

# A COMPARATIVE STUDY OF BAJAJ AUTO LTD AND HERO MOTOCORP BY USING TECHNICAL ANALYSIS

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## ABSTRACT:

A comparative study on performance of Bajaj Auto and Hero Motorcorp has been chosen for the study because automobile industry is one of the fastest growing industries of the economy. To analyze the performance ratios and trends are used. Technical is one of the analyses used for this study. Technical analysis can be used for any commodities or Securities. It is more prevalent for traders who focus on short term price movements. It helps them to trade securities using historical stock data. Technical analysis is more about using past data to predict future price movements. The main advantage of Technical analysis is that it can be used for both short term trading as well as long term security investment purposes. The main purpose of this analysis is to make the traders anticipate how stocks are to be traded. Technical analysis would require experience and prolonged observation on the part of the observer. This method is also one of the important and useful technique for analysing the financial statements.

**KEYWORDS:**Price movements, short term investors, Trend line, resistance and support lines, Priceline.

## INTRODUCTION

It is all about forecasting future financial price movements. It is a methodology that makes buying and selling decisions using market conditions. It primarily involves studying of charts. This analysis is applicable to any tradable financial instruments where its prices are influenced by market demand and supply. Technical analysis comprises of price charts, volumes, patterns, trend lines, moving averages, and indicators. The main objectives of technical analysis is to analyze profit from trading by observing market patterns and statistics, to know when to enter and exit a market, especially when it begins to shift, and to not let emotions influence trading decisions. The following charts are analyzed in this article:

- Simple moving average

- Line chart
- Average Directional Index
- Relative Strength Index
- Candlestick

**SIMPLE MOVING AVERAGE:**

Simple moving average is one of the technical tool that compare closing market prices of the company with the average of the same for 3 months. It is calculate by dividing the sum of past three month's closing prices with 3 to derive the average. It is one of the most popular technical analysis tool for it may even help generate buy and sell signals. Since it is in the chart form one can easily compare at the very instance.

**LINE CHART:**

It is one of the simplest and most basic stock charts among the technical analysis charts. It only shows the trend of the closing prices in the line chart by connecting the dots placed on the very right place indicating the closing prices of the company. Here the closing price would mean closing market price. This helps the users to easily understand the price patterns of particular company. They indicate rise and fall in the price movement. It is also known as close only charts since it represents only the closing market prices of the company.

**AVERAGE DIRECTIONAL INDEX:**

The Average Directional Index represents directional movement which measures the trend strength and determines if a trend is strong or weak. A high reading signifies a strong trend and a low reading would mean the trend is weak. Directional movement is defined by +DI and -DI. DI stands for directional indicator. There are two indicators which helps to define the trend direction, they are Plus Directional Indicator (+DI) and Minus Directional Indicator (-DI). To know whether it is upward trend and downward, ADX has a certain limits for it. The direction of the ADX line is essential for understanding trend strength. When the ADX line is rising, trend strength is also increasing, and the price moves in the course of the trend. When the line is decreasing, trend strength is also declines, and the prices enter a phase of retracement or consolidation.

**RELATIVE STRENGTH INDEX:**

RSI stands for Relative Strength Indicator. It is a momentous oscillator used to identify trend reversal. RSI was invented by Welles Wilder Jr. It calculates strength of stock trend and helps to predict their reversals. RSI value oscillates between 0 to 100. As per Wilder when RSI value is above 70 it is considered as overbought and when RSI is below 30 it is considered as oversold. A value between 35 to 65 is a no entry or exit point for traders who rely on RSI as primary indicator. However their movement can help supplement

other indicators signal. Another use of RSI is to determine divergence between price and RSI. Divergence indicates trend reversals.

### **CANDLESTICK**

A candlestick is a sort of price chart that displays the high, low, open and closing prices of a security for a detailed period. Candlesticks replicate the flow of investor sentiment on security prices and are used by technical analysts to decide when to enter and exit trades. Candlestick charting is based on a technique developed in Japan in the 1700s to track the price of rice. Candlesticks are an appropriate technique for trading any liquid financial asset like stocks, foreign exchange and futures.

