

Tesla Stock Price Analysis Report

1. Introduction

This report provides a comprehensive analysis of Tesla's stock price, trading volume, and performance trends from its IPO in 2010 through 2024. The analysis includes insights into average prices, significant highs and lows, trading activity, and yearly trends. Additionally, Python-based exploratory data analysis (EDA) was conducted to complement the Power BI visuals.

2. Data Overview

This dataset contains historical stock price data for Tesla Inc. (TSLA) spanning from 2010 to 2024. It provides an in-depth look at the performance of Tesla's stock, covering various key financial indicators and metrics that have shaped the company's growth story.

Tesla, Inc. (TSLA) is one of the most recognized electric vehicle manufacturers in the world, and its stock has experienced substantial volatility, making it a popular asset for investors, analysts, and enthusiasts. From its IPO in 2010 to its meteoric rise in the following years, this dataset captures the evolution of its stock price and trading volume.

- **Dataset Size:** 3637 records
- **Columns:**

The dataset includes the following key columns:

- **Date:** The date of the stock data.
- **Open:** The opening price of Tesla's stock on a given date.
- **High:** The highest price reached by Tesla's stock on that date.
- **Low:** The lowest price reached by Tesla's stock on that date.
- **Close:** The closing price of Tesla's stock on that date.
- **Adj Close:** The adjusted closing price, which accounts for stock splits and dividends.
- **Volume:** The total number of shares traded on that date.

3. Analysis Process

Tools : Python Programming and Power BI

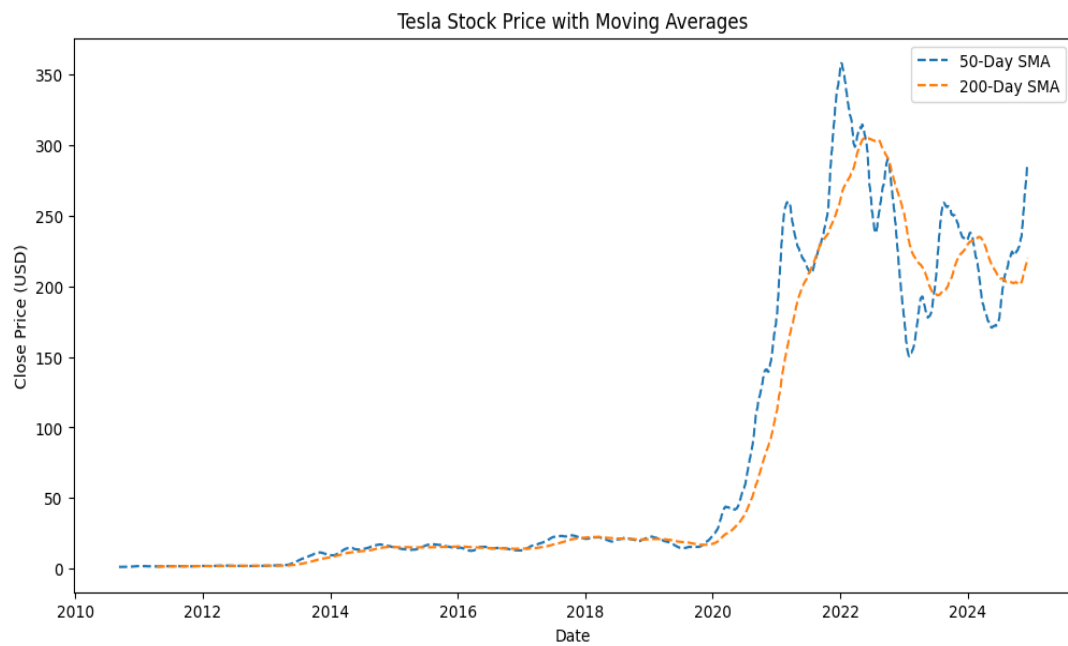
3.1 Data Cleaning

- **Missing Values:** Checked for missing data.
- **Duplicate Records:** Checked for duplicate rows.
- **Inconsistent Data:** Checked for Data types and formatting
- **Converted Date** to a datetime format.

