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A Study on Risk and Return Analysis of Selected Stocks in India

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Abstract: *Risk and return analysis plays a key role in most individual decision making process. Every investor wants to avoid risk and maximize return. In general, risk and return go hand. If an investor wishes to earn higher returns than the investor must appreciate that this will only be achieved by accepting a commensurate increase in risk. Based on risk and return analysis, high risk gives high returns with low risk gives to low return, based on this concept in Banking and Automobile sector high risk gives low return, and in Information technology, Fast moving consumer goods, Pharmaceutical sector low risk gives high return. Alpha stock is positive and the companies are independent to market return and have a profitable return.*

Keywords: Return, Risk, Beta, Standard Deviation, Variance

1. Introduction

The term stock exchange is the concept for the mechanism that the trading of company stocks. Trading at both the exchanges takes place through an open electronic limit order book, in which order matching is done by the trading computer. There are no market makers or specialists and the entire process is order-driven, which means that market orders placed by investors are automatically matched with the best limit orders. As a result, buyers and sellers remain anonymous. The advantage of an order driven market is that it brings more transparency, by displaying all buy and sell orders in the trading system.

All orders in the trading system need to be placed through brokers, many of which provide online trading facility to retail customers. Institutional investors can also take advantage of the direct market access (DMA) option, in which they use trading terminals provided by brokers for placing orders directly into the stock market trading system.

2. Review of Literature

PHILIPPE GERGOOIRE (2001)[1] conducted a study on "Predictive Power of Technical Analysis: The moving average rules on European" According to him simple forms of technical analysis possessed significant forecast power on various market indexes. He shows that these results can be replicated on formally selected European indexes, which almost completely eliminates any influences from data – snooping. Implications of these results in terms of market efficiency are also discussed.

DG PRAVEEN AND NIHAR RANAJN PANDA (2002) [2] had conducted a study on "Beat the market with hammer ", Japanese candlestick analysis is one of most popular and oldest forms of technical analysis. Candlestick charting studies the records of the market movements in the past to identify the future patterns. It identifies exuberant buying and panic selling, enabling the trader to pocket a great deal of profits from the stock market. Compared to traditional bar charts, many traders consider candlestick charts more visually appearing and easier to interpret. Each candlestick provides an easy to decipher picture of price action. Immediately a trader can see and compare the relationship between the open and close as well as the high and low.

STEPHEN SAULT (2006)[3] had conducted a study on fundamental and technical analysis literatures invest considerable effort in assessing their respective ability to explain share prices, they invariably do so without reference to each other. In this context, we propose an equity valuation model integrating both fundamental and technical analysis and, in doing so, recognize their potential as complements rather than as substitutes. Testing confirms the complementary nature of fundamental and technical analysis by showing that, while each performs well in isolation, models integrating both have superior explanatory power. While our findings relate to the valuation of shares, they also have implications for other valuation exercises.

CHEOL-HO PARK AND SCOTT H. IRWIN (2004)[4] The purpose of this report is to review the evidence on the profitability of technical analysis. To achieve this purpose, the report comprehensively reviews survey, theoretical and empirical studies regarding technical trading strategies. We begin by over viewing survey studies that have directly investigated market participants' experience and views on technical analysis. Foreign exchange markets, and that about 30% to 40% of practitioners appear to believe that technical analysis is an important factor in determining price movement at shorter time horizons up to 6 months.

3. References

1. Philippe Gregooire (2001), "Predictive power of technical analysis", The journal of Finance, Vol. 21, PP. 10–12
2. DG Praveen and Nihar Ranajn Panda (2002), "Beat the market with hammer", The journal of Finance, Vol 13, PP.75-77
3. Stephen Sault(2006), Accounting & Finance, Vol. 19, pp. 21-36.
4. Cheol-Ho Park and Scott H. Irwin (2004), Journal of Finance , Vol.26, pp 17-21.

4. Research Methodology

Source of Data - The study based on secondary data collected from BSE. The data on monthly market prices of leading sector listed in BSE have been collected. In addition the other sources are also used for data collecting like newspaper and internet (www.bseindia.com). Published data will be available in News papers, Websites, Journals, books, Reports by management, scholars, researchers, brokers etc..,

The reason behind choosing the monthly prices is that short term fluctuations in the market prices of the stocks due to internal and external factors can be catch hold off. Through it is possible to make much an analysis using daily prices; collection of data for long period of time is not possible. Hence the monthly prices are considered.

Sample Size - The sample size for the number of stocks is taken as 25 for analysis of stocks as very exhaustive and requires detailed study.

Data Collection Method - The sample of the stocks for the purpose of collecting secondary data has been selected on the basis of Random Sampling. The stocks are chosen based on top market capitalization in BSE.

