

Relevance of Technical Analysis As A Predictive Tool : An Empirical Study From Indian Stock Market

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Abstract

Technical analysis is a method of predicting the future price movements on the basis of the market data like past price movement, open interest and volume. Technical analysis is a science or an art of planting the stock information like trading volume, past price movements and market scenario in the form of charts for the aim of forecasting the future trends of the stock prices. It can help the investors to anticipate what is likely to happen to the future prices of the stocks over a period of time. Technical analysis also aids an investor in understanding the intrinsic value of the scripts and knowing whether the shares are overpriced or underpriced by scrutinizing the various factors of the market, thus enabling the investors in identifying the true value of the shares. This study attempts to apply some of the tools and techniques of technical analysis on selective stocks to help the investors in making precise investment decision in Indian stock market. The main technical analysis tools that are used in the study are Moving Averages (MA) and Relative Strength Index (RSI). These techniques are used to identify whether the stocks are technically strong or not. It helps investors to identify the current trend and recognize the risks associated with the shares in the market. This research aims at carrying out the technical analysis of the shares of the selected companies and assist investors in making investment decisions in the Indian Stock Market. This study is analytical in nature and is purely based on secondary data which has been collected from National Stock Exchange (NSE) website, magazines and journals.

Keywords: Trading Volume, Moving Averages, Relative Strength Index, Stock Market, Efficient Market Hypothesis, Buy and Hold Strategy, Retracement

Introduction

Share prices change due to continuous buying and selling. It is the demand and supply of the shares that largely determines the prices of the scrip's. In order to identify the current trend and risks associated with the stocks at par with the market, technical analysis is applied. Technical analysis is based on the belief that the Past performances of the stocks are indicators of their future performances. Technical analysis involves the use of the technical charts of price movements and market indicators, in order to infer what is likely to happen to future share price movements and therefore, construct forecasts and determine future trading decisions whether to buy, sell or hold the investment. A good amount of work has provided support for the technical analysis, that it is capable of generating valuable signals in financial

markets. But as per Efficient Market Hypothesis, any attempt made by technical analysts to forecast recurring-price patterns are completely futile because any signal or information from analyzing the historical prices is already reflected in the current stock prices. However, technical analysts believe that there exists some form of market inefficiency in the form of sluggish responses on part of investors or traders to new information. Thus, technical analysts assert that one can earn profit by using recurring patterns of the prices along with both the private and public information, in order to predict the changes in the demand and supply of the stocks. Empirical support provided by Bock et al. (1992) for utilizing technical trading tools where the profit generated from using technical trading strategies outperform the buy-and-hold strategy.

Literature Review

C. Booblan (2014) has stated that technical analysis of great importance in order to predict the trends of medium and short term price movements. The study analyzed the pattern of stock prices of five companies (ONGC, ITC, GAIL, SBIN, and WIPRO) and revealed that both the fundamental analysis and technical analysis helps the investors in making investment decisions.

Chitra (2011) observed that before making investment decisions it is advisable for investors to make technical analysis of stocks for better gains and also take into account various factors like company performance, union budget, social and political events, and climate conditions.

Wong, Manzur and Chew (2003) focused on the performance of technical analysis in signaling the timing of entry and exit in stock market by using technical indicators namely Moving Averages and RSI. The study revealed that technical analysis does help investors in getting better returns.

Objectives of the study

1. To analyze the price movement of shares of the selected companies in order to find the returns.

2. To analyze the prevalence of technical trading strategies in Indian stock market.
3. To suggest investors various investment strategies in selected scripts, based on technical indicators.

Materials and Methods

The research is completely analytical in nature, and the researcher has made use of information or facts that are already available, in order to analyze the share price movements for the purpose of making critical evaluation. The research design is based on secondary data and the data has been collected from NSE India, various websites and books. A sample of 10 companies listed on NSE among NIFTY 50 was taken on stratified sampling basis for the study. The sample companies include Axis bank, HDFC, Reliance, Sunpharma, TATA motors, WIPRO, Bharti Airtel, ONGC, Adani ports. The time period of the study is one year starting from 01 march 2019 to 28 February 2020. The statistical tools used for the study includes Moving Averages, and RSI, for the purpose of analyzing the price movements of the selected companies.

Moving Averages

Moving averages are one of the most popular trend following and easy to use tool available to technical analysts. It smoothes a data series and makes easier for an analyst to spot trend and decide on the trades, that is quite helpful in volatile markets.

In this study we are using Exponential Moving Average (EMA), which weighs current prices more heavily than past prices, and gives it an advantage of being quicker to the changes or fluctuations of price compared to simple moving averages.

RSI

Relative Strength Index (RSI) is a very popular technical indicator developed by Welles Wilder. It is leading momentum indicator and helps in identifying a trend reversal.

Calculation

$$RSI = 100 - 100 / (1 + RS)$$

RS = Average of x days' up closes/ average of x days' down closes.

RSI is used in various forms including 'Touch', 'Peak', 'Retracement', and '50 Crossover' methods. The 'touch' method generates a buy signal when the RSI touches the lower bound (typically set at 30) which indicates that the market is oversold and hence a time to buy. It generates a sell signal when the RSI touches the upper bound (typically set at 70) which indicates that the market is overbought and hence a time to sell. The 'peak' method generates a buy signal when the RSI has crossed the lower bound (typically set at 30) and turned back. It generates a sell signal when the RSI has crossed the upper bound (typically set at 70) and turned back. The 'retracement' method generates a buy signal when the RSI has crossed the lower bound (typically set at 30) and retraced back to the same lower bound or higher bound. It generates a sell signal when the RSI has crossed

the upper bound (typically set at 70) and retraced back to the same upper bound or lower. The '50 crossover' method generates a buy signal when the RSI rises above 50 and a sell signal when the RSI falls below 50.

