



## A STUDY ON “TECHNICAL ANALYSIS OF AUTOMOBILE SECTOR OF TOP 5 COMPANIES – BSE”

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### **Abstract**

The Indian automobile industry has a well established name globally being the second largest two wheeler market in the world, fourth largest commercial vehicle market in the world. The Automobile industry in India has consistently registered strong performance. The paper sets its objective to analyse the technical analysis through relative strength index of automobile companies. To suggest the best performing automobile companies in the sector specified. The research is conducted on secondary data i.e. the published literatures available through online database N-list and other websites. In addition various reports and books were referred. The evidence is the Indian automobile industry is highly dependent on the Indian economy for its growth and this study also covers the recent scenario in these firms and further futuristic perspective. The main purpose of the study is to present some guidelines on the best performing automobile companies in market for investment purpose.

**Keywords:** *Automobile Sector, Relative Strength Index.*

### **Introduction**

The technical analysis studies the behaviour of price of the stock to determine the future price of the stock. Stock price movements are divided into three; the primary, secondary movements & the daily fluctuations. The primary trend may be a bull market moving in a steady upward direction or a bear market steadily dropping. Support level is the barrier for the further decline. It provides base for an up move.

Technical analysis is a forecasting method of price movements using past prices, volume, and open interest. As an approach to investment analysis, technical analysis is radically different from fundamental analysis. While the fundamental analyst believes that the market is 90% logical and 10 % psychological, the technical analyst assumes that it is 90 % psychological and 10% logical. Technical analysts don't evaluate a large number of fundamental factors relating to the company, the industry, and the economy. Instead they analyze internal market data with the help of charts and graphs. Technical analysis involves the examination of past market data such as price and the volume of trading which leads to an estimate of future price trends and therefore, an investment decision.

The Relative Strength Index (RSI) is an extremely useful and popular momentum oscillator. The RSI compares the magnitude of a stock's recent gains to the magnitude of its recent losses and turns that information into a number that ranges from 0 to 100. It takes a single parameter, the number of time periods to use in the calculation.

### **Calculation**

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

$$\text{Average gain} = (\text{Total gains} / n)$$

$$\text{Average loss} = (\text{Total loss} / n)$$

$$RS = \text{Relative Strength} = \text{Average gain} / \text{Average loss}$$

N = number of RSI periods.

The automobile industry is one of the key drivers that boost's the economic growth of the country. Since the de-licensing of the sector in 1991 and the subsequent opening up of 100 percent FDI through automatic route, Indian automobile sector has come a long way. Today, almost every global auto major has set up facilities in the country.

Austria based motorcycle manufacturer KTM, the established makers of Harley Davidson from the US and Mahindra & Mahindra have set up manufacturing bases in India. Furthermore, according to internal projections by Mercedes Benz Cars, India is set to become Mercedes Benz's fastest-growing market worldwide ahead of China, the US and Europe.

As per the data published by Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce, Government of India, the cumulative FDI inflows into the Indian automobile industry during April 2000 to October 2013 was noted to be US\$ 9,079 million, which amounted to 4% of the total FDI inflows in terms of US \$. The production of compact superbikes is also expected to take place in India. The country has a mass production base of 16 million two-wheelers and the several global as well as Indian bike makers are looking forward to use it as an advantage in order to roll out sports bikes in the 250 cc capacity.

The world standing for the Indian automobile sector, as per the Confederation of the Indian industry is as follows:

- Largest three-wheeler market
- Second largest two-wheeler market
- Tenth largest passenger car market
- Fourth largest tractor market
- Fifth largest commercial vehicle market
- Fifth largest bus and truck segment

However, the year 2013-2014 has seen a decline in the industry's otherwise smooth-running growth. High inflation, soaring interest rates, low consumer sentiment and rising fuel prices along with economic slowdown are the major reason for the downturn of the industry. Except for the two-wheelers, all other segments in the industry have been weakening. There is a negative impact on the automakers and dealers who offered high discounts in order to push sales. To match the decline in demand, automakers have resorted to production cuts and lay-offs, due to which capacity utilization for most automakers remains at a dismal level.

