

# RISK AND RETURN ANALYSIS OF SELECTED STOCKS IN INDIAN AUTOMOBILE SECTOR

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## ABSTRACT

The study aims to compare stocks of selected companies from the Indian Automobile sector in the form of their risk and return. Indian vehicle industry is one of the pillar to the Indian economy. So as to keep up the developing interest, numerous automakers have begun to put resources into this industry. The study also creates awareness about the stocks among the investors to invest in the selected stocks of Indian Automobile sector. The risk/return relationship is a fundamental concept in not only financial analysis, but in every aspect of life. If decisions are to lead to benefit maximization, it is necessary that individuals/institutions consider the combined influence on expected return or benefit as well as on risk/cost. The requirement that expected return/benefit be commensurate with risk/cost is known as the "risk/return trade-off" in finance. This study is all about the risk and return analysis of selected five stocks in Indian Automobile Sector for a period of 5 years, covering from 2015-16 to 2019-20. This study uses tools such as beta and standard deviations, coefficient of correlation tools and provides a method for quantifying risk.

**Keyword:** Risk, Return, Coefficient of Correlation, Beta, Systematic and Unsystematic risk.

## 1. INTRODUCTION:

Most commonly made mistakes in investment decision is caused by mental biases and emotions. All the investors make their investment with an objective of increasing their wealth. One of the investment opportunity is equity market. It is said to be one of the most rewarding investment options even though it involves more risk. Since the risk is very high on such investment, the investors need to make equity analysis that helps them to know more about the nature of those equity shares and those industries where they invest their money. Therefore the equity analysis will help the potential investors in taking a rational and clear informed investment decision.

## 2. OVERVIEW OF INDIAN AUTOMOBILE INDUSTRY

- Fifth largest auto market in 2019 with sales touching 4.18 million units.
- Presence of established domestic and international original equipment manufacturers (OEMs).
- Strong market in terms of domestic demand and exports.
- Automobile sector split into four segments, each having few market leaders.
- Two wheelers and passenger vehicles dominate the domestic demand.
- Two wheelers accounted for 80.9 per cent of the domestic demand in FY20.
- Automobile exports reached 4.77 million vehicles in FY20, growing at a CAGR of 6.94 per cent between FY16-FY20.

### 3. REVIEW OF LITERATURE:

**P. Karthika and Dr. P. Karthikeyan (2011)**<sup>3</sup> conducted a study that compares stocks of selected companies from different sectors like Information Technology, Automobiles, Banking, Pharmaceuticals, and Oil Sectors in the form of their risk, return and liquidity. This study also creates awareness about Stocks among the investors to invest in the particular sectors. The study also analyses the risk return relationship of the selected companies from different sectors. It also discusses the trade-off using beta and standard deviations, coefficient of correlation tools and provides a method for quantifying risk.

**Laxman Raj Kandel (2018)**<sup>4</sup> this paper analyses the risk and return on common stock investment of Nepalese stock market and it is focused on common stock of two commercial banks listed in Nepal stock exchange Limited. Investors have varying perception towards risk and enterprising activities. They invest in those opportunities which have certain degree of risk associated with it. This research study found that there is a positive relationship between risk and return.

**T. Mallikarjunappa and Shaini Naveen (2016)**<sup>5</sup> conducted a study on Comparative Analysis of Risk and Return with Reference to Stocks of CNX Bank Nifty. This study analyses the risk and returns in the banking sector. They compare the performance of the 12 listed banks in the Nifty Bank Index. The study also analyses the performance of banking stocks mainly to understand the required rate of return and risk of a particular stock based on different risk elements prevailing in the market and other economic factors.

### 4. METHODOLOGY:

This study has analysed the equity of five automobile companies in India. This helps the investors in understanding the risk and return characteristics of the equity of automobile industry in Indian stock market. This study is of descriptive in nature. This study is completely based on secondary data mainly collected from the website of NSE (<https://www.nseindia.com/>). In addition to that, the data has also been collected from published sources and also from websites, newspapers (Business Standard, Economic Times), and Report by Management, Scholars, Researchers etc.

