

## **A Study on Gauging the Risk & Return of Selected Stocks in the Automobile Sector**

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### **ABSTRACT:**

The stock market holds substantial significance in the economy, serving as a crucial source of capital for companies. This financial platform not only facilitates companies in raising funds for various purposes like expansion, innovation, and operational needs through the issuance and trading of shares but also plays a pivotal role in influencing diverse sectors. In particular, the automobile sector stands out as a key player in the stock market, attracting a diverse array of investors. Leveraging the consistent growth of the GDP and robust domestic demand for commercial vehicles, the sector presents alluring investment opportunities. With a desire to maximise return on investment, many individuals are inclined towards investing their money in the stock market. Before making investments, investors should conduct a comprehensive analysis of the stock market and then proceed to make investment decisions. The primary goal for every investor is to manage risk effectively while enhancing their return on investment. This study aims to analyze the risk and return associated with the stocks of selected automobile companies, utilizing secondary data. The present study focused on collecting monthly data on the chosen automobile stocks over the last five years, from 2018 to 2023. Monthly returns for the stocks were computed, leading to the derivation of average returns, standard deviations, and correlation. The study progressed to assess risk by employing beta and regression analysis on formed indices, which were then compared to the NIFTY 50. The study's findings revealed the intricate dynamics of risk and return among the specified automobile companies' stocks, providing valuable financial insights for potential investors in the automobile sector.

**Keywords:** *Risk, Return, Automobile sector, Regression Analysis*

### **INTRODUCTION**

The capital market serves as a platform for raising and investing long-term funds, encompassing both debt and equity. It plays a crucial role in directing savings towards the most productive avenues, thereby contributing significantly to the overall growth of our economy. Within the capital market, the stock market holds particular importance as it facilitates economic expansion by directing funds to the most productive assets through processes like disinvestment and reinvestment. Acting as the secondary market, the stock market is where investors engage in buying and selling ownership stakes in publicly traded companies. India has 23 stock markets in total, including two national markets and 21 regional markets. The Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE) were India's two main stock exchanges. The oldest stock exchange in Asia is BSE, whereas NSE has the biggest volume of stocks. The Securities and Exchange Board of India (SEBI), which was founded in 1992, keeps an eye on the Indian stock market, facilitates the growth of the securities industry, and protects investors from unfair trade practices.

Approximately 80 million individuals in the nation are active stock market investors, accounting for 3% of India's entire population. *As of January 2024, the NSE had a market capitalization of US\$4.5 trillion, making it the seventh-largest stock market worldwide. The automobile sector makes up around 7% of India's GDP.* This sector is expected to increase in the next years as a result of modernization and urbanization. In the future, demand and profitability will rise with the introduction of electric automobiles. Government policy supports the growth of the automotive sector and promotes the national production of electric vehicles.

### SWOT ANALYSIS OF SELECTED AUTOMOBILE COMPANIES

#### ❖ BAJAJ AUTO:

<b>STRENGTHS:</b> <ul style="list-style-type: none"> <li>❑ Consistent returns in the past 5 years</li> <li>❑ New ideas based on customer needs</li> <li>❑ Diverse revenue inflow</li> </ul>	<b>OPPORTUNITY:</b> <ul style="list-style-type: none"> <li>❑ Performance-oriented vehicles</li> <li>❑ Increasing demand for two-wheel vehicles</li> </ul>
<b>WEAKNESS:</b> <ul style="list-style-type: none"> <li>❑ Not expanded globally</li> <li>❑ Employee turnover</li> </ul>	<b>THREATS:</b> <ul style="list-style-type: none"> <li>❑ US and China trade war and instability in the Middle East</li> <li>❑ Economic conditions</li> </ul>

#### ❖ EICHER MOTORS:

<b>STRENGTH:</b> <ul style="list-style-type: none"> <li>❑ Strong brand reputation</li> <li>❑ Diverse customer groups</li> <li>❑ First mover advantage</li> </ul>	<b>OPPORTUNITY:</b> <ul style="list-style-type: none"> <li>❑ Potential to enter the US market</li> <li>❑ Online customer service</li> </ul>
<b>WEAKNESS:</b> <ul style="list-style-type: none"> <li>❑ Challenges to replacing a few skilled staff members</li> <li>❑ Gross profit and operating margin under pressure</li> </ul>	<b>THREAT:</b> <ul style="list-style-type: none"> <li>❑ Withdrawal of Top Management</li> <li>❑ Intense competition in the automobile industry</li> </ul>



