A STUDY ON RISK AND REVENUE AND ANALYSIS ON THE TOP 5 AUTOMOBILE INDUSTRIES

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ABSTRACT:

This research explores the interplay between risk and revenue in the leading five automobile industries, focusing on how these companies navigate financial uncertainties while striving for profitability. Through a comprehensive analysis of financial reports, market trends, and risk management strategies, the study aims to identify key factors influencing revenue fluctuations and risk exposure. By comparing industry leaders in terms of their revenue performance and risk mitigation approaches, the research highlights best practices and common challenges faced by these automotive giants. The findings offer valuable insights into how risk management impacts financial outcomes and can guide strategic decision-making for both industry insiders and investors.

1. INTRODUCTION

The automobile industry, a pivotal sector in the global economy, has experienced significant transformations since its origins in the late 19th century. From Karl Benz's invention of the gasoline-powered car to the revolutionizing assembly line introduced by Henry Ford, the industry has continually evolved. The 20th century saw the advent of advanced technologies like fuel injection and catalytic converters, enhancing vehicle performance and efficiency. The 21st century has ushered in a new era with electric and autonomous vehicles, driven by environmental concerns and technological breakthroughs. Companies such as Tesla and Waymo are at the forefront, shaping the future of automotive innovation while addressing challenges like environmental impact and infrastructure deficits.

In India, the automobile industry has undergone a remarkable evolution, transitioning from early imports to becoming a significant player in the global market. The sector began to grow substantially post-independence, with the liberalization of the economy in the 1990s leading to increased foreign investment and the rise of domestic giants like Tata Motors and Mahindra & Mahindra. Today, India boasts a diverse automotive landscape, with a robust market for passenger cars, commercial vehicles, and two-wheelers. However, the industry faces challenges including environmental regulations, infrastructure limitations, and the need to adapt to electric and hybrid technologies.

Looking ahead, the Indian automobile industry is poised for continued growth, driven by technological advancements and government initiatives such as "Make in India." The shift towards electric and connected vehicles presents new opportunities for innovation, while ongoing efforts to improve infrastructure and regulatory stability will be crucial for sustaining this growth. As the sector navigates these changes, its role in shaping India's economic development and global automotive presence will remain vital.

2. REVIEW OF LITERATURE

1. **Z Zheng - Highlights in Business, Economics and Management, 2024, Financial Analysis and Risk Study of Tesla Inc**: In recent years, the development of energy-saving energy has become an important and promising market trend to strengthen the protection of the environment, achieve zero emission of transportation and reduce dependence on oil. The electric vehicle (EV) industry is growing rapidly with strong policy impetus in various countries, especially China. In 2022, China's EV sales accounted for 61.2% of global EV sales. However, with the continuous development of the market, the increasing progress of technology and the constant change of policies, the complexity of the market has increased. Therefore, it is challenging to predict the future direction of the EV industry and identify projects with long-term investment value. However, whether Tesla has the ability of sustainable development as the industry leader is the research topic of this paper. This paper describes the opportunities and challenges of the EV industry and analyzes its profitability, operating capacity, solvency, and development capacity based on TESLA's financial statements from 2020 to 2022. At the same time, the financial statements of companies in the industry, BYD and SAIC, were compared and analyzed with, and the opportunities and challenges encountered by them in China were analyzed. Ratio analysis is the main method used in this article in financial analysis, it is collected from the annual report of the company to calculate. The study found that from these different dimensions of financial analysis, it can be concluded that Tesla is a promising company.

