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Predictive Analysis Of Automobile Company Stocks In The Stock Market

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ABSTRACT
The Indian automobile industry has experienced substantial growth, driven by rising domestic demand, urbanization, and technological advancements, positioning India as a significant global manufacturing hub. The industry has also embraced the shift towards electric vehicles (EVs), particularly in the two-wheeler and three-wheeler segments, spurred by government initiatives like the Faster Adoption of Manufacturing of Electric Vehicles in India (FAME) and the Production Linked Incentive (PLI) schemes. This study explores the risk-return dynamics of selected publicly listed Indian automobile companies, analyzing their equity performance between 2018 and 2025. By evaluating market, financial, operational, and regulatory risks, the research aims to offer insights into the investment potential of these companies. The study investigates how systematic and unsystematic risks influence investment decisions, with a focus on prominent companies such as Maruti Suzuki, Mahindra & Mahindra, Tata Motors, Hindustan Motors, and Ashok Leyland. Using statistical tools like mean, standard deviation, variance, and beta, the analysis provides a comprehensive understanding of the volatility, return potential, and overall risk profile of the companies. Results suggest a direct correlation between higher risk and higher returns, with Ashok Leyland emerging as a top performer, while Maruti Suzuki demonstrated more stable returns. The study also provides recommendations for investors, emphasizing the importance of diversification and long-term analysis. Despite its limitations, the research contributes valuable insights for investors looking to navigate the evolving Indian automobile sector.

Keywords: *Financial markets, Stock price, Risk return analysis, Automobile industry, Capital asset pricing Model, systematic risk, Stock performance, Financial.*

1. INTRODUCTION

The Indian automobile industry is experiencing rapid growth, driven by increasing domestic demand, rising incomes, and urbanization. India has become a global manufacturing hub, attracting international automakers due to its cost-competitive labour and production capabilities. The sector is also embracing technological advancements, including automation and AI, enhancing vehicle safety and efficiency. A significant push towards electric vehicles (EVs) has spurred innovation and investment, especially in the electric two-wheeler and three-wheeler segments. Strong government support through initiatives like the FAME and PLI schemes has further boosted the industry's growth (Prakash & Jadav, 2024). Additionally, India's strong export market and the automobile sector's role as a major job creator underline its importance to the national economy. Together, these factors position the Indian automobile industry for a bright future as a key player in the global automotive landscape (Erumban, 2020).

The India Automobile Industry, ranked as the third-largest auto market in 2025 with a strong presence of both domestic and international original equipment manufacturers (OEMs). The industry demonstrates robust performance in exports and domestic demand, with two-wheelers and passenger cars being particularly popular. Notably, two-wheelers accounted for 74% of domestic demand in FY23. Despite intense competition in every segment, a few market leaders dominate (SIMA, 2025). The Table presents Domestic Automobile Sales Trends from 2018-18 to 2024-23 show significant fluctuations across vehicle categories on the account of COVID-19 pandemic. Passenger vehicles experienced a steady decline from 2019-19 to 2021-21 due to economic slowdown and pandemic disruptions but rebounded strongly to 38,90,114 units in 2024-23. Commercial vehicles followed a similar trend, dropping sharply in 2021-21 but recovering to 9,62,468 units by 2024-23. Three-wheeler sales saw a drastic dip during the pandemic but nearly doubled from 2022-22 to 2024-23, though still below pre-pandemic levels. Two-wheelers, the largest category, peaked in 2019-19, experienced a significant decline during the pandemic, and have shown signs of recovery, reaching 1,58,62,087 units in 2024-23, though still below pre-pandemic highs.

The total sales figures across all categories peaked at 2,62,66,179 units in 2019-19, dipped sharply in 2021-21 to 1,86,20,233 units, and have since recovered to 2,12,04,162 units in 2024-23, highlighting a post-pandemic rebound in the automobile market.

