



Technical analysis of stock performance: Evidence from Indian information technology & banking sector

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Abstract

Technical Analysis is an in-depth study of the stock market, as it helps the investor to predetermine the stock prices. It also helps in determining whether the stock is under-priced or overpriced. Any active investor considers technical analysis as a tool whether to buy the stock at a particular point of time. The main objective is to analyse the effectiveness of technical analysis on selected stocks of IT & Banking sector and interpret whether to buy or sell the stocks by using technical analysis tools like MACD, RSI and SMA. The Beta value is computed to check the volatility of the stock in comparison to the market return. It would help investors to know if the stock is following the trends in the market and also the risk involved in the investment. The study purely a secondary sources data collected from trusted sources such as NSE website.

Keywords: technical analysis, stock market, risk & return, moving average

1. Introduction

Technical Analysis is an in-depth analysis of the stock market by critically evaluating the factors related to the supply and demand of stocks. Technical analysis is a technique used to assess securities by using past prices and volumes traded to give the investors a brief knowledge about the movement of the stocks in the market. Technical analysts do not measure the intrinsic value of securities, but instead, use charts and other tools to identify patterns that can suggest future activity. In fact, the decision made by technical analysis is made only after inferring a trend and predicting the movement of the stock by the pattern followed. Technical Analysis assumes that the market is efficient and the price has already taken into consideration the other factors related to the company and the industry. It is because of this assumption that many think technical analysis is a tool, which is useful for short-term investing. The study on technical analysis of selected IT & Banking sector companies based on their past performances it is significant as it helps an investor to identify the intrinsic value of shares and to know whether the shares are undervalued or overvalued or correctly priced. It becomes essential to know the performance of the company so that the investment will be duly giving returns and ensure the safety of the investment. Further, it helps in understanding the price behaviour of the shares, the signals provided by the tools and the dominant trend movements of the market price. The Technical analysis concentrates on plotting the price movements of stock, drawing inferences from the price movements in the market. It is an approach by prediction of future prices through the forces like supply and demand. It is very much useful for a speculator who aims at profit margins.

1.1 Conceptual Framework

Technical analysis is a tool to analyze and hint about the market movements and help the investors to decide when to

buy and when to sell based on various tools, charts and graphs. It is a tool to be applied on the data and statistics provided by the past price and volume behavior of the stocks. One of the tools may be technical analysis which helps to study market action, primarily through the use of charts, for the purpose of forecasting future price trends. The movement of the scrip price and its behavior can be explained in more illustrative form by using technical analysis. Chitra (2011) ^[1] In this article it was found that technical analysis is a study of the stock market relating to factors affecting the supply and demand of stocks and also helps in deriving the intrinsic value of shares and to know whether the shares are under-priced or overpriced. The stock market indicators would help the investor to identify major market turning points. Mrs.J.Nithya, Dr. G. Thamizhchelvan (2014) ^[1] the article shows the effectiveness of technical analysis in the banking sector of the equity stock market. The tools of technical analysis like the RSI (Relative Strength Index) was used to predict the price movements of stocks in the select segment. The tool showed varied results for different stocks creating confusion in the minds of the investors regarding the trustworthiness of the tools used in technical analysis. The outcome, however, shows positive trends for all stocks but the effectiveness of the tool of the study was suggested for further research. Boobalan. C (2014) ^[3] in the article shows the importance of technical analysis in the performance of selected Indian company stocks. The focus was limited to five companies (WIPRO, SBIN (State Bank of India), GAIL (Gas Authority of India Limited), ONGC (Oil & Natural Gas Corporation Ltd.), and ITC (Imperial Tobacco Company of India Limited). The period of study was also limited to three years from 2011-2014. The analysis proved that technical analysis was helpful in making the right investment decision. The tools used in technical analysis where very limited, thereby limiting the scope of the study to those specific tools.

2. Methodology & Statistical Tools Used in the Study

The study aims at critically evaluating the price movements of selected companies in the IT & Banking sector. As the study describes the existing facts and figures given in the financial statement and the price movements of the selected companies, the research design followed is descriptive and analytical form. For Technical Analysis, the daily share price movements of the selected companies in NSE were absorbed for the five years from 01-01-2012 to 31-12-2016. The closing price of shares were taken out of which the future price movement was evaluated using various technical analysis tools. For beta computation, closing prices of select companies listed in the NSE and the closing value of NIFTY were taken. Data pertaining to the study was from a trusted secondary source that is the NSE website. Ten companies which have high trade volumes in NSE were taken as the base to conduct the study. The selected companies are as follows:-

2.1 Beta

The Beta value describes the movement of stocks or a portfolio's returns in comparison to that of the market index return over a period. The intention of using Slope or Beta is to predict the volatility of the market price. Beta is a measure of the market risk associated with any given security in the market. The formula for predicting Beta is as follows:

$$\beta = \frac{n \sum XY - (\sum x \sum y)}{n \sum x^2 - (\sum x)^2} \quad \text{Eq. (1)}$$

Where, X =index return,
Y = Scrip return.

