

A STUDY ON RISK AND RETURN ANALYSIS OF SELECTED STEEL MANUFACTURING COMPANIES LISTED IN BSE

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ABSTRACT

DOI URL: <https://doi.org/10.36713/epra3028>

India is the second largest crude steel producer in the world. The demand of the steel industry is depending on the consumer durables, automobiles and infrastructure sectors in India. Steel sector growth in India was depending on the locally available materials like iron ore and cost-effective labour. It is the major manufacturing output contributing sector and also vertebrae of Indian economy. The level of living standard and socioeconomic growth of the human being living in the country is the indicator of the per capita consumption of products and services in that country. Imports plays a significant role in the domestic market of the country. Technology, government policy, high capital cost and economies of scale are the major hurdles to this sector. To understand the risk and return style in steel company stocks is the objective of this paper. Uncertainty of generating a return on any investment is called risk. Capital appreciation or more than investment value receiving of entity is called return.

KEYWORDS: steel, manufacturing, Technology, emerging markets, volatility stocks

INTRODUCTION

The world's first iron pillar was rigid in India at Chandragupta's period. Steel Authority of India Limited (SAIL) is the highest public sector steel producer in India. Fifty percent of the steel was produced in India by small and medium enterprises. Around 650 mini steel plants are located in India. Gum & Shell Factory was the India's first modern steel producer. Tata Iron and Steel Company (TISCO) are the largest steel in the British Empire with production capacity of 2 million tons of pig iron and 1.13 of steel annually. 6.36 Metric Tonnes (MT) were exported from India during 2018-19. Foreign Direct Investment (FDI) in India was tune of US\$11.38 billion during 2000-2019. Steel Scrap Recycling Policy was introduced and import duty was raised by the Indian government to reduce imports. Last fifteen years the growth rate of the domestic market was 7%. Steel and raw material price movement are globally depending on the US dollar. Developed economies steel demand was deliberately decreased from 3.1% to 1.8% in 2017 and 2018 respectively.

REVIEW OF LITERATURE

Koehers and others (2006) tried in contrasting the return of the securities exchange as for developing markets and

emerging markets. The examination clarified by method for breaking down 49 nations of which 26 nations belong to developing nations and remaining 23 nations had a place with developed nations. The investigation found that the risk related to the developing business sector was more than creating nations. Since the normal return of the interest in the developing markets was equivalent with risk. The study concluded that the risk adverse attitude of the financial specialists was seen as higher in developing business sector in comparison with developed market.

Sindhu. K. P & S. Rajitha Kumar (2014) established the perception of risk for investors for making investment decisions in Mutual funds. It is clearly noted that investors should consider investing in a combination of schemes to achieve the predetermined goals. Investing in one scheme is often risky because there are always fluctuations in the market price of the schemes. Diversified products and diversified investments often help in achieving good returns and makes the investor very less risky.

Zahir (1992) to discover the potential outcomes of affecting certain internal and external components on the market price of choosing scrip's of Indian stock exchange. To

complete the examination, the specialist took 140 scrip's from 1985 to 1987 range of two years. The distinguished outer factors were RBI security index, money supply and time factor while the internal factors, for example, share value, bonus issue, growth in assets, earnings per share, book value per share, yield and changeability in market price. The outcome indicated that the model of regression could disclose the autonomous factors to the degree of 67% as far as higher volatility stocks, though similar factors were disclosed by the model to the degree of just 29% regarding the low unpredictability gathering of shares.

NEED OF THE STUDY

The need of the study was to evaluate the activities of steel company stocks with the S&P BSE METAL index. It also analyzes the risk and return of the selected steel company's securities with the benchmark index for a particular period of time.

SCOPE OF THE STUDY

The scope of the study is confined to 5 steel companies listed under BSE. This study covers the average return, standard deviation, beta & alpha of the selected company's securities for a period of 5 years i.e., from April 2014 to March 2019.