Despite the comprehensive market being under extreme burden, the luxury car market has observed a robust double-digit hike during the year 2013-2014, as a result of rewarding new launches at compelling lower price points. Further, with the measured increases in the price of diesel, the overall market continues to shift towards petrol-fuelled cars. This has led to the growth in sales of the 'Mini' segment of the PV market by of 5.5%

### **Review of Literature**

#### **Daigler and Fielitz (1981)**

Employed multiple discriminant analysis to examine the ability of daily technical indicators to predict future movements of the stock market. The study investigates the ability of daily technical indicators to predict future change in the Standard and Poor's 500 index (as measured by price relatives). Daily observations for the predictors' variables and the Standard and Poor's 500 stock price index were determined for the period January 1961 to December 1973. The notable features of this research included the use of a multivariate approach, a non-linear discriminant function, the Lachenbruch holdout method, test-space and reduced-space procedure, the complete stepwise method, and consideration of the characteristics of the data such as stationarity, the discreteness of the criteria variable, and the use of the two-group largest and smallest price relatives.

#### **Treynor and Forguson (1985)**

Showed that past prices, when combined with other valuable information, can indeed be helpful in achieving unusual profits. Adherents of technical analysis claim that unusual profits can be achieved using only past security prices. Many investors occasionally receive that what they believe to be nonpublic information about a security. Others feel that by applying superior analytical skills to public information, they are able to arrive at valuable insights that are not generally appreciated. The investor must be correct on two counts. First, the estimate of the worth of the information must be reasonably accurate in terms of its impact on the price of the stock, and second, the investors must make a realistic assessment of the likelihood that the market already has received the information or insight in question. This paper is concerned only with the latter problem. The probability distribution of the date on which the market receives information already in the hands of the investors is calculated for a simple model of information propagation. It is then shown how this probability distribution can be brought to bear on management of a portfolio. However, it is the non-price information that creates opportunity. The past prices serve only to permit its efficient exploitation.

#### **Blume, Easley, and Ohara (1994)**

Investigated the information role of volume and its applicability for technical analysis. The authors developed a new equilibrium model in which aggregate supply is fixed and traders receive signals with differing quality. The paper shows that volume provides information on information quality that cannot be deduced from the prices statistic. The paper showed how volume, information precision, and price movements relate, and demonstrate how sequences of volume and price can be information. The authors also showed that traders who use information contained in market statistics do better than traders, who do not. Technical analysis thus arises as a natural component agents learning process. As the analysis suggests, introducing volume unrelated to the underlying information structure would survey weakly the ability of uninformed traders to interpret market information accurately.

#### **Antoniou et al. (1997)**

The study was aimed to examine whether seemingly efficient can, in fact, be predicted by the use of technical analysis of both past volume and part returns data. The study used daily closing prices for 63 stocks traded in the Istanbul Stock Exchange (ISE) in the period from January, 1988 to December, 1993. This paper investigated the extent to which past volume, in

conjunction with past returns, can predict returns from seemingly efficient prices. The result revealed that technical analysis on volume can aid the prediction of returns which cannot be predicted by the analysis of past returns in isolation. This was particularly the case for low levels of trading volume. The results presented here suggested that any assessment of the volume depicts the fact that market prices were not fully revealing. Volume has a useful role to play that was captured in the past sequence of returns.

### Fernado, Christan, and Simon (2000)

Tested the profitability of simple technical trading rule based on Artificial Neural Network (ANN) model. They made a small study on „The Profitability of Technical Trading Rules based on Artificial Neural Network: Evidence from the Madrid Stock Market“. Their results were based on applying this investment strategy to the General Index of the Madrid stock market, and suggested that, in absence of trading costs, the technical trading rule was always superior to buy-and-hold strategy for both the “bear” market and “bull” market and “stable” market. On the other hand, they found that the buy-and-hold strategy generated higher return than the trading rule based on ANN for a sub-period presenting upward trend (bull market).

### Statement of the Problem

It is very difficult to choose the best shares for international among the available lot. An Analysis tool will be helpful in choosing the right share. Hence “The study on technical analysis has been chosen for the research work”.