2.2 Relative Strength Index (RSI) (Oscillator)

$$RSI = 100 - \frac{100}{(1+RS)} \quad \text{Eq. (2)}$$

$$Average\ Gain = \frac{Total\ Gains}{n} \quad \text{Eq. (3)}$$

$$Average\ Loss = \frac{Total\ losses}{n} \quad \text{Eq. (4)}$$

$$First\ RS = \frac{Average\ Gain}{Average\ Loss} \quad \text{Eq. (5)}$$

$$Smoothed\ RS = \frac{[(previous\ average\ gain) \times 13 + current\ gain]/14}{[(previous\ average\ loss) \times 13 + current\ loss]/14} \quad \text{Eq. (6)}$$

For a 14-period RSI, the Average Gain equals the total of all gains divided by 14. Even if there are only four profits (losses), the total of those four profits (losses) gets divided by the total of RSI periods used in the calculation (14 in this case). The Average Loss is computed similarly. When the Average Gain is more than the Average Loss, the RSI will increase because RSI will be more than 1. On the other hand, when the average loss is more than the average gain, the RSI declines because RSI will be less than 1. The last part of the formula ensures that the indicator oscillates between 0 and 100. Note: If the Average Loss ever becomes zero, RSI becomes 100 by definition.

2.3 Simple Moving Averages (SMA)

In most of the stock chart patterns, there is a lot of variation in price movement. This movement makes it difficult for traders to get an idea of a security's overall trend. An easy method which the traders use to combat this is to apply simple moving averages. A simple moving average is the average price of a security over a set amount of time. By plotting a security's average price, the price movement is smoothed out. Once the day-to-day fluctuations get eliminated, traders will be able to identify the trend better and increase their probability of earning better returns.

3. Empirical Results and Discussions

3.1 Information Technology (IT) Sector

Infosys Technologies Ltd.

From the analysis done, the beta value of Infosys stock is 0.327 that is less than 1. This indicates that the Infosys stock movement is less volatile than that of the market condition. The 20 day Simple Moving Average (SMA) is a handy tool in predicting the Buy and Sell signals of a particular stock based on the trend lines of the moving average. If the trend line is moving above the price level, then it indicates a buy signal. If the trend line is running below the price level, then it shows a sell signal. From the Infosys stock analysis, as seen in the above diagram it is evident that the SMA trend line is moving above the price level. Therefore it indicates a buy signal. The stock price is expected to grow in the future. The RSI value is 59.52 from the analysis done. The values suggest that the investor should hold the stock is expecting a rise in the price level in the future. MACD analysis of Infosys stock, the divergence is about 0.825. It shows that the stock is going to have an upward trend in the days to come. When the MACD value is above zero the short-term average is above long-term average this indicates that the stock is going to shoot in the upward direction.



Fig 1: Showing SMA, RSI, MACD movements of Infosys Stock

Tata Consultancy Services (TCS)

As in the analysis done the beta value of TCS stock is 0.4861 that is less than 1, this indicates that the TCS stock movement is less volatile than that of the market condition. A 20 day Simple Moving Average (SMA) is a handy tool in predicting the Buy and Sell signals of a particular stock based on the trend lines of the moving average. From the TCS stock analysis, as seen in the above diagram it is evident that the SMA trend line is moving below the price level. Therefore it indicates a sell signal. The stock price is expected to decline in the future. The RSI value is 64.46. From the analysis done a majority of the trend line is striking at the overbought condition, thereby hinting the investors that the price of the stock is expected to rise in the future. The value suggests that the investor should buy the stock expecting a rise in the price level in the future. MACD analysis of TCS stock, the divergence is about 12. It predicts that the stock is going to have an upward trend in the days to come. When the MACD value is above zero the short-term average is above long-term average this indicates that the stock is going to shoot in the upward direction.