TABLE 1. DOMESTIC AUTOMOBILE SALES TRENDS

Category	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Passenger vehicles	32,88,581	33,77,389	27,73,519	27,11,457	30,69,523	38,90,114
Commercial vehicles	8,56,916	10,07,311	7,17,593	5,68,559	7,16,566	9,62,468
Three wheelers	6,35,698	7,01,005	6,37,065	2,19,446	2,61,385	4,88,768
Two wheelers	2,02,00,117	2,11,79,847	1,74,16,432	1,51,20,783	1,35,70,008	1,58,62,087
Quadricycles	0	627	942	-12	124	725
Grand total	2,49,81,312	2,62,66,179	2,15,45,551	1,86,20,233	1,76,17,606	2,12,04,162

Source: SIMA, 2025.

From an investor's perspective, auto stocks in India present strong growth potential, driven by rising demand for passenger vehicles and the shift towards electric vehicles (EVs). The sector is further boosted by the government's favourable initiatives, like the PLI scheme. However, due to the cyclical nature of the industry, investors must take into account economic factors that could influence demand. Nevertheless, investing in the Indian automobile industry offers a blend of risks and returns. While the sector has shown substantial growth potential, particularly with the shift towards electric vehicles, it also faces significant risks, such as regulatory changes, technological disruptions, and economic cycles. Investors can make well-informed choices that match their financial objectives by analyzing these factors and conducting a detailed risk-return assessment (Dai et.al, 2022). Investing in securities inherently carries a degree of uncertainty, which can vary from high to low. The level of this risk is influenced by several elements, such as the type of equity shares and the industry in which the company operates. Therefore, prior to making any investment decision, it is crucial for investors to thoroughly analyze the equity in terms of its associated risks and potential returns (Sullivan & Mackenzie, 2018).

2. SIGNIFICANCE OF THE STUDY

This study concentrates on examining the equity of specific automobile companies listed on the Indian securities market. By exploring the risk and investment features of these companies, it seeks to deliver a detailed insight into their investment potential. The study aims to offer valuable insights by examining the risk-return relationship, helping investors evaluate the potential profits and losses tied to investing in these equities. This research intends to explore the investment opportunities and risk factors within the Indian automobile sector from financial 2018-18 to 2024-2025, focusing on five key companies selected based on market share and revenue. The study will assess different types of risks— market, financial, operational, and regulatory—and their influence on the financial performance of companies and their investment decisions. The study will also explore investment strategies, including capital allocation and portfolio diversification, to understand the factors influencing investment decisions. Using a comparative approach, it will assess the differences in risk management and investment outcomes among the companies.

By conducting this study in a focused manner on the specific subset of automobile companies listed in the Indian securities market, the research aims to contribute to the existing body of knowledge in the field of investment analysis. This research will provide a valuable reference for investors, researchers, and market participants keen on grasping the risk and investment dynamics in the Indian automobile sector.

3. OBJECTIVES OF THE STUDY

The primary objective of the study is to explore and analyze the various factors that contribute to the risk and investment profiles of the selected companies, including market conditions, industry dynamics, and company-specific factors. The secondary objectives are as follows:

1. To understand the trends in automobile sector and to gain a complete understanding of the risks, investment, returns pattern associated with the selected companies in the automobile sector.
2. To determine the systematic risk of the selected companies in the automobile sector, aiding in the assessment of their vulnerability to market fluctuations.
3. To identify the most profitable company among the selected companies for investment purposes, taking into account risk and investment parameters

4. REVIEW OF LITERATURE

4.1. Literature on Risks in Equity Investment

Equity investments while often the most rewarding in terms of returns, involve various risks that investors must be aware of before entering the market (Gitaman et al, 2022). These risks include market or economy risk, which is influenced by broader economic factors such as government policies, inflation, and consumer confidence, affecting all asset classes. Industry risk arises from challenges within a specific industry, potentially impacting all companies in that sector. Management risk stems from poor decision-making by a company's leadership, which can adversely affect stock performance (Chairani & Siregar, 2022). Business risk relates to uncertainties surrounding a company's operations and its ability to generate profits, while financial risk is linked to a company's financial structure, especially its reliance on debt (Peterdy, 2025). Exchange rate risk affects companies operating in foreign markets, as currency fluctuations can impact profitability, and inflation risk, or purchasing power risk, occurs when inflation reduces the real value of returns (Alenezi, 2022). Interest rate risk refers to fluctuations in interest rates that primarily impact fixed-income securities (Jha, 2025).