Method of Sampling - Judgmental sampling involves the choice of subjects who are most advantageously placed or in the best position to provide the information required.The Judgmental sampling method is used for selected sector from BSE for the study. The following sector scrip are taken for study.

- **Banking Sector**
  - Axis Bank.
  - Canara Bank.
  - HDFC Bank Ltd.
  - Industrial Credit Investment Corporation of India.
  - State bank of India.
- **Information Technology Sector**
  - HCL Technologies Ltd.
  - Infosys Ltd.
  - Oracle Financial Services Software Ltd.
  - Tata Consultancy Service Ltd.
  - Wipro Ltd.
- **Automobile Sector**
  - Ashok Leyland Ltd.
  - Eicher Motors Ltd.

- Hero Moto Corp Ltd.
  - Maruti Suzuki India Ltd.
  - Tata Motors Ltd.

- **Pharmaceutical Sector**
  - Cipla Ltd.
  - Dr. Reddy's Laboratories Ltd.
  - Lupin Ltd.
  - Ranbaxy Laboratories Ltd.
  - Sun Pharmaceutical Industries Ltd.

- **Fast Moving Consumer Goods Sector**
  - Britannia Industries Ltd.
  - Dabur India Ltd.
  - Marico Ltd.
  - Godrej Consumer Products Ltd.
  - ITC Ltd.

Period of study

The period of study covers from 1st January 2010 to 31st december2014.

4. Calculation

Return - The return can be calculated over a single period or where there is more than one time period, the return and rate of return over the overall period can be calculated, based upon return within each sub period.

Risk - Investment is a measure of the risk arising from exposure to general market movements.

Formula for risk

$$\beta = \frac{n\Sigma XY - (\Sigma x)(\Sigma y)}{n\Sigma x2 - (\Sigma x)2}$$

Interpretation

1) One per cent change in market index return causes exactly one per cent change in the stock return. It indicates that the stock moves in tandem with the market.

2) One per cent change in market index return causes 2% change in the stock return. The stock return is more volatile. When there is a decline of 10% in the market return, the stock with a beta of 2 would give a negative return of 20%. The stocks with more than 1 beta value are considered to be risky.

3) One per cent change in market index return causes 0.5% change in the stock market. The stock is less volatile compared to the market.

4) Negative beta value indicates that the stock return moves in the opposite direction to the market return. A stock with a negative beta would provide a return of 10%, if the market return declines by 10% and vice versa. Stock with negative beta resist the decline in the market return, but stocks with negative returns are very rare.

Variance - The variance is a parameter that describes, in part, either the actual probability distribution of an observed population of numbers or sample of numbers has been drawn.

Standard deviation - It is measure of the values of the variables around its mean or it is the squared deviation from the variance divided by the number of observances.

Objectives

- To make comparative study of risk and return of selected company stocks.
- To find the standard deviation and variance of the stocks.

5. Analysis and Interpretation

Table 1: Risk and Return Analysis of Banking Sector

S.No.	Banking Sector	Return	Risk (Beta – β)
1	Axis Bank	8	1.7
2	Canara Bank	7	1.7
3	ICICI Bank	10	1.9
4	HDFC Bank	3	1.3
5	SBI	4	1.4

It is inferred from the above table that in ICICI Bank 1% change in market index return causes exactly 1.9 cent change in the stock return. It indicates that the stock moves in tandem with the market. In HDFC Bank 1% change in market index return causes exactly 1.3% changes in the stock return. It indicates that the stock moves in tandem with the market.

Table 2: Risk and Return Analysis of Automobile Sector

S.No.	Automobile Sector	Return	Risk (Beta – β)
1	Tata Motors	8.7	1.6
2	Ashok Leyland	8.1	1.9
3	Eicher Motors	35.9	0.8
4	Hero Moto Corp	10.8	0.6

5	**Maruti Suzuki**	12.1	1.5

It is inferred from the above table that in Ashok Leyland 1% change in market index return causes exactly 1.9% changes in the stock return. It indicates that the stock moves in tandem with the market. In Hero Moto Corp 1% changes in market index return causes 0.6% change in the stock market. The stock is less volatile compared to the market.

Table 3: Risk Return Analysis of Information Technology Sector

S.No.	IT Sector	Return	Risk (Beta – β)
1	**HCL**	17.7	0.3
2	**Oracle**	6.2	6.6
3	**Infosys**	2	0.5
4	**Wipro**	1.2	0.3
5	**TCS**	14.4	0.1

It is inferred from the above table that in Oracle 1% changes in market index return causes 6.6 % change in the stock market. In TCS 1% changes in market index return causes 0.1% change in the stock market. The stock is less volatile compared to the market.

