

Profitability Dynamics in India's Selected Private Fertilizer Company: An Analytical Study

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Abstract

This study analyzes the profitability dynamics of the private fertilizer industry in India. It focuses on looking at financial ratios and profitability measures to find patterns and factors that affect financial performance over a given time period. The financial condition of the industry forms the core objective of this research. by identifying the variables that affect operational effectiveness and profitability. The outcomes have important ramifications for fertilizer industry stakeholders and decision-makers, encouraging competitiveness and sustainable expansion.

Keywords: Profitability, Fertilizer, Financial Ratio

Introduction

The fertilizer industry of India functions as a element for boosting agricultural output and achieving food safety. The increasing fertilizer demands of the country are primarily fulfilled by private fertilizer enterprises. Profitability assessment aids stakeholders in comprehending operational effectiveness and financial health. This research examines the profitability of several private fertilizer firms in India. The results offer insights into the elements affecting the industry's growth and profitability.

Review of Literature

Dr. Mitulkumar T. Parmar (2023). A ratio analysis method is used to assess the profitability of few fertilizer industries in india for the year period 2016-2022. It indicates that Net Worth, Capital Employed and Total Assets are not significantly affecting profitability because the sample of the companies have the comparable ability to make profit. But Total Income, Sales, Gross Fixed Assets and Net Fixed Assets have shown positive impact on profitability. The study also recommends investment in modern fixed assets and increase production towards enhancing sales and income for profitability.

Dr. L.C. Punjab (2019). Analyzed profitability trends (2010–2018) of India's fertilizer industry, focusing on policy impacts and operational efficiency. Using annual reports and primary data, the study highlighted agriculture's critical role in India's economy, with fertilizer firms

currently profitable. Concluded that producing soil-friendly, eco-sustainable fertilizers could further enhance earnings and align with environmental goals. Advocates for policy reforms to support green innovation in the sector.

Ravichandran (2018). The research evaluates the performance and the economic results of some of the Indian fertilizer firms for the years 2010 to 2015. This study also analyzes the challenges of a free economy in fertilizer by calculating mean, standard deviation and variation coefficient. These difficulties stem from several issues such as the location, the input costs, and the technology employed. It brings out the fact that the fertilizer industry requires advanced computer technology to enhance productivity, ensure safety, quality control, and environmental protection

Sengottaiyan and Ambika (2013) India stands among the top manufacturers as well as consumers of fertilizer products worldwide. Research findings urged professionals to use advanced manufacturing methods for developing innovative fertilizer products which would drive efficiency and sustainability improvements.

Singh (2013) explained that chemical fertilizers served as a vital component to make India become self-sufficient in food grain production. His research analyzed vital market elements which affected both supply and demand patterns together with usage patterns and industry expansion drivers operating in India's fertilizer sector. These research studies present combined insights which shed light on Indian fertilizer industry obstacles alongside opportunities.

Profitability

Profitability means how well a company can make money compared to its revenue, assets, or equity. It shows how well the company operates and its ability to provide value to its shareholders. Good profitability is important for lasting growth and survival.

Net Profit Margin

Net Profit Margin evaluates the division of revenue that remains as profit following all cost and tax expenses and interest payments. The ability to deliver better cost management and operational effectiveness appears through a higher margin ratio.

Return on Equity (ROE)

ROE determines profit performance on shareholders' equity through the net income division by average equity values. The measurement reveals management's ability to produce earnings from investor monetary resources.

Return on Assets (ROA)

The assessment of ROA allows viewers to understand the effectiveness of how company assets generate net income. Total average company assets undergo a division operation to produce this financial indicator. A higher ROA shows better management of assets

Current Ratio

Companies can determine their short-term liquidity by comparing current assets with current liabilities using the current ratio. When the ratio exceeds one the company becomes capable of fulfilling its short-term debt obligations.

Statement of the Problem

The private fertilizer companies' profitability is dependent on factors such as cost structures, market environment, and management of working capital. These factors must be evaluated

with a view of identifying trends, problems, and possibilities that have the potential to enhance development in this industry that is of fundamental importance.

Objectives

1. To study the profitability of selected private fertilizer firms in India.
2. To evaluate financial ratios that are pertinent to the companies' productivity.
3. To assess the obstacles and factors affecting profitability in Indian fertilizer industry.