Systematic risk relates to macroeconomic factors that affect the overall economy, including inflation, interest rates, and market volatility, which cannot be eliminated through diversification (Muiruri, 2014). In contrast, unsystematic risk is unique to a particular company or industry and can be reduced by diversifying across various asset classes (Ahmmed & Siddique (2024). The risk and return trade-off is a fundamental concept in financial analysis, where higher potential returns are associated with greater risk (Frazier & Liu 2016). Investors must balance their desire for return with their tolerance for risk, recognizing that decisions involving higher risk should offer greater expected returns (Ainia & Lutfi, 2020). Additionally, government action risk, such as unexpected policy changes or interest rate adjustments on government securities, can affect returns regardless of an investor's strategy, further emphasizing the importance of understanding these risks when making investment decisions (Grundl & Gal, 2018).

Systematic risk is typically evaluated using Beta, which measures a stock's volatility relative to the overall market. A Beta of 1 indicates that the stock moves in tandem with the market, whereas a Beta greater than 1 signifies higher volatility, and a Beta less than 1 indicates lower volatility (Kenton, 2024). For example, a stock with a beta of 0.70 is expected to move 70% of the market's fluctuations, while a beta of 1.30 suggests it may move 30% more than the market (Kenton, 2024). Although beta helps investors gauge risk based on their tolerance, it can sometimes be confusing due to varying values from different sources. It's essential to recognize that Beta relies on historical data, making it more applicable for short-term evaluations than for long-term forecasts. (Kenton, 2024).

Beta is a crucial element of the Capital Asset Pricing Model (CAPM), which is employed to determine the cost of equity. A higher Beta results in an increased cost of capital, thereby decreasing the present value of future cash flows (Rossi, 2023). This concept is central to understanding the risk/return trade-off in finance, where investors balance potential returns against risk. The CAPM helps quantify this trade-off by linking a stock's required return to its beta. Additionally, it highlights the role of business and financial risk in equity analysis, as well as how portfolio diversification can mitigate risk (Andriotto & Teti (2021).

A return, or financial return, denotes the profit or loss generated from an investment over a defined period, typically expressed as a percentage of the initial investment (Barry & Robison, 2014). Volatility, indicating the variation in returns, is commonly used to assess risk, with higher volatility implying greater risk. Volatility is typically measured through standard deviation or variance (Adrian & Rosenberg, 2008). Risk in investments refers to the chance that actual returns may differ from expectations, potentially leading to loss. It is divided into systematic and unsystematic risk (Muiruri, 2014). Typically, low-risk investments provide modest returns, whereas higher-risk investments present the opportunity for larger returns.

4.2. Relevant literature

The analysis of risk and return in the Indian automobile industry has been the subject of numerous empirical studies that seek to investigate the complexities associated with stock market investments in this sector. The automobile industry is recognized as one of the key contributors to India's economy, significantly impacting GDP and tax revenues. These studies analyze the relationship between risk and return for major automobile companies listed on the National Stock Exchange.

A study conducted by Subbalakshmi (2025) highlights key statistics, such as the valuation of the automobile industry at over $100 billion, its contribution to 2.3% of India's GDP, and its pivotal role in contributing to 8% of the nation's exports. These figures provide the reader with an in-depth understanding of the sector's impact on the Indian economy. This backdrop sets the stage for the study's core objective—evaluating the equity shares of selected automobile companies listed on the National Stock Exchange (NSE). Pavithra and Hamsalakshmi (2024) investigate the risk-return characteristics of selected automobile companies from 2009 to 2020. The companies analyzed include Bajaj Auto, TVS Motors, Mahindra & Mahindra, Maruti Suzuki, Tata Motors, Eicher Motors, and Ashok Leyland. The study reveals that Eicher Motors and TVS Motors offer the highest returns with the least risk, making them the most attractive for investment among the listed companies. Narayanan et.al (2022), explores the risk-investment profile of Ashok Leyland, Bajaj Auto, and Eicher Motors using statistical tools such as mean, variance, standard deviation, and beta. The research highlights a notable connection between risk and

investment, stressing the importance for investors to thoroughly evaluate the risk-return trade-off prior to making investment decisions. A recent studies by Vyas (2024) and Vijayvergiya (2025) notes that COVID-19 has influenced investment behavior, emphasizing risk management while pursuing returns. Analysis of the auto, pharma, and IT sectors shows the Automobile sector leads the returns.