### **REVIEW OF LITERATURE:**

**Avijit Banerjee (1998)**<sup>1</sup> reviewed about fundamental analysis and technical analysis in his article “Glimpse Of Portfolio Management” analysed the worthiness of the securities which were needed to be used for portfolio construction. The fundamental analysis helps an investor take decisions whether to buy, sell or hold the investments. But he also observed that the fundamental analysis could not detect the most appropriate time to buy or sell the stock and found that technical analysis removes this weakness.

**S.Achelis (2000)**<sup>2</sup>in his book “Technical analysis from A-Z” explains about technical analysis and the indicators available. He also discusses about how it works with overviews, interpretations, calculations, calculations, etc. Technical analysis’s performance under actual market conditions is also discussed.

### **ABOUT THE COMPANY**

#### **BAJAJ AUTO LTD**

The group's flagship company, Bajaj Auto, is ranked as the world's fourth largest three and two wheeler manufacturer .Its strong suit is high-volume production; it is the lowest-cost scooter maker in the world. The company has two subsidiaries namely Bajaj Auto International Holdings BV and PT Bajaj Indonesia. It has bagged many awards and still remains the most preferred automobiles in India. Bajaj Auto Limited is India's largest manufacturer of scooters and motorcycles. Its strong suit is high-volume production; it is the lowest-cost scooter maker in the world.

#### **HERO MOTOCORP**

Hero Motocorp Ltd. is the world's largest manufacturer of two - wheelers, based in India. Hero Motocorp Limited was incorporated in the year 1984 with the name Hero Honda Motors Ltd. The company is based in New Delhi, India. Hero Motocorp Limited is the world's largest manufacturer of two-wheelers. The company was established as a joint venture company between Honda Motor Company of Japan and Hero Group. Hero Motocorp surpassed the landmark seven million units in cumulative sales in a calendar year in 2017. Hero Motocorp is the World's single largest two-wheeler motorcycle company. The company is based in New Delhi India.

**SCOPE OF THE STUDY:**

This study helps the investors in better understanding of the markets and measures the direction in which investments might be headed and its utility helps in estimating the future trends of the stock price and to make a decent profit out of it. This can be done using three analysis, namely, fundamental analysis and technical analysis.

**OBJECTIVES:**

- To study the fundamental and technical analysis of HERO MOTOCORP and BAJAJ AUTO LTD.
- To compare and analyse based on their performance.
- To show which company is a better investment for the investors.

**SOURCE OF DATA:**

The study is based on secondary data that has been collected from different websites such as BSE, Wikipedia, etc. The sources also include books and magazines.

**PERIOD OF THE STUDY:**

A period of 5 years has been taken for the study from 2013-2018.

**LIMITATIONS:**

- The study is only for 5 years and changes that took place before and after that period were not taken into consideration.
- The study depends on the information provided in the annual report of the company so it is not very reliable.
- Detailed study of the topic is not possible due to limited size of the project.
- The study is only limited to automobile industry.

**ANALYSIS****LINE CHART****TABLE SHOWING CLOSING PRICES OF BAJAJ AUTO LTD**

MONTHS	CLOSING
Apr-17	2868
May-17	2843
Jun-17	2790
Jul-17	2807
Aug-17	2808
Sep-17	3108
Oct-17	3260
Nov-17	3311
Dec-17	3323
Jan-18	3338
Feb-18	3018
Mar-18	2748