Need of the Study

The fertilizer industry is crucial for enhancing the farming economy in India. Understanding profitability is important because it reflects the economic health of private fertilizer companies. This study fills the gap by investigating critical financial ratios and their correlates. It aims to provide stakeholders with practical guidance to improve decision making. Additionally, the findings will help government and investment agencies in enhancing growth and efficiency in the industry. Analyzing financial performance also helps in benchmarking the company's performance against industry standards. The study is very relevant because of the increasing competition and changes in the regulations governing the industry.

Research Methodology

Secondary data obtained from five Indian privately-owned fertilizer companies' annual reports during 2019–20 to 2023–24 was used in this research. Key financial metrics Return on Assets (ROA), Net Profit Margin and Working Capital Ratio were used to determine both operational efficiency and profitability performance. The descriptive statistical tools used to analyze trends provided data through mean and standard deviation results as well as coefficient of variation calculations. The research interpretation included data visualization elements such as graphs as well as information from industrial reports and academic publications. The study examines five main private fertilizer companies which operate within the Indian market.

Hypothesis

H0: The independent variables (Net Profit Margin, Return on Equity, and Return on Assets) do not significantly explain the variation in the current ratio.

H1: The independent variables significantly explain the variation in the current ratio.

Limitations of Study

1. The study uses only secondary data, which limits the timeliness.
2. The selected companies' outcomes do not provide an overall view of the entire industry.
3. External factors such as government and global marketplace are not adequately studied.

Company Profiles

Coromandel International Limited (CIL)

Coromandel International is among the largest fertilizers companies in India. It operates in both crop protection and specialty nutrients with its business interests spread over multiple agrochemical segments. Focuses on sustainable agriculture. In India, millions of farmers are served to through an elaborate distribution network. Coromandel's product range and market position is well known in the industry. Coromandel is more known in innovation of new products and their marketing.

Deepak Fertilisers and Petrochemicals Corporation Limited (DFPCL)

Indian Fertiliser and Chemical industry relies heavily on DFPCL which produces a wide range of high-quality industrial chemical and fertilizers. Their product line includes Nitro-Phosphate and Bentonite Sulphur among many others. The company thrives on innovation and customization to meet customer needs. Our manufacturing plants are positioned strategically to cater to the overseas market as well as serve local clientele. DFPCL believes in committing to the sustainable economy and achieving operational excellence.

Zuari Agro Chemicals Limited (ZACL)

In India major input supplier of fertilizers and agro inputs is Zuari Agro Chemicals. With the focus to increase agricultural productivity, company/plant makes urea, DAP and NPK fertilizers. Has a huge network of dealers and retailers for their products. Zuari is equipped with the solutions which farmer needs to increase his crop yield. It is part of the Adventz Group, which has a legacy of supporting rural development.

Mangalore Chemicals and Fertilizers Limited (MCF)

MCF is in Karnataka, India, the largest producer of chemical fertilizers, and its main fertilizer products include urea and complex fertilizers. It works with the aim of enhancing the agricultural development through quality inputs. The company is recognized for their effective and high quality production and marketing strategies. MCF has a strong marketing system that ensures prompt deliveries to the farmers. It is devoted to sustaining the environment.

Nagarjuna Fertilizers and Chemicals Limited. (NFCL)

Nagarjuna Fertilizers is a significant player in the Indian fertilizer industry, focusing on nitrogen and micronutrient based products. The company's goal is to provide holistic nutrient solutions for farmers. The company is revered for its radical approaches to agricultural commercialization. Technology and research serve as the framework of Nagarjuna's operations. The company works toward building sustainable relationships with the farming community.