❖ **HERO MOTOCORP:**

<b>STRENGTHS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> High popularity in two-wheeler vehicles</li> <li><input type="checkbox"/> Strong financial position with debt-free</li> <li><input type="checkbox"/> Sponsorship for sports and racing</li> </ul>	<b>OPPORTUNITY:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Increasing the standard of living of people</li> <li><input type="checkbox"/> Rapid technology advancement</li> </ul>
<b>WEAKNESS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identical features among many products</li> <li><input type="checkbox"/> Dissatisfaction among customers</li> </ul>	<b>THREATS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Usage of public transport</li> <li><input type="checkbox"/> Heavy competition domestically and internationally</li> </ul>

❖ **MAHINDRA & MAHINDRA:**

<b>STRENGTHS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Strong presence in rural and semi-urban areas</li> <li><input type="checkbox"/> Consistent high-return stock</li> <li><input type="checkbox"/> Increase in the brand image through CSR activities</li> </ul>	<b>OPPORTUNITY:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Expansion of emerging markets</li> <li><input type="checkbox"/> Fuel-efficient cars for the future</li> <li><input type="checkbox"/> High demand for agriculture equipment</li> </ul>
<b>WEAKNESS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> High dependence on India for revenue</li> <li><input type="checkbox"/> Low customer-oriented service investment</li> </ul>	<b>THREATS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Strict regulations and policy</li> <li><input type="checkbox"/> Stiff competition from global brand</li> </ul>

❖ **MARUTI SUZUKI:**

<b>STRENGTH:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Significant market share in the automobile sector</li> <li><input type="checkbox"/> Effective promotion and product portfolio</li> <li><input type="checkbox"/> Low maintenance cost</li> </ul>	<b>OPPORTUNITY:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> New electric vehicle platform</li> <li><input type="checkbox"/> Rapid growth of the Indian economy and automobile market</li> </ul>
<b>WEAKNESS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Limited worldwide expansion</li> <li><input type="checkbox"/> Poor interior quality</li> <li><input type="checkbox"/> Lack of innovation and new product development</li> </ul>	<b>THREAT:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Government regulations and interventions</li> <li><input type="checkbox"/> Recent decline in market share in the past few years</li> </ul>



❖ **TATA MOTORS:**

<b>STRENGTHS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Strong brand reputation</li> <li><input type="checkbox"/> Higher profit margin</li> <li><input type="checkbox"/> High customer satisfaction</li> <li><input type="checkbox"/> Great distribution network</li> </ul>	<b>OPPORTUNITY:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Shift towards EVs</li> <li><input type="checkbox"/> New technology innovations</li> <li><input type="checkbox"/> Sustainability and social responsibility increase brand image</li> </ul>
<b>WEAKNESS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> High debt loan</li> <li><input type="checkbox"/> Higher employee turnover</li> <li><input type="checkbox"/> Slow expansion at the international level</li> </ul>	<b>THREATS:</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Heavy competition</li> <li><input type="checkbox"/> Aftermath of the pandemic</li> </ul>

### Review of Literature

1. **Srivastava, Diksha (2022)** in their research study carried out Technical Analysis of the Indian Stock Market with a special focus on the Automobile Sector in which they revealed that equity is considered the most rewarding despite its high risk. Her study mentioned that investors must analyse the stock based on technical or fundamental analysis.
2. **Rahul & Tukaram (2021)**. The study measured the Risk and Return of various stocks with their benchmark indices to understand the behaviour of movements of the stocks to market. It revealed that the Automobile & Banking sectors & IT sectors have outperformed in the Regression test analysis giving the information that the Stocks are good for Investment in Terms of Risk and Return.
3. **Vimala et al., (2014)** The study aimed at ascertaining the behaviour of share returns. They analysed the equity share fluctuations in the Indian Selected Industry. It also measures the strength of the trend and the money involved in investing in the stocks. Investors can invest in the companies which are recovering out of either overbought or oversold conditions since there might be a definite trend reversal in those stocks. It is also advised for the investors to hold the stock which keeps fluctuating until the stock follows a definite bearish or bullish trend. They recommended investing not only following a particular indicator but also confirming the signal with several indicators for better returns.