Sowbarnika, and Jayanthi (2020) examines the stock performance of various Indian automobile companies over five years, analyzing trends in stock prices and providing insights into the current situation of equity investments in the sector. The research highlights the performance of companies like Honda, Mahindra & Mahindra, and Bajaj Auto, offering valuable information to investors. Vanaja and Nishok (2021) examine the risk-return relationship of five selected stocks in the Indian automobile industry over a five-year period (2019-2020). By employing tools such as beta, standard deviations, and correlation coefficients, the study illustrates the balance that investors need to achieve between risk and return when evaluating investments in this sector.

Florin Aliu (2018) examines risk and risk-return tradeoffs in the Czech automotive industry from 2005 to 2014. It finds that auto suppliers have the lowest risk and highest diversification benefits, while manufacturers face greater risk. Combining both portfolios reduces overall risk, offering valuable insights for optimizing portfolio performance through strategic diversification. Balaji et.al (2019) analyzes the risk and returns of five Indian automobile companies—Tata Motors, Ashok Leyland, Eicher Motors, Force Motor, and SML Isuzu—using data from January 1, 2028, to March 31, 2018. Through risk assessments and graphical analysis, it provides insights into the performance of these firms, contributing to investment understanding in the automobile sector. The risk and return analysis of the Indian automobile industry focuses on evaluating the investment potential of major companies listed on the National Stock Exchange. Several studies have examined the risk-return relationship for companies like Bajaj Auto, TVS Motors, Mahindra & Mahindra, Maruti Suzuki, Tata Motors, Eicher Motors, and Ashok Leyland.

5. RESEARCH METHODOLOGY

The research methodology utilized in this study adopts a scientific approach to systematically tackle the research problem. It involves a theoretical analysis of the methods applied within the field of study to ensure accurate and reliable findings.

5.1. Data Collection

The study will employ both primary and secondary data collection methods to facilitate a thorough analysis. Primary data will be gathered through personal discussions with authorized clerks and members of Bonanza Portfolio. This direct interaction will provide firsthand insights from key individuals involved with the organization. Secondary data will be sourced from various platforms, including internet searches, books, government departments, websites, and libraries. These secondary sources will offer additional context and support to the primary data, enriching the study's findings. By combining both data collection methods, the study aims to present a well-rounded and thorough investigation into the research topic.

5.2. Sample Design

The study focuses on analyzing share price changes among five selected Indian prominent automobile companies listed on NSE indexes such as Maruti Suzuk, Mahindra & Mahindra, Hindustan Motors, Tata Motors, and Ashok Leyland (NSE India, 2025). These companies are significant players in the Indian automobile industry, and the analysis examines their investment potential by taking into account factors such as market dynamics, industry trends, financial performance, and regulatory influences. This sample size has been chosen to ensure a balanced, manageable scope for in-depth analysis while capturing a representative cross-section of the industry. Out of 15 automobile NSE Automobile indexed companies, 8 are Automobile manufacturers and 7 are automobile components manufacturers, out of these, 5 automobile manufacturing companies are drawn for the sample. By concentrating on these companies, the study aims to gain insights into their risk and investment characteristics, considering the overall market dynamics and performance of the Indian automobile sector. This approach will enable targeted comparisons and evaluations, providing meaningful insights into trends and variations within the industry.

