# EQUITY ANALYSIS OF AUTOMOBILE INDUSTRY IN INDIAN STOCK MARKET

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*Abstract:* Indian automobile industry is one of the big and considered as quick developing industry within the world. For developing this sector, automakers have started investing in this sector. Performance of selected companies of automobile industry in equity has been analyzed in this paper. Each person continuously needs to urge return on his speculations since speculator makes the speculations from the difficult earned reserve funds. There are different plans of speculation like value, subordinates, bonds and more but among all equity market is one of the most excellent alternative for each speculator because it gives great return but each venture plans have chance included in them, value advertise too have hazard. Since the value showcase includes exceptionally hazard so, it is critical for each speculator to do value examination that makes a difference. In this viewpoint, a ponder is conducted to analyze the equity shares of companies within the vehicle industry. So the ponder on value investigation of this Sector guide offer assistance the potential financial specialists in taking levelheaded choice. The time period taken in this research is from 2015 to 2020. To ponder the vehicle division stocks 10 vehicle companies have been taken into thought. From this investigation, it is concluded that the Bajaj Auto Ltd has moo beta (0.839781) so it is less unsafe to contribute. Tata have tall beta (1.349615) than other companies but gives negative return (-0.001724). Among of all company Bajaj Auto and TVS Engines are best companies to contribute since its beta esteem is less than one and they too have positive return. Maruti can be great choice because it has beta esteem more than one but less than Tata conjointly has positive return.

*Keywords:* Risk, Return Analysis, Equity

## INTRODUCTION

Automobile division is one of the foremost favored divisions by financial specialist as it is considered to be the quickest developing division.

Numerous Automakers have begun to contribute in this division. According to Indian stock trade, car industry is considered as most secured division to contribute and financial specialist were getting good return by contributing. All financial specialists make their investment with the objective to extend their riches. This research will help them to choose the company which will increase their wealth by telling them the past performance of selected companies.

**Beta and its implication**: Beta is a measure of the systematic of a security in comparison to the market as a whole. Investment analyst uses the Greek letter to represent beta. If beta is one then security's price will move with the market. The beta value less than means that the security will be less volatile than the market and the value greater than one indicates that the security's price will be more volatile than the market.

**What is CAPM Model? :** The capital asset pricing model (CAPM) attempts to define the relationship between an investor's expected return and the level of risk she assumes when choosing a particular investment. The model tries to explain the behavior of a security's price and the impact it will have on your portfolio's risk and return. The main components in calculating your expected return are the return of the market, the risk-free rate of return and beta. The risk-free rate of return is usually measured using the return of Treasury bonds for the current period. Your risk premium, or how much you need to earn to compensate for the level of risk that you undertake when choosing a particular security, is determined by subtracting the risk-free rate of return from the overall return of the market and multiplying it by the beta of the individual security. Adding this number to the risk-free rate of return will give you your expected return for the security. The only way to produce a negative expected return with a positive beta is if the risk-free rate of return exceeds the overall return of the market. This is unlikely to ever occur, as investors will not choose to purchase more risky securities without the possibility of a greater return. Reference from (*https://www.sapling.com/8664284/relationship-expected-return-positive-beta*)

$$ER_i = R_f + \beta_i (ER_m - R_f)$$

**Where:** $ER_i$ =expected return of investment

$R_f$ = risk-free rate

$\beta_i$ = beta of the investment

$(ER_m - R_f)$=market risk premium

## REVIEW OF LITERATURE

**Vikkraman P.** *et al.* (2009) conducted an experimental ponder to identify the chance and return included in venture of securities within the showcase particularly with the Indian vehicle industry (2004- 2007). The analyst examinations 5 major car companies in India that are Mahindra & Mahindra Ltd, Maruti Suzuki India Ltd, Tata Engines Ltd, Hindustan Engines Ltd. Beta (Precise hazard) and Alpha (return marker) were utilized to fulfill the objective of investigate. These calculations can offer assistance in certain examination that can be made for a clear understanding approximately the speculation choice on these firms**.**

**Srivastava Anubha (2014)** evaluates performance of auto mobile sector which found that execution of car division is straight forwardly related to country's financial status. With increase in demand and sales of car will give new and wide opportunities to the financial specialist.

**V. Pankunni (2015)** conducted a study which shows importance of beta and its linearity. Study reveals that beta has great impact on stock's return. Research is based on closing prices of 20 different companies listed on Bombay stock exchange. It was also found that those companies had high beta earning more returns than those having low beta.

