A study on forecasting the security prices by using technical indicator analysis with reference to sensex listed companies

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1. Introduction

This research work has been designed to forecast security price by using technical indicator analysis method. Investors and financial advisors use this method for analyzing the future buying and selling of securities in the capital market. This study helps the investor to understand and examine the position of the stock market and make a decision over securities. The present work has been devoted to the explanation of the concept of investment, analysis of investment, application of technical indicators, the profile of selected companies and other parts related to forecasting in the securities marketplace.

Concepts of investment

According to Warren Buffett's quotes on investment is Rule no. 1: Never lose money. Rule no 2. Never forget rule no-1.An investment is a commitment of funds made in the expectation of some positive rate of returns. If the investment is properly undertaken, the returns will commensurate with the risk the investor assumes. An investor who has surplus cash could invest it in securities or any other assets such as gold, silver, real estate, antiques or deposit it in a term deposit with a bank. Investment has two attributes, namely risk and return.

Objectives of investment

The main investment objectives of an investor are increasing the rate of return and reducing the risk. Other objectives are followed as follows:

1. Liquidity

2. Stability of return

3. Capital appreciation

4. Safety

5. Hedge against inflation

6. Tax planning

Security analysis

Security analysis refers to the analysis of buying and selling of securities in the security market through the stock exchange. It analyses the securities (shares, debentures, mutual fund, bond etc..,) Price returns and risk involved in the investment. Every investment has two characters: risk as well as return. This analysis helps the investor in understanding the mood of security prices and the stock market.

Objectives of security analysis

The following are the objectives of security analysis:

1. To forecast the risk and return of securities of a company

2. To find out the intrinsic value of the securities with regard to a trading decision.

3. To analyze the stock market trends in order to know the market position and behaviour

4. To forecast the future prices and earnings of securities

5. To use various charts, diagrams, and application of various market indicators in order to predict the bull and bear market.

Forecasting of portfolio

Capital markets have witnessed the growth of several market indicators. These indicators are computed on the stock market on a whole rather than on a specific share. There are certain market indicators which help in forecasting the trend of the share market. The application of statistical analysis and econometric to forecasting is based on past data are indicators of future performance. Forecasting of statistical tools of moving averages is used in the research.

Moving average

The term moving average refers to the method of calculation that takes the average value over a fixed period of time and adds the latest period data for the calculation of the average while dropping the first period of the calculation.

Moving averages are used to help identify the trend of prices by rearing an average of prices that move with the addition of new data. The price action on the security being analyzed is curved. By using and calculating the average value of a share or indicator, day to day fluctuations are reduced in importance and what remains is a stronger indication of the

trend of prices over the period being analyzed.

Examples –In order to find out the moving averages, first of all, the moving average period is selected; say a period of 5 weeks, 10 weeks, 50 weeks, or 10 days, 50 days or 100 days or a year. Suppose a period of 10 weeks is selected for calculation of weekly averages, each week the moving average is calculated by dropping this oldest week and adding a new week. Every time, the average of 10 weeks is calculated. This research has taken 20 days prices and 5 days moving average.

Need for the study

The capital market has been involved with various activities such as allowing companies for listing and computing the Sensex, buying and selling of securities, trend of the market, settlement etc.., Therefore, it is unable to predict the prices of securities for a future period. Hence the investors or the potential investors would like to know the future prices of their investment in a particular company. For this purpose, the research paper has decided to conduct a study.

Scope of the study

There are a lot of companies registered as listed company under the BSE.BSE is one among the many securities exchanges over the world and in India. The BSE - Sensex is the barometer of Indian capital market and the selected companies of SENSEX are well established and financially sound.

Selected companies in the study

Though so many companies listed are in BSE, this research has taken only two car manufacturing companies namely MARUTI and TATA Motors. As these car companies have built a good name among the car driving aspirants. Hence the research has selected and done forecasting analysis of the two afore mentioned companies.

Object of the study

The objectives of the study are:

1. To identify the trend in prices of securities in a particular company

2. To identify when the market trend will end

3. To identify if the share prices will move in the opposite direction.

4. To suggest on the basis of the results of the forecasting model for the selected companies.

Research methodology

Research design

A research design is the arrangement of conditions for the collection and analysis of data in a manner that aims to combine relevance of the research purpose with economy in mind. The present study is empirical cum analytical in nature. It has analyzed the trend price of both companies by using the most popular technical indicators.