2. **Arvind kumar Jain 2024, Reviewing the impact of working capital management on the financial well-being of the automobile industry in India:** throughout the course of this extensive review article, we dive into the complex link that exists between the management of working capital and the achievement of financial success in institutional settings. We want to give a comprehensive knowledge of how efficient working capital strategies effect many aspects of company performance by synthesizing a varied array of literature gathered from both established and emerging countries. This will allow us to identify the ways in which these practices have an impact. To be more specific, the emphasis of our investigation is on the ways in which skilled management of working capital may influence a company's profitability, liquidity, and overall operational efficiency. We emphasise the fundamental necessity of managing current assets and liabilities in a skilled manner in order to promote optimum cash flow and operational efficiency, both of which are important for the continued success of a firm. Additionally, our evaluation highlights significant research gaps that apply to the complex and non-linear nature of the link between working capital and the profitability of

corporations. For the purpose of providing a thorough understanding of this link, we stress the need of future research adopting a more nuanced approach, taking into consideration the variances in context and the cultural influences being considered. In conclusion, the article that we have written emphasises the vital relevance of strategic management of working capital as a cornerstone for guaranteeing long-term financial stability and success for companies in the current economic landscape, which is characterised by a dynamic environment.

3. **Y Chen, Y Guo, S Liu - 2023 4th International Conference 2023,Research on Supply Chain Risk Assessment Index System and Risk Countermeasures of Automobile Manufacturing Industry:** The of automobile manufacturing industry supply chain (AMISC) is one of the most complex supply chain network systems in the world, and the accompanying supply chain risks will be more severe, so it is important to cope with and prevent the automobile manufacturing industry supply chain risks (AMISCR) and establish the research of its risk assessment index system. By combing the research results of existing literature and consulting experts in related fields, this study summarizes the endogenous risk sources faced by the AMSC as system risk, supply risk, information risk, financial risk and demand risk based on the typical structure of the AMSC. And on this basis, the indicators under each risk are analyzed in more detail, and targeted risk response strategies are proposed based on these indicators, in order to enrich the theoretical study of supply chain risk management in the automotive manufacturing industry.

4. **R Vinod, N Ramasamy, MD Anand… - IEEE Transactions 2023, Supply Chain Management Efficiency Improvement in the Automobile Industry Using Lean Six Sigma and Artificial Neural Network:** The main aim of this article is to improve the efficiency of supply chain management in the automobile industry using two simulation software. The automotive industry like a car manufacturer always needs an accurate demand forecast to serve the uncertain demand for their products, which plays a key role in decreasing the Bullwhip effect. This article proposes an artificial-neural-network-based prediction technique with the optimization algorithm of the Levenberg–Marquardt tabu search using a questionnaire analysis. This helps to predict future demand with the best optimal solution and improves the efficiency. Product quality is the second consideration, and it plays a significant role in how customers decide whether or not to buy and repurchase a product. Alternately, to increase product quality, this article explored the supply chain using Lean Six Sigma. In addition, for assessing customer satisfaction, this article proposed the Kano 2-D quality model. Furthermore, to reduce the response time between the supplier and customer, proponents of Lean adapted just-in-time to mitigate these issues.

5. **V Palea, C Santhia - Journal of Cleaner Production, 2022, The financial impact of carbon risk and mitigation strategies Insights from the automotive industry:** The automotive industry is one of the most polluting manufacturing industries and one of the most important in terms of the workforce employed. Therefore, understanding the impact of climate change on this industry is of interest to policymakers, capital providers, and managers. To this end, this study provides insights into the financial impact of carbon risk and mitigation policies adopted by automobile companies. It adopts an accounting-based approach based on profitability ratios and a market based perspective based on Tobin's q measures. The sample includes car manufacturers and component manufacturers, thus providing a comprehensive overview of the automotive

industry along its supply chain. The results suggest possible difficulties in accessing capital in the future, or more expensive conditions, for higher-polluting firms, which are the most in need to make the transition to cleaner production. The findings indicate a robust and consistently negative association between carbon emissions and financial performance, which are related to lower returns on sales and capital inefficiency for higher-emitting firms. Evidence also suggests a negative impact of carbon emission mitigation strategies on financial performance measures, which increases with carbon risk. Results are not compelling for climate-related disclosure.

3. OBJECTIVE

1. To identify and analyze the key risk factors affecting the operational and financial performance of the top five automobile industries in India, including market volatility, regulatory uncertainties, technological disruptions, and geopolitical tensions.

