

Comparative analysis on three companies stock prices

Shubham Nanaware¹ Siddhi Waragade²

Dr. Sachin Misal³

¹⁻² Student of International Institute of management Science

³Assistant Professor of International Institute of management Science

Abstract: - The report provides an in-depth evaluation and analysis of three company stocks to help guide investment decisions. The analysis is based on a combination of three different company (Maruti Suzuki, Tech Mahindra, Tata Motors) stock rate data from year 2019-2023. The analysis considers factors, Open rate of stock, Close rate of stock, Low difference, High difference, VWAP (Volume weighted average price), Volume of overall stock rate. This Project also help to analyse the difference between the stock rates of all the three companies

Keywords: - Changes in price rate of stock from 2019-2023, open , close , high, low, volume, vwap prices of three company stock.

INTRODUCTION

Tata Motors, Maruti Suzuki, and Tech Mahindra are prominent players in their respective industries in India, with significant contributions to the automotive and technology sectors. While Tata Motors and Maruti Suzuki are primarily focused on the automobile market, Tech Mahindra operates in the IT services and consulting space. The stock prices of these companies are often influenced by a variety of factors, including domestic and global economic trends, industry-specific developments, and company performance. A comparative analysis of their stock prices offers valuable insights into their market performance, growth potential, and investor sentiment. This analysis considers key factors such as earnings growth, market share, competitive positioning, overall economic and the

environment, enabling investors to assess the relative investment potential of these major Indian firms.

The stock prices of Tata Motors, Maruti Suzuki, and Tech Mahindra reflect the distinct dynamics and challenges faced by companies in the automotive and information technology sectors in India. Tata Motors, a leading player in the automotive industry, experienced considerable volatility over the past five years, influenced by both domestic and international factors. The COVID-19 pandemic in 2020 significantly impacted its stock, driven by disruptions in production due to factory shutdowns and diminished consumer demand. However, Tata Motors saw a notable recovery in 2021-2022, propelled by positive developments in its electric vehicle (EV) segment and the revival of its luxury vehicle brand, Jaguar Land Rover. Despite this, the company's stock remained sensitive to ongoing global supply chain issues, particularly the semiconductor shortage, which hampered its production capacity.

In contrast, Maruti Suzuki demonstrated a relatively more stable stock performance during the same period. While its stock price did face declines in 2020 due to the pandemic, it quickly rebounded, benefiting from its dominant position in the Indian market and strong consumer demand for affordable vehicles. Between 2019 and 2023, Maruti's stock exhibited steady growth, underpinned by its robust market presence and relatively lower exposure to global supply chain challenges compared to Tata Motors.

Tech Mahindra, a key player in the Indian IT services sector, exhibited a moderate growth pattern, largely influenced by

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sectoral trends and demand for IT services. While the pandemic negatively affected many industries in 2020, Tech Mahindra's stock held up relatively well, driven by continued demand for its services. The company's stock experienced consistent growth through 2021-2022, benefiting from increased IT spending and the digital transformation wave. However, like many companies in the tech sector, Tech Mahindra's stock faced a market correction in 2023, driven by investor caution towards tech stocks amidst global economic uncertainties and tightening valuations.

This paper aims to conduct a comparative analysis of the stock prices of Tata Motors, Maruti Suzuki, and Tech Mahindra over the past five years. By examining their respective performance trajectories, the factors influencing their stock prices, and the overall market conditions, this research seeks to provide insights into the investment potential and financial health of these major companies in their respective industries. *Summary:*

Tata Motors showed the most volatility, with a sharp decline in 2020 followed by a strong recovery.

Maruti Suzuki displayed steady and stable growth, supported by its dominant position in India's automotive market.

Tech Mahindra experienced moderate, consistent growth, benefiting from strong demand for IT services but facing some market corrections in 2023.

Overall, Tata Motors was the most volatile, Maruti Suzuki had a steady rise, and Tech Mahindra's performance mirrored global tech trends during this period.

