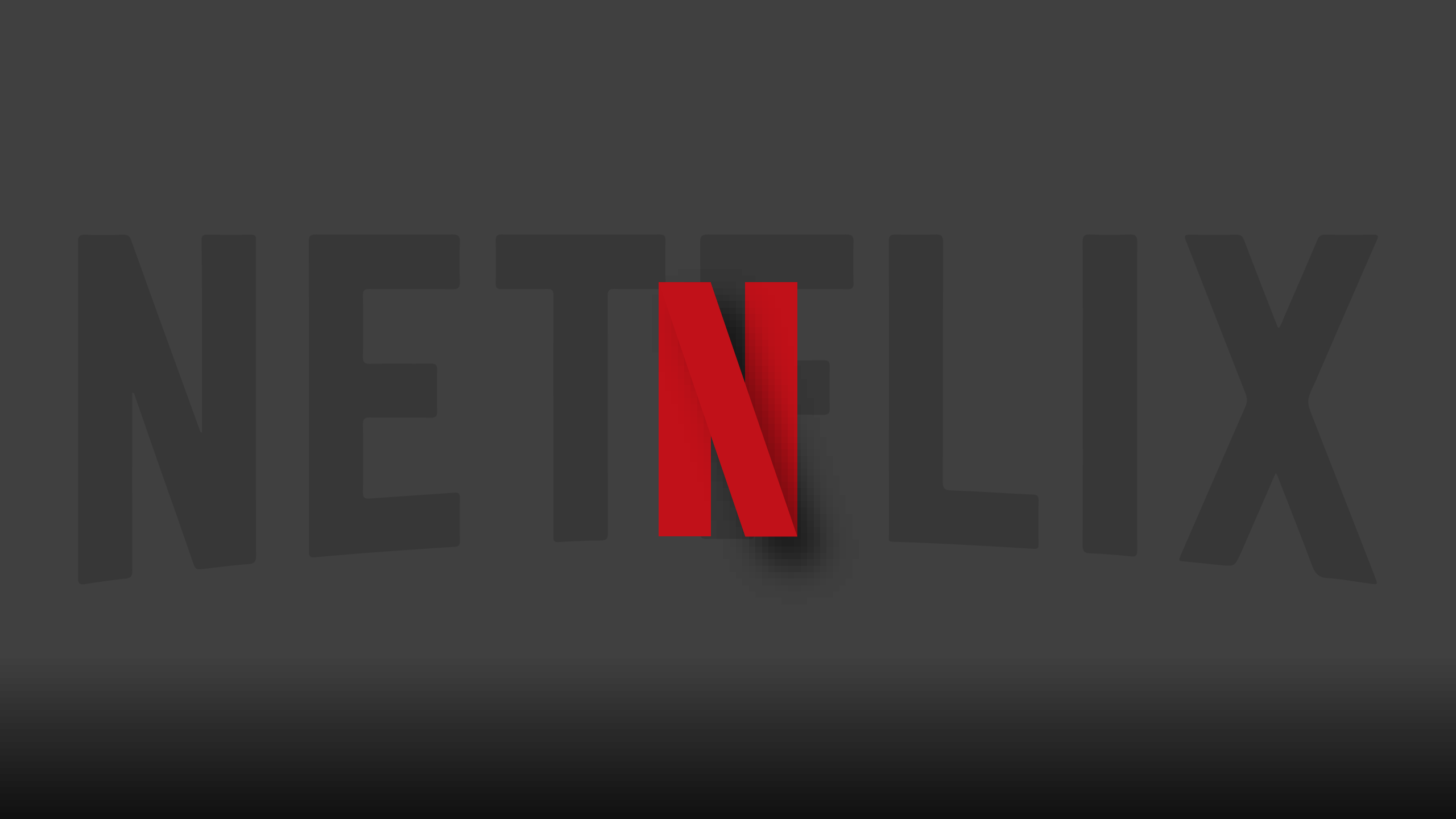
NETFLIX

Supply Chain Analytics
Group 8

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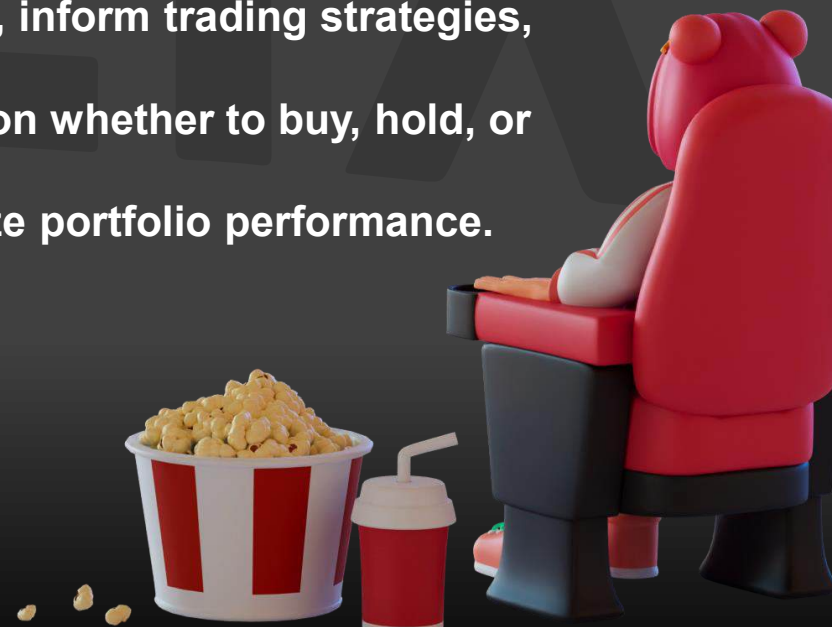
Business Problem

Develop an LSTM model to enhance forecasting accuracy, inform trading strategies, and guide investors on whether to buy, hold, or sell stocks to optimize portfolio performance.



Data Description