Data Analysis and Interpretation

Profitability Analysis

Table No 1 Net Profit Margin (Values in Percentage)

Year	CIL	DFPCL	ZACL	MCF	NFCL
2019-20	8.07	1.79	0.01	2.38	-27.71
2020-21	9.27	11.53	-2,23,068.57	3.12	-39.07
2021-22	7.39	8.63	-100.53	3.03	-24.88
2022-23	6.87	12.39	178.09	3.69	-15.95
2023-24	7.8	16.29	25.78	4.07	-26.94
Mean	7.88	10.13	-44593.04	3.26	-26.91
SD	0.80	4.83	89237.81	0.58	7.39
CV	10.21	47.73	-200.12	17.83	-27.45
AGR	3.46	-89.01	-99.96	-41.52	2.86
CAGR	0.01	-0.42	-0.86	-0.13	0.01

Source: Moneycontrol

The Net Profit Margin assessment shows Coromandel International Limited (CIL) as having low dispersion (CV: 10.21%) and an average profit margin of 7.88%, meaning it is consistently profitable. Deepak Fertilisers (DFPCL), on the other hand, has a moderate profit margin of 10.13% but high dispersion (CV: 47.73%). Unlike other players, it has an average profit margin of -44,593.04%, and thus, is constantly loss making. Zuari Agro Chemicals Limited (ZACL) is extremely unprofitable, and unlike the rest of the industry, Mangalore Chemicals and Fertilizers (MCF) is mildly profitable, earning an average profit margin of 3.26% (CV: 17.83%). In the aggregate, Nagarjuna Fertilizers (NFCL) is the least profitable with an average profit margin of -26.91% with low dispersion (CV: -27.45%).

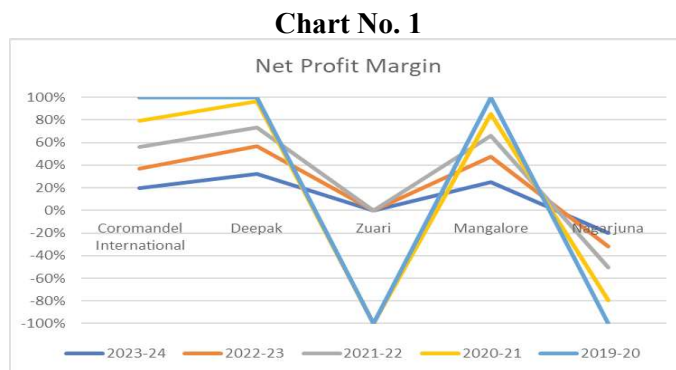
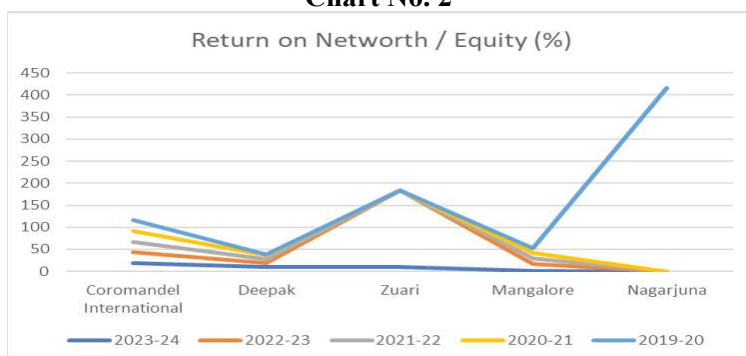


Table No 2 Return on Equity (Values in Percentage)

Year	CIL	DFPCL	ZACL	MCF	NFCL
2019-20	24.13	1.87	0.01	11.83	415.45
2020-21	25.18	10.39	0	11.04	0
2021-22	22.42	7.25	0	12.86	0
2022-23	25.86	9.72	172.79	16.76	0
2023-24	18.28	9.86	10.54	0.47	0
Mean	23.17	7.82	36.67	10.59	83.09
SD	2.71	3.17	68.18	5.43	166.18
CV	11.69	40.49	185.95	51.26	200.00
AGR	32.00	-81.03	-99.91	2417.02	0
CAGR	0.07	-0.34	-0.82	1.24	0

Source: Money control

The Return on Equity (ROE) assessment identifies Coromandel International Limited (CIL) consistent performer with an average return of equity of 23.17% with low variation (CV: 11.69%). Deepak Fertilisers (DFPCL) display averagely poor indicators with their ROE experienced a mean of 7.82% and moderate variation of (CV: 40.49%). It is important to note that ZACL contains elements of high risk as it performs well with mean ROE of 36.67% but suffers with volatility where it have recorded a CV of 185.95%. With respect to Mangalore Chemicals and Fertilizers (MCF), a constant increase of mean ROE to 10.59% (CV: 51.26%) suggests a significant improvement, while for Nagarjuna Fertilizers (NFCL), due to one extreme value, the mean ROE spikes to 83.09% without any indication of change (CAGR: 0).