Ticket Symbol:

Maruti Suzuki: MARUTI (NSE) / 532500 (BSE)

Tata Motors: TATAMOTORS (NSE) / 500570 (BSE)

Tech Mahindra: TECHM (NSE) / 532755 (BSE)



<u>Ref :- www.google.com</u> Literature Review

Several studies have explored the financial performance, stock behavior, market positioning, and competitive dynamics of Tata Motors and Maruti Suzuki, providing valuable insights into their comparative strengths and weaknesses. Sharma (2021) conducted a fundamental analysis of Tata Motors and Maruti Suzuki, focusing on key financial ratios such as Priceto-Earnings (P/E), Return on Equity (ROE), and Debt-to-Equity (D/E). The study found that Maruti Suzuki consistently outperforms Tata Motors in terms of profitability metrics, primarily due to its dominant position in the passenger vehicle segment and strong operational efficiency.

Chatterjee (2022) examined the stock performance of Tata Motors and Maruti Suzuki over a five-year period. The study revealed that while Maruti Suzuki displayed resilience and steady growth in market capitalization, Tata Motors experienced significant stock price volatility, which was largely attributed to global supply chain disruptions and shifts in consumer preferences. These external factors were noted to influence investor sentiment and, in turn, stock price performance for Tata Motors.

Patel (2022) focused on the market position and competitive landscape of both companies, highlighting Maruti Suzuki's substantial advantages in terms of brand loyalty and an extensive distribution network. The study emphasized that Maruti Suzuki's ability to maintain consumer trust and offer a broad range of affordable vehicles helped solidify its market leadership. In contrast, Tata Motors, despite being an innovator

in the electric vehicle (EV) space, faced challenges in market penetration and brand recognition, which hindered its competitive positioning relative to Maruti Suzuki.

Singh (2020) delved into the role of investor sentiment in determining the stock price volatility of Tata Motors. The research demonstrated how negative news, particularly regarding production delays or regulatory hurdles, could exacerbate the company's stock price declines. Investor sentiment was found to be a significant contributor to Tata Motors' fluctuating stock prices, with adverse news leading to increased volatility.

Lastly, Kola and Hossain (2022) investigated the regulatory impacts on the automotive sector, particularly focusing on the implications for Tata Motors and Maruti Suzuki. The authors pointed out the challenges posed by evolving environmental regulations and safety standards. They suggested that proactive compliance strategies would allow both companies to not only avoid potential risks but also improve their competitive positioning in the market.

Together, these studies contribute to a comprehensive understanding of the financial health, stock performance, and competitive strategies of Tata Motors and Maruti Suzuki, offering valuable insights for investors and industry analysts alike.

OBJECTIVES OF THE STUDY

The primary objective of this research is to analyze the historical stock performance of Tata Motors, Maruti Suzuki, and Tech Mahindra over the period from 2019 to 2023, with a focus on key stock metrics such as open prices, close prices, high and low prices, trading volumes, and Volume Weighted Average Price (VWAP). This study aims to identify the factors influencing stock price movements and evaluate the comparative stock performance of these companies during the specified period. The following specific objectives guide the research:

 Sum of Opening Prices: To analyze the sum of the opening stock prices for Tata Motors, Maruti Suzuki, and Tech Mahindra by year from 2019 to 2023.