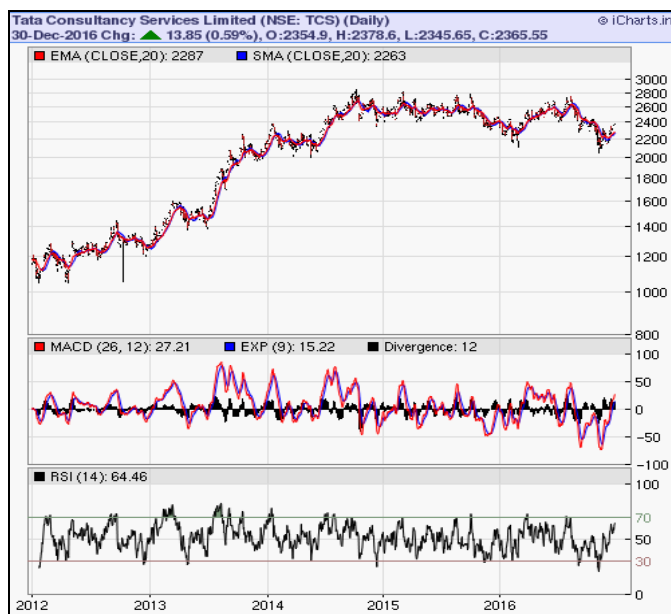


Fig 2: Showing MACD, RSI, SMA movements of TCS Stock

Wipro Technologies Ltd

As in the analysis done the beta value of WIPRO stock is 0.406 that is less than 1, this indicates that the WIPRO stock movement is less volatile than that of the market condition. From the WIPRO stock analysis, it is evident that the SMA Trend line is moving below the price level. Therefore it indicates a sell signal. The stock price is expected to decline in the future. The RSI value of the stock is 64.46. The values suggest that the investor should hold the stock is expecting a rise in the price level in the future. In the MACD analysis of WIPRO stock, the divergence is about 0.656. It shows that the stock is going to have an upward trend in the days to come. When the MACD value is above zero the short-term average is above long-term average this indicates that the stock is going to shoot in the upward direction.

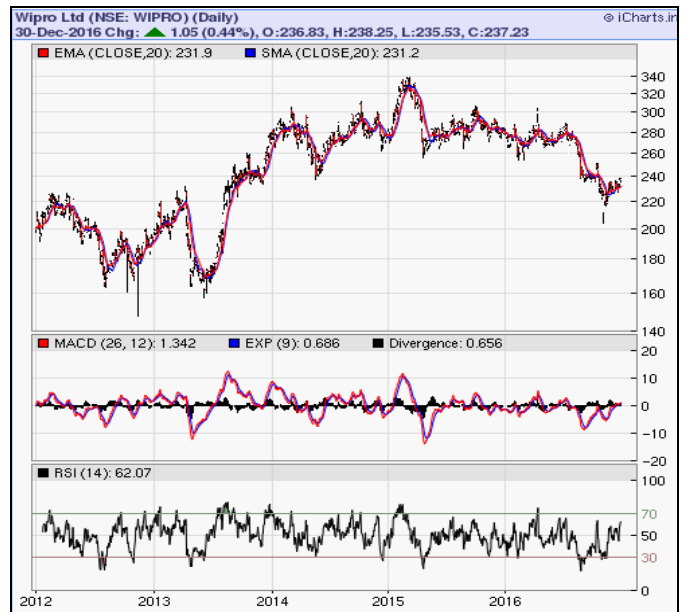


Fig 3: Showing MACD, RSI, SMA movements of Wipro Stock

Mind tree

As in the analysis done the beta value of MINDTREE stock is 0.383 that is less than 1, this indicates that the MINDTREE stock movement is less volatile than that of the market condition. From the Mindtree stock analysis, it is evident that the SMA Trendline is moving above the price level. Therefore it indicates a buy signal. The stock price is expected to grow in the future. The RSI value is 68.45 as depicted in the chart. The value suggests that the investor should hold the stock is expecting a rise in the price level in the future. From the MACD analysis of Mindtree stock, the divergence is about 0.093. It shows that the stock is going to have an upward trend in the days to come. When the MACD value is above zero the short-term average is above long-term average this indicates that the stock is going to shoot in the upward direction.