OBJECTIVES OF THE STUDY

- 1 To examine the risk of selected steel companies listed in BSE
- 2 To study the return of selected steel companies listed in BSE
- 3 To compare the performance of selected steel company's securities against their P&S BSE METAL index.

RESEARCH METHODOLOGY

Data sources

The present study was conducted based on secondary data. Data was collected from the BSE website, journals and magazines etc.

Sample

Data was collected from top five steel companies listed in BSE namely Jindal steel, JSW Steel, Tata Steel, Steel Authority of India Limited (SAIL) and Visa Steel to compare risk and return of selected companies with their benchmark index.

Tools used in this study

Statistical tools

1. **Mean:** It is used to calculate the average returns of stocks by using the formula.

Return =

$$(\text{Closing price} - \text{Opening price}) / \text{Opening price} * 100$$

Mean = $\sum R/N$, Where $\sum R$ is sum of the returns of the Stock

N is number of years

2. **Standard deviation (SD):** It provides the measure of the total risk associated with a security. If the standard deviation is more, then the risk is also more in the security.

$$\text{Standard deviation (s)} = \sqrt{\text{Variance}}$$

$$\text{Variance}(s^2) = S (R_i - \bar{R}_i)^2 / n-1$$

3. **Beta:** Beta is a measure of the volatility in security returns due to changes in the economy or the market. Beta is also known as the beta coefficient. Beta is an index of the systematic

risk of a security. The larger the beta, the more volatile the security and vice versa.

$$\text{Beta (} \beta \text{)} = \text{Cov}_{im} / \sigma_m^2$$

4. **Alpha:** Alpha is a measure of the active return on an investment the performance of that investment compared with a suitable market index.

$$\text{Alpha (} \alpha \text{)} = \bar{R}_i - \bar{R}_m$$

Limitations of the study

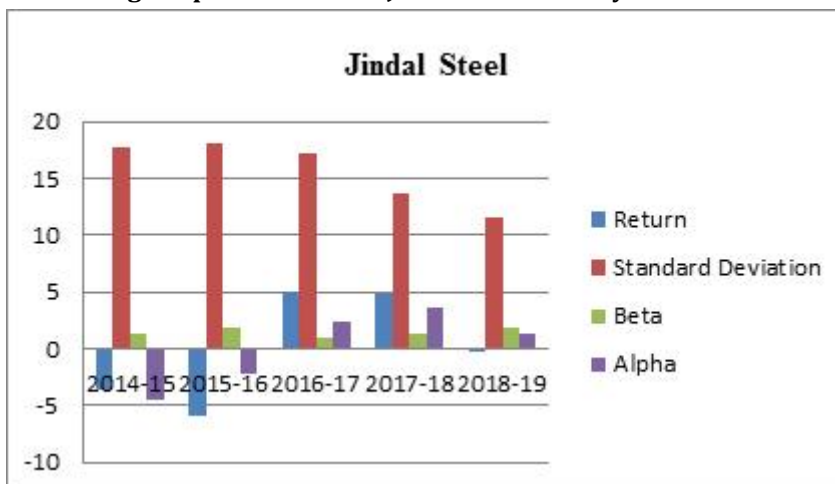
- This study has mainly relied on secondary data.
- The study is restricted to five years only.
- The study is limited to only five steel companies.
- Suggestions and conclusions are based on the limited data of five years.

DATA ANALYSIS AND INTERPRETATION

An attempt was made to study the risk and return of selected steel sector. Statistical techniques like mean, standard deviation, beta & alpha was used to calculate and to analyze the risk, return comparison between selected steel stocks with their market index.

Table 1: Indicating the performance of Jindal Steel for the years 2014-15 to 2018-19

Techniques	2014-15	2015-16	2016-17	2017-18	2018-19	Average
Return	-3.69056	-5.96798	5.077416	4.799396	-0.26395	-0.00914
Standard Deviation	17.69447	18.11985	17.25514	13.6269	11.63066	15.6654
Beta	1.374002	1.797252	0.937737	1.292574	1.802171	1.440747
Alpha	-4.51954	-2.26461	2.357225	3.612402	1.278666	0.092828

Graph 1: Indicating the performance of Jindal Steel for the years 2014-15 to 2018-19

From the above graph and table 1 shows that in 2016-17 & 2017-18 Jindal steel return was more than the benchmark. Least volatility of fund return was occupied in 2018-19 only.