- Sum of Closing Prices: To analyze the sum of the closing stock prices for Tata Motors, Maruti Suzuki, and Tech Mahindra by year from 2019 to 2023.
- 3. **High Price Changes**: To examine the changes in the high prices for the stocks of Tata Motors, Maruti Suzuki, and Tech Mahindra over the 2019-2023 period, identifying any significant trends or fluctuations.
- 4. Low Price Trends: To investigate the low price movements for the stocks of Tata Motors, Maruti Suzuki, and Tech Mahindra over the same five-year period and assess how these fluctuations impact overall stock performance.
- 5. Volume Comparison: To identify and analyze the differences in overall trading volumes between Tata Motors, Maruti Suzuki, and Tech Mahindra, determining whether there are significant variations in investor activity across these companies.
- 6. **VWAP Analysis**: To analyze the Volume Weighted Average Price (VWAP) for the stocks of Tata Motors, Maruti Suzuki, and Tech Mahindra from 2019 to 2023 using various graphical representations. This analysis will provide insights into the relative value and trading patterns of these stocks over the period.
- Factors Influencing Stock Price Movements: To identify key factors influencing the stock price movements of Tata Motors, Maruti Suzuki, and Tech Mahindra, such as macroeconomic factors, company-specific events, and sectoral trends, utilizing dashboards for an in-depth visual representation of data.
- 8. **Historical Stock Performance of Tata Motors**: To examine the historical stock performance of Tata Motors from 2019 to 2023, identifying trends, patterns, and any major fluctuations in its stock prices.
- Stock Performance of Maruti Suzuki: To analyze the historical stock performance of Maruti Suzuki from 2019 to 2023, evaluating its growth trajectory and market behavior during this period.
- 10. **Stock Performance of Tech Mahindra**: To examine the historical stock performance of Tech Mahindra from 2019

to 2023, focusing on its relative performance compared to Tata Motors and Maruti Suzuki.

RESEARCH METHODOLOGY

The methodology employed in this study encompasses a combination of both qualitative and quantitative approaches, focusing on the collection and analysis of secondary data to assess the stock performance of Tata Motors, Maruti Suzuki, and Tech Mahindra. The following sections outline the key components of the research methodology.

Data Collection

For this study, secondary data was primarily utilized, sourced from various reliable platforms such as the National Stock Exchange (NSE), Bombay Stock Exchange (BSE), financial articles, market research reports, and academic theses. The data collection involved historical stock data for Tata Motors, Maruti Suzuki, and Tech Mahindra, covering a period of five years. The key parameters considered in the data collection included:

Stock Data: Historical data such as adjusted closing prices, stock volume, high, low, open, close, and VWAP (Volume Weighted Average Price) for each of the companies.

This study employs quantitative analysis using secondary data collected from stock exchanges, including the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE), for Tata Motors, Maruti Suzuki, and Tech Mahindra over the period from 2019 to 2023. The data includes daily stock metrics such as opening prices, closing prices, high and low prices, trading volumes, and VWAP values. The data is analyzed using statistical tools and various graphical representations such as line charts, bar charts, and dashboards to evaluate the stock performance of each company.

The research methodology will be structured around the following approaches:

- Descriptive Statistics: Summarizing the stock data for each company by calculating the annual sum of open and close prices and assessing changes in high and low prices.
- Comparative Analysis: Comparing the stock performance of Tata Motors, Maruti Suzuki, and Tech Mahindra using key metrics such as trading volume and VWAP.

- Graphical Representation: Visualizing stock price trends, volume differences, and VWAP data through interactive charts and dashboards to facilitate comparative analysis.
- Factor Identification: Using data analytics tools to identify significant factors influencing stock price fluctuations, including both internal company events and external economic factors.

Stock Price Movements

To evaluate stock price trends, a variety of graphical tools and technical indicators were used. These include:

Line Charts: Used to track the stock price movements over time, offering a clear visual representation of trends.

Bar Charts and Waterfall Charts: Utilized to assess the yearon-year performance and visualize price fluctuations.

Donut Charts and Stacked Charts: These charts helped provide insights into market share distributions, comparing performance across different periods.

Slicers and Dashboards: Employed to create an interactive experience, allowing for deeper analysis of annual data and overall stock performance trends. These graphical tools enabled a thorough analysis of how each company's stock prices evolved over time, helping to identify key patterns and fluctuations in relation to market dynamics.

SWOT Analysis

A SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis was performed for Tata Motors, Maruti Suzuki, and Tech Mahindra to assess the internal and external factors impacting their operations and stock performance. The analysis focused on:

Strengths: Key advantages such as market leadership, technological innovation, and global presence.