Chart No. 2**Table No 3 Return on Assets (Values in Percentage)**

Year	CIL	DFPCL	ZACL	MCF	NFCL
2019-20	10.36	57.8	1.37	96.7	42.41
2020-21	14.66	55.53	0	107.36	59.11
2021-22	12.59	0.65	0.03	1.23	0.99
2022-23	14.33	0.62	0.08	1.35	2.4
2023-24	10.96	0.49	0.08	1.49	2.87
Mean	12.99	28.65	0.37	51.66	26.23
SD	1.73	27.48	0.53	49.43	24.43
CV	13.31	95.92	143.21	95.69	93.15
AGR	-5.47	11695.92	1612.50	6389.93	1377.70
CAGR	-0.01	2.30	1.03	1.84	0.96

Source: Money control

Return on Assets (ROA) shows that Coromandel International Limited (CIL) achieves a steady performance with a mean ROA of 12.58 percent and a low CV of 13.74 percent. Deepak Fertilisers (DFPCL) displays a great performance with high mean ROA of 23.02 percent and a high 119.39 percent CV. Zuari Agro Chemicals Limited (ZACL) captures a low mean ROA of 0.31 percent but has a high CV of 169.83 percent. Mangalore Chemicals and Fertilizers (MCF) also captures mean ROA of 41.63 percent but suffers from high CV of 118.76 percent leading to considerable volatility. Nagarjuna Fertilizers (NFCL) mean ROA of 21.56 percent but suffers from considerable performance variability with CV of 113.34 percent.

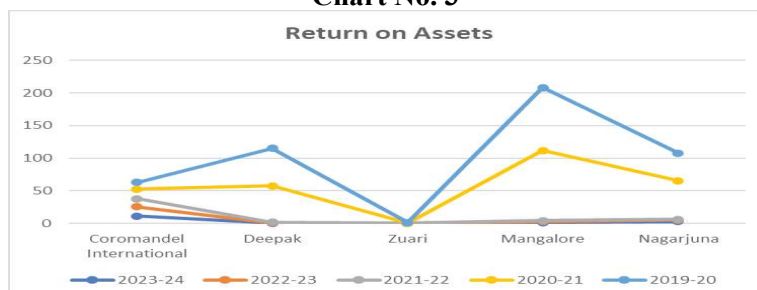
Chart No. 3

Table No 4 Current Ratio Analysis (Values in Percentage)

YEAR	CIL	DFPCL	ZACL	MCF	NFCL
2019-20	1.44	1.15	0.54	1.04	0.45
2020-21	1.96	1.33	0.64	1.03	0.17
2021-22	1.85	1.34	0.48	1.04	0.18
2022-23	1.77	1.28	0.17	1.1	0.15
2023-24	2.1	1.33	0.14	1.23	0.15
Mean	1.82	1.29	0.39	1.09	0.22
SD	0.22	0.07	0.20	0.08	0.12
CV	12.15	5.53	51.26	6.91	52.54
AGR	-31.43	-13.53	285.71	-15.45	200.00
CAGR	-0.09	-0.04	0.40	-0.04	0.32

Source: Money control

According to ratios, current ratio is higher than the average of 1.82 for Coromandel International Limited (CIL) which suffers from a stable coefficient of variation of 12.15 percent and thus high liquidity. Low average current ratio of 0.39 for Zuari Agro Chemicals Limited (ZACL) suffers from a stable coefficient of variation of 51.26 percent, reflecting low liquidity. Aggravate current ratio allows NFCL to record highest AGR of 200% while allowing him to achieve CAGR of 0.32 but average current ratio of 0.22 represents very poor short term liquidity. Placing Mangalore Chemicals and Fertilizers Limited (MCF) and Deepak Fertilisers (DFPCL) in the same folder suggests moderate stability since their average ratios are 1.09 and 1.29 respectively and standard deviations of 6.91% and 5.53%, respectively.