5.3. Statistical Analysis Used

The study employs various statistical tools to analyze the risk and investment dynamics within the selected Indian automobile companies. The mean will be used to determine the average performance of share prices over the specified period. The standard deviation will help measure the dispersion of share prices, indicating the degree of volatility. Variance will be calculated to assess the variability of share price changes, providing further insight into the risk associated with the investments. The coefficient of variation will be utilized to compare the relative risk of the companies, as it expresses the standard deviation as a percentage of the mean. Lastly, the analysis of systematic risk will focus on assessing the market risk inherent to the selected companies, helping to understand how their share prices correlate with market movements. Together, these statistical tools will facilitate a comprehensive examination of the risk-return profile in the Indian automobile industry.

TABLE 2. FORMULAS USED IN STUDY.

Sl.No	Calculation	Formula
1	Return	Current week price – Previous week price / Previous eek Price
2	Average Return	Sum of all close price/no. of values
3	Differences (D	Returns – Average return
5	Variance	$\sum D^2 / (n-1)$
6	Standard Deviation=Risk	= √e Variance
7	Coefficient of variation	Risk/Return
8	Systematic Risk (β)	$=\sum d1*d2/d2^2$

6. DATA ANALYSIS AND INTERPRETATION

6.1. Comparative Risk & Return Analysis of Selected Automobile Stocks

The following Table 3 presents a comparison of various automobile sector stocks based on their return, risk, variance, and coefficient of variation. Starting with Maruti Suzuki, it has shown a positive return of 0.14252, indicating a profit during the specified period. The risk associated with this stock is 4.5074, suggesting a moderate level of volatility. The variance, which measures the dispersion of returns, is 20.3169. The coefficient of variation, which accounts for risk relative to the average return, is 31.6264. Overall, Maruti Suzuki demonstrates a relatively stable performance with a reasonable level of risk.

TABLE 3. COMPARATIVE ANALYSIS OF RISK AND RETURN OF SELECTED AUTOMOBILE STOCKS.

S.No	Company name	Return	Risk	Variance	Co-efficient of variation
1	Maruti Suzuki	0.14252	4.5074	20.3169	31.6264
2	Mahindra & Mahindra	-0.0315	5.00607	25.0607	-158.920
3	Hindustan Motors	0.21014	8.51863	72.5671	40.5379
4	Tata Motors	0.18747	6.89085	47.4838	36.7571
5	Ashok Leyland	0.21772	6.48445	42.0480	29.7834

Mahindra & Mahindra, on the other hand, has experienced a negative return of -0.0315, implying a loss during the given timeframe. This stock exhibits a higher level of risk with a value of 5.00607. The variance is 25.0607, indicating a wider range of returns. The coefficient of variation is negative (-158.920), suggesting a high degree of risk compared to the average return. Investors should be cautious with this stock due to its negative returns and higher risk profile. Hindustan Motors has achieved a positive return of 0.21014, indicating a profit. However, it is associated with a higher risk level of 8.51863, making it a more volatile option. The variance is significantly higher at 72.5671, indicating a wider range of returns and increased uncertainty. The coefficient of variation is 40.5379, suggesting a relatively high risk compared to the average return. Investors considering Hindustan Motors should be prepared for higher volatility and potential fluctuations in returns.

Tata Motors has delivered a positive return of 0.18747, signalling profitability. It exhibits a moderate level of risk with a value of 6.89085. The variance is 47.4838, suggesting a wider dispersion of returns compared to some other stocks. The coefficient of variation is 36.7571, indicating a moderate level of risk relative to the average return. Investors should carefully assess the risk-return trade-off when considering Tata Motors. Ashok Leyland has shown a positive return of 0.21772, indicating profitability. It demonstrates a moderate level of risk with a value of 6.48445. The variance is 42.048, suggesting a moderate dispersion of returns. The coefficient of variation is 29.7834, indicating a moderate level of risk relative to the average return. Ashok Leyland appears to offer a reasonable risk-return balance compared to other stocks in the automobile

sector.

6.2. Systamatic Risk Analyses for Selected Automobile Stocks

Systematic risk, or Beta (β), measures a stock's sensitivity to overall market movements, especially in relation to a benchmark index like NIFTY. Systematic risk measures the sensitivity of an individual stock's returns to overall market movements. A beta value greater than 1 indicates that the stock is expected to be more volatile compared to the broader market. A beta value below 1 suggests that the stock is expected to be less volatile compared to the broader market.