Weaknesses: Internal challenges, including production delays, dependency on global supply chains, and competition.

Opportunities: Emerging market opportunities, particularly in electric vehicle (EV) adoption, international expansion, and technological advancements.

Threats: External threats from competitors, regulatory changes, economic downturns, and fluctuations in commodity prices.

Special attention was given to the companies' overall strategies, including global expansion plans and competition from both domestic and international players.

Competitor Comparison

A crucial component of the research was the comparative analysis of Tata Motors, Maruti Suzuki, and Tech Mahindra's performance relative to their competitors. Key financial metrics, stock price trends, and overall market performance were analyzed to assess the competitive positioning of each



company.

A **sensitivity analysis** was conducted to evaluate how changes in key variables, such as interest rates, fuel prices, and exchange rates, might affect the stock performance of the companies.

Findings and Analysis

The findings of the study are derived from both fundamental and technical analyses. The study presents a detailed examination of the companies' financial health, stock price trends, and competitive positioning. By comparing key financial ratios, stock performance, and market dynamics, the research evaluates how well each company is positioned to capitalize on industry opportunities, such as the growing shift to electric vehicles. Additionally, the role of global operations, such as Jaguar Land Rover (JLR) for Tata Motors, was examined to understand its contribution to overall stock performance.

DATA ANALYSIS

| | | | Table no 1 | | | |
|------------|--------|--------|------------|--------|-----------|----------|
| Date | Open | High | Low | Close | Adj Close | Volume |
| 23-06-2023 | 570 | 571.15 | 557.7 | 559.65 | 559.65 | 9362695 |
| 22-06-2023 | 584 | 584.7 | 568.2 | 569.35 | 569.35 | 11229179 |
| 21-06-2023 | 584.95 | 585.9 | 574.5 | 581.4 | 581.4 | 9146332 |
| 20-06-2023 | 566.05 | 583.95 | 562.5 | 583.25 | 583.25 | 18074902 |
| 19-06-2023 | 570.65 | 573.2 | 564.2 | 566.05 | 566.05 | 6280388 |
| 16-06-2023 | 569.65 | 572.2 | 566.05 | 569.8 | 569.8 | 8736313 |
| 15-06-2023 | 571.8 | 575 | 567.75 | 568.45 | 568.45 | 12475759 |
| 14-06-2023 | 566 | 571.2 | 564 | 570.3 | 570.3 | 12713256 |

Top Left (Pie Chart): Sum of Open by Year:

This chart shows the distribution of opening prices across the five years. 2022 had the highest sum of opening prices.

Top Middle (Bar Chart): Sum of High by Year:

This chart displays the total of the highest prices reached each year. Again, 2022 stands out with the highest total high price.

Top Right (Area Chart): Sum of Volume by Date:

This chart illustrates the volume of trades over time, with peaks and valleys indicating periods of high and low trading activity. Bottom Left (Pie Chart): Sum of Close by Year:

This chart shows the distribution of closing prices across the five years. 2022 had the highest sum of closing prices. Sum of high rate from three years is 327.6 Sum of log is 574.50

Table no 2 (Tech mahindra) Adj Close Volume Date Open High Low Close 01-06-2023 1122 1117.6 1120.8 1120.8 1412280 1136.7 02-06-2023 1128 1139.2 1117.6 1123.1 1123.1 1907589 1134.55 1109.35 1109.35 1754521 05-06-2023 1124.1 1107.5 06-06-2023 1071.55 1086.25 1086.25 1100 1102 3284841 1095 1099 1095.7 2086377 07-06-2023 1084.2 1095.7 08-06-2023 1101 1101.5 1069 1071.3 1071.3 4054486 09-06-2023 1079 1079 1063.05 1063.05 1060.1 2782697

1079

1062.15

1074.75

12-06-2023

1066

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1074.75 1767945





The dashboard shows the volume of stocks traded by quarter and year. The highest volume was in quater of each year. Price:

The dashboard also shows the opening, closing, and high prices of stocks by year. The closing price has been steadily increasing each year.

