

Impact Measurement of Investment Returns: A Case Study of Coal Industry in Indian CPSEs

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Abstract

Investment return may be defined as a recital gauge which is used to compute the effectiveness of an investment. In addition, it helps to assess the competency of dissimilar investments at a dot of occasion. Return on investment is an endeavour to straightforwardly calculate the income of a finicky investment in relative to the outlay of its investment. In this background, the present research paper is an attempt to study the impact of investment returns of coal industry in Indian CPSEs during 2010-11 to 2019-20. Overall, the coal industry has generated positive returns in terms of ROA, ROCE, and ROE. The sub-period analysis reveals that on the average, investment returns in terms of ROA and ROCE have decreased from 1st half to 2nd half, while investment returns in terms of ROE has improved from 1st half to 2nd half of the study. Moreover, all the investment ratios (except ROCE in the 2nd half) show relatively stable performance. Furthermore, 1st half shows better consistency in ROA and ROCE as compared to that in the 2nd half, while ROE marginally shows better consistency in the 2nd half as compared to that in the 1st half. The noteworthy positive impact in ROE implies that coal industry plays a crucial position in the monetary enlargement of the Indian economy. Hence, the Govt. must take essential steps earn more returns on investment and thus helps in the economic development of the country.

Keywords: Coal Industry, Indian CPSEs, Impact, Investment Returns, ROA, ROCE, ROE.

Introduction

Investment refers to an asset through which the worth of currency rises over the time period. Thus, investment generates capital which is used for diverse needs like covering income deficit, loan repayment, etc. In other words, investment is the method of apportioning money in an efficient way to produce profit.

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An Overview of Central Public Sector Enterprises (CPSEs) in India

The CPSEs in India were established to serve the various economic objectives like autonomy in manufacturing, glut equilibrium of expenditure, etc. The CPSEs are considered as an apparatus for structural conversion of the country with evenhandedness and social impartiality.

The CPSEs are considered as tactical players in the formation of a financial system. They endow with essential merchandise and services and occupy a considerable marketplace in crucial segments like coal, steel, transport, etc. They also function in markets that are competitive in nature.

Literature Review

Sankar, T.L. and Reddy, Y.V. (1989), indicated that state PSEs were high or low on the basis of social reason, profitability and resource compilation. The State PSEs that function in a cutthroat marketplace were the most apposite players for divestment. Antony, M.T. (1992), assessed the effectiveness CPSEs in Kerala in terms of aptitude use, profitability, and output. The study showed a decreasing trend in investment pattern. Overall, the study indicated that reform measures had brought preferred outcomes in the CPSEs. The researcher further concluded that privatization acts as a short-range gauge to accomplish effectiveness. Sankar, T.L. and Mishra, R.K. (1994), found that divestment in the shareholdings of PSEs was a fiscal prerequisite. The researchers stated that the Govt. of India was unsuccessful to realize the goals of disinvestment. LaPorta, R. and Lopez-De, S. (1998), found that fifty seven percent of profitability was due to improved output. The study also revealed that markets which were competitive had elevated level of profitability as compared to the markets which were non-competitive. Ghosh, S. (2002), identified the most significant issues and tribulations of privatization in India. To achieve a reasonable development of the economy, the Govt. of India should give importance on crucial PSEs. Nagaraj, R. (2005), observed that fiscal feat is not probable to be pretentious by disinvestment since the Govt. holds majority of the equity shares. Hence, the behaviour of the Govt. would not persuade equity return. The study recommended that optimistic results could

flow in the economy provided the organizations operate in a competitive atmosphere. Mathur, R. and Mathur, B.L. (2010), showed that fiscal performance of the CPSEs had were better performed in the post-reform stage as compared to the pre-reform stage. The researchers concluded that reform actions had brought positive results to the Indian economy. Vijayakumar, A. and Jayachitra, S. (2015), observed miscellaneous outcomes i.e., some recital indicators revealed reduced recital, while some recital indicators revealed better recital after disinvestment. Overall, the cram revealed enhancement in fiscal and working recital for at least 41% of the selected sample in the study. Singh, R.A. (2020), revealed that income should not be the sole criteria for the inspection of PSEs because the CPSEs were set up by the Govt. for social wellbeing also. Thus disinvestment of Government's equity cannot be the sole reply. The study stated that recital of the PSEs had enhanced considerably throughout the study phase.

