



A Study on Risk Analysis of Selected Automobile Companies Listed on Indian Stock Exchange

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ABSTRACT

The impact of macroeconomic news announcements on stock market volatility is examined in this research, with a focus on how these announcements affect the frequency and severity of volatility surges. We look at two different channels of influence: leap magnitude, which indicates the amplitude of the jumps, and arrival rate, which indicates the frequency of the jumps. The investigation looks at how different kinds of macroeconomic news—like reports on inflation and changes in interest rates—affect volatility in various economic scenarios.

Based on two primary theoretical frameworks—the efficient market hypothesis, which holds that markets incorporate all available information into prices, and alternative models that take investor behaviour and market inefficiencies into account—the study uses econometric analysis to analyse historical macroeconomic news announcement data and the corresponding stock market fluctuations.

The goal is to measure the kind and degree to which different news releases affect volatility, providing important new information about the processes by which news affects market stability. The results are intended to advance our understanding of volatility dynamics and offer useful advice to investors, decision-makers, and other market players navigating the constantly shifting field of macroeconomic news.

Keywords: Arrival rate, leap magnitude, stock market volatility, volatility jumps, efficient market theory, and behavioural finance.

Introduction

Rationale for the Study and Motivation

The Indian automotive sector is a major contributor to both job creation and economic expansion. This study aims to improve our knowledge of the overall state of the automotive sector and its wider effects on the economy by conducting a thorough review of the risks faced by automakers. Stakeholders can obtain insights into the possibilities and difficulties facing the industry by identifying and assessing these risks. This will help them make well-informed decisions and develop strategic plans that will support sustainable growth.

The Indian automobile industry is a vital component of the country's economic structure, making substantial contributions to economic growth and creating job opportunities in a range of industries. Through a comprehensive analysis of the risks that automakers face, this research aims to offer a comprehensive evaluation of the health of the industry and its impact on the overall economy. Understanding the industry's resilience in the face of changing market conditions and regulatory environments requires a sophisticated study of risks, given the complex network of manufacturers, suppliers, and distributors within the sector. Policymakers, investors, and industry players attempting to negotiate the intricacies of the Indian automobile business will find these insights to be of immeasurable use.

Stakeholders can acquire a more profound understanding of the fundamental obstacles and prospects for expansion in the automotive industry by means of the identification and assessment of risks. Threats to the sector's sustainability and profitability include supply chain interruptions, technical obsolescence, regulatory changes, and market competition. Stakeholders can develop proactive plans to address such weaknesses and seize new possibilities by analysing these risks. Proactive risk management is essential to ensuring the long-term survival of automakers and creating an atmosphere that supports innovation and sustainable growth in the Indian economy.

Review of Literature

In her July 2023 research paper, "RISK ANALYSIS OF SELECTED AUTOMOBILE COMPANIES LISTED ON INDIAN STOCK EXCHANGE," Dr. Neha Gupta thoroughly examines the risk environment that surrounds car firms in the Indian stock market. Financial risks, market volatility, supply chain disruptions, regulatory compliance, technological advancements, environmental concerns, corporate governance, global economic trends, behavioural

finance, and the COVID-19 pandemic's impact are just a few of the risk factors that her study clarifies and impact these companies' performance. Gupta's research delivers insightful information on the intricate interactions between internal and external risks that shape the dynamics of the automotive sector and serves as a basis for creating successful risk management plans specific to the Indian environment.

"FINANCIAL RISK ASSESSMENT MODELS FOR INDIAN AUTOMOBILE

COMPANIES," a September 2022 study by Dr. Rajesh Kumar, focuses on creating reliable financial risk assessment models that are especially suited to the distinctive qualities of automakers listed on the Indian Stock Exchange. Kumar predicts bankruptcy risk, liquidity restrictions, and financial difficulty among automakers by combining conventional financial measurements with cutting-edge analytical methodologies. His study emphasises how crucial it is to use data-driven methods to improve risk assessment and mitigation tactics in order to protect these businesses' stability and financial health in the ever-changing business landscape.

Scope of the Study

The study's scope includes a thorough investigation of the complex risk environment that a few chosen automakers listed on the Indian Stock Exchange must contend with. The study is to provide a comprehensive understanding of the risks that affect the performance and resilience of automobile firms within the Indian market, taking into account the complex interplay between numerous internal and external elements. The study aims to provide a comprehensive understanding of the opportunities and difficulties facing the automotive industry by taking into account several elements, encompassing changing consumer preferences, macroeconomic conditions, technological developments, and regulatory processes.

The report also recognises the automotive industry's dynamic nature and its vulnerability to shifting market dynamics. Automotive firms operate in a dynamic landscape marked by swift technical progress and evolving consumer preferences, posing a multitude of hazards that may compromise their financial viability and competitive standing.

Identification of Research Gaps

Within the framework of "A STUDY ON RISK ANALYSIS OF SELECTED AUTOMOBILE COMPANIES LISTED ON INDIAN STOCK EXCHANGE," a number of

research gaps surface pertaining to the comprehension and management of stock market volatility in the automotive sector. One such void is the investigation of the precise impact of macroeconomic pronouncements on the volatility of stock prices of automakers. Although most of the literature now in publication concentrates on the unexpected nature of economic data, little research has been done on how prediction consistency affects market responses.