### Objectives of the Study

- To analyze the performance of the automobile sector stocks.
- To ascertain whether the stocks are moving in certain patterns and trends as per technical analysis concepts.
- To get a practical insight as to how technical analysis is used to predict stock price behavior.
- To study the financial position of the selected companies in automobile industry and analyze them to recommend to the investors.

### Scope of the Study

The study is on “TECHNICAL ANALYSIS OF AUTOMOBILE SECTOR OF TOP 5 COMPANIES IN BSE” This study focusing on top 5 automobile companies of Bombay stock exchange and evaluating the closing prices of each companies for twelve months and finding out the return of each company by using Relative Strength Index method and Candle stick method.

### Limitations of the Study

1. Top 5 companies in BSE are taken out of a very large Indian automobile industry could be studied in this process.
2. The study is based on limited time period of twelve months.
3. Only selected tools are applied for analysis.

### Company Profile

Companies considered for the study are:

1. Tata motors ltd.
2. Mahindra & mahindra ltd.
3. Maruti suzuki india ltd.
4. Hero moto corp ltd.
5. Ashok leyland ltd

### Analysis and Interpretation

**Table Showing Relative Strength Index on Monthly Stock Returns of Tata Motors, Mahindra & Mahindra, Maruti Suzuki, Hero Motocorp, Ashok Leyland From April 2016 – March 2017**

| Relative Strength Index |             |         |               |                |               |
|-------------------------|-------------|---------|---------------|----------------|---------------|
| Month                   | Tata motors | M&m     | Maruti suzuki | Hero moto corp | Ashok leyland |
| Apr-16                  | 43.8769     | 32.2876 | 47.1297       | 53.6438        | 58.9108       |
| May-16                  | 35.3223     | 51.8825 | 29.0222       | 30.5851        | 44.0677       |
| Jun-16                  | 48.2335     | 25.2987 | 44.2129       | 43.0564        | 63.7088       |
| Jul-16                  | 31.4545     | 48.3499 | 21.8985       | 43.9868        | 58.7443       |
| Aug-16                  | 41.2882     | 55.3108 | 30.1933       | 30.7998        | 59.8984       |
| Sep-16                  | 52.4222     | 47.6353 | 29.3593       | 57.8371        | 56.4417       |

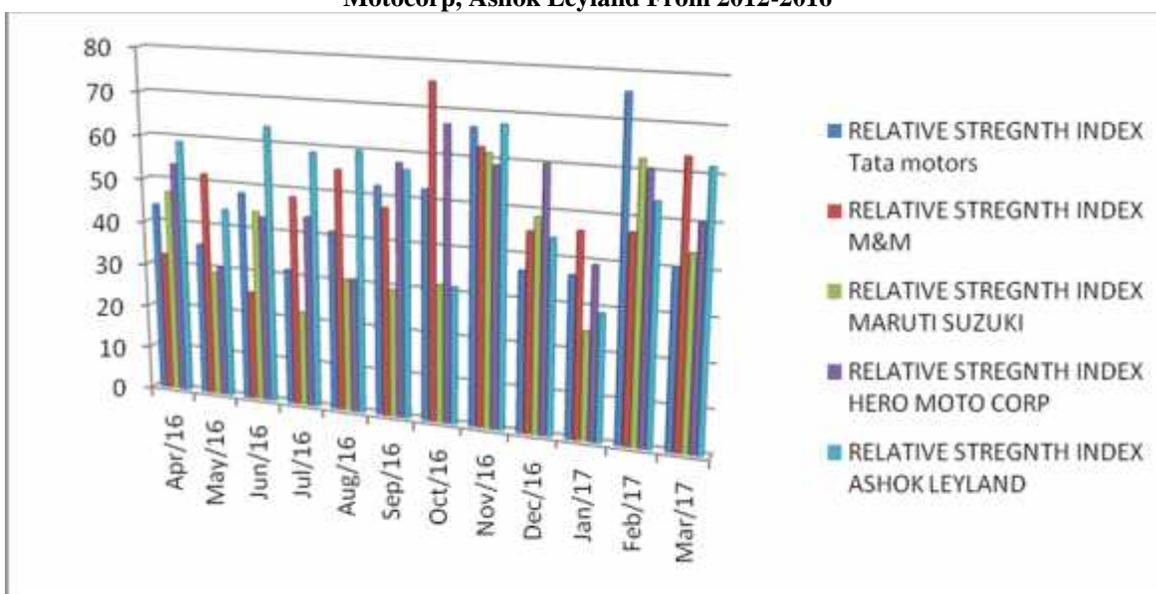
|        |         |         |         |         |         |
|--------|---------|---------|---------|---------|---------|
| Oct-16 | 52.5387 | 75.8402 | 31.5611 | 66.9758 | 31.3907 |
| Nov-16 | 66.7055 | 62.6313 | 61.4144 | 58.9355 | 67.731  |
| Dec-16 | 36.5934 | 45.3067 | 48.5843 | 60.0074 | 44.3155 |
| Jan-17 | 36.6212 | 46.3556 | 24.6517 | 39.264  | 28.9079 |
| Feb-17 | 76.0087 | 46.9719 | 62.5263 | 60.6477 | 53.9408 |
| Mar-17 | 40.2601 | 63.6578 | 43.7688 | 50.3053 | 61.8686 |