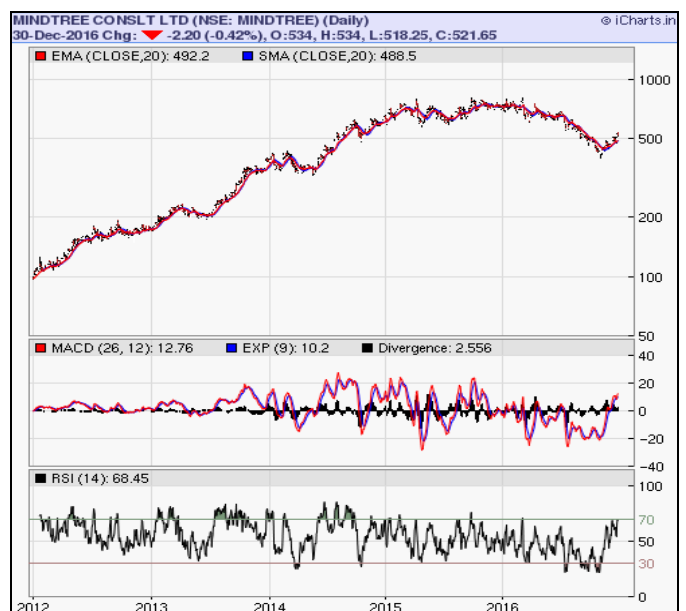


Fig 4: Showing the MACD, RSI, SMA movements of Mindtree Stock

HCL Technologies Ltd.

As in the analysis done the beta value of HCLTECH stock is 0.497 that is less than 1, this indicates that the HCLTECH stock movement is less volatile than that of the market condition. From the HCL Technologies stock analysis, it is evident that the SMA Trend line is moving below the price level. Therefore it indicates a sell signal. The stock price is expected to grow in the future. The RSI value is 59.73. The value suggests that the investor should hold the stock is expecting a rise in the price level in the future. The MACD analysis of HCLTECH stock, the divergence is about 0.093. It shows that the stock is going to have an upward trend in the days to come. When the MACD value is above zero the short-term average is above long-term average this indicates that the stock is going to shoot in the upward direction.



Fig 5: Showing the MACD, RSI, SMA movements of HCL stock

3.2 Banking Sector

State Bank of India

As in the analysis done the beta value of SBIN stock is 1.407 that is more than 1, this indicates that the SBIN stock movement is more volatile than that of the market condition. From the SBIN stock analysis, it is evident that the SMA Trendline is moving above the price level. Therefore it indicates a buy signal. The stock price is expected to grow in the future. The RSI value is 43.64. The value suggests that the investor should hold the stock was expecting a rise in the price level in the future. MACD analysis of SBIN stock the divergence is about -1.122. It shows that the stock is going to have an upward trend in the days to come. When the MACD value is below zero the short term average is below the long-term average this indicates that the stock is going to decline in future.



Fig 6: Showing MACD, RSI, SMA movements of SBIN Stock

HDFC Bank

As in the analysis done the beta value of HDFC Bank stock is 1.109 that is more than 1, this indicates that the SBIN stock movement is more volatile than that of the market condition. From the HDFC Bank stock analysis, as seen in the above diagram it is evident that the SMA Trendline is moving below the price level. Therefore it indicates a sell signal. The stock price is expected to fall in the future. The RSI value is 51.83. The value suggests that the investor should hold the stock was expecting a rise in the price level in the future. The MACD analysis of HDFC Bank stock, the divergence is about 3.871. It suggests that the stock is going to have an upward trend in the days to come. When the MACD value is above zero the short-term average is above the long-term average this indicates that the stock is going to rise in future.