**Krishnaprabha S.** *et al.* **(2015)** aim to analyze the risk and return of selected stocks in India. Banking, IT, Pharmaceutical, Fast Moving Consumer Goods sectors were taken for study. Authors concluded that long term investors were able to take advantage of market as it is less volatile.

**Kulkarni Keerti** *et al.* **(2016)** evaluates Beta investigation of chosen stocks. The core behind the ponder is to assess the chance and return for chosen company stocks. This think about would offer assistance the speculators to know around the chance and return related with these chosen stocks based on which financial specialists can take their venture choice. This ponder was conducted for whole one month, i.e, from Walk 1 to Walk 31, 2016. The stock costs were taken from the NSE. They have been utilized for calculating normal returns and Beta. The objective behind calculating the normal returns and beta is to assist the speculators arrives at a decision to contribute within the offers on the premise of chance included in it conjointly to pick up information of the stock showcase. INFRA, CEMENT and AUTOMOBILES companies were taken in this investigate. It was found that all companies have less than one beta esteem which suggests securities will be less unstable than the advertise.

**Gopalkrishnan Muthu** *et al.* **(2017)** conducted think about on value examination of Vehicle Industry in Indian Stock Showcase. They consider

on value investigation in terms of chance and return that give adequate data for the potential financial specialists in taking a sound speculation choice. This ponder is conducted for a period of 5 year, covering from 2012 to 2017. In that ponder consider 8 major vehicle companies in India that are Mahindra & Mahindra Ltd, Maruti Suzuki India Ltd, Tata Engines Ltd, Ashok Leyland Ltd, Bosch Ltd, Eicher Engines Ltd, Apollo Tires Ltd., Saint MotoCorp Ltd. The researcher has used techniques – Mean, Standard Deviation, Variance, Coefficient of Variance, Correlation and Beta for analyzing the collective data. From the analysis, it was found that among all the others a company Mahindra & Mahindra is the best company to invest.

**Ratna Deepali (2017)** inspected the appropriateness of CAPM in NSE. Closing costs of beat ten companies on the premise of their advertise capitalization from 2012 to 2016 had been considered. Analyst revealed whether the securities are overestimate or underestimated by taking advantage of CAPM so to assist the people interested in investing. It was found that the difference between forecasted and real gain is very significant at normal risk. This will help investor to forecast future movement of stocks.

**Suresh A.S & Sai Prakash L. (2018)** studied the performance of twelve nationalized banks listed NSE in terms of return, risk and beta for the period 1st January 2016 to 31st December 2016. The study shows that the shares of Yes bank and Federal bank have given positive returns during the study period whereas the return of Axis bank, Bank of Baroda and Bank of India were negative during same period. The beta of Bank of India, Canara Bank, Punjab National Bank, State Bank of India, Axis Bank, ICICI Bank and Yes Bank were more than one which tells that these stocks carry a higher market risk.

### Research Gap

In this project, I have attempted to analyze the value of Indian stock Showcase considering Vehicle segment. Prior analyst too have inquire about on this but in this , I have taken as it were Indian car companies conjointly discover that as it were few apparatuses can offer assistance to discover out the hazard and return in Car division. In this venture, I have objective to discover out chance and return of selected automobile companies additionally compared the connection with the stock records. I have taken lists like S&P BSE Auto List, S&P BSE File, S&P BSE 100. Prior on one file was taken by analysts to discover relations but in this venture three records are taken to discover the connection.

## OBJECTIVES OF THE STUDY

• To analyze and compare risk and return of equity shares of selected automobile companies in Indian stock market.

• To find out the extent of relationship between automobile companies and market index.

The two main objectives have been taken as the basis of research. First objective is to analyze and compare risk and return of equity shares of selected automobile companies which will help investors to know about how much risk he will going to face and earn the return by investing in these selected securities. They also compare the companies and to know which companies will more risk and which will have more return. From this he will make decision, which is profitable company to invest. Second objective is to find the extent of relationship between automobile companies and market index which will inform the investor how much these shares of companies are related to the market index like S&P BSE. Through which they will get to know about how much securities have risk in relation to market index.