Table 4: Risk and Return Analysis of Fast Moving Consumer Goods Sector

S.No	Fast Moving Consumer Goods	Return	Risk (Beta – β)
1	**Dabur**	7.2	-0.5
2	**ITC**	7.2	0.5
3	**Britannia**	11	-0.2
4	**Marico**	13.5	0.4
5	**Godrej**	14.8	0.3

It is inferred from the above table that in ITC 1% changes in market index return causes 0.5% change in the stock market. The stock is less volatile compared to the market. In Dabur -0.5 indicates that the stock return moves in the opposite direction to the market return. A stock with a negative beta would provide a return of 10%, if the market return declines by 10% and vice versa. Stock with negative beta resist the decline in the market return, but stocks with negative returns are very rare.

Table 5: Risk and Return Analysis of Pharmaceutical Sector

S.No	Pharmaceutical	Return	Risk (Beta – β)
1	**Dr. Reddy Laboratories**	11.6	0.3
2	**Lupin**	10.4	0.3
3	**Ranbaxy**	7.4	0.4
4	**Sun Pharmaceutical**	5	0.8
5	**Cipla**	8.4	0.4

It is inferred from the above table that in Sun Pharmaceutical 1% changes in market index return causes 0.8% change in the stock market. The stock is less volatile compared to the market. In Dr. Reddy Laboratories 1% changes in market index return causes 0.3% change in the stock market. The stock is less volatile compared to the market.

Table 6: Standard Deviation and Variance of Banking Sector

S.No.	Banking Sector	Standard Deviation	Variance
1	**Axis Bank**	0.114	0.013
2	**Canara Bank**	0.135	0.018
3	**ICICI Bank**	0.102	0.010
4	**HDFC Bank**	0.126	0.015
5	**SBI**	0.098	0.009

It is inferred from the above table that in Canara Bank the standard deviation is 0.135 that means the values in the data set are farther away from the mean and in SBI the standard deviation is 0.098 that means the value in a data set are close to the mean of the data.

Table 7: Standard Deviation and Variance of Automobile sector

S.No.	Automobile Sector	Standard Deviation	Variance
1	**Tata Motors**	0.154	0.023
2	**Ashok Leyland**	0.156	0.024
3	**Eicher Motors**	0.103	0.010
4	**Hero Moto Corp**	0.078	0.006

5	**Maruti Suzuki**	0.105	0.011

It is inferred from the above table that in Ashok Leyland the standard deviation is 0.156 that means the values in the data set are farther away from the mean and in Hero Moto Corp the standard deviation is 0.078 that means the value in a data set are close to the mean of the data.

Table 8: Standard Deviation and Variance of Information Technology Sector

Sno	Information Technology Sector	Standard Deviation	Variance
1	**HCL**	0.075	0.005
2	**Oracle**	0.109	0.011
3	**Infosys**	0.103	0.101
4	**Wipro**	0.098	0.009
5	**TCS**	0.062	0.003

It is inferred from the above table that in Oracle the standard deviation is 0.109 that means the values in the data set are farther away from the mean and in TCS the standard deviation is 0.062 that means the value in a data set are close to the mean of the data.

Table 9: Standard Deviation and Variance of Fast Moving Consumer Goods Sector

Sno	Fast Moving Consumer Goods Sector	Standard Deviation	Variance
1	**Dabur**	0.088	0.007
2	**ITC**	0.083	0.007
3	**Britannia**	0.131	0.017
4	**Marico**	0.062	0.003
5	**Godrej**	0.062	0.003

It is inferred from the above table that in Britannia the standard deviation is 0.131 that means the values in the data set are farther away from the mean and in Marico and Godrej the standard deviation is 0.062 that means the value in a data set are close to the mean of the data.

Table 10: Standard Deviation and Variance of Pharmaceutical Sector

Sno	Pharmaceutical Sector	Standard Deviation	Variance
1	**Cipla**	0.070	0.004
2	**Dr. Reddy Laboratories**	0.062	0.003
3	**Lupin**	0.128	0.016
4	**Ranbaxy**	0.120	0.014
5	**Sun Pharmaceutical**	0.139	0.019

It is inferred from the above table that in Sun Pharmaceutical the standard deviation is 0.139 that means the values in the data set are farther away from the mean and in Dr. Reddy Laboratories the standard deviation is 0.062 that means the value in a data set are close to the mean of the data.

Conclusion

Long term investors were able to take advantage of the market as it less volatile. As there is less fluctuation in the shares when compared to market as well as its prices, the long term investors able to predict about when the share will raise. Majority of Information technology, Fast Moving Consumer Goods, Pharamactical Sectors Give more return while compared to Banking and Automobile sector.