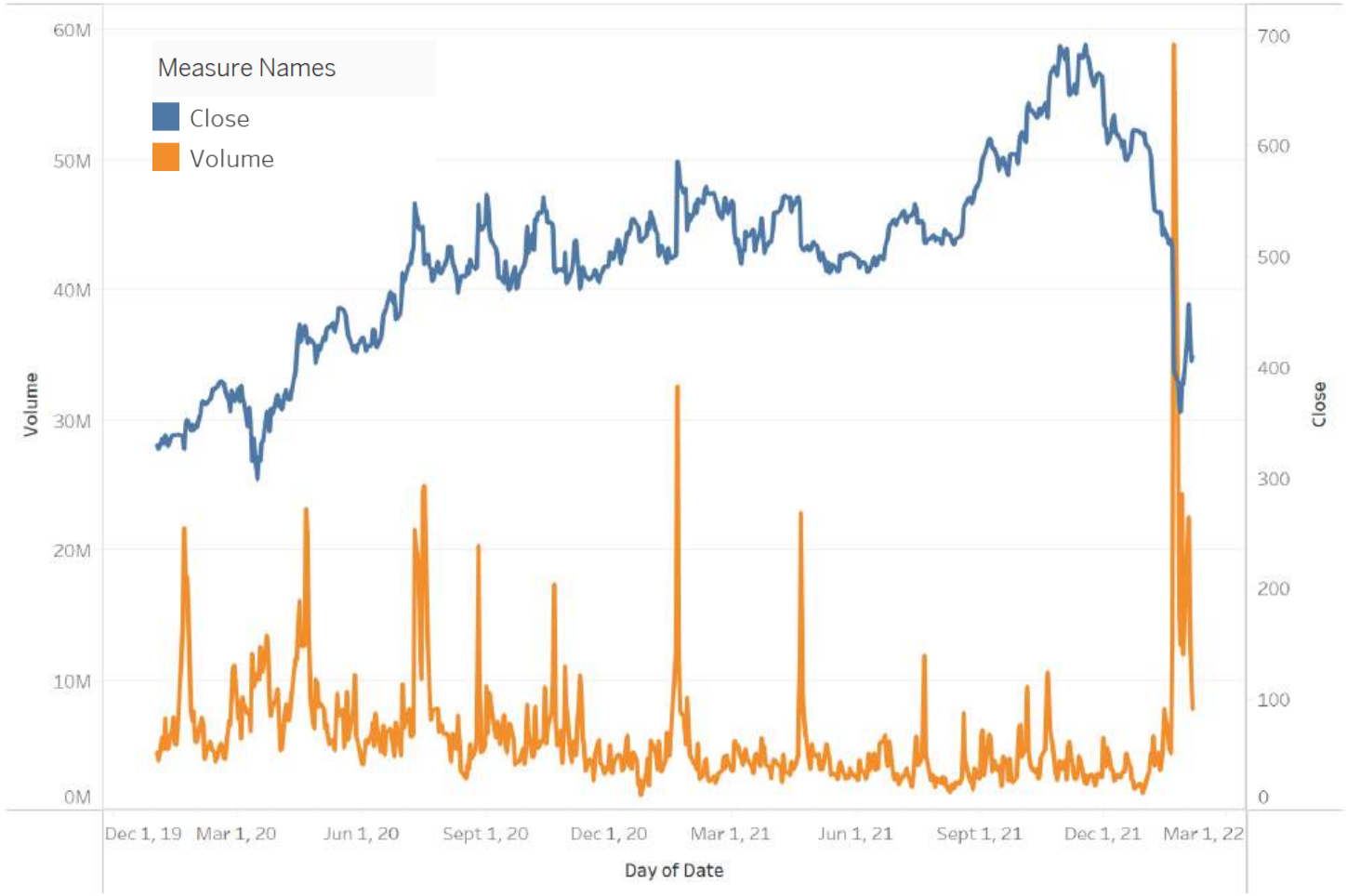
Column	Short Description	Datatype
Date	The date of the stock data entry.	datetime64[ns]
Open	The opening stock price for the day.	float64
High	Highest stock price during the day.	float64
Low	Lowest stock price during the day.	float64
Close	Stock price at the day's end.	float64
Adj Close	Adjusted closing price post-splits/dividends.	float64
Volume	Volume of shares traded that day.	int64