**Source: Secondary data taken from Bombay stock exchange(BSE)**

**LINE CHART OF BAJAJ AUTO LTD:**



**TABLE SHOWING CLOSING PRICES OF HERO MOTOCORP**

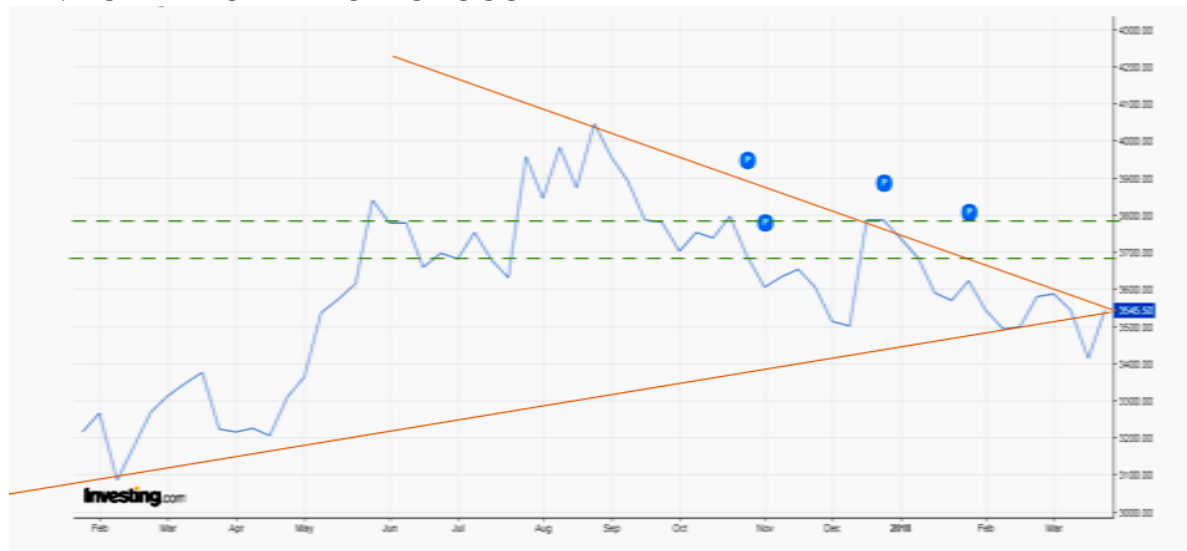
MONTHS	CLOSING
Apr-17	3310
May-17	3742
Jun-17	3696
Jul-17	3654
Aug-17	3998
Sep-17	3781
Oct-17	3854
Nov-17	3642
Dec-17	3786
Jan-18	3691
Feb-18	3600
Mar-18	3545

**Source: Secondary data taken from Bombay stock exchange(BSE)**

#### **INTERPRETATION:**

In the above chart, the red line depicts the trend line and the green line shows us the support and resistant points. The support and resistant points are the price points where maximum buying or selling is attracted. The support price is a price at which one can expect more buyers than sellers. Likewise the resistance price is a price at which one can expect more sellers than buyers. The resistant points are often a signal to sell which shows that there might have been a likelihood of excess supply is 3600. This excess supply builds a selling pressure which later tends to bring down the prices. Similarly, the support line is always a trigger to buy and lies between 3600 and 3700. The trend lines forms a symmetrical triangle where price action grows increasingly narrow, may be followed by a breakout to either side, up or down. The symmetrical triangle follows a bullish trend which means the breakout is below the ascending support line, which would indicate a market reversal to a downtrend.

