertilizers Limited, Tata Chemicals Ltd., Gujarat Narmada Valley Fertilizers and Chemicals Ltd., Nagarjuna Fertilizers & Chemicals Ltd. are among the well-known private sector fertilizer companies in India that are the subject of this research study. These businesses were chosen for their important positions in the Indian fertilizer industry; each has made a noteworthy contribution to the sector with their varied product offerings and market influence. The study's goal is to assess their effectiveness, tactics, and overall influence on the fertilizer market, taking into account how crucial they are to raising agricultural output and satisfying the nation's fertilizer requirements.

3.1.Sampling Frame

The sampled firm was chosen using the purposeful sampling approach from among all the firms listed on the Bombay Stock Exchange. Several of the leading private sector fertilizer industry companies in India have been chosen for the study's purposes. For the analysis's sake, seven (07) private sector businesses during a ten-year period are chosen.

3.2.Collection of Data

The quantitative approach of this study relies on secondary data culled from the actual results-producing companies' annual reports and financial statements. The financial statements of companies traded on the NSE i.e. National Stock Exchange and the BSE i.e. Bombay Stock Exchange also provide me with useful information.

3.3.Period of Study

The research was carried out between 2010 and 2020.

3.4.Tools and Techniques used in analyses of the data

Accounting and statistical methods were combined to analyze the financial data of the chosen businesses. By looking at several financial ratios, ratio analysis was utilized to evaluate the organizations' performance and financial health. In addition, statistical methods such as the mean and standard deviation calculations were applied to quantify and describe the financial measures' dispersion. Additionally, to find any significant differences among the businesses under study and to evaluate the impact of different variables on the firms' financial outcomes, a two-way ANOVA was employed. A thorough and nuanced grasp of the financial dynamics within the chosen organizations was made possible by this all-encompassing approach.

4. DATA ANALYSIS

4.1.Proprietary Ratio

Research Hypothesis

H0 = The financial performance of various private sector fertilizer industry firms is not significantly different from one another, nor is the proprietary ratio significantly changed between years.

H1 = The fertilizer industry's private sector businesses exhibit notable variations in their financial performance, and the proprietary ratio varies significantly throughout different years.

Table 1: Private Sector: Proprietary Ratio

Company Name	March 2020	March 2019	March 2018	March 2017	March 2016	March 2015	March 2014	March 2013	March 2012	March 2011	Mean
CHAMBAL	0.43	0.39	0.43	0.39	0.35	0.39	0.45	0.40	0.34	0.42	0.39
GNFC	0.59	0.45	0.40	0.43	0.50	0.54	0.65	0.58	0.61	0.75	0.55
GSFC	0.84	0.73	0.78	0.74	0.68	0.73	0.76	0.66	0.67	0.59	0.72
KHAITAN	0.39	0.43	0.43	0.43	0.36	0.39	0.43	0.42	0.44	0.43	0.42
MANGALORE	0.30	0.27	0.37	0.34	0.36	0.34	0.64	0.58	0.46	0.45	0.42
NAGARJUNA	0.36	0.34	0.51	0.54	0.49	0.51	1.10	0.11	0.11	0.11	0.46
TATA CHEMICALS	0.80	0.66	0.61	0.61	0.59	0.57	0.61	0.58	0.48	0.58	0.61