Sampling technique

Non-probability sampling technique was used for the study.

Sample size

The present study has been taken only two companies which are listed in the BSE-Sensex

Collection of data

In the present study, secondary data has been used. This data was collected from the websiteof the companies, the website of BSE, NSE, and SEBI.

Time period of the study

Period between 18-Sep-2017 to 16-Oct-17 has been taken for the study.

Statistical tools used

To analyze the collection of data, moving averages have been used.

Limitation of the study

1. The researcher has not admitted into account all technical indicators of technical analysis i.e. MACD, RSI, ROC etc..,

2. The researcher has not used types of charts in technical analysis

3. Company's financial statements have not been used in the study.

Profile of the representative companies

Marti Suzuki India Ltd. Company

The company belongs to Engineering - Turnkey Industry. The company was incorporated in1981. The Chairman is R C BHARGAVA & MR. KENICHI AYUKAWA Managing Director & CEO and company's secretary is S RAVI AIYAR. The registered office of the company is in New Delhi. The company is listed in Mumbai and NSE.

Tata Motors Ltd. Company

The company belongs to Automobiles - LCVs/HCVs Industry. The company was incorporated in1945. The Chairman of the company is N.CHANDRASEKARAN & CEO &Managing Director of the company is Mr. GUENTER and the company secretary is H K Sethna. The registered office of the company is in Mumbai, (Maharashtra). The company is listed in London, Luxembourg, Mumbai, New York, and NSE.

Review of Related Literature

Review of literature is an important part of any research problem. A review of earlier studies is essential and useful to give right direction to any study. It explores the developments in thesubjects of study.

Bhardwaj, Raheja, and Priyanka (2012)

The paper examined the profitability of Marti Suzuki Ltd. and Tata Motors Ltd., on the basis of Fundamental analysis tools. The authors used ROI, ROE, GP Ratio, NP Ratio, OP Ratio, EPS, DPS and Dividend Payout Ratio to examine the profitability. The authors have used Average, S.D and C.V to analyze the data. The inference made was that Marti Suzuki Ltd. was more profitable than Tata Motors Ltd. Maruti Suzuki has more ROI, but Tata Motors have more ROE in all year. The EPS of Marti Suzuki was higher as compared to Tata Motors but the DPS and Dividend Payout Ratio were not as high as that of Tata Motors.

Analysis of Forecasting the Security Prices
Introduction

The share prices of stock and a moving average of the stock are plotted on the graph. The trends are then compared. When the share price is above the moving average line; the stock concerned has a bullish trend. So the investors could BUY the shares. On the other hand, if the share price line is below the moving average, the stock concerned has a bearish trend. So the investors could SELL the shares.

Secondary data collected from the 02 sample companies are analyzed. The analysis and interpretation of data are important research processes in any research because these stages bring out the findings of a research.

The present parts deals with Share prices for 20 Days by using 5 days moving average