Correlation Matrix

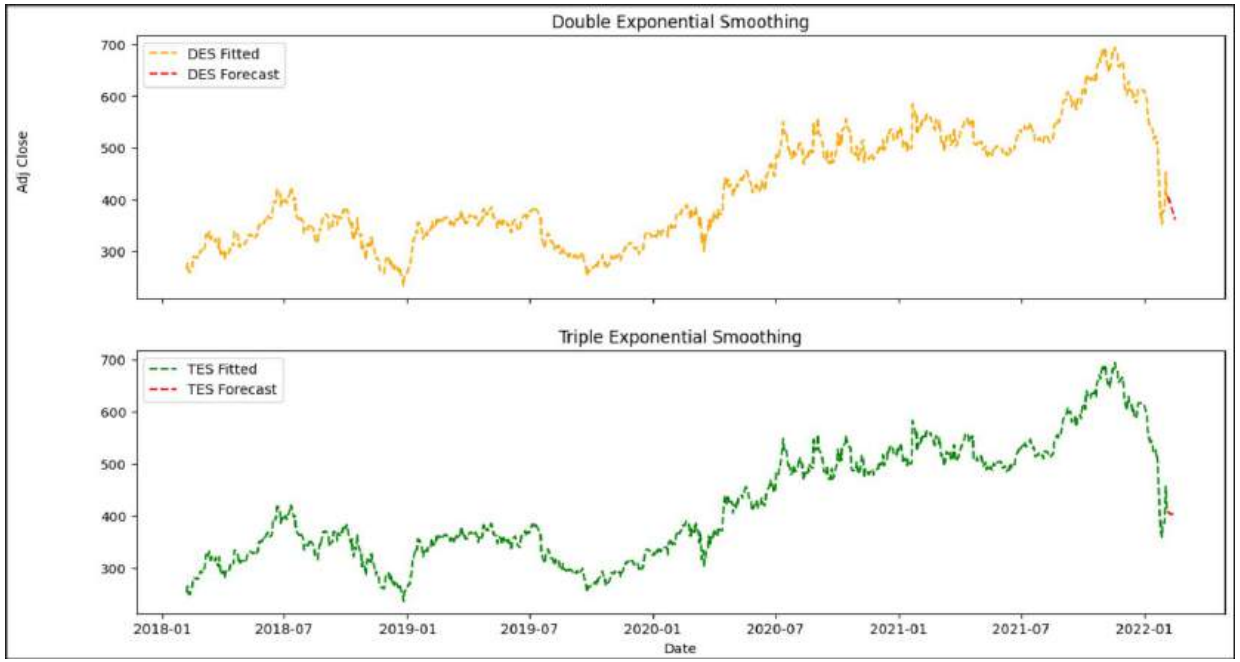
Correlation Between Trading Volumes and Adjusted Closing Prices