In 2016-17 only stock price was less than the yardstick. Stock performance was better than market from 2016-17 to 2018-19.

Table 2: Indicating the performance of JSW Steel Ltd. for the years 2014-15 to 2018-19

Techniques	2014-15	2015-16	2016-17	2017-18	2018-19	Average
Return	-1.62778	2.922839	-5.53374	3.353152	0.844319	-0.00824
Standard Deviation	8.034482	5.891452	26.61449	5.957219	9.11101	11.12173
Beta	0.613188	0.273591	-2.20875	0.676172	1.569035	0.184648
Alpha	-1.99773	3.486593	0.873409	2.732211	2.187379	1.456371

Graph 2: Indicating the performance of JSW Steel Ltd. for the years 2014-15 to 2018-19

From the above graph and table 2 reveals that JSW steel return was less than the benchmark in 2014-15, 2016-17 & 2018-19. The high volatility of the fund return was in 2016-

17. In 2018-19 only stock price was more than the market. Underperformance of the fund was identified in 2014-15 & 2016-17.

Table 3: Indicating the performance of Tata Steel Ltd. for the years 2014-15 to 2018-19

Techniques	2014-15	2015-16	2016-17	2017-18	2018-19	Average
Return	-1.39326	0.627014	1.530495	1.756933	-0.19664	0.464908
Standard Deviation	10.16876	12.39056	5.775966	8.481153	4.790147	8.321317
Beta	0.937856	1.718143	0.697193	0.97014	0.796887	1.024044
Alpha	-1.9591	4.167373	-0.49193	0.866035	0.485474	0.613572

Graph 3: Indicating the performance of Tata Steel Ltd. for the years 2014-15 to 2018-19



From the above graph and table 3 described that Tata steel return was higher than the benchmark from 2016-17 to 2017-18. Comparatively fund return volatility was more in

2015-16. Price of the stock was less than the market during the study period except 2015-16. Performance of the fund was higher than the market in 2015-16 only.

Table 4: Indicating the performance of Steel Authority of India Limited (SAIL) for the years 2014-15 to 2018-19

Techniques	2014-15	2015-16	2016-17	2017-18	2018-19	Average
Return	-0.3291	-3.57244	1.902231	1.519951	-1.79692	-0.45526
Standard Deviation	13.43477	11.03634	19.1529	16.3109	10.04471	13.99592
Beta	1.320698	1.174583	2.853511	1.634021	1.117471	1.620057
Alpha	-1.12593	-1.15213	-6.37525	0.019399	-0.84039	-1.89486

Graph 4: Indicating the performance of Steel Authority of India Limited (SAIL) for the years 2014-15 to 2018-19



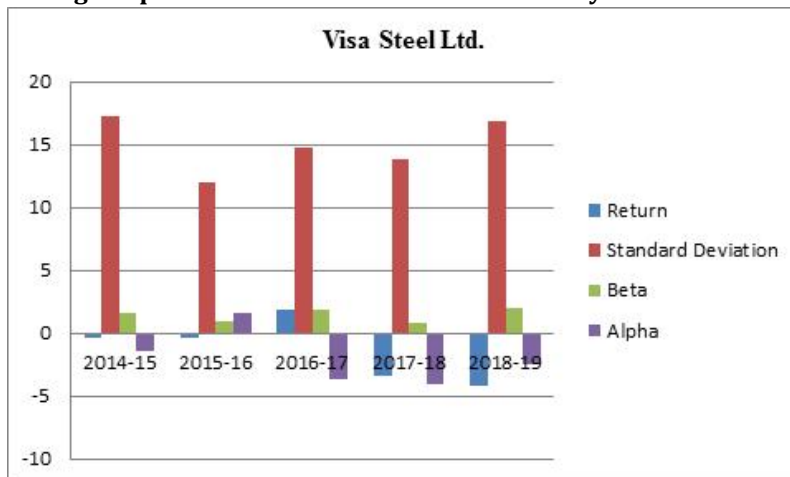
From the above graph and table 4 depict that SAIL India Ltd return was positive in 2016-17 & 2017-18. Fund return was more volatile than the market in 2016-17 only. During

the study period stock price was higher than the benchmark. Total study period worst performance of stock than the market index.