### OBJECTIVES OF THE STUDY

- ❖ To analyse the performance of stocks of selected automobile companies in NIFTY 50.
- ❖ To explore the SWOT of select automobile companies.
- ❖ To determine the level of risk and return involved in selected companies in the automobile sector.
- ❖ To find out the statistical variations in the stocks with the help of Regression analysis.

## **METHODOLOGY**

### **Sample Size:**

To analyze the risk and return of the automobile sector on the Indian stock market the following Companies' Stocks were considered for the data analysis & interpretation. Based on popularity, the researcher has selected the following companies for the present study.

- ❖ Bajaj Auto
- ❖ Eicher Motors
- ❖ Hero MotoCorp
- ❖ Mahindra & Mahindra
- ❖ Maruti Suzuki
- ❖ Tata Motors

### **Data Collection:**

To analyse the risk and return, monthly returns of the selected automobile companies were collected from the NSE website [www.nseindia.com](http://www.nseindia.com). Data pertaining to the period from 2018 to 2023 were collected for the present study. The study solely relies on secondary data.

### **Tools Used:**

The data extracted from the secondary sources were analyzed by application of the following tools using MS Excel.

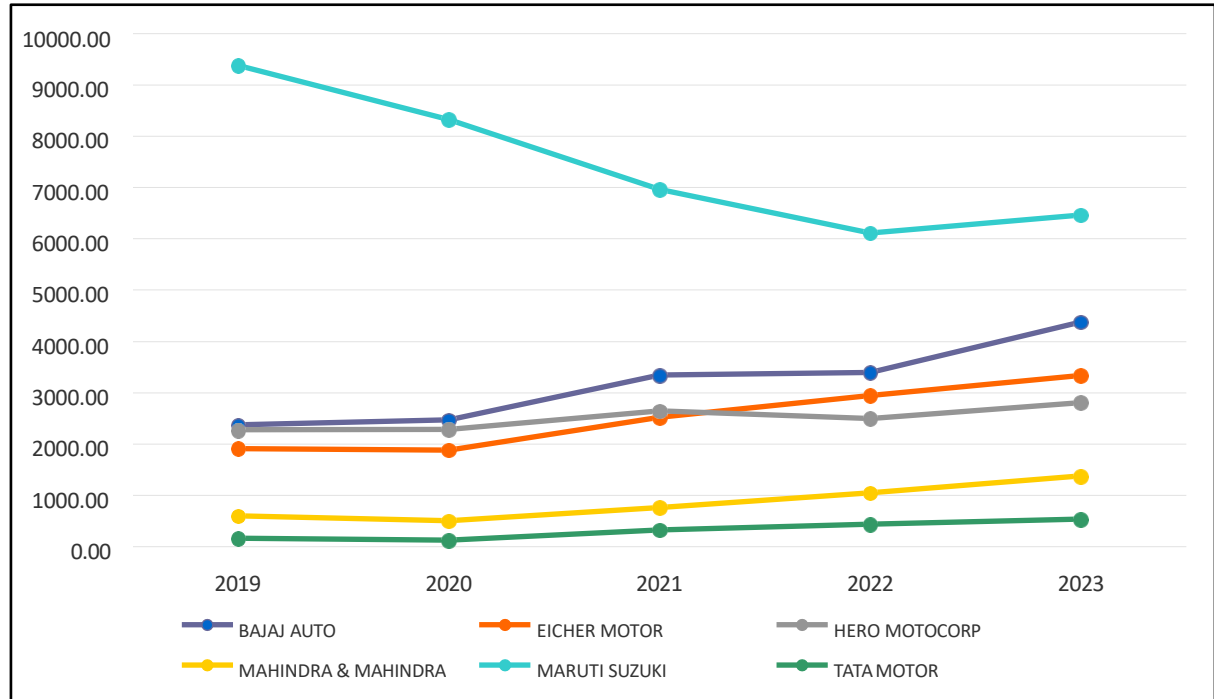
- ❖ Descriptive Analysis
- ❖ Correlation Analysis
- ❖ Regression Analysis

## **LIMITATIONS OF THE STUDY**

- ❖ Information is solely based on secondary data rather than primary data.
- ❖ Only a few companies were analysed in this study.
- ❖ Different researchers have varied perspectives on the analysis of equity shares. Hence the results of the study cannot be generalized.