### Analysis

The above table explains about the overall performance of Tata Motors, Mahindra & Mahindra, Maruti Suzuki, Hero Moto corp, Ashok Leyland from april 2016 – march 2017.

Tata motors gives more returns followed by Maruti suzuki, Ashok Leyland, Hero Motocorp and Mahindra and Mahindra Company.

### Graph Showing Risk, Return on Yearly Stock Returns of Tata Motors, Mahindra & Mahindra, Maruthi Szuki, Hero Motocorp, Ashok Leyland From 2012-2016



### Interpretation

The above graph shows the monthly returns of Tata Motors, Mahindra & Mahindra, Maruti Suzuki, Hero Motocorp and Ashok Leyland companies.

Among five companies tata motors Company is the best company to invest, which has less risk and also give maximum returns to the investors.

### Findings

- The RSI of Tata Motors has crossed the 75% level only once, i.e in the month of February 2017. The RSI has fallen below 35% level during the month of May 2016.
- The RSI of Mahindra & Mahindra has crossed the 75% level only once, i.e in the month of October 2016. The RSI has fallen below 30% level during the month of June 2016.
- The RSI of Maruti Suzuki has crossed the 60% level twice, i.e in the month of November 2016 & February 2017. The RSI has fallen below 25% level during the month of July 2016 & January 2017.
- The RSI of Hero Moto Corp has crossed the 65% level only once, i.e in the month of October 2016. The RSI has fallen to 30% level during the month of May 2016 & August 2016.
- The RSI of Ashok Leyland has crossed the 65% level only once, i.e in the month of November 2016. The RSI has fallen below 30% level during the month of January 2017.



### Suggestion

- The investor can invest in Maruti Suzuki company because the share prices are higher than all the other company.
- The short term investors are advised to keep the Tata Motors stock for some more months as the RSI shows a linear trend.
- A suggestion to buy the stock of Mahindra & Mahindra is given to the short term investors.
- The short term investors are advised to keep the Hero Moto Corp stock for some more months.
- The RSI of Ashok Leyland shows that from February 2017, it is on a bearish trend and for safety, short term investors can either sell to avoid losses or hold it expecting for an increase in the months to come.

### Conclusion

The study of the stock price movements of the automobile sector stocks using the two technical indicators, the Relative Strength Index, has helped to analyze the movement of the stock prices during the past twelve months. This has helped to foresee the trend in the stock prices for a short period in future. This can help the investors in deciding whether to sell the stock or to buy them. If the short term average move above the long term average and the long term average is falling, investor should treat the intersection of the price line with suspicion. The short term movement may not hold long. Hence, the investor should wait for long term average to turn up before buying scrip. Similarly, if the short term average moves below the long term average before the long term average has flattened out or before it reverses its direction, the investor should wait for the fall in long term average for reversal of direction before moving out of the scrip.

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