VWAP:

The VWAP (Volume Weighted Average Price) is a measure of the average price a stock is traded at, weighted by volume. The dashboard shows the VWAP by year, quarter, month, and day.



The dashboard provides a comprehensive overview of financial data across different time periods and metrics.

It highlights trends in opening, closing, high, volume, and VWAP values.

The visualizations enable quick insights into the data, facilitating informed decision-making



| | | | Table no 3 (maruti suzuki) | | | |
|------------|--------|---------|----------------------------|---------|-----------|--------|
| Date | Open | High | Low | Close | Adj Close | Volume |
| 01-06-2023 | 9337.5 | 9377.55 | 9222 | 9328.3 | 9328.3 | 378708 |
| 02-06-2023 | 9389 | 9525.15 | 9312.7 | 9485.35 | 9485.35 | 445105 |
| 05-06-2023 | 9552.5 | 9640 | 9488.55 | 9582.1 | 9582.1 | 434649 |
| 06-06-2023 | 9629 | 9770 | 9611 | 9736.2 | 9736.2 | 542318 |
| 07-06-2023 | 9788 | 9800 | 9650.5 | 9707.5 | 9707.5 | 453747 |
| 08-06-2023 | 9733 | 9765 | 9625.5 | 9658.6 | 9658.6 | 273746 |
| 09-06-2023 | 9675.5 | 9713.9 | 9611.1 | 9627.8 | 9627.8 | 161389 |
| 12-06-2023 | 9625 | 9700 | 9537.65 | 9550.45 | 9550.45 | 316879 |

The stock's opening and closing prices seem to follow a similar trend across the years. The highest price of the stock tends to occur in the second quarter, followed by the first quarter. Trading volume was highest in 2020 and lowest in 2023. The VWAP shows fluctuations across the years, with a peak in 2022.

The adjusted closing price of the stock has seen overall growth over the years, despite some fluctuations.

Overall, the dashboard indicates a positive trend with increasing open, close, and VWAP values in 2023, despite a decline in trading volume compared to 2020

The graph illustrates the sum of "Open" values for Tata Motors, Tech Mahindra, and Maruti Suzuki over the years 2019 to 2023. Here's a breakdown of the key points: Maruti Suzuki

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Consistently has the highest "Open" value, Floating around 950

throughout the period.



Tata Motors

Follows closely, with values just below 950 in 2019-2022, but experiencing a significant drop to 114 in 2023.

Tech MahindraMaintains a stable "Open" value of around 220-Maruti Suzuki close rate



230 during the entire period

The bubble chart represents the close rate of Maruti Suzuki across different years. Here's what it shows:

2019: 1,648,939

2020: 1,605,269

2021: 1,793,357

2022: 2,072,885

2023: 1,040,061 (likely partial data, as the year is not yet complete)

The size of the bubbles represents the magnitude of the close rate for each year. We can see that 2022 had the highest close rate, while 2023 (based on partial data) has the lowest.



This pie chart illustrates the volume distribution of Maruti Suzuki, Tata Motors, and Tech Mahindra by year.

The years 2019, 2020, and 2023 have the highest volume, each accounting for 19.91% of the total. The year 2022 has the second highest volume, accounting for 19.91% of the total. The year 2021 has the lowest volume, accounting for 0.15% of the total.

The graph presents the Volume Weighted Average Price (VWAP) of three companies - Tata Motors, Maruti Suzuki, and Tech Mahindra - from 2019 to 2023.

Tata Motors:

Experienced a significant surge in VWAP in 2022, reaching its peak. However, it witnessed a decline in 2023.

Maruti Suzuki:

Showed a relatively stable VWAP throughout the period, with a slight increase in 2021 followed by a minor dip in 2022 and a further decrease in 2023.

Tech Mahindra:

Saw a consistent increase in VWAP from 2019 to 2021, reaching its peak in 2021. It then experienced a decline in 2022 and 2023.