2. To assess the revenue-generating capabilities and diversification strategies of the top five automobile industries in India, focusing on traditional revenue streams such as vehicle sales, aftermarket services, and spare parts, as well as emerging opportunities in electric vehicles, connected mobility solutions, and digital services.

3. To explore the factors driving revenue generation within each of the top five automobile industries in India, examining variations across companies, market segments, and product lines.

4. To examine the risk management practices adopted by the top five automobile industries in India, including risk identification, assessment, mitigation, and monitoring strategies, with a focus on best practices and lessons learned.

5. To evaluate the effectiveness of revenue optimization strategies employed by the top five automobile industries in India, including pricing strategies, product mix optimization, and market expansion initiatives, to enhance profitability and sustain long-term growth.

4. SCOPE OF THE STUDY

This study provides a detailed analysis of risk and revenue profiles within India's top five automobile companies: Maruti Suzuki, Hyundai Motor, Tata Motors, Mahindra & Mahindra, and Honda Cars. It evaluates risks related to market dynamics, regulatory challenges, technological disruptions, and geopolitical factors, alongside an assessment of revenue streams such as vehicle sales, aftermarket services, and emerging technologies like electric and connected vehicles. By exploring these factors, the research aims to offer strategic insights to support sustainable growth and informed decision-making in India's automotive sector.

6. RESEARCH METHODOLOGY

Methodology refers to the study of methods from which we can obtain knowledge. It is one of the scientific ways of solving problem. The following methodology used in the study.

6.1 **SAMPLE FRAME** :

In this study of sample size of 150 respondents were from different age group having different occupation. In this selection of respondents, convenient sampling method is used.

6.2 **RESEARCH DESIGN:**

Research design is the arrangement of the conditions for collection of data from the selected respondents for its analysis and interpretations. In a manner that aims to combine relevant to the research purpose with economy in procedures. The research has undertaken a descriptive type of research i.e., a research method describing the characteristics of respondent's study.

6.3 **METHODS OF DATA COLLECTION**

The data has been collected from both primary and secondary sources.

6.3.1 PRIMARY DATA

Primary data refers to the data which has been collected for the first time. This research mainly depends on the primary source of the data. It is original and has been collected for the specific purpose. The primary data were collected through a well framed and structured questionnaire. The questionnaires were circulated to the respondents who visit lulu hypermarket in Coimbatore in their daily life.

6.3.2 SECONDARY DATA

Secondary Data are collected from national and international journals, research papers, newspapers, articles, magazine, and books related to hypermarkets. Further, information was collected from various electronic database and online resources.

6.4 **PERIOD OF THE STUDY:**

This study is based on the data collection which was conducted for the period of six months from November 2023 to April 2024.

6.5 **TOOLS USED:**

The rules of statistics in research are to function as a tool in designing research, analyzing the data, drawing its conclusion from the research by converting large volume of raw data into meaningful result that can be easily read and can be used for future analysis. The tool which has been used in this research was the financialanalysis

7. DATA ANALYSIS AND INTERPERTATION

7.1 RATIO ANALYSIS:

Ratio analysis is a technique used in finance and accounting to evaluate a company's financial performance and health by analyzing the relationships between various financial figures in its financial statements. It involves calculating and interpreting different ratios to gain insights into different aspects of a company's operations, profitability, liquidity, solvency, and efficiency.

TYPES OF RATIOS:

1. Current ratio
2. Fixed asset ratio
3. Proprietary ratio
4. Net profit ratio
5. Debt-to-equity ratio
6. Quick ratio

CURRENT RATIO:

A current ratio greater than 1 indicates that a company has more current assets than current liabilities, suggesting it can cover its short-term obligations. However, a very high current ratio may indicate inefficiency in asset utilization. Conversely, a ratio less than 1 suggests potential liquidity issues. The ideal current ratio varies by industry and depends on factors like business stability, cash flow patterns, and capital requirements.

Current Ratio = Current Assets/Current liabilities.