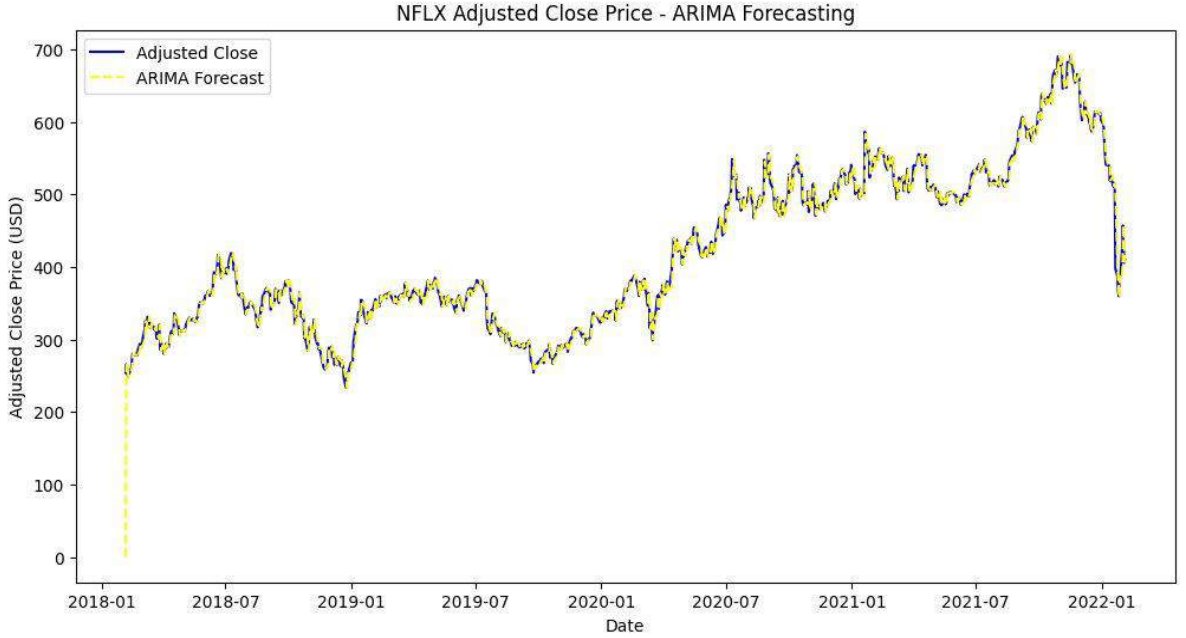
We can note higher trading volumes on days with higher Adj Close Values.

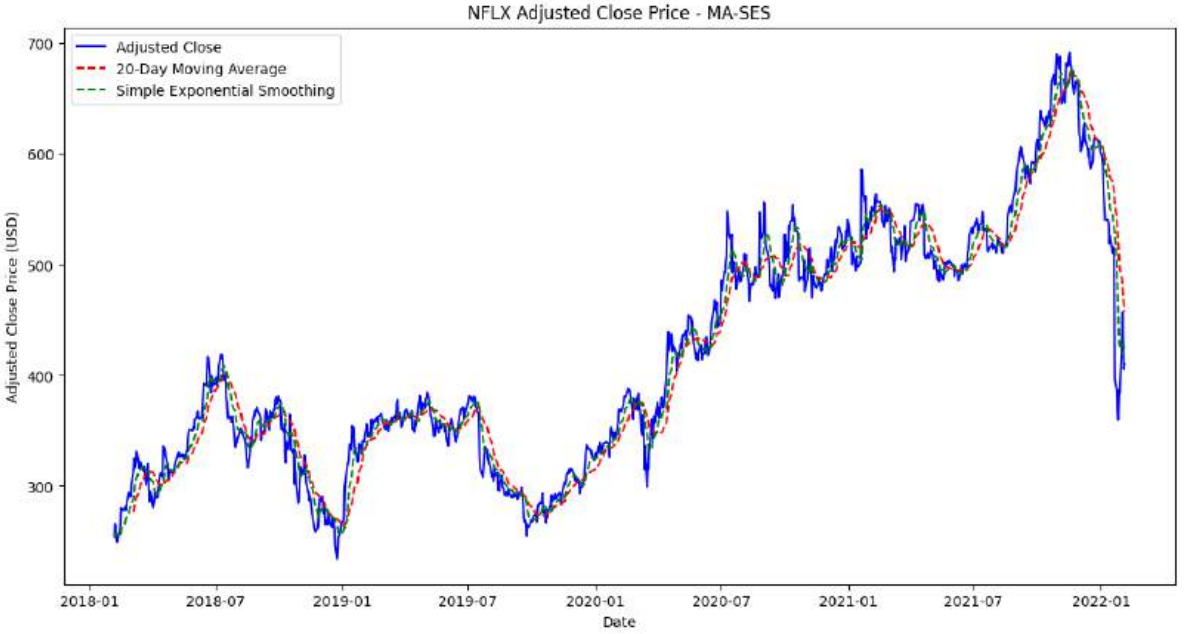
Investor behavior is reactive to changes in stock performance.