6.2.1. Systematic risk of Maruti Suzuki with NIFTY

Systematic Risk (β) $=\sum d1*d2/d2^2$

=1.079236

For Maruti Suzuki, the systematic risk is calculated to be 1.079236. This value suggests that Maruti Suzuki's stock is slightly more volatile than the overall market. A Beta of 1 indicates that the stock's price generally moves in sync with the market. Since Maruti Suzuki's β is >1, indicates that the stock is expected to have relatively larger price fluctuations compared to the benchmark index. Investors should be aware of this higher level of systematic risk associated with Maruti Suzuki and consider it when making investment decisions.

6.2.2. Systematic risk of Mahindra & Mahindra with NIFTY

Systematic Risk (β) $=\sum d1*d2/d2^2$

=1.079236

The calculation of systematic risk (β) for Mahindra & Mahindra in relation to NIFTY resulted in a value of 1.079236In this case, Mahindra & Mahindra has a Beta of 1.079236, indicating that its returns are expected to move in line with the market, but with slightly greater volatility. Investors should consider this when evaluating the risk and potential returns of investing in Mahindra & Mahindra, as its performance will be more significantly affected by market conditions.

6.2.3. Systematic risk of Hindustan Motors with NIFTY

Systematic Risk (β) $=\sum d1*d2/d2^2$

=0.707391

The calculation of systematic risk, represented by beta (β), for Hindustan Motor in relation to NIFTY yielded a value of 0.707391, indicating that its returns are likely to exhibit less volatility in relation to the NIFTY index. This implies that Hindustan Motor's performance may be relatively more stable and less influenced by overall market movements. Investors should consider this lower level of systematic risk when evaluating the potential risk and returns associated with investing in Hindustan

6.2.4. Systematic risk of Tata Motors with NIFTY

Systematic Risk(β) $=\sum d1*d2/d2^2$

=0.707391

The calculation of systematic risk, represented by beta (β), for Hindustan Motor in relation to NIFTY yielded a value of 0.707391, indicating that its returns are likely to exhibit less volatility in relation to the NIFTY index. This implies that Hindustan Motor's performance may be relatively more stable and less influenced by overall market movements. Investors should consider this lower level of systematic risk when evaluating the potential risk and returns associated with investing in Hindustan.

6.2.5. Systematic risk of Tata Motors with NIFTY

Systematic Risk(β) $=\sum d1*d2/d22$

= 1.391991

The calculation of systematic risk (β) for Tata Motors in relation to NIFTY was 1.391991. The Beta value indicating that its returns are likely to exhibit higher volatility in relation to the NIFTY index. This suggests that Tata Motors' performance may be influenced to a greater extent by overall market movements, and investors should consider this higher level of systematic risk when evaluating the potential risk and returns associated with investing in Tata Motors.

6.2.6. Systematic risk of Ashok Leyland with NIFTY

Systematic Risk (β) $=\sum d1*d2/d2^2$

=1.289308

The calculation of systematic risk, Ashok Layland in relation to NIFTY resulted in a value of 1.289308. Systematic risk, also known as market risk, measures the extent to which a stock's returns are influenced by overall market movements. Ashok Layland has a beta of 1.289308, suggesting that its returns are likely to exhibit higher volatility compared to the NIFTY index. Investors should consider this higher level of systematic risk when evaluating the potential risk and reward associated with investing in Ashok Layland. It implies that changes in the NIFTY index are likely to have a significant impact on Ashok Layland's stock price, and investors should be aware of this when making investment decisions.

6.3. Comparative Analysis of Systematic Risk of Selected Companies

The systematic risk values provide insights into how the selected companies' stock returns are influenced by overall market movements. Companies with lower systematic risk are generally considered more stable, while those with higher systematic risk are more susceptible to market volatility. The Table 4 presents a comparison of the systematic risk (β) of selected companies. Systematic risk measures the sensitivity of a company's stock returns to overall market movements. Maruti Suzuki has a systematic risk of 1.079, suggesting that its stock returns are relatively less sensitive to market fluctuations than the average market. This implies that Maruti Suzuki's stock is relatively stable and less susceptible to systematic market risks. On the other hand, Mahindra & Mahindra has a systematic risk of 1.122, indicating that its stock returns are more responsive to market movements compared to Maruti Suzuki. Investors should be aware that changes in broader market conditions may have a more significant impact on Mahindra & Mahindra's stock performance.