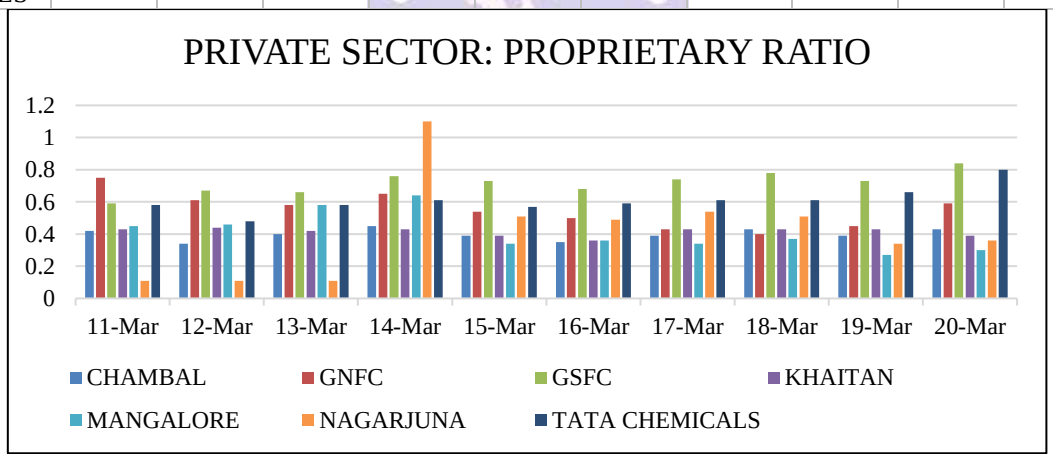

Figure 2: Graphical presentation of the Proprietary Ratio

Table 2: Private Sector: Proprietary Ratio Summary

Enterprise Name	Count	Sum	Average	Variance
CHAMBAL	10	3.90	0.39	0.01
GNFC	10	5.52	0.55	0.02
GSFC	10	7.23	0.72	0.02
KHAITAN	10	4.19	0.42	0.01
MANGALORE	10	4.17	0.42	0.02
NAGARJUNA	10	4.22	0.42	0.10
TATA CHEMICALS	10	6.13	0.61	0.02
March 20	7	3.07	0.43	0.06
March 19	7	3.62	0.37	0.04

March 18	7	3.79	0.41	0.03
March 17	7	3.77	0.4	0.03
March 16	7	3.66	0.38	0.03
March 15	7	3.83	0.4	0.03
March 14	7	4.89	0.56	0.06
March 13	7	3.67	0.38	0.05
March 12	7	3.46	0.35	0.04
March 11	7	3.68	0.38	0.05

Table 3: Private Sector: Proprietary Ratio ANOVA

ANOVA						
Source of Variation	**SS**	**df**	**MS**	**F**	**P-value**	**F crit**
Rows	0.85	7	0.27	9.14	0.00	2.38
Columns	0.34	10	0.04	1.50	0.18	2.17
Error	0.85	65	0.03			
Total	2.23	70				

Interpretation

Due to the fact that the F value (Rows/firms) (9.14) is higher than the F critical value (2.38) suggests that the profitability of various Private Sector fertilizer sector firms varies significantly in terms of the Proprietary Ratio. The fact that the F value (Columns/Years) (1.50) is less than the F critical value (2.17) suggests that the Proprietary Ratio does not significantly change between years.

4.2.Interest Coverage Ratio

Research Hypothesis

H0 = Both the interest coverage ratio and the financial performance of various private sector fertilizer companies are not significantly different from one another over time.

H1 = The financial performance of various private sector fertilizer industry businesses varies significantly, as does the interest coverage ratio between different years.

Table 4: Private Sector: Interest Coverage Ratio

Enterprise Name	March 2020	March 2019	March 2018	March 2017	March 2016	March 2015	March 2014	March 2013	March 2012	March 2011	Mean
CHAMBAL	4.62	3.87	4.65	3.85	5.63	6.76	6.12	6.26	4.60	4.72	5.10
GNFC	5.62	2.03	-0.35	6.70	8.85	14.54	20.93	12.71	15.22	51.57	13.96
GSFC	7.88	20.22	33.98	13.08	23.29	57.56	58.12	14.84	20.80	9.87	25.96
KHAITAN	2.18	2.22	1.05	0.86	2.19	3.28	4.74	2.15	3.63	3.73	2.79
MANGALORE	2.36	1.69	2.26	2.92	2.91	3.44	4.11	2.97	3.10	2.54	2.94
NAGARJUNA	1.62	1.73	-0.27	-0.28	2.72	3.62	1.11	1.11	1.11	1.11	1.93
TATA CHEMICALS	5.81	6.23	6.68	5.18	6.17	5.75	4.88	5.11	6.51	55.88	10.82