### 5. LIMITATION:

- The analysis is completely based on the secondary data collected from the website of NSE, annual reports etc., and so the findings of the study will be entirely depend on the accuracy of such data.
- Different experts have different opinions regarding the analysis of equity shares, therefore, the view used in this study can't be treated as absolute or perfect.

### 6. ANALYSIS

The Analysis portion consist of Return analysis, Risk analysis, Coefficient of Correlation comparison, Beta comparison and Systematic and Unsystematic Risk calculation.

#### 6.1 RETURN ANALYSIS

A return, also known as a financial return, in its simplest terms, is the money made or lost on an investment over some period of time. A return can be expressed nominally as the change in value of an investment over time. A return can also be expressed as a percentage derived from the ratio of profit to investment.

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<sup>3</sup> P Karthika and Dr P Karthikeyan (2011), "A Study on Comparative Analysis of Risk and Return with reference to selected stocks of BSE Sensex India" *The International Journal's – Research Journal of Social Science & Management*, Volume: 01, Number: 04, August 2011.

<sup>4</sup> Laxman Raj Kandel (2018), " Risk and Return Analysis of Commercial Banks of Nepal with reference to NABIL and NIBIL" *Pravaha Journal - A Journal of Management*, Volume 24, No. 1, 2018.

<sup>5</sup> T. Mallikarjunappa and Shaini Naveen (2016), " A study on Comparative Analysis of Risk and Return with reference to stocks of CNX Bank Nifty" *International journal of Scientific Research and Modern Education*, Volume I, Issue I, 2016.

**RETURNS OF NIFTY 50:**

Average Returns	
Year	%
2015-16	-0.55%
2016-17	1.50%
2017-18	0.83%
2018-19	1.42%
2019-20	-2.17%

**Table 1:** Returns of Nifty 50**RETURNS OF BAJAJ AUTO:**

Average Returns	
Year	%
2015-16	0.700%
2016-17	1.583%
2017-18	0.083%
2018-19	0.917%
2019-20	-2.000%

**Table 2:** Returns of Bajaj Auto**RETURNS OF HEROMOTOCO:**

Average Returns	
Year	%
2015-16	2.64%
2016-17	1.08%
2017-18	1.25%
2018-19	-2.08%
2019-20	-3.08%

**Table 3:** Returns of HeroMotoco**RETURNS OF TATA MOTORS:**

Average Returns	
Year	%
2015-16	-1.36%
2016-17	2.00%
2017-18	-2.50%
2018-19	-4.83%
2019-20	-4.33%

**Table 5:** Returns of TATA Motors**RETURNS OF MARUTI:**

Average Returns	
Year	%
2015-16	0.55%
2016-17	4.42%
2017-18	3.50%
2018-19	-1.83%
2019-20	-2.42%

**Table 4:** Returns of Maruti**RETURNS OF TVS MOTORS:**

Average Returns	
Year	%
2015-16	3.45%
2016-17	2.83%
2017-18	3.42%
2018-19	-2.00%
2019-20	-2.83%

**Table 6:** Returns of TVS Motor**6.2 RISK ANALYSIS**

Volatility is a statistical measure of the dispersion of returns for a given security or market index. In most cases, the higher the volatility, the riskier the security. Volatility can either be measured by using the standard deviation or variance between returns from that same security or market index.

**Standard Deviation (S.D)**

This is the most commonly used measure of risk in fiancé. Its square also is widely used to find out the risk associated with a security. Standard deviation is a statistical term that measures the amount of variability or dispersion around an average.

**BAJAJ AUTO:**

Standard Deviation	
Year	%
2015-16	0.0858
2016-17	0.0486
2017-18	0.0502
2018-19	0.0592
2019-20	0.1146

**Table 7:** Standard deviation of Bajaj Auto**HEROMOTOCO:**

Standard Deviation	
Year	%
2015-16	0.0869
2016-17	0.0466
2017-18	0.0549
2018-19	0.0675
2019-20	0.0928

**Table 8:** Standard Deviation of HeroMotoco**MARUTI:**

Standard Deviation	
Year	%
2015-16	0.1001
2016-17	0.0618
2017-18	0.0555
2018-19	0.0857
2019-20	0.1317