Research Objective

The most important objective of this research work is to study the impact of investment returns of coal industry in Indian CPSEs.

Research Supposition

- H_0 : There is no significant impact in investment returns of coal industry in Indian CPSEs.
- H_A : H_0 is incorrect.

Research Methodology

Sample: For the purpose of our research, coal industry in Indian CPSEs is selected in the study.

Study Period: The study phase has been chosen from 2010-2011 to 2019-2020. To gauge the impact of investment returns in coal industry, the whole study phase is sub-divided into two sub-phases (i) 1st sub-phase: 2010-11 to 2014-15 and (ii) 2nd sub-phase: 2015-16 to 2019-20.

Data Source: Secondary data is used in the study. The required data are collected from the available yearly information of the PSE, Govt. of India.

Tools and Techniques for Data Analysis

Descriptive Statistics: To inspect the movement of investment returns, explanatory statistics that

comprises of mean, standard deviation and coefficient of deviation are employed in the study.

To measure the steadiness of investment returns in coal industry, the C.V. has been arbitrarily alienated into comparatively stable (C.V. ≤ 25%), fairly fluctuating (25.1% ≤ C.V. ≤ 50.0%), highly fluctuating (50.1% ≤ C.V. ≤ 75.0%), and fitfully fluctuating (C.V. > 75.0%) [Selvi and Vijayakumar, 2007].

Accounting Ratios: The ratios that are selected to measure investment returns of coal industry in Indian CPSEs at aggregate level are outlined below:

Return on Assets (ROA) = Net Profit after Taxes ÷ Total Assets,

Return on Capital Employed (ROCE) = EBIT ÷ Capital Employed, and

Return on Equity (ROE) = Net Profit after Taxes ÷ Shareholders' Equity.

Paired 't' Test: To measure the impact of investment returns in coal industry at aggregate level, paired 't' test is applied in the study which is shown below:

$$t = (d) \div (s \div \sqrt{n - 1}) \text{ with } (n-1) \text{ d.f.}$$

Where: d indicates average and 's' indicates S.D. of the differences d_i i.e., $d = (\sum d_i \div n)$ and $s = \sqrt{\sum d_i^2 \div n - (\sum d_i \div n)^2}$.

Findings and Analysis

Investment Returns in Coal Industry

ROA: Table 1 and Figure 1 reveals that ROA of coal industry has an increasing trend in the first four years and then a fluctuating trend is observed in the remaining six years with an average of 0.19. The ratio varies between 0.12 and 0.25 with a relatively stable performance (C.V. 21.05%) during the whole

period.

The sub-period analysis reveals that on the average, ROA (0.20) in the 1st half is marginally higher as compared to ROA (0.18) in the 2nd half. The ROA moves from 0.15 to 0.25 in the 1st half, while it moves from 0.12 to 0.24 in the 2nd half. The ratio has remained relatively stable during both halves of the study period.

ROCE: In respect of ROCE of coal industry (Table 1 and Figure 1), no specific trend is observed during the whole period. The ratio ranges between 0.19 and 0.43 with an average of 0.35 and it has remained relatively stable (C.V. 20.00%) during the whole period.

The findings of the sub-period analysis reveal that on the average, ROCE has decreased from 0.38 in the 1st sub-period to 0.31 in the 2nd sub-period. The movement of this ratio varies from 0.33 to 0.43 in the 1st half, while the movement of the same varies from 0.19 to 0.41 in the 2nd half. The ratio is found to be relatively stable (C.V. 10.53%) in the 1st sub-period and it has fluctuated moderately (C.V. 25.81%) in the 2nd sub-period.