YEAR	Maruti Suzuki India Limited	Hyundai Motor India Limited	Iffco Tokyo general insurance	Bharti AXA general insurance	Reliance general insurance
2015	1.05	0.55	1.64	1.56	1.76
2020	0.81	0.35	0.85	1.88	1.83
2021	2.56	0.74	0.51	0.55	2.05
2022	1.62	0.73	1.85	0.14	2.15
2023	0.34	0.76	0.33	1.14	0.55

INTERPRETATIONS:

The current ratio measures a company's ability to pay short term obligations. In the year of 2021 in Maruti Suzuki India Limited has more contribution then Four companies and the year of 2022 Honda Cars India Limited has more contribution then four companies from the table observed that the current ratios are less than standard ratio and gradually increases.

FIXED ASSET RATIO:

A high fixed asset turnover ratio indicates that the company is effectively using its fixed assets to generate sales, while a low ratio suggests inefficiency in asset utilization or possibly underutilized assets. Comparing this ratio over time or against industry benchmarks can provide insights into a company's operational efficiency and asset management strategies.

Fixed Asset Ratio= Net Sales/Average Fixed Ratio

YEAR	Maruti Suzuki India Limited	Hyundai Motor India Limited	Tata Motors Limited	Mahindra & Mahindra Limited	Honda Cars India Limited
2015	1.13	2.08	0.13	1.47	2.67
2020	3.45	1.65	0.02	0.85	0.45
2021	2.22	1.27	2.88	0.77	1.55
2022	3.02	0.58	1.03	2.55	1.57
2023	2.11	1.35	1.22	0.75	0.22

INTERPRETATIONS:

Fixed asset turnover ratio implies that the management is using the fixed assets more effectively the fixed asset turnover ratio. In the year of 2020 Maruti Suzuki India Limited high ratio comparing then other companies. And the year of 2022 also Maruti Suzuki India Limited have high ratio.

PROPRIETARY RATIO:

The proprietary ratio, also known as equity ratio, measures the proportion of assets financed by the owner's equity. It's calculated by dividing owner's equity by total assets. A higher ratio indicates a larger proportion of assets funded by owner's equity, which implies lower financial risk.

Proprietary Ratio = Shareholders Equity / Total Assets

YEAR	Maruti Suzuki India Limited	Hyundai Motor India Limited	Tata Motors Limited	Mahindra & Mahindra Limited	Honda Cars India Limited
2015	1.55	1.85	2.62	1.68	1.67
2020	0.75	2.85	1.78	0.82	1.45
2021	0.64	2.88	1.56	0.54	1.63
2022	1.85	2.75	1.66	2.54	2.61
2023	2.37	2.52	2.02	2.58	2.58

INTERPRETATIONS:

The proprietary ratio measures the amount of funds that investors have contributed towards the capital of a firm in relation to the total capital that is required by the to conduct operations. In the year of 2020 Hyundai Motor India Limited have high ratio comparing then other companies.

8. FINDINGS

1. The year of 2021 in Maruti Suzuki India Limited has more contribution then Four companies and the year of 2022 Honda Cars India Limited has more contribution then four companies from the table observed that the current ratios are less than standard ratio and gradually increases.

2. The year of 2020 Maruti Suzuki India Limited high ratio comparing then other companies. And the year of 2022 also Maruti Suzuki India Limited have high ratio.

3. The year of 2020 Hyundai Motor India Limited have high ratio comparing then other companies.

4. The table Hyundai Motor India Limited have more Revenue over the five years and comparing between other four companies.

5. Hyundai Motor India Limited has a higher ratio in 2015 when compared to the other four companies.

6. The greatest quick ratio is shown in the table for the year 2023, with a standard quick ratio of 2.75. Comparing Maruti Suzuki India Limited to the other four firms, the ratio is higher.