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SJIF Rating: 8.448





Maruti Suzuki:

Has the smallest share, starting at 10.09% in 2019 and reaching 10.60% in 2023.

Findings

The sum of "Open" values for Tata Motors, Tech Mahindra, and Maruti Suzuki from 2019 to 2023 reveals the overall opening stock prices for each company. Over the five years, fluctuations in the opening prices reflect the market conditions, with certain peaks seen in 2022. This year marks a significant period of growth and optimism for the companies. The analysis of trading volume for each company (Maruti Suzuki, Tata Motors, and Tech Mahindra) by year demonstrates the trading activity across different periods. In 2022, all three companies showed increased trading volumes, indicative of a recovery phase in the stock market, while 2020 displayed a notable decrease, likely due to the pandemic's economic impact The sum of the "Low" values for Maruti Suzuki, Tata Motors, and Tech Mahindra provides insight into the market's downturns each year. In particular, 2020 experienced the lowest recorded values for Tata Motors, which aligns with the global market crash triggered by the pandemic. The overall trend of stock market data from 2019 to 2023 for Tata Motors, Tech Mahindra, and Maruti Suzuki reveals a volatile yet ultimately positive period, with 2022 marking the most significant recovery year. The data reflects global economic shifts and how these companies responded to market changes. The closing stock prices for each company reflect their overall performance each year. For Maruti Suzuki and Tech Mahindra, the closing

The graph illustrates the sum of lows for Maruti Suzuki, Tech Mahindra, and Tata Motors stocks by year, from 2019 to 2023. Tata Motors:

Has the highest low value throughout the period, indicating a higher stock price compared to the other two companies. Maruti Suzuki:

Has the second-highest low value, with a noticeable increase in 2022 and a slight decrease in 2023.

Tech Mahindra:

Has the lowest low value among the three companies, remaining relatively stable throughout the period.

Overall: The graph suggests that Tata Motors has been the most valuable stock among the three, followed by Maruti Suzuki and then Tech Mahindra.

The graph shows the percentage breakdown of the sum of high values for Maruti Suzuki, Tata Motors, and Tech Mahindra shares over the years 2019 to 2023.

Key Points:

Tech Mahindra:

Holds the largest share throughout the period, with a slight decrease from 45.4% in 2019 to 44.51% in 2023.

Tata Motors:

Remains relatively stable, fluctuating around 44%, with a slight increase from 44.26% in 2019 to 45.18% in 2023.

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rates showed a general upward trend from 2020 onwards, while Tata Motors showed significant recovery after 2020, particularly in 2022. VWAP provides a more comprehensive understanding of stock performance by considering both price and trading volume. The VWAP for Tata Motors, Tech Mahindra, and Maruti Suzuki from 2019 to 2023 shows stable performance for Tech Mahindra, while Tata Motors and Maruti Suzuki experienced considerable volatility, especially during the market dip in 2020.

The donut chart visualizes the distribution of the sum of "Open" values for Tech Mahindra across 2019 to 2023. The chart highlights that 2022 represented the peak of opening stock prices, indicating a year of strong market performance for the company.

Conclusion

Concluding an analysis of Tata Motors, Tech Mahindra, and Maruti Suzuki requires understanding each company's stock performance, market position, and dynamics within India's stock market. Tata Motors, a major player in the automotive sector, has seen volatility due to fluctuating demand, currency exchange rates, and evolving consumer preferences. The company's substantial investment in global reach through Jaguar Land Rover position it for long-term growth, but shortterm performance can be impacted by market conditions and supply chain disruptions. Maruti Suzuki, as India's leading passenger car manufacturer, remains highly dependent on domestic sales. Although the company dominates market share, it has faced challenges from newer EV- focused entrants and fluctuating raw material costs. With a growing focus on expanding its product lineup and adapting to India's evolving EV policies, Maruti Suzuki has potential for continued growth if it maintains market responsiveness.

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