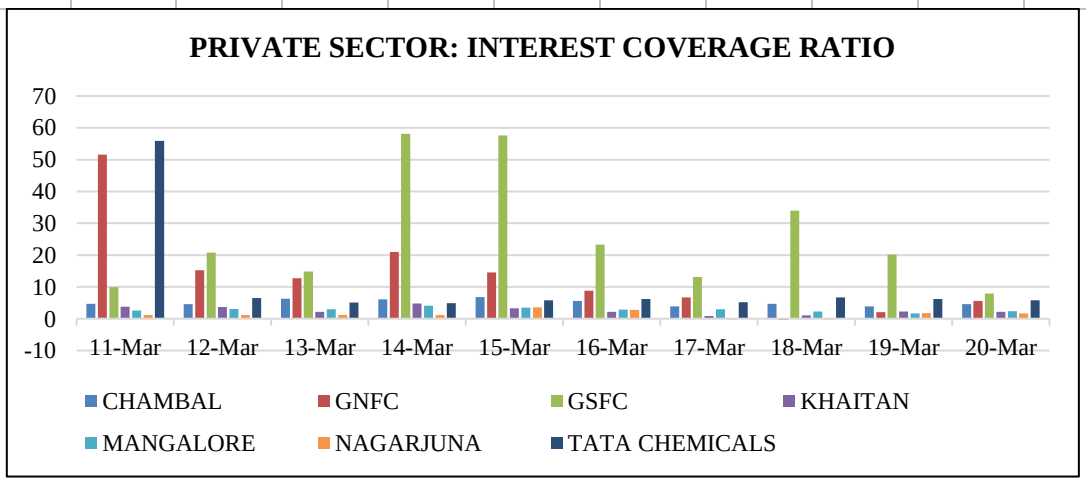

Figure 3: Graphical presentation of the Interest Coverage Ratio

Table 5: Private Sector: Interest Coverage Ratio Summary

Summary	Count	Sum	Average	Variance
CHAMBAL	10	50.09	5.91	2.14
GNFC	10	239.64	13.85	323.07
GSFC	10	359.64	25.85	448.73
KHAITAN	10	27.05	2.69	1.05
MANGALORE	10	30.40	2.94	0.69
NAGARJUNA	10	15.03	1.49	1.81
TATA CHEMICALS	10	108.20	10.71	252.04
March 20	7	42.33	5.46	45.35
March 19	7	54.37	7.28	154.28
March 18	7	37.98	4.84	17.74
March 17	7	55.09	7.38	55.74
March 16	7	98.28	13.45	402.80
March 15	7	103.34	14.18	425.82
March 14	7	49.49	6.48	28.51
March 13	7	58.30	7.74	54.34
March 12	7	133.75	18.52	594.31
March 11	7	50.09	5.91	2.14

Table 6: Private Sector: Interest Coverage Ratio ANOVA

ANOVA						
Source of Variation	**SS**	**df**	**MS**	**F**	**P-value**	**F crit**
Rows	4685.87	7	776.88	7.22	0.00	2.38
Columns	1541.77	10	169.87	1.48	0.18	2.17
Error	5925.42	65	118.78			
Total	12948.84	70				

Interpretation

The fact that the F value (Rows/firms) (7.22) is higher than the F critical value i.e. 2.38 implies that the Interest Coverage Ratio of various Private Sector firms in the Fertilizer industry differs significantly in terms of their financial performance. The fact that the F value (Columns/Years) (1.59) is less than the F critical value (2.17) suggests that the Interest Coverage Ratio does not significantly change between years.

4.3.Net Profit Ratio

Research Hypothesis

H0 = There are no appreciable variations in the Net Profit Ratio across years or in the financial performance of various Private Sector Fertilizer Industry firms.

H1 = There are notable variations in the Net Profit Ratio between years as well as in the financial performance of various Private Sector Fertilizer Industry firms.

Table 7: Private Sector: Net Profit Ratio

Enterprise Name	March 2020	March 2019	March 2018	March 2017	March 2016	March 2015	March 2014	March 2013	March 2012	March 2011	Mean
CHAMBAL	12.47	5.09	-8.63	7.14	7.53	8.46	10.48	5.85	8.90	11.97	6.82
GNFC	8.08	7.26	8.63	7.43	9.40	15.30	16.87	7.44	9.60	7.82	8.89
GSFC	1.61	1.53	2.17	-0.31	1.58	4.48	7.97	1.51	3.00	3.39	2.89
KHAITAN	1.89	-7.89	2.57	2.24	2.49	2.97	4.19	3.83	2.24	3.32	1.09
MANGALORE	-2.61	-1.34	-13.37	-5.93	2.49	1.83	1.11	1.11	1.11	1.11	-2.75
NAGARJUNA	12.23	6.69	7.44	6.13	8.65	8.45	7.56	9.14	6.52	24.62	9.64
TATA CHEMICALS	12.28	6.72	7.50	6.18	8.73	8.52	7.67	9.14	6.52	24.62	9.79