9. SUGGESTIONS

1. Market Volatility Fluctuating market conditions, influenced by factors such as economic downturns, geopolitical tensions, and regulatory changes, pose significant risks to revenue streams of automobile industries.
2. Technological Disruption Rapid advancements in technology, including electric vehicles (EVs), autonomous driving, and connected cars, present both opportunities and risks for traditional automobile manufacturers, requiring substantial investments in research and development.
3. Supply Chain Vulnerabilities Dependency on complex global supply chains exposes automobile companies to risks such as material shortages, supplier disruptions, and geopolitical tensions, impacting production schedules and revenue generation.
4. Competition Intense competition among global automobile manufacturers, coupled with the emergence of new entrants from tech companies, increases pressure on pricing strategies and profit margins, affecting revenue growth.
5. Regulatory Compliance with stringent environmental regulations, safety standards, and emission norms necessitates continuous adaptation and investment in technological innovations, potentially impacting revenue through increased production costs.

10. CONCLUSION

In the realm of business, particularly within the dynamic landscape of the automobile industry, the correlation between risk and revenue remains a critical focal point for analysis.

Through a comprehensive exploration of the top five automobile industries, namely Toyota, Volkswagen, General Motors, Ford, and Honda, it becomes evident that managing risk effectively is pivotal in maximizing revenue and sustaining long-term success. Throughout this study, various risk factors have been identified, ranging from technological disruptions to economic fluctuations, regulatory changes, and geopolitical tensions. Each of these factors presents a unique challenge to automobile manufacturers, demanding proactive strategies and adaptability to navigate successfully. However, amidst these challenges lie ample opportunities for growth and innovation. Toyota, renowned for its commitment to quality and innovation, exemplifies a strategic approach to risk management. By diversifying its product portfolio and investing heavily in research and development, Toyota has positioned itself as a leader in sustainable mobility solutions. Moreover, its robust supply chain management practices and emphasis on lean manufacturing have fortified its resilience against unforeseen disruptions. Similarly, Volkswagen has embarked on a transformative journey towards electrification and digitalization, mitigating risks associated with traditional combustion engines. By leveraging strategic partnerships and capitalizing on emerging trends, Volkswagen aims to redefine mobility for the future while safeguarding its revenue streams. General Motors and Ford, stalwarts of the American automotive industry, have embarked on ambitious initiatives to embrace electric vehicles and autonomous driving technologies. By reallocating resources and restructuring operations, both companies seek to enhance their competitive edge in an increasingly electrified market, thereby mitigating risks posed by climate change regulations and shifting consumer preferences. Honda, renowned for its engineering prowess and commitment to innovation, has adopted a multi-pronged approach to risk management. By prioritizing sustainability and investing in alternative fuel technologies, Honda aims to minimize its environmental footprint while capitalizing on emerging market opportunities. The top five automobile industries exhibit a nuanced interplay between risk and revenue, underscored by the imperative for strategic foresight and adaptability. While challenges abound, ranging from technological disruptions to regulatory uncertainties, opportunities for growth and innovation remain abundant. By embracing change, fostering resilience, and cultivating a culture of continuous improvement, automobile manufacturers can navigate uncertainties effectively and thrive in an ever-evolving landscape. As the industry embarks on a transformative journey towards electrification, connectivity, and autonomy, the ability to anticipate and mitigate risks will be instrumental in shaping the future of mobility. In essence, the success of automobile industries hinges on their ability to strike a delicate balance between risk-taking and risk mitigation. By embracing uncertainty as a catalyst for innovation and leveraging strategic foresight, manufacturers can unlock new revenue streams and sustain long-term growth. Moreover, by fostering a culture of collaboration and embracing emerging technologies, the industry can collectively address global challenges such as climate change and urbanization, while simultaneously driving economic prosperity and societal well-being. As we look towards the horizon, it is imperative for automobile manufacturers to remain agile, adaptable, and attuned to evolving market dynamics. By harnessing the power of data analytics, artificial intelligence, and predictive modeling, manufacturers can gain valuable insights into consumer behavior, market trends, and competitive landscapes, thereby enabling informed decision-making and proactive risk management. In summary, the top five automobile industries exemplify resilience, innovation, and adaptability in the face of uncertainty. By embracing change as a catalyst for growth and investing in sustainable business practices, manufacturers can mitigate risks effectively while unlocking new opportunities for revenue generation. As the industry continues to evolve, collaboration, agility, and a relentless pursuit of excellence will remain indispensable attributes for success.