**Table 9:** Standard Deviation of Maruti**TATA MOTORS:**

Standard Deviation	
Year	%
2015-16	0.1576
2016-17	0.0820
2017-18	0.0821
2018-19	0.0796
2019-20	0.2393

**Table 10:** Standard Deviation of TATA Motors**TVS MOTORS:**

Standard Deviation	
Year	%
2015-16	0.0930
2016-17	0.0813
2017-18	0.0738
2018-19	0.0714
2019-20	0.1263

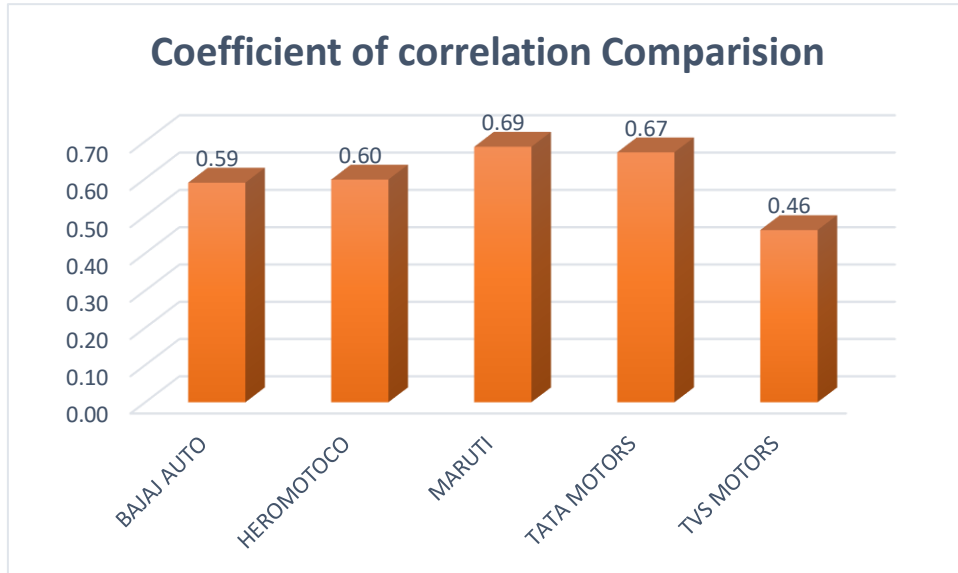
**Table 11:** Standard Deviation of TVS Motors**6.3 SUMMARY OF THE COMPANY'S STATISTICAL VALUES**

Company Name	Stock Return	Beta	Standard Deviation	Coefficient of correlation	Variance
<b>BAJAJ AUTO</b>	<b>0.257%</b>	<b>0.9479</b>	<b>0.0717</b>	<b>0.59</b>	<b>0.58%</b>
<b>HEROMOTOCO</b>	<b>-0.039%</b>	<b>0.9448</b>	<b>0.0698</b>	<b>0.60</b>	<b>0.52%</b>
<b>MARUTI</b>	<b>0.842%</b>	<b>1.3321</b>	<b>0.0870</b>	<b>0.69</b>	<b>0.83%</b>
<b>TATA MOTORS</b>	<b>-2.206%</b>	<b>1.8203</b>	<b>0.1281</b>	<b>0.67</b>	<b>2.04%</b>
<b>TVS MOTORS</b>	<b>0.974%</b>	<b>0.8586</b>	<b>0.0892</b>	<b>0.46</b>	<b>0.83%</b>

**Table 12:** Summary of the company's statistical values

The above table shows the stock return, beta, standard deviation and coefficient of correlation of five companies. During the period May 2015 to Mar 2020, the market return percentage is positive. All the companies' coefficient of correlation is positive in value, it implies that when the market value increases the stock value also increases.