## METHODOLOGY OF STUDY

### Sample Size

To study the automobile sector stocks the following automobile companies will be taken into consideration:

• Ashok Leyland Ltd.
• Bajaj Auto Ltd.
• Eicher Motors Ltd.
• Force Motors Ltd.
• Mahindra & Mahindra Ltd.
• Hindustan Motors Ltd.
• Maruti Suzuki India Ltd.
• Tata Motors Ltd.
• TVS Motors Ltd.
• Hero Motorcorp Ltd.

### Duration of the study

For the purpose of the study a period of five years from 2015 to 2020 would be taken into consideration.

## Data Collection

This study is completely based on secondary data mainly collected from website of bse *https://www.bseindia.com/.*

## Tools for Data Analysis

Microsoft Excel has been used to analyze the gathered information. The following techniques are used:

- Mean Return
- Standard Deviation
- Variance
- Coefficient of Variation
- Correlation
- Beta

## Analyses and Interpretation

This section helps to find out results from the researcher's collected data.

**Table 1**
**Table showing Mean Return of Automobile Companies**

| S. No. | Name of Companies | Mean Return |
|--------|-------------------|-------------|
| 1. | Ashok Leyland Ltd. | -0.00044 |
| 2. | Eicher Motors Ltd. | -0.00016 |
| 3. | Hindustan Motors Ltd. | -0.00064 |
| 4. | Force Motors Ltd. | -0.00053 |
| 5. | Mahindra & Mahindra Ltd. | -0.00117 |
| 6. | Bajaj Auto Ltd. | 0.000003 |
| 7. | Maruti Suzuki India Ltd. | 0.000132 |
| 8. | Tata Motors Ltd. | -0.00168 |
| 9. | TVS Motors Ltd. | 0.000123 |
| 10. | Hero MotoCorp Ltd. | -0.00041 |

## Interpretation

The following shows that selected companies have negative daily mean return expect Bajaj Autos Ltd, Maruti Suzuki India Ltd. and TVS Motors Ltd. have positive return. According to the calculation Maruti Suzuki has mean return (0.000132) and lowest for Tata motors (-0.00168).
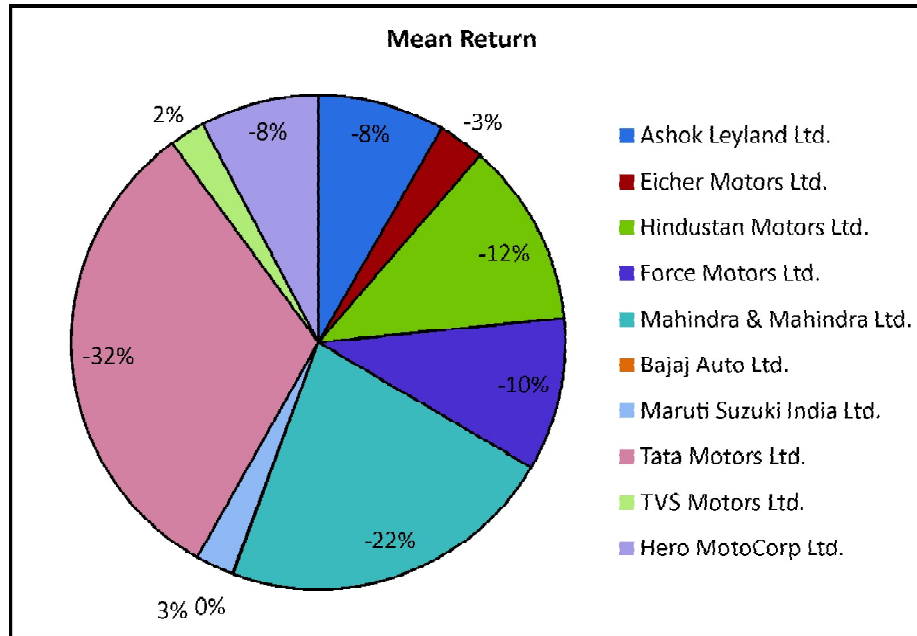
Figure 1

**Table 2**
**Table showing Standard Deviation of Automobile Companies**

| S No. | Name of Companies | Standard Deviation |
|---|---|---|
| 1. | Ashok Leyland Ltd. | 0.026064 |
| 2. | Eicher Motors Ltd. | 0.020875 |
| 3. | Hindustan Motors Ltd. | 0.034112 |
| 4. | Force Motors Ltd. | 0.026787 |
| 5. | Mahindra & Mahindra Ltd. | 0.027273 |
| 6. | Bajaj Auto Ltd. | 0.016003 |
| 7. | Maruti Suzuki India Ltd. | 0.018036 |
| 8. | Tata Motors Ltd. | 0.02687 |
| 9. | TVS Motors Ltd. | 0.020463 |
| 10. | Hero MotoCorp Ltd. | 0.017297 |