1. ANALYSIS OF 20 DAYS SHARE PRICES AND 5 DAYS MOVING AVERAGE

Table -1.1

Share prices for 20 Days

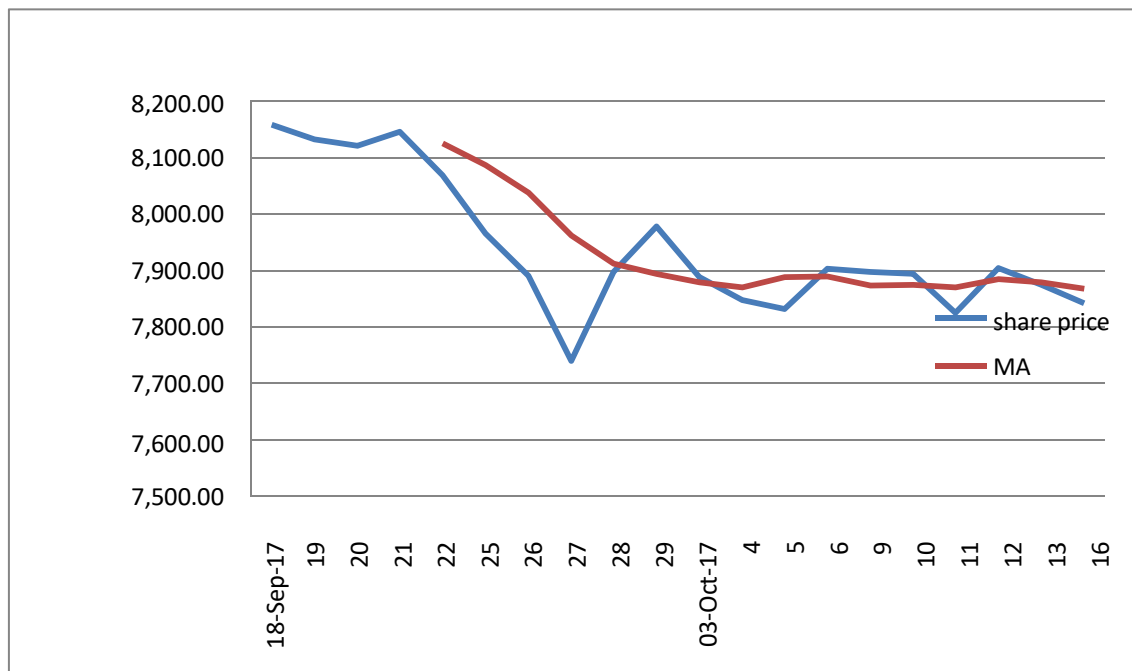| Date	Share prices	5-Days Moving Average	Date	Share prices	5-Days Moving Average
18-Sep-2017	8,157.85	-	03-Oct-17	7,888.30	7878.74
19-Sep-2017	8,131.70	-	04-Oct-17	7,847.20	7870.20
20-Sep-2017	8,120.15	-	05-Oct-17	7,831.05	7888.42
21-Sep-2017	8,144.95	-	06-Oct-17	7,903.20	7889.59
22-Sep-2017	8,068.20	8124.57	09-Oct-17	7,896.70	7873.29
25-Sep-2017	7,964.95	8085.99	10-Oct-17	7,893.70	7874.37
26-Sep-2017	7,889.90	8037.63	11-Oct-17	7,825.15	7869.96
27-Sep-2017	7,739.95	7961.59	12-Oct-17	7,904.25	7884.60
28-Sep-2017	7,897.35	7912.07	13-Oct-17	7,874.15	7878.79
29-Sep-2017	7,978.20	7894.07	16-Oct-17	7,842.00	7867.85

(Sources: BSE&NSE)

The above table displays 20 day share price and 5 days moving average of Marti Suzuki Ltd.

The following points are worth noting:

- ✓ From the above table, one can see that On 03,06,09,10 and 12th October 2017 show bullish trend when the share price is above the moving average line and

- ✓ The rest of the days show bearish trend when the share price line is below the moving average.

Diagram -1.1

The value of 20 days share prices and 5- Days moving average

2. ANALYSIS OF 20 DAYS SHARE PRICES AND 5 DAYS MOVING AVERAGE

Table -2.1

Share prices for 20 Days

| Tata Motors Ltd.					
Date	Share prices	5-Days Moving Average	Date	Share prices	5-Days Moving Average
18-Sep-17	405.35	-	03-Oct-17	416.40	406.71
19-Sep-17	423.90	--	04-Oct-17	423.40	409.21
20-Sep-17	415.50	-	05-Oct-17	423.15	413.06
21-Sep-17	413.30	-	06-Oct-17	424.20	417.68
22-Sep-17	411.20	413.85	09-Oct-17	425.60	422.55
25-Sep-17	408.20	414.42	10-Oct-17	423.80	424.03
26-Sep-17	410.90	411.82	11-Oct-17	415.25	422.40
27-Sep-17	403.90	409.50	12-Oct-17	420.30	421.83
28-Sep-17	401.10	407.06	13-Oct-17	424.45	421.88
29-Sep-17	401.25	405.07	16-Oct-17	436.55	424.07

(Sources: BSE&NSE)

The above table displays 20 day share price and 5 days moving average of Marti Suzuki Ltd. The following points are worth noting:

✓ From the above table, one can note that On 03rd , 04th , 05th ,06th ,09th ,13th and 16th October 2017 show bullish trend when the share price is above the moving average line and

✓ The rest of the days show bearish trend when the share price line is below the moving average.