## Analysis & Discussions

**GRAPH 1: TRENDLINE SHOWING FLUCTUATIONS IN STOCK PRICES (2018-2023)**



The above graph illustrates the changes in stock prices of selected firms over the last five years. The onset of the COVID-19 pandemic led to a significant downturn in company stock prices in 2020. Subsequently, there was an uptick in the stock price of Bajaj Auto following the outbreak. Eicher Motors, Mahindra & Mahindra, and Tata Motors also witnessed an overall increase in their stock prices over the five years. Hero MotoCorp experienced more pronounced fluctuations in its stock price during this timeframe. Maruti Suzuki's stock price exhibited a declining trend, albeit at a diminishing rate; however, there was an increase in the stock price in the year 2023.

**TABLE 1: BETA VALUES OF THE SELECTED COMPANIES STOCK**

COMPANIES	BETA
Bajaj Auto	1.13
Eicher Motors	0.96
Hero MotoCorp	0.96
Mahindra & Mahindra	1.34
Maruti Suzuki	0.97
Tata Motors	1.79

The systematic performance of stocks relative to the overall market is quantified by their beta values, denoted by the Greek letter beta, a symbol commonly used by investment analysts. When the beta is 1, it signifies that the security's price movements align with those of

the market. If the beta is less than one, the stock's price is anticipated to be less volatile than the market, while a beta exceeding one indicates higher volatility. In Table 01, Tata Motors stands out with the highest beta value at 1.79, followed by Mahindra & Mahindra (1.34) and Bajaj Auto (1.13). On the other hand, Hero MotoCorp (0.96), Eicher Motors (0.96), and Maruti Suzuki (0.97) exhibit the lowest beta values.

Consequently, based on these beta values, it can be inferred that the returns for Bajaj Auto, Mahindra & Mahindra, and Tata Motors were higher, with higher associated risk factors.

**TABLE 2: REGRESSION VALUES OF SELECTED COMPANIES STOCK**

COMPANIES	VALUES
Bajaj Auto	0.457
Eicher Motors	0.298
Hero MotoCorp	0.329
Mahindra & Mahindra	0.460
Maruti Suzuki	0.391
Tata Motors	0.318

Regression analysis is used to determine the degree of relationship between the dependent and independent variables. Investors could highly opt for stocks that have the highest regression that may provide investors with significant rewards with minimum risk for investment. All the stocks are statistically significant based on the values computed from the analysis. Notably, Mahindra & Mahindra stands out with the highest regression value of 0.460, closely followed by Bajaj Auto at 0.457. On the other hand, Eicher Motors exhibits a comparatively lower regression value of 0.298. These regression values provide insights into the stocks' potential and their respective relationships with NIFTY 50, guiding investors in their decision-making process.

**TABLE 3: MEAN RANKING BASED ON THE RETURN OF SELECTED COMPANIES STOCK**

COMPANIES	MEAN
Bajaj Auto	0.020
Eicher Motors	0.014
Hero MotoCorp	0.008
Mahindra & Mahindra	0.018
Maruti Suzuki	0.010
Tata Motors	0.037

Investors can assess the relationship between the risk and potential return of a portfolio of securities by calculating the mean return. However, it's crucial to note that mean return is just one tool in an investor's toolkit and should be considered cautiously, as it does not guarantee future rates of return. In the above table, Tata Motors exhibits the highest mean value at 0.37, followed by Bajaj Auto with 0.020. On the other end of the spectrum, Hero MotoCorp has the lowest mean value at 0.008. These mean return values offer insights into the historical performance of the securities but should be interpreted alongside other factors when making investment decisions.

**TABLE 04: STANDARD DEVIATION BASED ON THE RETURN OF THE SELECTED COMPANIES STOCK**

COMPANIES	STANDARD DEVIATION
Bajaj Auto	0.090
Eicher Motors	0.095
Hero MotoCorp	0.091
Mahindra & Mahindra	0.107
Maruti Suzuki	0.083
Tata Motors	0.172

A stock's standard deviation is a measure of its volatility, evaluating how closely or distantly past returns deviate from the average returns. When the standard deviation is low, prices tend to cluster closely around the average, resulting in minimal variation. Conversely, a high standard deviation suggests more erratic price behaviour, with prices dispersed further from the mean.