Table 5: Indicating the performance of Visa Steel Ltd. for the years 2014-15 to 2018-19

Techniques	2014-15	2015-16	2016-17	2017-18	2018-19	Average
Return	-0.42525	-0.3332	1.847633	-3.34181	-4.12411	-1.27535
Standard Deviation	17.28622	12.02054	14.81919	13.83933	16.92843	14.97874
Beta	1.649354	0.967526	1.906868	0.822991	1.998103	1.468968
Alpha	-1.42036	1.660454	-3.68382	-4.09758	-2.41378	-1.99102

Graph 5: Indicating the performance of Visa Steel Ltd. for the years 2014-15 to 2018-19



From the above graph and table 5 indicates that Visa Steel Ltd return was more the market in 2016-17 only. Volatility of the fund return was comparatively high than the yardstick in 2014-15 of standard deviation. The stock price

was less than a benchmark in 2015-16 & 2017-18. Less performed by the stock than the market in 2015-16 with the alpha value.

Table 6: Indicating performance of selected steel companies for the period of 2014-15 to 2018-19

Name of the Company / Techniques	VISA Steel	TATA Steel	JSW Steel	SAIL	Jindal Steel
Return	-1.27535	0.464908	-0.00824	-0.45526	-0.00914
Standard Deviation	14.97874	8.321317	11.12173	13.99592	15.6654
Beta	1.468968	1.024044	0.184648	1.620057	1.440747
Alpha	-1.99102	0.613572	1.456371	-1.89486	0.092828

Graph 6: Indicating performance of selected steel companies for the period of 2014-15 to 2018-19



From the above table & graph 6 interpreted that Tata steel return only positive compared to all companies. The comparatively Jindal steel return was more volatile than the market. The JSW steel price was lower than the yardstick of other selected companies. Better performance than the market was JSW steel only when compared to all other selected firms during this period.

FINDINGS

1. In 2016-17 & 2017-18 Jindal steel return was more than the benchmark. Least volatility of fund return was occupied in 2018-19 only. In 2016-17 only stock price was less than a yardstick. Stock performance was better than market from 2016-17 to 2018-19.

2. JSW steel return was less than a benchmark in 2014-15, 2016-17 & 2018-19. The high volatility of the fund return was in 2016-17. In 2018-19 only stock price was more than the market. Underperformance of the fund was identified in 2014-15 & 2016-17.
3. Tata steel return was higher than benchmark from 2016-17 to 2017-18. Comparatively fund return volatility was more in 2015-16. Price of the stock was less than the market during the study period except 2015-16. The performance of the fund was higher than the market in 2015-16 only.
4. SAIL India Ltd return was positive in 2016-17 & 2017-18. Fund return was more volatile the market

in 2016-17 only. During the study period stock price was higher than the benchmark. Total study period worst performance of stock than the market index.

5. Visa Steel Ltd return was more the market in 2016-17 only. Volatility of the fund return was comparatively high the yardstick in 2014-15 of standard deviation. The stock price was less than a benchmark in 2015-16 & 2017-18. Less performed the stock in the market in 2015-16 with the alpha value.
6. Tata steel return only positive compared to all companies. The comparatively Jindal steel return was more volatile than the market. The JSW steel price was lower than a yardstick of other companies. Better performance than the market was JSW steel of all other firms.

SUGGESTIONS

- 1 As per the performance of select steel companies JSW steel was outperformed with low return & risk with less volatility when compared to other selected steel companies.
- 2 It is suggested to potential investors to select JSW steel company for their investment purpose.

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