### Interpretation

The following clearly states that the standard deviation is high for Hindustan Motors Ltd. (0.034112), Standard Deviation is decline for Bajaj Auto Ltd. (0.016003) during the financial year 1-04-2015 to 31-03-2019.
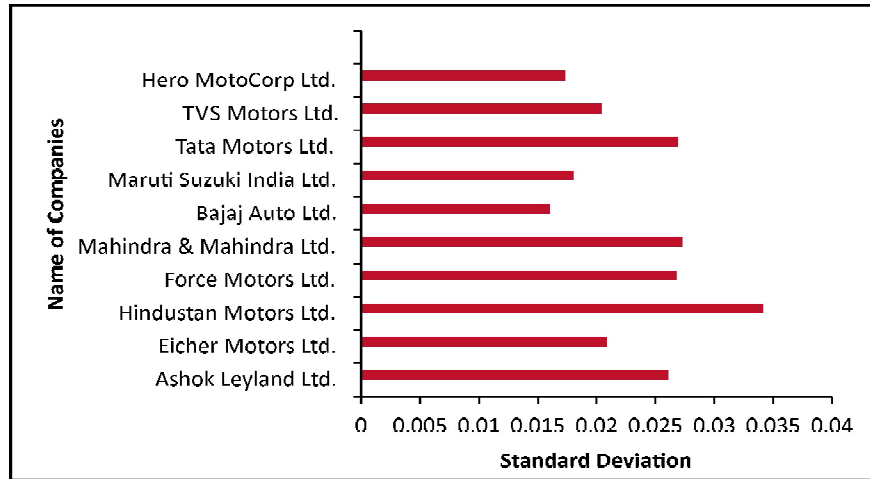
Figure 2

**Table 3**
**Table showing Variance of Automobile Companies**

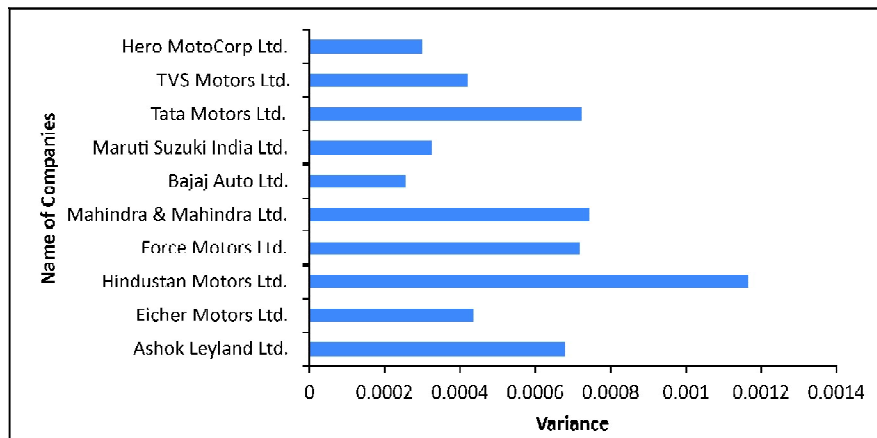| S No. | Name of Companies | Variance |
|---|---|---|
| 1. | Ashok Leyland Ltd. | 0.000679 |
| 2. | Eicher Motors Ltd. | 0.000436 |
| 3. | Hindustan Motors Ltd. | 0.001164 |
| 4. | Force Motors Ltd. | 0.000718 |
| 5. | Mahindra & Mahindra Ltd. | 0.000744 |
| 6. | Bajaj Auto Ltd. | 0.000256 |
| 7. | Maruti Suzuki India Ltd. | 0.000325 |
| 8. | Tata Motors Ltd. | 0.000722 |
| 9. | TVS Motors Ltd. | 0.000419 |
| 10. | Hero MotoCorp Ltd. | 0.000299 |



Figure 3

## Interpretation

The following shows that the Variance is high for Hindustan Motors Ltd. (0.034112), Variance is low than the average for Bajaj Auto Ltd. (0.000256) during the year 1-04-2015 to 31-03-2019. So the overall crux is found that the equity shares of Hindustan Motors Ltd. have a high risk factor as the prices tend to fluctuates more and equity shares of Bajaj Auto Ltd. possess lower risk factor as the prices fluctuates less.