**LINE CHART OF HERO MOTOCORP**

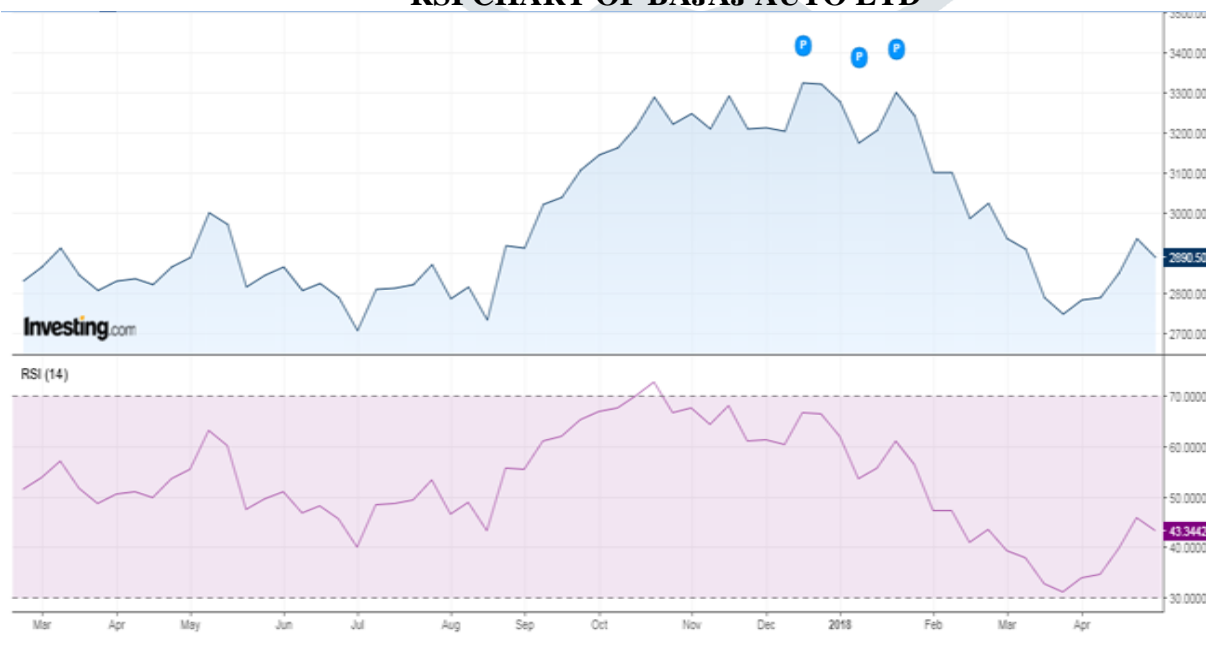


**RELATIVE STRENGTH INDEX**

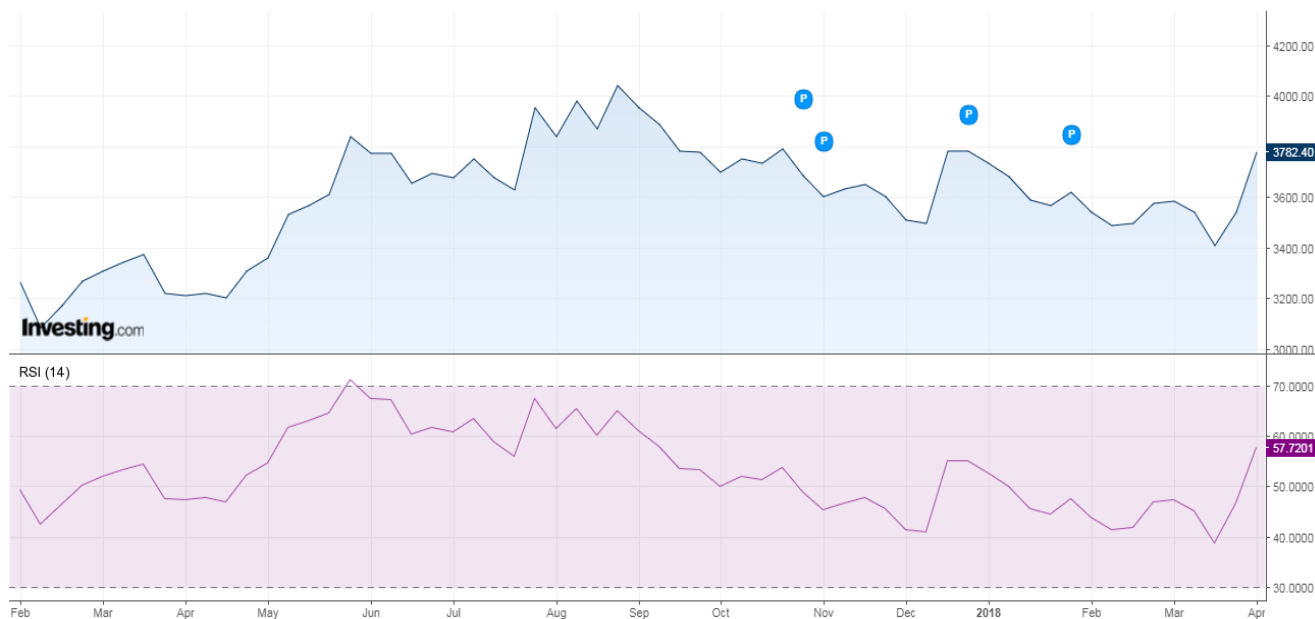
**INTERPRETATION:**

The objective of relative strength indicator is to find the overbought and oversold price areas. Now let's take a look at the chart. The second chart indicates RSI. It shows that the security reading exceeds 70 during the month of October. This indicates that the stock is overbought. It also coincides with a bearish pattern. These are clear signals to short the stocks. The security reading at 72 shows the overbought stock and that the traders have to shorten their stocks. The security reading that exceeds 70 implies that the stocks are overbought and that they have to be shortened. The reading during the month of May exceeds 70 and it is also followed by a bullish trend which clearly indicates that the traders have to identify this signal and reduce their stocks. Looking for selling opportunities would help traders at this point.