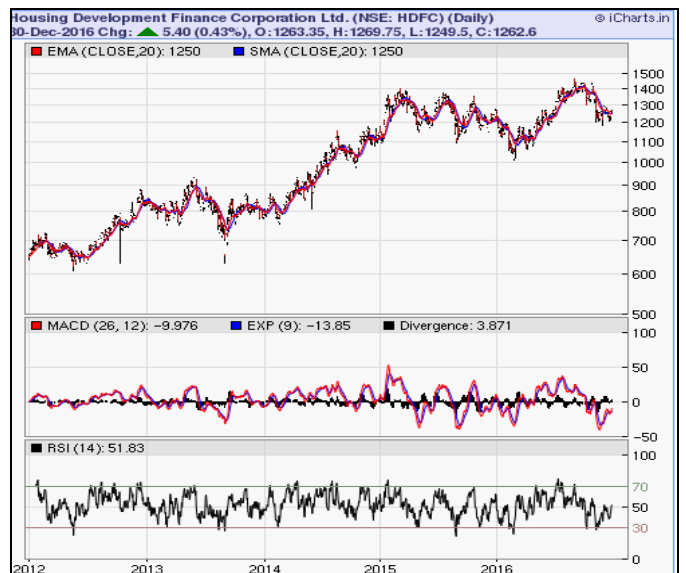


Fig 7: Showing the MACD, RSI, SMA movements of HDFC Stock

ICICI Bank

As in the analysis done the beta value of ICICI Bank stock is 1.469 that is more than 1, this indicates that the ICICI Bank stock movement is more volatile than that of the market condition. From the ICICI Bank stock analysis, it is evident that the SMA Trendline is moving above the price level. Therefore it indicates a buy signal. The stock price is expected to grow in the future. The RSI value is 46.88. The value suggests that the investor should hold the stock is expecting a rise in the price level in the future. From the MACD analysis of ICICI Bank stock, the divergence is about -0.027. It depicts that the stock is going to have an upward trend in the days to come. When the MACD value is below zero the short term average is below the long-term average this indicates that the stock is going to decline in future.



Fig 8: Showing the MACD, RSI, SMA movements of ICICI Bank Stock

Kotak Mahindra Bank

As in the analysis done the beta value of Kotak Bank stock is 1.113 that is more than 1, this indicates that the Kotak Mahindra bank stock movement is more volatile than that of the market condition. From the KOTAK Bank stock analysis, as seen in the above diagram it is evident that the SMA Trendline is moving above the price level. Therefore it indicates a buy signal. The stock price is expected to grow in the future. The RSI value is 40.11. The value suggests that the investor should hold the stock was expecting a rise in the price level in the future. From the MACD analysis of KOTAK Bank stock, the divergence is about 1.532. It shows that the stock is going to have an upward trend in the days to come. When the MACD value is above zero the short term average is below the long-term average this indicates that the stock is going to rise in the future.

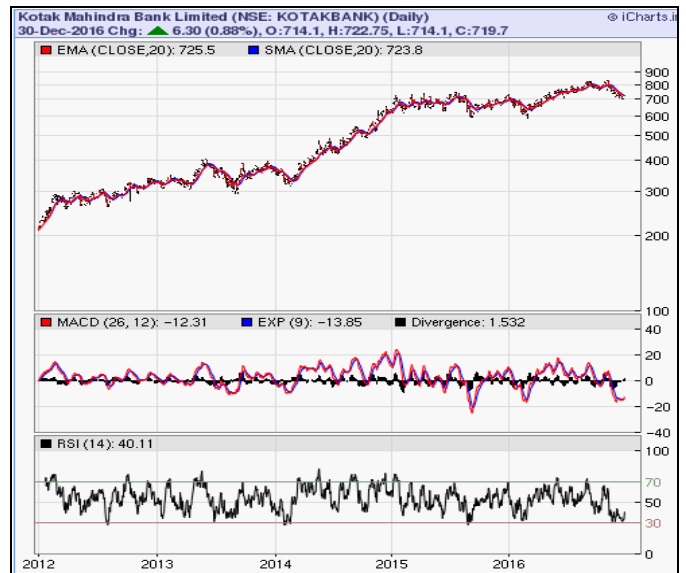


Fig 9: Showing the MACD, RSI, SMA movements of kotak bank stock

Canara Bank

As in the analysis done the beta value of Canara Bank stock is 1.70 that is more than 1, this indicates that the Canara bank stock movement is more volatile than that of the market condition. From the CANARA Bank stock analysis, it is evident that the SMA trend line is moving above the price level. Therefore it indicates a buy signal. The stock price is expected to grow in the future. The RSI value is 27.96. The value suggests that the investor should sell the stock expecting a fall in the price level in the future. From the MACD analysis of CANARA Bank stock the divergence is about -3.79. It depicts that the stock is going to have an upward trend in the days to come. When the MACD value is below zero the short term average is below the long-term average this indicates that the stock is going to fall in the future.



Fig 10: Showing the MACD, RSI, SMA movements of canara bank stock

4. Conclusions

Today, the health of stock exchange is solely dependent on the pattern of investment by the investor. As the financial market goes through quick changes, investors should look for right opportunities keeping in tune with the dynamics of the market environment. The financial market reflects a country's economic growth as they supply necessary financial inputs for the development of the country. Technical analysis gives the investor a better understanding of the stocks and also provides the right direction to take a call on whether to buy or sell the shares. Therefore, the small investors and traders should not blindly invest instead they should analyze using the various tools to check if the scrip is technically strong. One can buy Infosys, Mindtree, State bank of India, ICICI Bank, Kotak Mahindra Bank, Canara Bank because these companies Net Profits are increasing at a higher rate. But at the same time for short-term investors, it is advisable to sell TCS, HCLTech, Wipro, HDFC Bank shares as they are incurring losses.

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