**Table 4**
**Table showing Coefficient of variation of Automobile Companies**

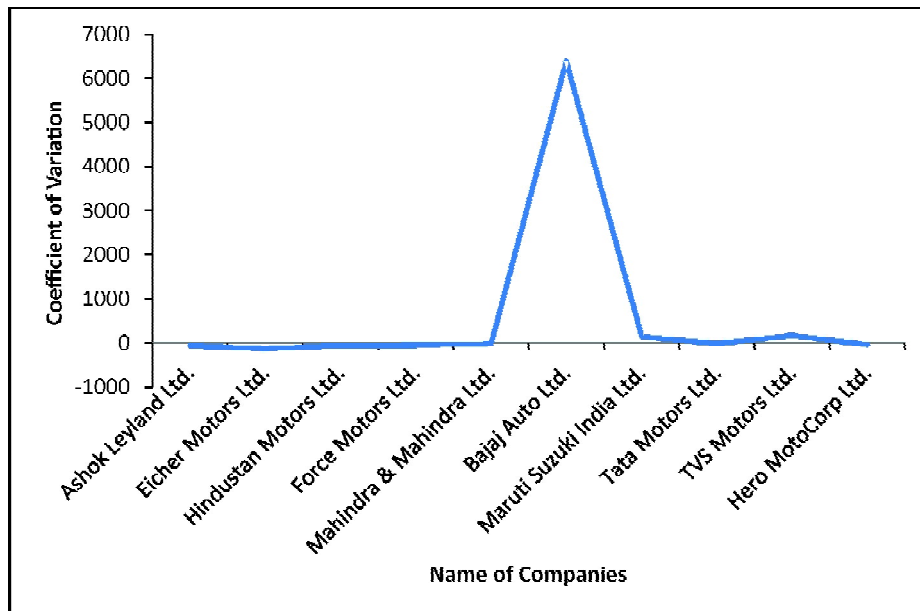| S No. | Name of Companies | Coefficient of variation |
|-------|-------------------|--------------------------|
| 1. | Ashok Leyland Ltd. | -59.2364 |
| 2. | Eicher Motors Ltd. | -127.171 |
| 3. | Hindustan Motors Ltd. | -53.2103 |
| 4. | Force Motors Ltd. | -50.2206 |
| 5. | Mahindra & Mahindra Ltd. | -23.4072 |
| 6. | Bajaj Auto Ltd. | 6392.582 |
| 7. | Maruti Suzuki India Ltd. | 136.5876 |
| 8. | Tata Motors Ltd. | -16.0107 |
| 9. | TVS Motors Ltd. | 166.761 |
| 10. | Hero MotoCorp Ltd. | -41.8617 |



Figure 4

## Interpretation

The following displays that all selected companies have negative coefficient of variation expect Bajaj Auto Ltd, Maruti Suzuki India Motors Ltd. and TVS Motors Ltd. It is recorded a higher level of coefficient of variation for Bajaj Auto Ltd. (6392.582). The lower value of coefficient of variation is -127.171 that are for Eicher Motors Ltd.

**Table 5**
**Table showing Correlation between return from selected companies and**
**S&P BSEAUTO Index**

| S No. | Name of Companies | Correlation |
|-------|-------------------|-------------|
| 1. | Ashok Leyland Ltd. | 0.595086 |
| 2. | Eicher Motors Ltd. | 0.653982 |
| 3. | Hindustan Motors Ltd. | 0.315592 |
| 4. | Force Motors Ltd. | 0.470207 |
| 5. | Mahindra & Mahindra Ltd. | 0.479992 |
| 6. | Bajaj Auto Ltd | 0.065101 |
| 7. | Maruti Suzuki India Ltd. | 0.806986 |
| 8. | Tata Motors Ltd. | 0.717369 |
| 9. | TVS Motors Ltd. | 0.61287 |
| 10. | Hero MotoCorp Ltd. | 0.682437 |

Table 5 conveys that all the automobile companies are positive sign of correlated. however highest coefficient of correlation is 0.806986 for Maruti Suzuki India Ltd., whereas lowest coefficient of correlation is 0.315592 for Hindustan Motors Ltd during the year 1-04-2015 to 31-03-2020