RESULTS


Double Exponential Smoothing
DES Fitted
DES Forecast
Adj Close
Triple Exponential Smoothing
TES Fitted
TES Forecast
Date

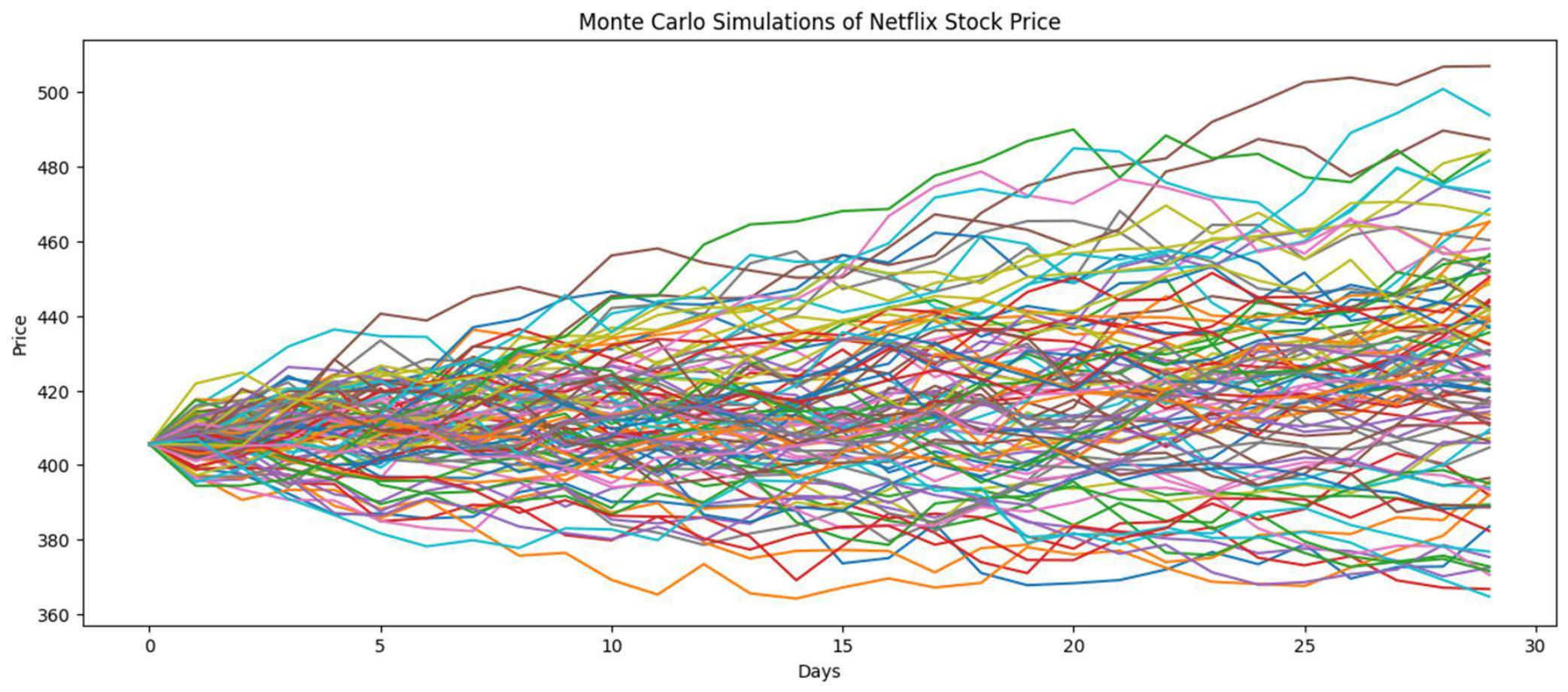

NFLX Adjusted Close Price - ARIMA Forecasting
Adjusted Close
ARIMA Forecast
Adjusted Close Price (USD)
Date