Chart No. 4

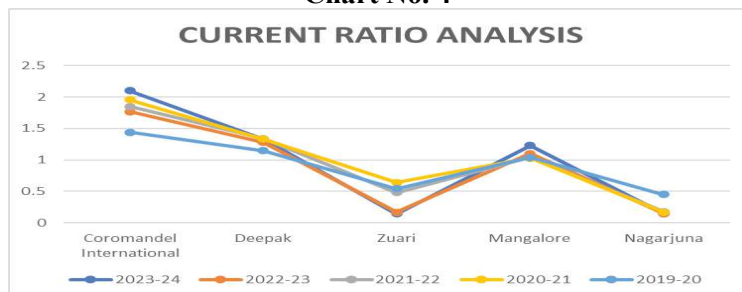


Table No 5 Regression Analysis

Company Name	Particulars	(Constant)	NPM	ROE	ROA	R	R Square
CIL	Coeff	2.116	0.039	-0.099	0.135	997	994
	't' Val	-	1.869	-12.620	10.945		
	'p' Val	-	0.313	0.050	0.058		
DFPCL	Coeff	1.168	-0.005	0.024	-0.001	885	784
	't' Val	--	-0.240	0.806	-0.444		
	'p' Val		0.850	0.568	0.734		

ZACL	Coeff	0.315	-1.458E-06	-0.001	0.160	848	719
	't' Val	-	-1.082	-0.561	0.711		
	'p' Val	-	0.475	0.675	0.607		
MCF	Coeff	0.991	0.058	-0.007	0.000	947	896
	't' Val	-	0.866	-1.407	-0.444		
	'p' Val	-	0.546	0.393	0.734		
NFCL	Coeff	0.135	-0.001	0.001	0.000	996	969
	't' Val	-	0.866	-1.407	-0.444		
	'p' Val	-	0.546	0.393	0.734		

Dependent variable: Current Ratio

* Coeff- Co-efficient, 't' Val-'t' Val, 'p' Val-'p' Value.

Every single firm exhibits a very high R-squared value, with CIL at 994 and NFCL at 969. Hence, the regression analysis infers that independent variables such as Return on Assets, Return on Equity and Net Profit Margin explain a lot of the change in the current ratio. The analysis also says that the p-value level for every coefficient NET in CIL at 0.313 and in DFPCIL 0.850 is far higher than 0.05, illustrating that the variable should not be relied upon on more firms. The only exception is the Return on Equity of CIL which has seasonal means of 0.050, just barely passing the level of statistical significance. All in all, the null hypothesis which states that there is no relationship between the R-squared value which are so high, and the lack of statistical significance in the p-value is believed to be true..

Findings

1. Net Profit Margin: CIL shows consistent performance (mean: 7.88%, CV: 10.21%), while ZACL suffers extreme losses and variability (mean: -44,593.04%, CV: persistent losses).
2. Return on Equity (ROE): CIL and ZACL exhibit high ROE values, but ZACL faces extreme volatility (CV: 185.95%).
3. Return on Assets (ROA): CIL maintains steady ROA (mean: 12.58%, CV: 13.74%), while ZACL and MCF experience significant inconsistencies (CVs: 169.83% and 118.76%, respectively).
4. Current Ratio: CIL maintains stable liquidity (mean: 1.82, CV: 12.15%), whereas ZACL reflects poor and inconsistent liquidity (mean: 0.39, CV: 51.26%).
5. Regression Analysis: The independent variables appear to have little to no predictive relevance for the current ratio of most companies, even though the R-squared scores are relatively higher (99.4% for CIL).

Suggestions

1. Concentrate on enhancing ZACL profitability and liquidity by resolving operational issues.
2. Study the external variables causing the differences in ROE and ROA for companies such as DFPCIL and NFCL.
3. Find other independent variables that influence Liquidity apart from the profitability ratios to strengthen the regression model.
4. Pursue a funded but constant economic policy for MCF to dampen performance volatility.
5. Compare with best in the class companies like CIL to derive practices that can be adopted by the weaker firms.

Conclusion

ZACL has great difficulty, CIL at the same time maintains good liquidity and profitability. High R-squared values indicate strong correlations; however, low P-values indicate individual profitability ratios cannot accurately predict returns. There is a need to address variability and incorporate additional predictors for more effective financial analysis and decision making.

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