**Table 6**
**Table showing Correlation between return from Selected companies and**
**S&P BSE SENSEX**

| S No. | Name of Companies | Correlation |
|-------|-------------------|-------------|
| 1. | Ashok Leyland Ltd. | 0.496732 |
| 2. | Eicher Motors Ltd. | 0.495006 |
| 3. | Hindustan Motors Ltd. | 0.284787 |
| 4. | Force Motors Ltd. | 0.47073 |
| 5. | Mahindra & Mahindra Ltd. | 0.393083 |
| 6. | Bajaj Auto Ltd | 0.569393 |
| 7. | Maruti Suzuki India Ltd. | 0.65092 |
| 8. | Tata Motors Ltd. | 0.544934 |
| 9. | TVS Motors Ltd. | 0.495273 |
| 10. | Hero MotoCorp Ltd. | 0.566784 |

Table 6 expresses that all the vehicle companies are emphatically connected. Among that the most noteworthy coefficient of relationship is 0.65092 for Maruti Suzuki India Ltd., most reduced coefficient of relationship is 0.284787 for Hindustan Engines Ltd.

**Table 7**
**Table showing Correlation between return from Selected companies and S&P BSE 100**

| S No. | Name of Companies | Correlation |
|---|---|---|
| 1. | Ashok Leyland Ltd. | 0.539679 |
| 2. | Eicher Motors Ltd. | 0.529718 |
| 3. | Hindustan Motors Ltd. | 0.314431 |
| 4. | Force Motors Ltd. | 0.49875 |
| 5. | Mahindra & Mahindra Ltd. | 0.400791 |
| 6. | Bajaj Auto Ltd | 0.579462 |
| 7. | Maruti Suzuki India Ltd. | 0.665648 |
| 8. | Tata Motors Ltd. | 0.56953 |
| 9. | TVS Motors Ltd. | 0.524297 |
| 10. | Hero MotoCorp Ltd. | 0.577843 |

Above table reveals that selected companies are positively correlated, Maruti Suzuki has highest correlation (0.665648) and Hindustan Motors has lowest value for correlation (0.314431).

**Table 8**
**Table Showing Alpha and Beta of Automobile Companies S&P BSE SENSEX**

| S No. | Name of Companies | Beta | Alpha |
|---|---|---|---|
| 1. | Ashok Leyland Ltd. | 1.193329 | -0.000481 |
| 2. | Eicher Motors Ltd. | 0.952445 | -0.000196 |
| 3. | Hindustan Motors Ltd. | 0.895424 | -0.000671 |
| 4. | Force Motors Ltd. | 1.16225 | -0.000573 |
| 5. | Mahindra & Mahindra Ltd. | 0.98813 | -0.001199 |
| 6. | Bajaj Auto Ltd. | 0.839781 | 0.0000005 |
| 7. | Maruti Suzuki India Ltd. | 1.082095 | 0.000095 |
| 8. | Tata Motors Ltd. | 1.349615 | -0.001724 |
| 9. | TVS Motors Ltd. | 0.934133 | 0.000091 |
| 10. | Hero MotoCorp Ltd. | 0.903627 | -0.000444 |

It is clearly watched from table 8 that the most noteworthy beta is 1.349615 for Tata Engines Ltd and most reduced beta is for 0.839781 for Bajaj. Tata Engines are more unstable than advertise and Bajaj Autos are less unstable. The most noteworthy alpha is 0.000095 for Maruti Suzuki

India Ltd and least alpha is -0.001199 for Mahindra & Mahindra Ltd. Maruti is gaining more return and Mahindra is gaining less than list.

**Table 9**
**Table showing Expected Return calculating with help of CAPM Model**

| S No. | Name of Companies | Expected Return |
|-------|-------------------|-----------------|
| 1. | Ashok Leyland Ltd. | -101.1% |
| 2. | Eicher Motors Ltd. | 24.9% |
| 3. | Hindustan Motors Ltd. | 54.7% |
| 4. | Force Motors Ltd. | -84.9% |
| 5. | Mahindra & Mahindra Ltd. | 6.2% |
| 6. | Bajaj Auto Ltd | 83.8% |
| 7. | Maruti Suzuki India Ltd. | 42.9% |
| 8. | Tata Motors Ltd. | -182.8% |
| 9. | TVS Motors Ltd. | 29.6% |
| 10. | Hero MotoCorp Ltd. | 50.4% |

The above table showing the Expected returns which is calculated with the help of CAPM Model. Ashok Leyland and Tata Motors Ltd have negative return and others have positive return. The investors will not invest in those equities which have negative return. The best equity, the investors will invest is Bajaj Autos Ltd.