3.2 Visualization and Analysis

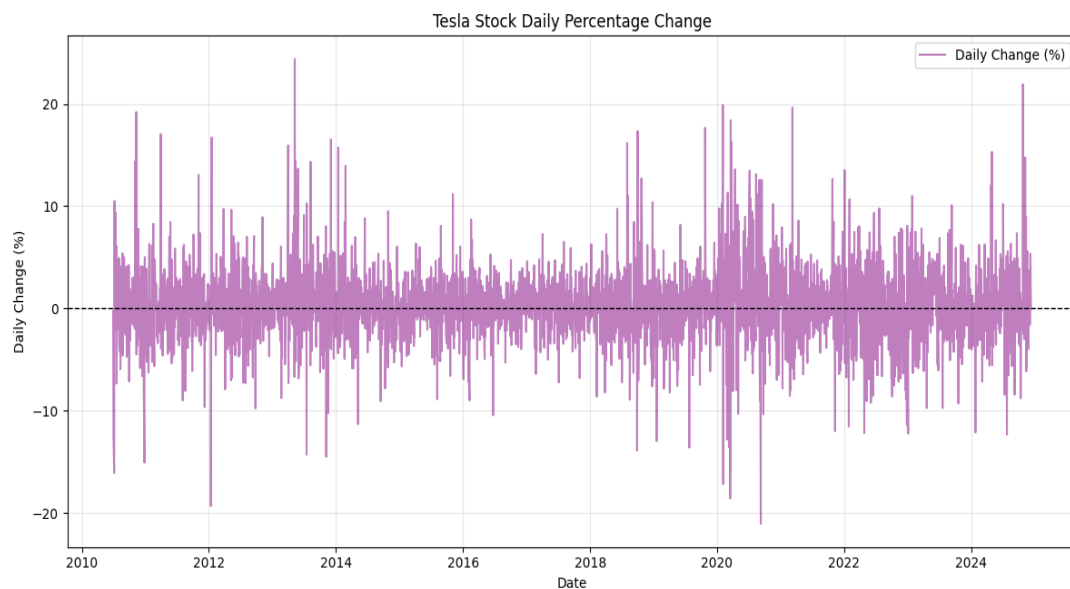
1. Trend Analysis:

- Calculated rolling averages (50-day and 200-day):



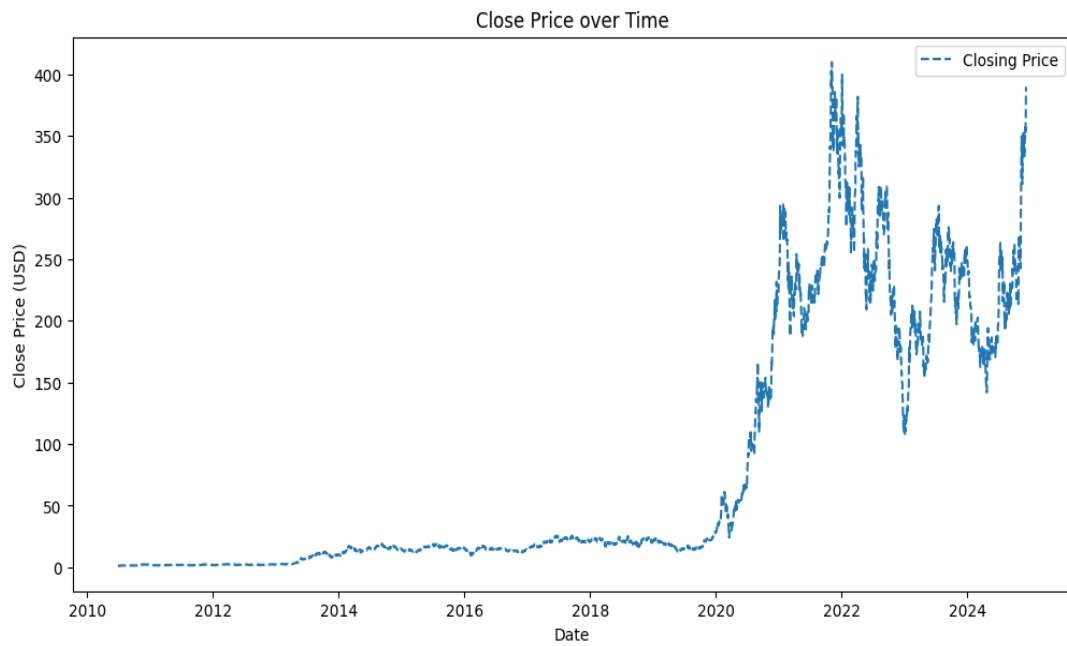
2. Volatility:

- Computed daily percentage changes:

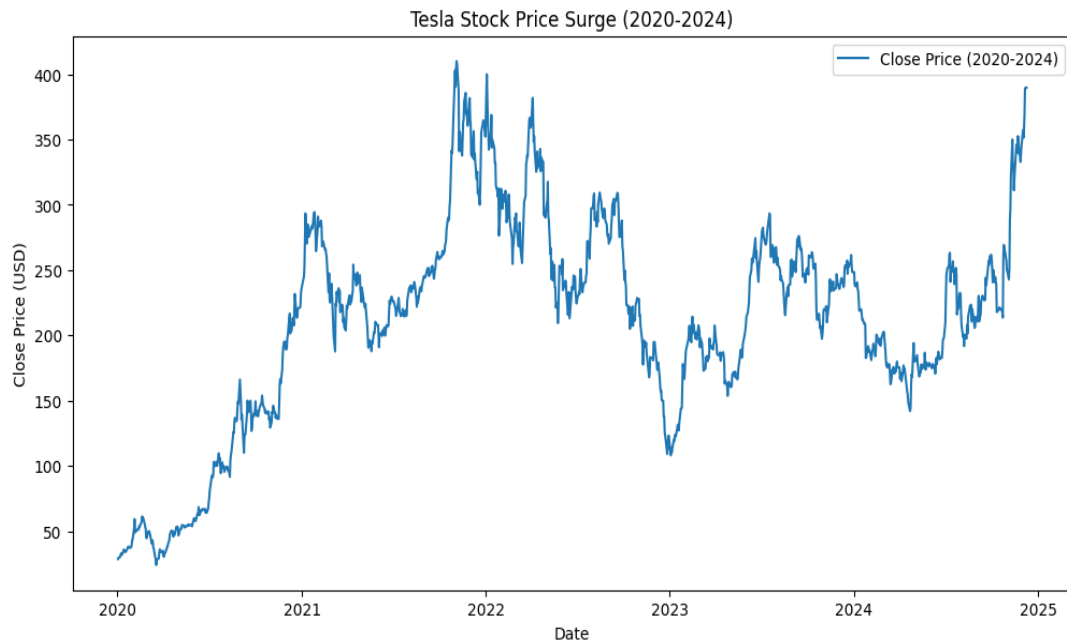


3. Visualization Examples:

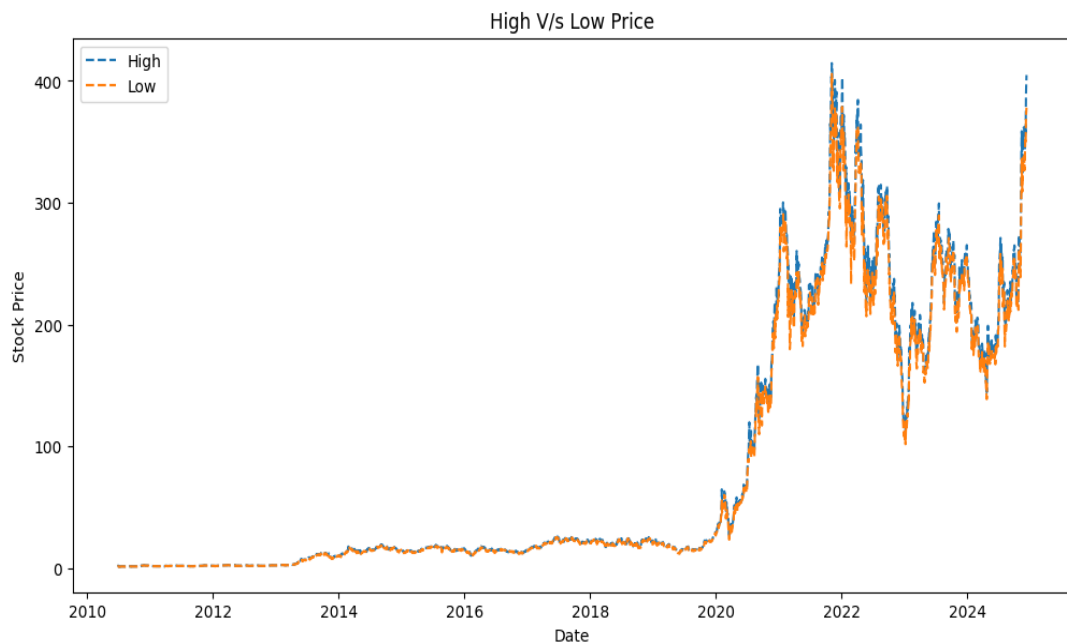
- Closing Price Over Time:



- Tesla Stock Price Surge (2020-2024):



- High V/s Low Price:



4. Key Insights

1. Initial Public Offering (IPO)

- Tesla went public in **June 2010** at an IPO price of \$17 per share.
- Since its IPO, the stock has demonstrated **extraordinary growth**, transitioning from a niche electric vehicle (EV) startup to one of the most valuable companies globally.
- Tesla's ability to consistently deliver innovative products has driven long-term investor confidence.

2. Growth and Milestones

2020-2024:

The stock experienced a meteoric rise during the EV boom, gaining from:

- Increased EV adoption worldwide.
- Strong revenue growth and profitability.

3. Volatility

Tesla's stock has also been one of the most **volatile** in the market:

- **High-growth years (2020-2021):** Surges due to robust demand for EVs, stimulus-driven market optimism.

5. Recommendations

- Focus on high-volume months for potential investment opportunities.
- Monitor trends in percentage changes to identify volatile periods.
- Include external factors like global market indices or EV adoption rates to correlate with stock performance.

6. Conclusion

Tesla's stock has demonstrated **unparalleled growth**, driven by:

- Strong leadership and innovation.
- Increasing global EV adoption.

Despite its **volatility**, Tesla remains a leader in the EV and renewable energy markets, with a strong growth trajectory fuelled by ongoing investments in technology and infrastructure.

This analysis demonstrates Tesla's remarkable growth in valuation and market activity, especially from 2020 onward.