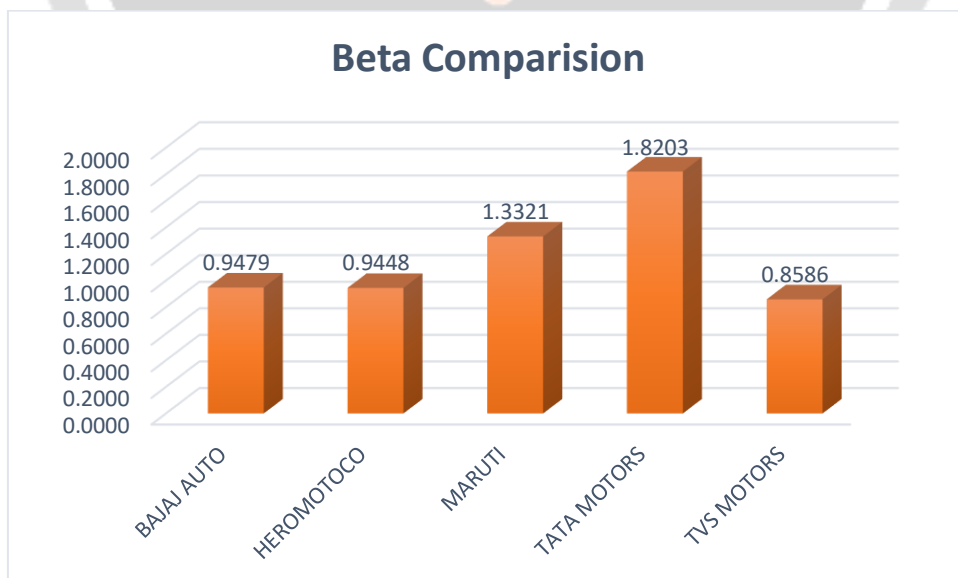
**6.4 COEFFICIENT OF CORRELATION COMPARISON:**



**Chart 1:** Coefficient of Correlation comparison

In this study all five company's stock has the positive value as well as those values is less than 1. A non-zero correlation coefficient means that the numbers are related, but unless the coefficient is either 1 or -1 there are other influences and the relationship between the two numbers is not fixed. So if you know one number you can estimate the other, but not with certainty. The MARUTI and TATA MOTOR have the high correlation value which indicates that the stocks movement is correlated with market.

**6.5 BETA COMPARISON:**



**Chart 2:** Beta Comparison

A Beta value of 1 shows the stock is moving in proportion with the market. A Beta Greater than 1 shows the stock is more volatile than the market. A Beta Less than 1 shows the stock is less volatile than the market. The

companies like Maruti and TATA Motors has high beta value compare to all other stocks which are high risky and provide high return.

## 6.6 SYSTEMATIC AND UNSYSTEMATIC RISK ANALYSIS:

### SYSTEMATIC AND UNSYSTEMATIC RISK

COMPANY NAME	TOTAL RISK	SYSTEMATIC RISK	UNSYSTEMATIC RISK
MARUTI	8.70% (100%)	6.04% (69.49%)	2.65% (30.51%)
TVS MOTORS	8.92% (100%)	3.89% (43.70%)	5.01% (56.30%)

**Table 13:** proportion of systematic and unsystematic risk

Out of total risk in stock of Maruti, 69.49% is un-diversifiable risk and created from systematic factor or market factor and the remaining 30.51% is diversifiable risk and created from company related factor. It shows that almost seventy percent of the risk of Maruti is created by unsystematic factor.

Out of total risk in stock of TVS Motors 43.70% is un-diversifiable risk and created from systematic factor or market factor and the remaining 56.30% is diversifiable risk and created from company related factor. Hence, TVS Motors can able to reduce its 56.30% of risk from its total risk.

## 7. CONCLUSION

The computed values shows BAJAJ AUTO, HEROMOTOCO and TVS MOTORS are the most defensive (least risky) whereas MARUTI and TATA MOTORS are the most aggressive (most risky). That is MARUTI and TATA MOTORS have the maximum market risk of running a business whereas BAJAJ AUTO, HEROMOTOCO and TVS MOTORS has the least risk. The results show that the risk of MARUTI and TATA MOTORS are the largest, it means that they are the most aggressive stock. From this analysis, it is concluded that the TVS MOTORS equity has a low beta value (0.8586) so it is less risky and the volatility of price is lesser than the market. Tata Motors Ltd has high beta, S.D, variance as compared to other equities. Thus it involves more risk.

## 8. REFERENCES:

- i. P Karthika and Dr P Karthikeyan, "A Study on Comparative Analysis of Risk and Return with reference to selected stocks of BSE Sensex India" The International Journal's – Research Journal of Social Science & Management, 2011.
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