Diagram - 2.2

The value of 20 days share prices and 5- Days moving average
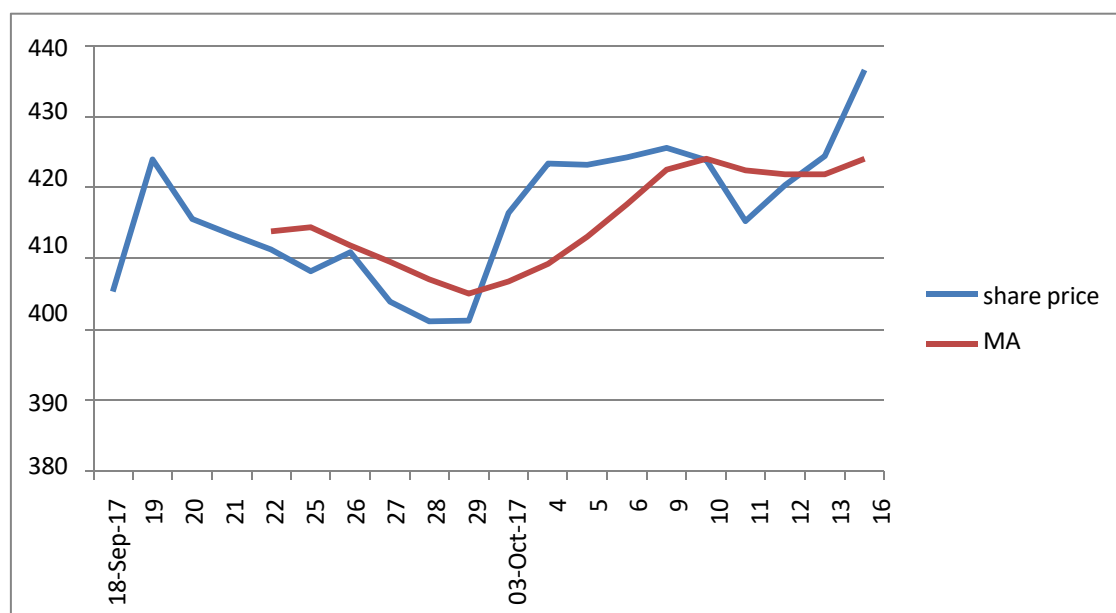
3. SUMMARY OF FINDINGS, SUGGESTIONS, AND CONCLUSION

3.1 Findings

Marti Suzuki India Ltd.

3rd, 6th, 9th, 10th and 12th October 2017 (5Days) show bullish trend when the share price is above the moving average line

The remaining 15 Days showing the bearish trend when the share price line is below the moving average.

Tata Motors Ltd.

3rd, 4th, 5th, 6th, 9th, 13th and 16th October 2017 (7Days) showing the bullish trend when the share price is above the moving average line

The rest of the day (13Days) showing the bearish trend when the share price line is below the moving average

3.2 Suggestions

On the basis of the findings and observations made during the study, the following points have been suggested in order to improve the market trend/ behaviour position of the companies.

- ✓ On the basis of the findings of the study, the researcher finds that only selected two companies. So the followers could select other companies too.
- ✓ On the basis of the findings of the study, the researcher used 20 days share prices and used 5 days moving average. So others may use 50 days and 200 days share prices.
- ✓ On the basis of the findings of the study, the researcher applied moving average. Hence the future researcher may apply other technical indicators. such as EMA, RSI ROC etc.,

For Marti Suzuki India Ltd:

- ✓ Five days of bullish trend can be seen in Maruti Suzuki Ltd for 20 days share prices and 5 days moving average. During this period, investors could buy the shares. Hence it should be increased in the future market for more than 15 days.
- ✓ 15 days of bearish market can be seen in the same company. During this period, investors could sell the shares. Hence the company could provide some benefits to the existing investors like interim dividend, final dividend etc..,

For Tata Motors Ltd:

- ✓ Seven days of bullish trend can be seen in Tata Motors Ltd for 20 days share prices and 5 days moving average. During this period, investors could buy the shares. Hence it should be increased in the future market for more than 17 days.
- ✓ 13 days of bearish market can be seen in the same company. During this period, investors could sell the shares. If not, only a few investors may invest in that company. Thus the company should exhibit the past years financial performance activities including dividend declaration.

3.3 Conclusion

Securities markets do not rise or fall in straight line. Since the fluctuations are wide and frequent, no meaningful decision can be made. An investor should predict the trend of share prices, application market/technical indicators of the whole market as well as individual companies' share prices. Before buying or/ and selling of any securities, through BSE or NSE, they should examine recent trends of share price and market behaviour of the company.

Thus, the investor needs to be familiar with various statistical tools that are used in the security market to predict the future price.

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