TABLE 4. COMPARATIVE ANALYSIS OF SYSTEMATIC RISK OF SELECTED AUTOMOBILE STOCKS.

S.No	Company name	Systematic risk(β)
1	Maruti Suzuki	1.079236018
2	Mahindra & Mahindra	1.122096840
3	Hindustan Motors	0.707391173
4	Tata Motors	1.391990648
5	Ashok Leyland	1.289308496

Hindustan Motors exhibits a lower systematic risk of 0.707, suggesting that its stock returns are less affected by market fluctuations and are relatively more stable compared to the overall market. This makes Hindustan Motors' stock less influenced by systematic risks. In contrast, Tata Motors has a higher systematic risk of 1.392, indicating that its stock returns are highly sensitive to market movements. This means that changes in the broader market can significantly impact Tata Motors' performance, making it more exposed to market volatility. Ashok Leyland, with a systematic risk of 1.289, falls in between, showing moderate sensitivity to market fluctuations, and indicating a balanced level of exposure to systematic risks. Hence, the investors can use this information to assess the potential risk associated with investing in these companies and make informed decisions based on their risk tolerance and investment objectives.

7. FINDINGS & RECOMMENDATIONS

7.1. Findings

During the study, several facts have been identified regarding the comparison of the five automobile stocks over a 5-year period (2018-18 to 2024-23) in relation to the NIFTY Auto index and among themselves:

1. All five automobile stocks have higher returns and risks compared to the NIFTY Auto index. This suggests that these companies are generating higher returns by taking on more risk than the overall market.
2. Analyzing the 5-year price data, it is observed that Ashok Leyland has earned the highest returns (21.772), followed by Hindustan Motors (21.014) and Tata Motors (18.747). On the other hand, Maruti Suzuki has the lowest returns among all the stocks.
3. Among the 5 automobile stocks, Hindustan Motors exhibits the highest level of risk, while Maruti Suzuki has the lowest risk.
4. Surprisingly, despite having higher risk, Maruti Suzuki manages to generate more returns compared to Tata Motors, which is riskier than Maruti Suzuki. This suggests that Maruti Suzuki has been able to deliver better returns while maintaining a comparatively lower level of risk.
5. Mahindra & Mahindra has experienced negative returns and is riskier than the other stocks in the analysis. This indicates that investors would need to accept higher levels of risk in order to potentially earn returns from this

particular stock.

6. The systematic risk, represented by β (beta), is a measure of how sensitive a stock's returns are to overall market movements. Maruti Suzuki has a systematic risk of 1.079236018, Mahindra & Mahindra has a risk of 1.12209684, Hindustan Motors has a risk of 0.707391173, Tata Motors has a risk of 1.391990648, and Ashok Leyland has a risk of 1.289308496.

These findings offer essential insights into the risk and investment characteristics of the five automobile stocks. Investors can leverage this information to evaluate the performance and risk profiles of these stocks, enabling them to make well-informed decisions aligned with their investment goals and risk tolerance. It's crucial to recognize that while attractive returns are appealing, they typically come with higher risks. Therefore, each investor should thoughtfully assess the risk-reward balance before proceeding with their investment choices.