## FINDINGS

- The average daily return of all selected companies in the automobile sector is negative expects Bajaj Autos, Maruti Suzuki India Ltd. and TVS Motors. Among all the companies Maruti has the highest (0.000132) average daily return and Tata Motors have lowest daily return (-0.00168).

- Accordingly to analysis, Standard Deviation and Variance both give same information that is if standard deviation and variance rise the prices become more volatile and if standard deviation and variance fall the price become calm. They help investor to get information about the movement of price which will help them to make decision related to investment. Variance is only double of Standard Deviation. We can see in research they almost give the same type of picture that is Standard Deviation and Variance is high for Hindustan Motors, low for Bajaj Auto Ltd.

- During the study period the coefficient of variation is high for Bajaj Auto Ltd.(6392.582) and less for Eicher Motor Ltd.(-127.171)

- According to the analysis, Maruti Suzuki India Ltd is correlated with Sector Index, Benchmark Index and Broad Based Index of BSE. We can observe from this if company is correlated with any one of these index than the company automatically correlated with other index.

- Tata Motors has high market risk as it's beta is more than one. On other hand the value alpha for the same is -0.001724.

- Bajaj Autos have maximum Expected return which is calculated with the help of CAPM model. This indicate that investor will get return by investing in this equity.

## LIMITATION

- The study is limited to only 10 selected automobile companies which are listed in BSE

- In calculating the return dividend has not been considered only closing price have been considered.

## CONCLUSION

In arrange to realize the objective of maximizing the return, the financial specialists have to be consider both risk and return of different companies. Value Investigation is one of the foremost critical procedures utilized to degree the chance and return calculate of values of diverse companies. From this examination, it is concluded that the Bajaj Auto Ltd has less beta (0.839781) so it is less hazardous and unstable of cost is lesser than advertise. Tata have more beta (1.349615) than other companies but gives negative return (-0.001724). Among of all company Bajaj Auto and TVS Engines are best companies to contribute since its beta esteem is less than one and they moreover have positive return. Maruti can be great choice because it has beta esteem more than one but less than Tata additionally has positive return. This considers will offer assistance financial specialist in choice making they ought to moreover concerned a few inside powers of companies which would affect emphatically on share costs whereas making choice.

### *Reference*

*Journals*

Dr. P Subramanyam, Dr. NallaBala Kalyan (2018). "A Study on Risk & Return Analysis of Selected Securities in India**"** available online at *https://www.researchgate.net/*, Vol. 5 (Iss.4): April 2018.

S. Sankeerthana, K. Neeraja (2018). "A Report on Equity Analysis of Automobile Sector" available online at *http://www.ijetsr.com/images/short_pdf*, Volume 5, Issue 3 March 2018..

Dr. M. Muthu Gopalakrishnan, Mr. Akarsh P K (2017). "Equity Analysis of Automobile Industry in Indian Stock Market", (Volume 2, Issue 5) Available online at *www.ijarnd.com.*

Deepali Ratra (2017). "Application of Capital Asset Pricing Model in Indian Stock Market" , Volume 7, Issue 2, March-April 2017 *International Journal of Engineering and Management Research*

Prof. Keerti Kulkarni, Prof. B. Vidyavathi, Prof. Pooja Ainapur (2016). "A Study on Beta Analysis of Selected Stocks", Volume 4, Issue 6, June 2016, Available online at: *www.ijarcsms.com*

Pankunni V. (2015). "Beta Analysis of Equity Returns: An Empirical Study About The Significance of Beta and its Linearity", Volume 17, Issue 4.Ver. II (Apr. 2015), PP 10-22 *www.iosrjournals.org.*

Dr. Anubha Srivastava (2014). "A Comprehensive Study of Performance of Indian Automobile Industry - A stock Market Perspective" available online at *http://www.indiaagristat.com/*

*Websites*

*https://www.investopedia.com/*

*https://www.monetarysection.com/dictionary/subscribed-share-capital*

*https://www.upcounsel.com/types-of-equity*

*https://economictimes.indiatimes.com/*

*https://www1.nseindia.com/*

*https://www.bseindia.com/*