**RSI CHART OF BAJAJ AUTO LTD**



**RSI CHART OF HERO MOTOCORP**



**TABLE SHOWING SIMPLE MOVING AVERAGE OF BAJAJ AUTO LIMITED:**

Months	Closing	3month MA
Apr-17	2868	2800.667
May-17	2843	2811.000
Jun-17	2790	2839.333
Jul-17	2807	2833.667
Aug-17	2808	2813.333
Sep-17	3108	2801.667
Oct-17	3260	2907.667
Nov-17	3311	3058.667
Dec-17	3323	3226.333
Jan-18	3338	3298.000
Feb-18	3018	3324.000
Mar-18	2748	3226.333

**Source: Secondary data taken from Bombay stock exchange(BSE)**

**INTERPRETATION:**

The price crossing over the moving average can be a powerful sign of a trend reversal, while the price crossing above the moving average indicates a bullish breakout ahead. Here for Bajaj auto limited we have interpreted moving average for past 3 months respectively using closing prices. The price has crossed over the moving average from April to August showing a sign of trend reversal i.e. the trend which was so far will be changed in the upcoming period on either ways. From August to December there had been a Bullish breakout while after January it's bearish. Here in January price crossed over moving average after which trend is reversed.

**CHART SHOWING SIMPLE MOVING AVERAGE OF BAJAJ AUTO LTD**



In Hero Motorcorp. The closing price had crossed above moving average showing a Bullish breakout for the first three months. In the month of September price crossed over moving average after which there was a trend reversal. As far as Hero Motorcorp is concerned more or less moving average and closing prices are same. Hence witnessing a trend reversal may not be possible after a price cross over. It is clearly evident with the above charts of the two companies Bajaj Auto Limited and Hero Motorcorp for the F.Y. 2017-2018 that both companies have maintained its closing stock prices up to the standard of moving average for the whole year. But the price crossover is comparatively higher in Bajaj Auto Limited.

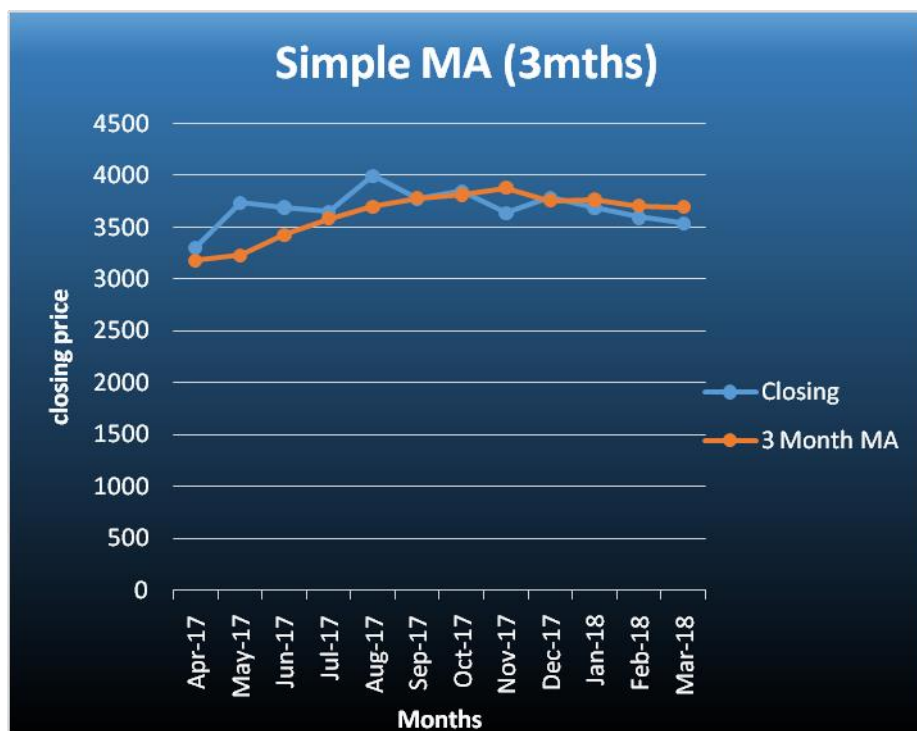
**TABLE SHOWING SIMPLE MOVING AVERAGE OF HERO MOTORCORP.:**

Months	Closing	3 Month MA
Apr-17	3310	3179.333
May-17	3742	3223
Jun-17	3696	3425.333
Jul-17	3654	3582.667
Aug-17	3998	3697.333
Sep-17	3781	3782.667
Oct-17	3854	3811
Nov-17	3642	3877.667
Dec-17	3786	3759
Jan-18	3691	3760.667
Feb-18	3600	3706.333
Mar-18	3545	3692.333