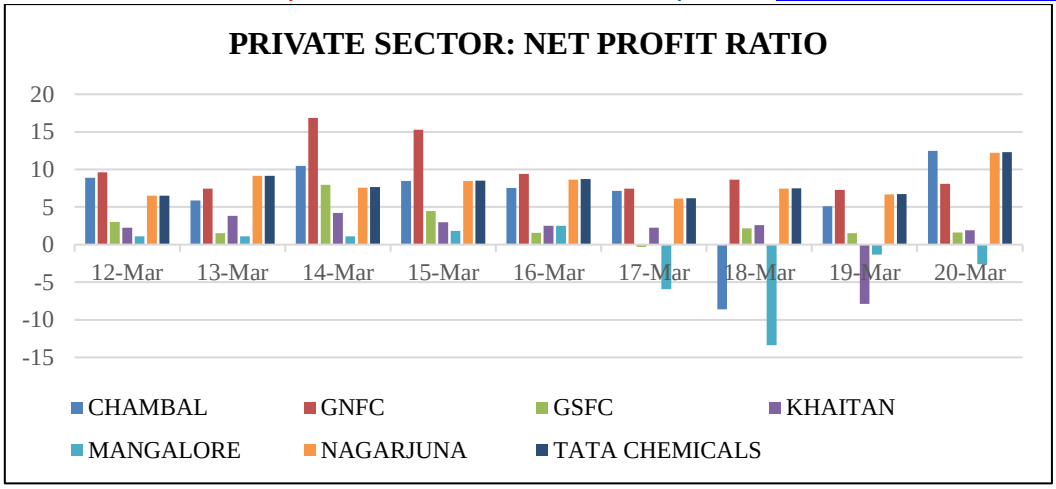

Figure 4: Graphical presentation of the Net Profit Ratio

Table 8: Private Sector: Net Profit Ratio Summary

Summary	Count	Sum	Average	Variance
CHAMBAL	10	60.26	6.02	36.58
GNFC	10	88.94	9.89	12.76
GSFC	10	18.96	1.89	5.71
KHAITAN	10	10.89	1.09	11.56
MANGALORE	10	-	24.27	26.92
NAGARJUNA	10	87.44	9.64	31.52
TATA CHEMICALS	10	87.91	9.79	31.36
March 20	7	40.30	6.72	40.17
March 19	7	13.52	1.88	29.94
March 18	7	-0.35	-0.10	75.28
March 17	7	18.35	2.57	23.06
March 16	7	35.32	5.00	11.07
March 15	7	45.46	7.45	19.14
March 14	7	49.19	7.98	25.63
March 13	7	31.37	5.43	12.51
March 12	7	32.23	5.00	11.51
March 11	7	70.20	10.09	100.50

Table 9: Private Sector: Net Profit Ratio ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Rows	1310.86	7	212.77	13.25	0.00	2.38
Columns	518.81	10	57.74	3.70	0.00	2.17
Error	939.88	65	16.46			
Total	2659.73	70				

Interpretation

When the F value (Rows/firms) (13.25) exceeds the F critical value (2.38), it indicates a notable variation in the Net Profit Ratio financial performance of various Private Sector Fertilizer industry firms. The fact that the F value (Columns/Years) (3.70) is more than the F critical value (2.17) suggests that the Net Profit Ratio varies significantly between years.

5. CONCLUSION

This study has comprehensively analyzed the impact of financial leverage on the profitability of private sector fertilizer companies in India. The results indicate significant variations in financial performance across different firms, with notable differences in the Net Profit Ratio ,Proprietary Ratio and Interest Coverage Ratio. Specifically, companies like GSFC and GNFC demonstrate substantial financial leverage, affecting their profitability differently. The study also reveals that while firm-specific factors play a crucial role in profitability, annual variations in financial metrics such as the Net Profit Ratio are significant. These findings underscore the

need for private sector fertilizer enterprises to carefully manage their financial leverage to optimize profitability and ensure long-term sustainability in the competitive industry landscape.

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