7.2. Recommendations

Based on the risk and investment analysis, the following suggestions can be made to investors regarding investing in specific stocks:

1. Considering the overall performance of the automobile sector, investors may consider allocating a majority of their holdings to the automobile sector. This suggests that the sector as a whole is performing well, indicating potential opportunities for investors.
2. Mahindra and Mahindra has been identified as riskier than the market. Therefore, risk-averse investors are advised to exercise caution when investing in this stock, as it carries higher risk compared to the overall market. Investors with a lower risk tolerance may consider diversifying their investments across other stocks with relatively lower risk.
3. It is important not to solely judge the performance of a stock based on the observed 5-year price data. Instead, investors should consider the stock's performance since its inception to gain a more comprehensive understanding. This long-term perspective will provide a more accurate assessment of the stock's performance and potential for future growth.
4. Hindustan Motors has a systematic risk (β) below 1, indicating lower volatility compared to the other stocks. This suggests that the price fluctuations of Hindustan Motors are relatively less compared to the overall market. Investors seeking a more stable investment option may consider including Hindustan Motors in their portfolio.
5. Stocks with systematic risk (β) falling between 1 and 2 have higher fluctuations. Investors need to thoroughly assess the risk-return trade-off before investing in these companies. While these stocks may present opportunities for greater returns, they also entail a higher level of risk. Therefore, it's essential for investors to conduct in-depth research and evaluate their risk tolerance before making investment decisions related to these stocks.

Thus, it is crucial for investors to conduct their own research, analyze the risk and investment profiles of individual stocks, and align their investment decisions with their financial goals, risk tolerance, and investment horizon. Diversification and seeking professional advice from financial advisors can also help in managing risks effectively and optimizing investment portfolios. Therefore, investors should consider the return, risk, variance, and coefficient of variation when evaluating these automobile stocks. Each stock has its own unique performance and risk profile, and investors should carefully analyze these factors to make informed investment decisions based on their risk appetite and investment objectives.

8. LIMITATIONS OF THE STUDY

The study has several limitations that need to be considered. Firstly, it focuses exclusively on the Indian market, meaning the findings may not be applicable to other global markets. The unique regulatory frameworks, economic conditions, and cultural factors in India could influence the results differently compared to other regions. Secondly, the research is primarily designed to analyze automobile stocks from an investor's perspective. This narrow focus may not capture other important dimensions, such as investor behaviour, broader industry trends, or the operational aspects of automobile companies. Lastly, the study is confined to a sample of five automobile companies over a five-year period i.e., 2018-18 to 2024-23 which may not fully represent the entire Indian automobile industry. The limited scope in terms of both the sample size and time frame may not provide a comprehensive view of the sector's dynamics or long-term trends. These limitations offer valuable context for interpreting the study's findings and suggest potential avenues for future research.

During the period under study, the National Stock Exchange (NSE) witnessed several significant declines, causing market turbulence and investor apprehension. These declines were driven by various factors, including the introduction of long-term capital gains tax, global economic recession concerns, and the outbreak of the COVID-19 pandemic. The NSE experienced notable drops in February and March 2019, following the Finance Minister's proposal for the capital gains tax. The impact of the COVID-19 pandemic became apparent in early 2021, with sharp declines in February and March, resulting from global tensions and the declaration of a pandemic by the World Health Organization. The Nifty index reached its lowest levels since

2016, and the market suffered significant weekly losses reminiscent of the 2008 financial crisis. These events highlight the vulnerability of the NSE to global economic conditions and the influence of major events on market performance.

9. CONCLUSION

The Automobile Industry in India holds a prominent position on the global stage, being one of the largest and fastest-growing sectors. With substantial capital requirements, most industries in India raise funds through share issuances. Investors seek reasonable returns while minimizing risk in comparison to the market's overall risk and investment profile. The study's findings highlight the diverse risk and return profiles of five key automobile stocks in comparison to the NIFTY Auto Index over a five-year period (2018-18 to 2024-23). All analyzed stocks exhibit higher returns and risks than the NIFTY Auto Index, indicating that these companies achieve greater returns by assuming more risk. Ashok Leyland and Hindustan Motors lead in returns, while Mahindra & Mahindra stands out with negative returns and higher risk, signalling caution for risk-averse investors. Maruti Suzuki, despite its moderate risk, delivers solid returns, outperforming Tata Motors, which carries higher risk. These finding reinforces the notion of a direct relationship between risk and return, where higher risk investments tend to yield higher returns. Thus, investors should consider these risk-return dynamics when making investment decisions in the automobile industry.

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