Source: Secondary data taken from Bombay stock exchange(BSE)

**CHART SHOWING SIMPLE MOVING AVERAGE OF HERO MOTOCORP**



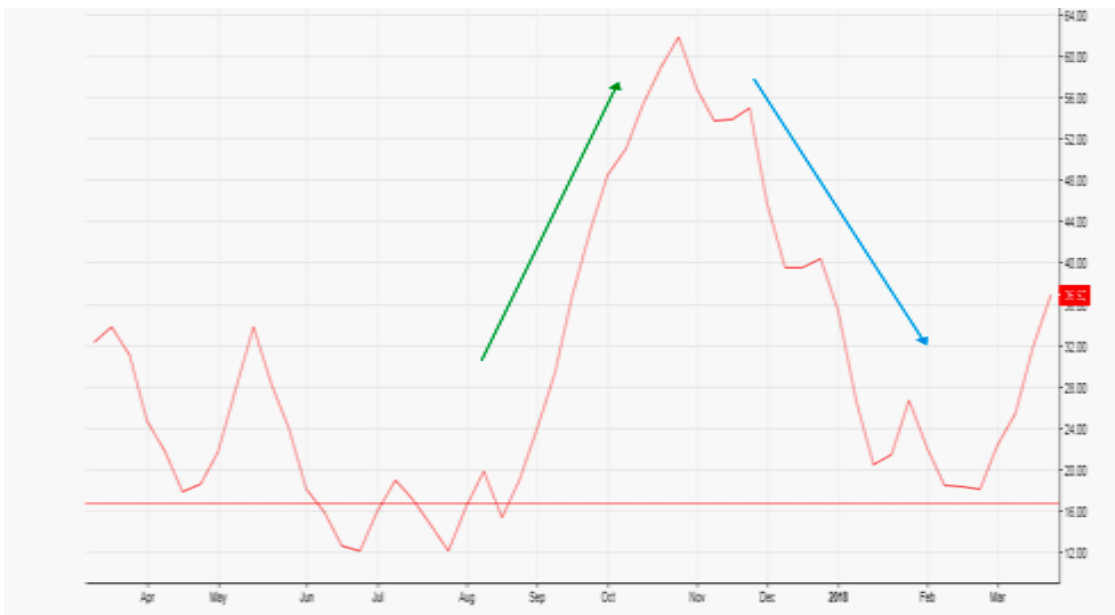


## AVERAGE DIRECTIONAL INDEX

### INTREPRETATION

The ADX line is used for reading the trend strength. where if the ADX line increases automatically your trend line will also get increased when a trend line increases the price will also get increases. so in case of Bajaj auto ltd initially the company had a good trend strength where the values are above 16 here company has fixed the ADX value as 16. thus at certain point of time there were no trading activities have been taken place that is the value is less than 16 but on September 2017 it slowly gets stronger and stronger at a peak point of time many shares were bought and slowly it gets less strong but it continues to have an uptrend. In case of Hero Motocorp, a trend momentum has been taken place. Here the term momentum means velocity of price. a series of higher ADX peaks means the trend momentum is also increases and vice versa. so in case of Hero Motocorp trend momentum is decreasing which indicates the warning of risk and signs for the negative divergence. a negative divergence is nothing but the price makes a new high but the indicator being track closes lower. therefore it can be concluded that it indicates the weakening sign of price movement

### CHART SHOWING ADX OF BAJAJ AUTO LTD



**CHART SHOWING ADX OF HERO MOTOCORP**



**CANDLESTICK**

**INTERPRETATION**

During selling pressure (Bearish tendencies), the Opening Price is more than the Closing Price and you get a firm body. Conversely, during buying pressure (Bullish tendencies), the Closing Price is more than the Opening Price and you get a depressed body. In case of Bajaj auto ltd ,there were bullish trend in the months

of April, September, October ,November which indicates that the investors can buy their share at that time i.e. they will control over the stock price movement but in certain months that is May, June, August, December, February, March there were bearish trend which indicates that the investors has to sell their shares that is the sellers will have the control over the stock price movement. At a certain point i.e. in the month of January the investors cant decide whether to buy or sell their shares because the opening and closing stock price are almost equal. In case of Hero Motocorp , -there were bullish trend only in the months like April ,May, August, December so that time the buyers will have the control over the stock price movement and in the month of June, July, September, November, January, February, March there is a bearish trend where In case of Hero Motocorp , there were bullish trend only in the months like April ,May, August, December so that time the buyers will have the control over the stock price movement.