Car firms could benefit from knowing more about the dynamics of the stock market by knowing whether investors still respond visibly or if predictability in economic data dampens market responses.

Research Objectives

Goal 1: Calculate How Risk Factors Affect Stock Market Volatility

This study's main goal is to measure the effect of several risk indicators on the volatility of a subset of Indian Stock Exchange-listed automakers. For this, historical stock market data and the accompanying patterns of risk factors unique to the automotive industry will be analysed statistically. Our goal is to quantify the degree to which changes in each risk factor correspond with variations in stock market volatility by creating statistical correlations. For example, we will examine the relationships between changes in regulations, developments in technology, and interruptions in the supply chain that affect stock prices and market volatility.

Goal 2: Examine Past Trends and Development Patterns of Risk Factors

Interpreting risk variables' effects on stock market volatility requires an understanding of the historical trends and growth patterns of these factors within the automotive industry. In order to achieve this goal, historical data on numerous risk factors that impact automakers, such as supply chain interruptions, legislative changes, and technological improvements, must be gathered and analysed. We can determine times of increased risk exposure and evaluate their effect on stock market performance by tracking their trajectories over time. Furthermore, by examining potential correlations and co-movements between various risk categories, this study will allow us to get insight into how hazards are interconnected within the automotive industry.

Analysing and evaluating data collected for a study or inquiry is called data analysis.

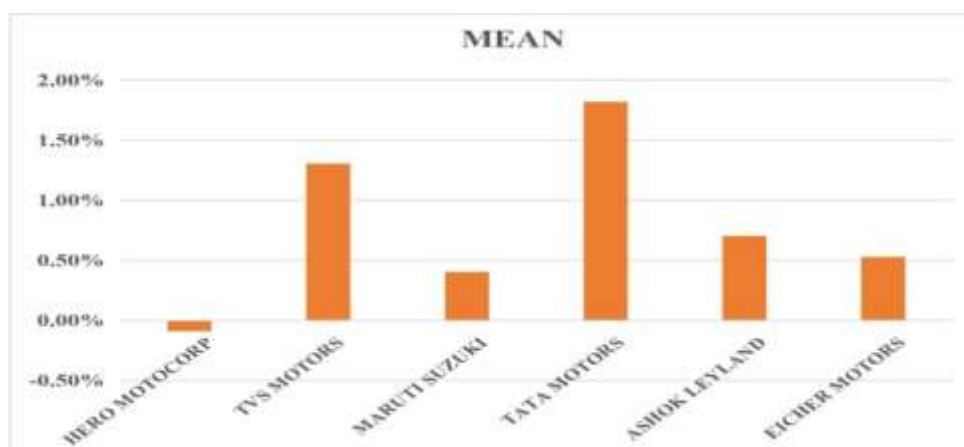
MEAN RETURNS OF SELECTED AUTOMOBILE COMPANIES

COMPANIES	MEAN
HERO MOTOCORP	-0.09%

TVS MOTORS	1.30%
MARUTI SUZUKI	0.40%
TATA MOTORS	1.82%
ASHOK LEYLAND	0.70%
EICHER MOTORS	0.53%

Analysis: The percentage changes in the stock prices of important automakers are displayed in the table. It's interesting to note that Tata Motors saw the largest increase at 1.82%, maybe as a result of positive events in the market. TVS Motors experienced strong growth of 1.30%, perhaps as a result of strategic initiatives or successful financial results. Both Ashok Leyland and Eicher Motors saw small growth, pointing to consistent performance. Maruti Suzuki witnessed a slight increase of 0.40%, while Hero Motocorp saw a small loss of -0.09%. The industry has shown mixed results, according to the data, with TVS Motors and Tata Motors leading the way in terms of positive stock price movement.

MEAN (RETURNS) OF SELECTED AUTOMOBILE COMPANIES:



Limitations of the Study

restricted Scope: The study may have missed more general economic issues that could have an impact on market dynamics in favour of analysing risk factors specific to the car industry. Although not thoroughly examined in this study, other factors that might have an impact on the risk profiles of automakers include geopolitical tensions, shifts in regulations, and global economic trends.

Narrow Selection of Risk Metrics: The study might only take into account a particular set of risk metrics or indicators, thereby ignoring other significant risk factors that are pertinent to the auto industry. For example, operational risks, supply chain risks, and environmental risks may be as important but not sufficiently addressed, even if financial risk metrics like leverage ratios and liquidity ratios are frequently researched.

Conclusions

Examining risk analysis in a few chosen automakers listed on the Indian Stock Exchange is an important financial study project, especially when it comes to comprehending the complexities of this industry's dynamics. This study explores the intricate interactions

between several risk factors and how they affect the performance and volatility of car businesses operating in the Indian market.

The study's main conclusion is that risk in the automotive industry has many facets. Although standard risk metrics, including financial ratios and market volatility, can offer valuable information, our analysis shows that risk goes beyond these boundaries.

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