

Twitter Stock Market Analysis Project Report

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1. Introduction

The Twitter Stock Market Analysis Project focuses on studying the historical performance of Twitter's stock from 2018 to its delisting from the New York Stock Exchange. Using Python, Power BI, and data visualization techniques, this project analyzes price trends, volatility, and investor reactions to generate meaningful insights. The main objective was to understand Twitter's stock movement, identify key influencing factors, and present them in an interactive and visual format.

2. Methodology

The following methodology was adopted to complete the analysis:

- 1. Data Collection – Obtained Twitter stock data (Date, Open, High, Low, Close, Adj Close, Volume).
- 2. Data Cleaning – Checked for missing values and ensured data integrity.
- 3. Data Analysis – Performed statistical analysis using Python libraries such as pandas and numpy.
- 4. Visualization – Created static and dynamic visuals using Power BI and Python (Matplotlib, Plotly).
- 5. Statistical Testing – Conducted hypothesis testing (Z-test, T-test, Chi-square) to validate relationships.
- 6. Dashboard Design – Developed an interactive Power BI dashboard for time-based stock analysis.

3. Requirement Analysis

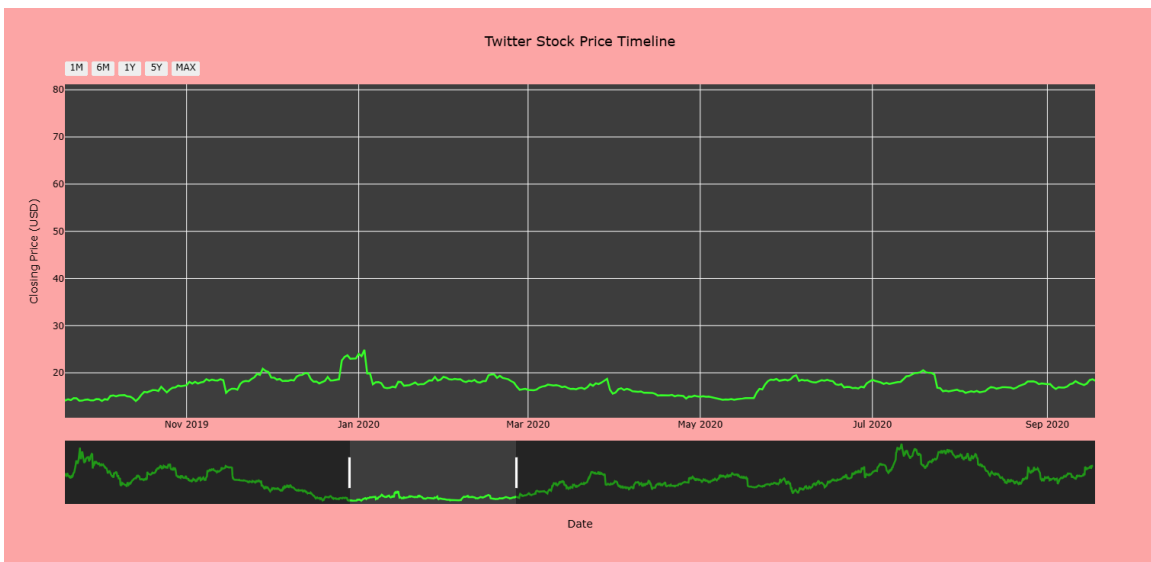
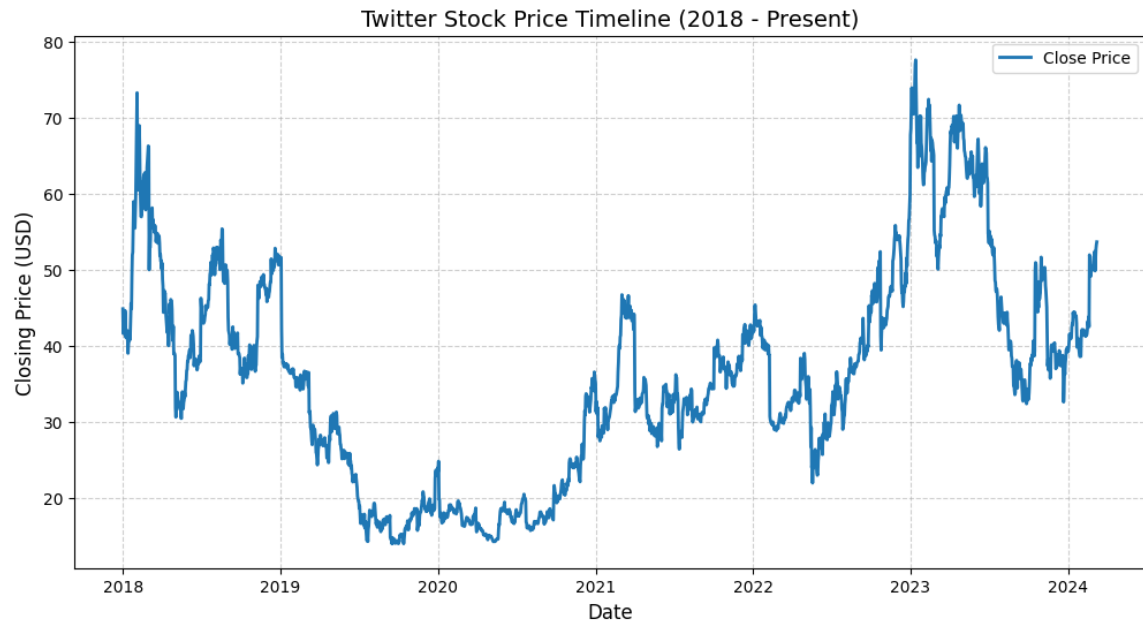
- Python (pandas, matplotlib, numpy, scipy, wordcloud, plotly).
- Power BI for visualization and dashboard creation.
- Dataset: TWTR.xlsx containing Twitter stock history.
- System Requirements: 8 GB RAM, Python 3.8+, Power BI Desktop.
- Knowledge of data analysis, visualization, and basic statistics.

4. Other Parameters

Additional parameters such as time-based filtering (1M, 6M, 1Y, 5Y, MAX) were applied to analyze stock behavior in short- and long-term contexts. The inclusion of dynamic charts and word clouds enhanced data interpretation, enabling users to interact with data effectively and identify patterns across specific periods.

5. Visualizations and Dashboards

Below is the key visualization representing Twitter's stock price timeline. The visualization allows users to observe trends, fluctuations, and major price shifts across multiple time ranges, highlighting the overall performance journey of Twitter stock.



6. Insights from the Charts and Dashboards

- The stock price exhibited high volatility during major corporate announcements and acquisition phases.
- Trading volumes spiked significantly around key business or market events.
- Positive sentiment correlated with rising prices, whereas uncertainty led to price drops.
- Long-term analysis revealed cyclical movements influenced by market and internal factors.
- The dashboard provides quick comparative insights using time filters (1M–MAX).

7. Conclusion

The analysis concludes that Twitter's stock performance was highly event-driven, influenced by corporate announcements, acquisitions, and broader market sentiments. Python's analytical power combined with Power BI's visualization capabilities provided clear insights into the company's stock trends and investor behaviors. The results can help analysts understand how social media companies respond to market changes and predict future stock behavior based on historical patterns.