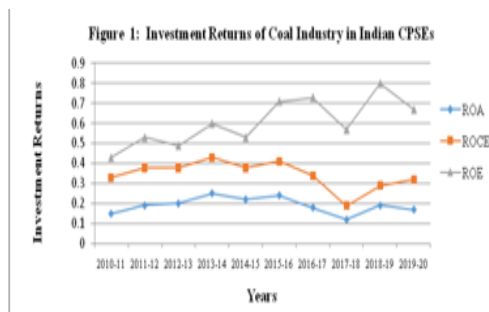
ROE: Table 1 and Figure 1 further reveals that ROE of coal industry has a fluctuating trend with a whole period average of 0.61. The ratio is relatively stable (C.V. 19.67%) and it ranges between 0.43 and 0.80 during the entire study period.

The sub-period analysis indicates that on the average, ROE has improved from 0.52 in the 1st half to 0.70 in the 2nd half. The ratio ranges from 0.43 to 0.60 in the 1st half, while the ratio ranges from 0.57 to 0.80 in the 2nd half. Relatively stable performances are observed in respect of ROE during both halves of the study period.

Table 1 Investment Returns of Coal Industry in Indian CPSEs

Year ↓	Ratios →	Investment Returns		
		ROA	ROCE	ROE
2010-11		0.15	0.33	0.43
2011-12		0.19	0.38	0.53
2012-13		0.20	0.38	0.49
2013-14		0.25	0.43	0.60
2014-15		0.22	0.38	0.53
2015-16		0.24	0.41	0.71
2016-17		0.18	0.34	0.73

2017-18	0.12	0.19	0.57
2018-19	0.19	0.29	0.80
2019-20	0.17	0.32	0.67
Whole Period:			
Average	0.19	0.35	0.61
S.D.	0.04	0.07	0.12
C.V.	21.05%	20.00%	19.67%
2nd Sub-Period:			
Average	0.18	0.31	0.70
S.D.	0.04	0.08	0.08
C.V.	22.22%	25.81%	11.43%
Source: Author's Calculation.			



Impact of Investment Returns in Coal Industry

Table 2 shows insignificant results for ROA ($t = 0.73$) and ROCE ($t = 1.51$), while significant result is observed in ROE ($t = -5.38$) at 1% level. For ROA and ROCE, the null hypothesis of our study has been accepted in the study, while for ROE, the third null premise is not accepted in the study. This implies that return to the equity shareholders has improved significantly i.e., positive impact during the study period.

Table 2 Paired 't' Test for Impact of Investment Returns in Coal Industry

Particulars	Investment Returns (in times)		
	ROA	ROCE	ROE
Average (1st Sub-Period)	0.20	0.38	0.52
Average (2nd Sub-Period)	0.18	0.31	0.70
Calculated value of t	0.73 i	1.51 i	-5.38***
Impact	No Impact	No Impact	Positive Impact
Notes: *** marked value indicates significant at 1% level (2-tailed). i marked values indicate insignificant.			
Source: Author's Calculation.			

Conclusion

Overall, coal industry has generated positive returns in terms of ROA, ROCE, and ROE. The sub-period analysis reveals that on the average, investment returns in terms of ROA and ROCE have decreased from 1st half to 2nd half, while investment returns in terms of ROE has improved from 1st half to 2nd half of the study. Moreover, all the investment ratios (except ROCE in the 2nd half) show relatively stable performance. Furthermore, 1st half shows better consistency in ROA and ROCE as compared to that in the 2nd half, while ROE marginally shows

better consistency in the 2nd half as compared to that in the 1st half.

The noteworthy positive impact in ROE implies that coal industry plays a crucial position in the monetary enlargement of the Indian economy. Hence, the Govt. must take essential steps to earn more returns on investment and thus helps in the economic development of the country.

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