While standard deviation can be a valuable risk indicator, it's important to note that a stock investment may not always perform as expected. In the context of the analyzed stocks, Tata Motors exhibits the highest standard deviation at 0.172, closely followed by Mahindra & Mahindra with 0.107. In contrast, Bajaj Auto has the lowest standard deviation at 0.083. These standard deviation values provide insights into the level of volatility associated with each stock, aiding investors in assessing and managing risks.

**TABLE 5: CORRELATION VALUES BASED ON THE RETURN OF SELECTED STOCKS WITH NIFTY 50**

COMPANIES	CORRELATION
Bajaj Auto	0.677
Eicher Motors	0.547
Hero MotoCorp	0.574
Mahindra & Mahindra	0.679
Maruti Suzuki	0.625
Tata Motors	0.564

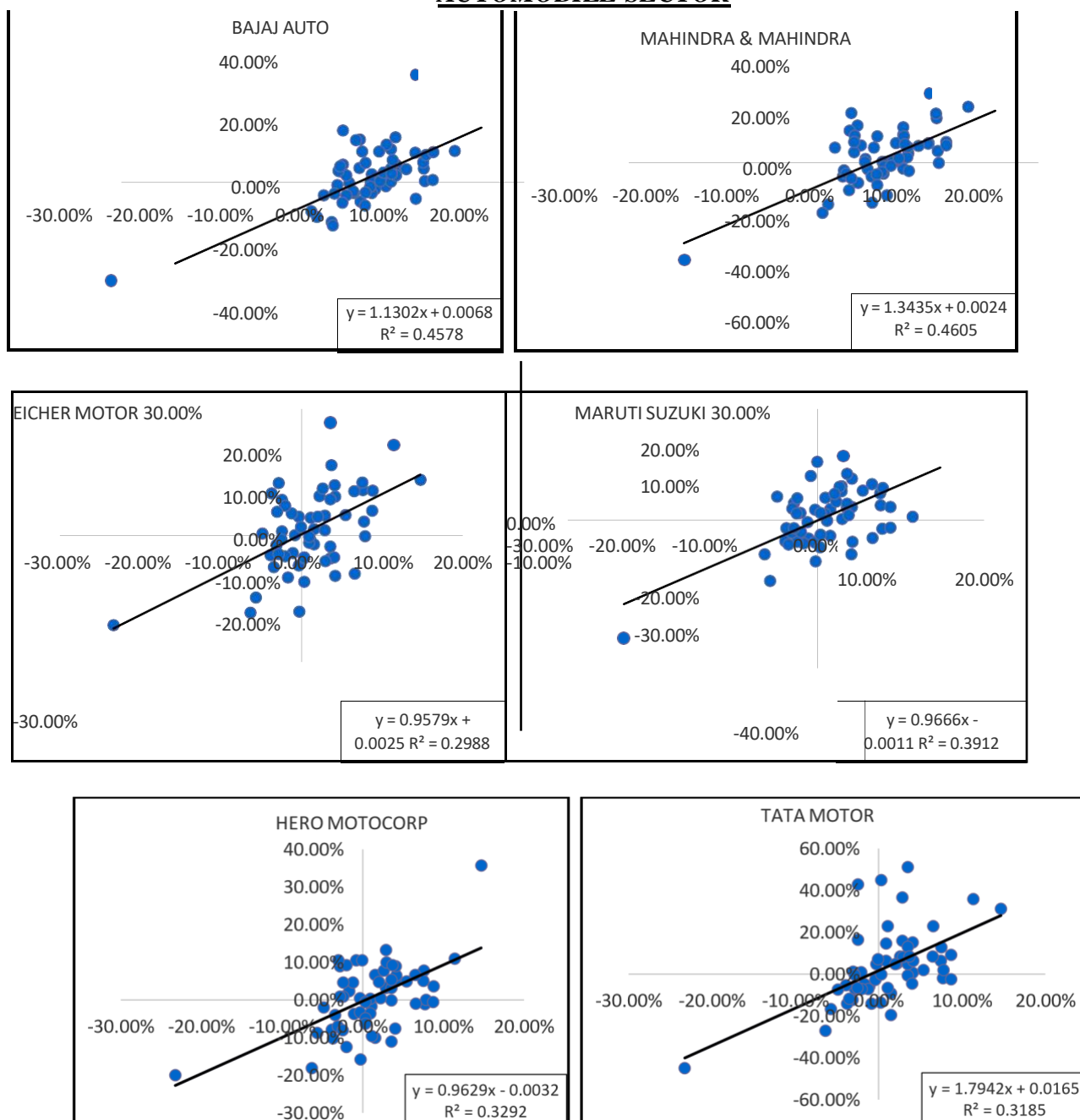
Correlation shows the strength of a relationship between two variables and is expressed numerically by the correlation coefficient. It ranges between -1 and 1. Stocks can be positively correlated. A value of 1 means stock and NIFTY 50 have a perfect positive correlation. If one variable moves up while the other goes down, it would have a perfect negative correlation, with a value of -1 and a moderate positive correlation from 0.5 to 1. The stronger the positive correlation, the more likely the variables could move in the same direction.