**TABLE SHOWING PRICES OF BAJAJ AUTO LTD**

MONTH	OPEN	HIGH	LOW	CLOSE
April	2,800	2908.60	2755.00	2868.35
May	2,876.25	3046.15	2757.00	2843.95
June	2843.95	2927.20	2765.00	2790.50
July	2775.00	2867.45	2695.00	2807.60
August	2810.65	2988.45	2701.00	2808.45
September	2830.77	3181.00	2830.00	3108.15
October	3171.60	3377.40	3107.50	3260.00
November	3273.00	3371.50	3150.00	3311.70
December	3344.00	3381.00	3094.55	3323.20
January	3326.40	3402.40	3145.00	3338.80
February	3325.00	3472.60	2956.35	3018.80
March	3049.60	3077.40	2735.15	2748.90

Source: Secondary data taken from Bombay stock exchange(BSE)

**CHART SHOWING CANDLE STICK OF BAJAJ AUTO LTD**



**TABLE SHOWING PRICES OF HERO MOTOCORP**

MONTH	OPEN	HIGH	LOW	CLOSE
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April	3250.00	3360.05	3180.00	3310.70
May	3315.65	3760.00	3721.90	3742.80
June	3741.00	3880.25	3636.55	3696.70
July	3695.00	3807.30	3607.00	3654.10
August	3665.10	4200.00	3665.10	3998.10
September	4001.95	4090.00	3677.95	3781.20
October	3829.90	3868.95	3662.00	3854.74
November	3895.00	3895.00	3555.00	3642.30
December	3642.00	3833.95	3410.00	3786.30
January	3790.15	3806.85	3523.95	3691.60
February	3720.00	3799.90	3388.00	3600.55
March	3620.00	3728.00	3553.75	3545.50

Source: Secondary data taken from Bombay stock exchange(BSE)

CHART SHOWING CANDLESTICK OF HERO MOTOCORP



## FINDINGS AND SUGGESTIONS

### FINDINGS OF TECHNICAL ANALYSIS

- In candlestick the Hero Motocorp performs bad as compared to Bajaj auto ltd as its trend is decreasing day by day
- In Bajaj Auto Ltd, between October to February there has been a Bullish break out while in the initial months of April to September its Bearish. It is commonly advised to buy on Bullish and sell during Bearish. In Hero Motocorp, the symmetrical triangle that is formed by the trend lines follows a bullish trend which means the breakout is below the ascending support line, which would indicate a market reversal to a downtrend.

➤ In both the companies, Hero Motocorp and Bajaj Auto Ltd, the RSI shows that the security reading has exceeded 70 which means that the stock is overbought and it is a sell signal.

➤ Bajaj Auto Ltd has maintained a good trend strength. After a point of time, the ADX value got stronger and stronger resulting in an uptrend.

### SUGGESTIONS

➤ Both the companies have maintained its closing prices upto the standard of moving average. Price crossover is comparatively higher in Bajaj Auto Ltd.

➤ From the analysis, Hero Motocorp holds good position based on Simple Moving Average since the averages are higher than Bajaj Auto Ltd.

➤ Average directional indicates that Hero Motocorp may get into trouble in future as the company is getting downward trend that is its price is weakening day by day.

➤ It is advisory to investors to not depend on only one tool ,instead they must choose the tools that are suitable for them to get confirmation for buy or sell signal.

➤ The Relative strength index shows the overbought and oversold stocks using the months where the stocks are overbought it is advisable to shorten the stocks.

### CONCLUSIONS

The technical analysis indicates a short term trend based on the historical data. From this analysis it is concluded that the charts are prepared on the basis of share price but to a certain extent charts like RSI, LINE, and ADX cannot be calculated accurately so it has been taken from respective investing websites. Technical analysis does not give the exact future price volume but can identify its trend line .Based on the trend line we can judge a company. In that case Bajaj auto ltd has been performed better than Hero Motocorp during the year 2017-2018 as far as ADX chart it does not tell the direction indicator, here it has been said only about the trend strength.

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