Limitations

- The study is used only for short term decision making not for long term investments.
- Technical analysis of stocks is done only for one year.
- Technical analysis invites subjective bias.
- The researcher has taken limited technical indicators.

Chart Analysis and Interpretation

Interactive charts have been used for the purpose of the analysis of the selected companies, considering the price fluctuations and their meaning to the investors.

1. Axis Bank

Chart 1 : Stock Price Movement of Axis Bank



Source: Computations based on NSE Data

The technical chart of AXIS BANK indicates the variation in different prices like open, close high and low in respect to different days, which altogether have been taken into consideration for the period of one year starting from 01 March 2019 to 28 February 2020. Moving average analysis indicates an uptrend as the prices of the shares closed above the moving averages. There is a crossover of two EMA's on 17/07/2019 where shorter EMA 20 crosses the longer EMA 50 from above generating a sell signal to investors as the trend is going to reverse from uptrend to downtrend. RSI is also confirming the trend during the same time by being in overbought region.

The candlestick chart of RELAINCE represents a bullish trend for the year 01 March 2019 to 28 February. Moving average analysis represents a close association between the 20 days EMA and 50 day EMA. On 26/09/2019 there is a crossover where the shorter moving average EMA 20 crosses longer moving average EMA 50, indicating investors to buy the shares and hold the investment up to 30/01/2020. The return for the holding period of 85 trading days is 11.37%. On the same day RSI also crossed 70 (overbought zone) hereby, confirming the above trend.

2. Reliance

Chart 2 : Stock Price Movement of Reliance



Source: Computations based on NSE Data

3. Sun Pharma

Chart 3 : Stock Price Movement of Sun Pharma



Source : Computations based on NSE Data

The candlestick chart of SUNPHARMA represents a sideways trend for the year 01 March 2019 to 28 February. There is a close association between the EMA 20 and EMA 50 days and the closing prices of the shares. The shares prices of the SUNPHARMA are moving along with the moving average lines.

Crossover on 10/05/2019, 23/07/2019 and 25/09/2019, on the basis of above crossovers investors can make decisions whether to go long or short on the shares, and book profits accordingly. RSI also confirms the signals generated by moving averages.

4. HDFC

Chart 4 : Stock Price Movement of HDFC



Source: Computations based on NSE Data

The candlestick chart of HDFC represents a bullish trend for the year 01 March 2019 to 28 February. Moving average analysis indicates strong position of trading, as the closing prices are above the EMA 20 and 50 days. The annual one year returns on the stock is 16.10%. RSI also indicates that the shares are overbought by being in the overbought zone most of the times.

5. Tata Motors

Chart 5 : Stock Price Movement of Tata Motors



Source: Computations based on NSE Data

6. Bharti Airtel

Chart 6 : Stock price movement of Bharti Airtel



Source: Computations based on NSE Data

7. ONGC (Oil and Natural Gas Cooperation)

Chart 7 : Stock Price Movement of ONGC



Source: Computations based on NSE Data

The candlestick chart of ONGC represents a bearish trend for the year 01 March 2019 to 28 February. Moving average analysis indicates downtrend, as the prices are closed below the EMA's 20 and 50 for most of the time, generating a

buy signal, which means investors can buy or hold the investment. RSI also indicates a buy signal during the same time, indicating investors to hold the investment until it leaves the oversold region. The annual return on the stock is -37.83%.

8. WIPRO

Chart 8 : Stock Price Movement of WIPRO



Source: Computations based on NSE Data

The candlestick chart of WIPRO represents a bearish trend for the year 01 March 2019 to 28 February. The share price of the company witnessed a high peak on 30/04/2019, at the same time RSI was 73, which means that the shares were overbought, indicating a sell signal to the investors, volume traded being 7.344 m shares. . Crossover on 08/04/2019, and 05/07/2019, investor can gain profit of 7.98% for a holding period of 60 trading days.

The candlestick chart of ADANI PORTS represents a sideways trend for the year 01 March 2019 to 28 February. There is a close association between the EMA 20 and 50 and the closing prices. The shares of ADANI PORT are moving along with the moving average lines. Moving average indicates a weak trend whereas on crossovers of EMA on 27/03/2019, 25/07/2019 and 25/09/2019, investors can take decisions whether to buy or sell the shares accordingly. RSI indicates that the shares are in oversold region i.e, near or below 30, indicating investors to hold the investment.

9. Adani Ports

Chart 9 : Stock Price Movement of Adani Ports



Source: Computations based on NSE Data

10. GAIL

Chart 10 : Stock Price Movement of GAIL



Source: Computations based on NSE Data

The candlestick chart of GAIL represents a bearish trend for the year 01 March 2019 to 28 February. Moving average analysis also indicates a downtrend as the prices are closed below the EMA 20 and 50, generating a buy signal. On 06/06/2019 crossover between two EMA's where longer EMA 50 crosses the shorter EMA 20 from below indicating start of downtrend. On the same day RSI was 30, which means that the shares were oversold, signaling investors to hold the investment until it leaves the oversold region.

Findings of the Study

- BHARTI AIRTEL, TATA MOTORS, RELIANCE and HDFC shares are bullish in nature since they have more upward movement.
- GAIL, ONGC, WIPRO shares show bearish pattern since they have more downward movement.
- ADANI PORT, SUNPHARMA and AXIS BANK represents sideways pattern since the shares moved quite flatly.

Conclusions

The results of the study revealed that on applying technical trading indicators namely EMA and RSI investors can earn positive returns in Indian stock market. Investing in stocks is not an easy job it requires application of skills, if one wants to earn profit from it. On merely relying on broker's advice or fundamental analysis one can lose money. So, this research study helps investors in analyzing the scripts and invests accordingly.

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