In the specific case of the analyzed automobile company stocks, Mahindra & Mahindra exhibits the highest correlation value at 0.679, closely followed by Bajaj Auto with 0.677, and Maruti Suzuki with 0.625. On the other hand, Eicher Motors demonstrates the lowest correlation value at 0.547, with Tata Motors at 0.564, and Eicher Motors also registering 0.547. These correlation



values provide insights into the likelihood of these stocks moving in tandem, with stronger positive correlations suggesting a higher probability of simultaneous directional movements.

**GRAPH SHOWING LINEAR REGRESSION DIAGRAM OF SELECTED STOCKS IN THE AUTOMOBILE SECTOR**



The charts illustrate the desperation in equities with the NIFTY 50 as a benchmark. If the points are closer to the trendline, it indicates that returns of the selected stock have been consistent throughout a given period. Whereas if the points are away from the trendline it indicates that returns of the selected stock fluctuate in a given period. Graphs show that Bajaj Auto, Hero MotoCorp, and Mahindra & Mahindra were closer to the other points, but Eicher Motors, Maruti Suzuki, and Tata Motors were far away from other points.

### **Major Findings of the Study**

- ❖ This study reveals that Tata Motors has the highest risk and high return for the past 5 years as it has the highest beta value and highest mean return.
- ❖ It also reveals that Eicher Motors and Hero MotoCorp have low risk and return from Tables 01 and 03 if investors are willing to invest their money for low risk and return.
- ❖ By analyzing historical data of selected companies in the automobile sector, using regression analysis it is found that Mahindra & Mahindra had been more consistent in the stock market followed by Bajaj Auto stocks. It was also found that Eicher Motors was the least consistent stock followed by Tata Motors
- ❖ From the values of standard deviation, it is understood that Bajaj Auto showed less variation of returns from the selected automobile sector as it results in less volatility whereas Tata Motors has a high variation of returns.
- ❖ Through correlation analysis, it is revealed that Mahindra & Mahindra and Bajaj Auto have a higher correlation. Hence stock and NIFTY 50 move in the same direction. It also revealed that Eicher Motors and Tata Motors have a lower correlation.
- ❖ From the graph of the selected automobile sector, reveals that Bajaj Auto, Maruti Suzuki, and Mahindra & Mahindra are closer to the trendline which results in consistent return. In contrast, Eicher Motors, Hero MotoCorp and Tata Motors were apart from the trendline as a result it fluctuated in the given period.

### **Suggestions of the Study:**

- ❖ As regression is high in Mahindra & Mahindra, Investors could invest in this company as it provides high returns and low risk to investors.
- ❖ Investors can invest in Tata Motors stock if they are willing to take high risks and obtain high returns. If the investors want comparatively lower risk with good returns, then they can invest in Bajaj Auto stock.
- ❖ Every investor needs to analyse the company's financial position in the market, capital structure, brand image among people, and history before investing in it.
- ❖ Investors should be given proper guidance by advisory firms, and banking institutions, regarding constructing portfolios to have a sustained level of risk and return also, they should consider the fundamentals as major factors for deciding.

### **Conclusion:**

The objective of this study was to assess the risk and return of selected automobile company stocks listed in the NIFTY 50 and to explore the correlation between these stocks and index indices. However, it is essential to acknowledge the study's limitations, including the utilization of a restricted set of tools and procedures, which may impact the precision of the findings. In the dynamic landscape of financial markets, companies are tasked with making informed decisions to enhance performance and mitigate risks effectively. Being prepared for unforeseen circumstances is crucial for minimising potential losses and instilling confidence among investors. As businesses navigate these challenges, it becomes

imperative for investors to carefully consider various factors before making investment decisions, ensuring a well-informed and strategic approach.

***Happy Investing!!!***

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