NFLX Adjusted Close Price - MA-SES
Adjusted Close
20-Day Moving Average
Simple Exponential Smoothing
Adjusted Close Price (USD)
Date

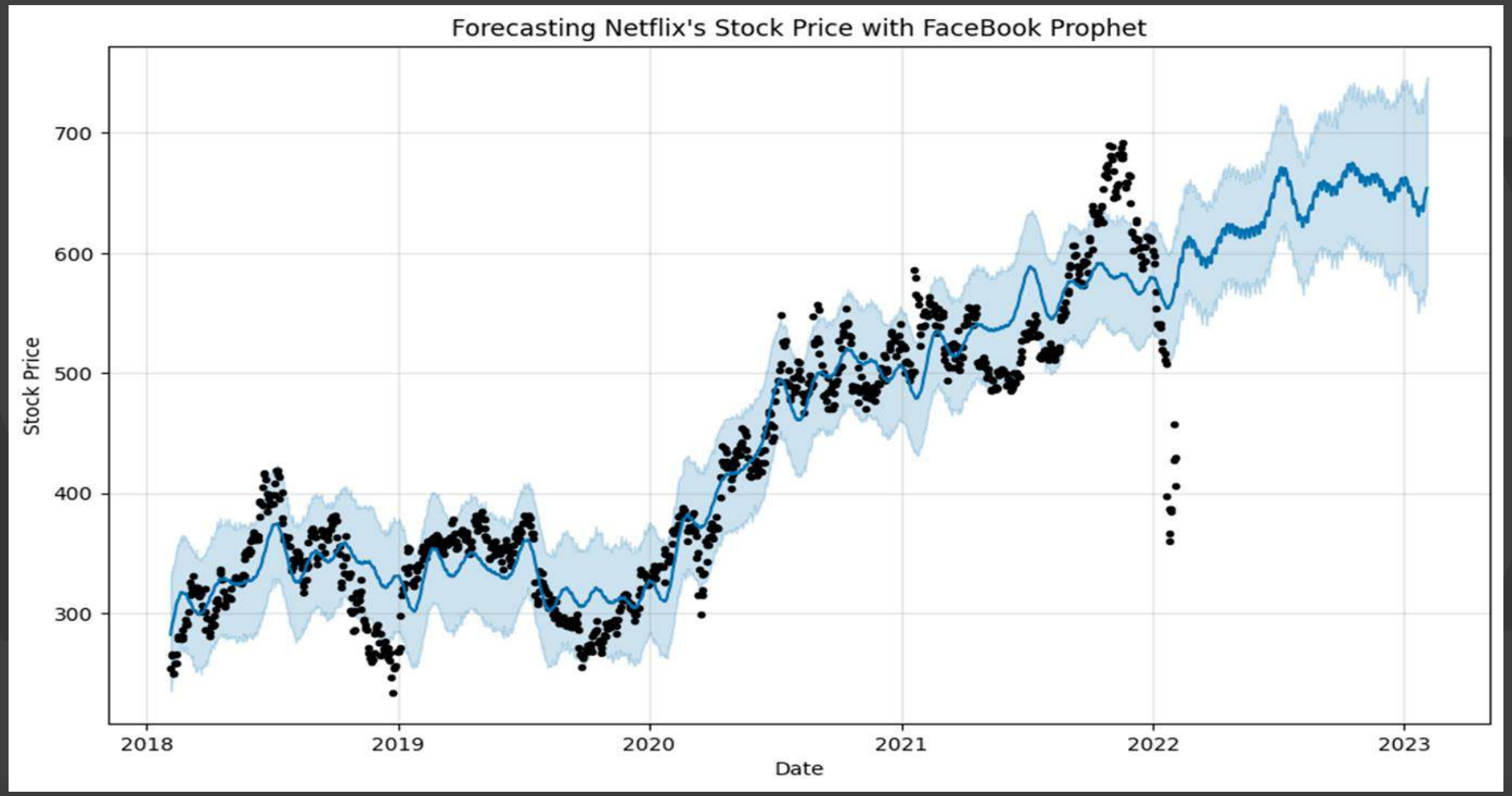
Model Evaluation

	MA	SES	LINEAR REGRESSION	ARIMA	LSTM
MAPE	4.49%	3.04%	12.07%	1.95%	1.94%
PREDICTION ACCURACY	95.66%	96.96%	89.15%	98.05%	98.06%

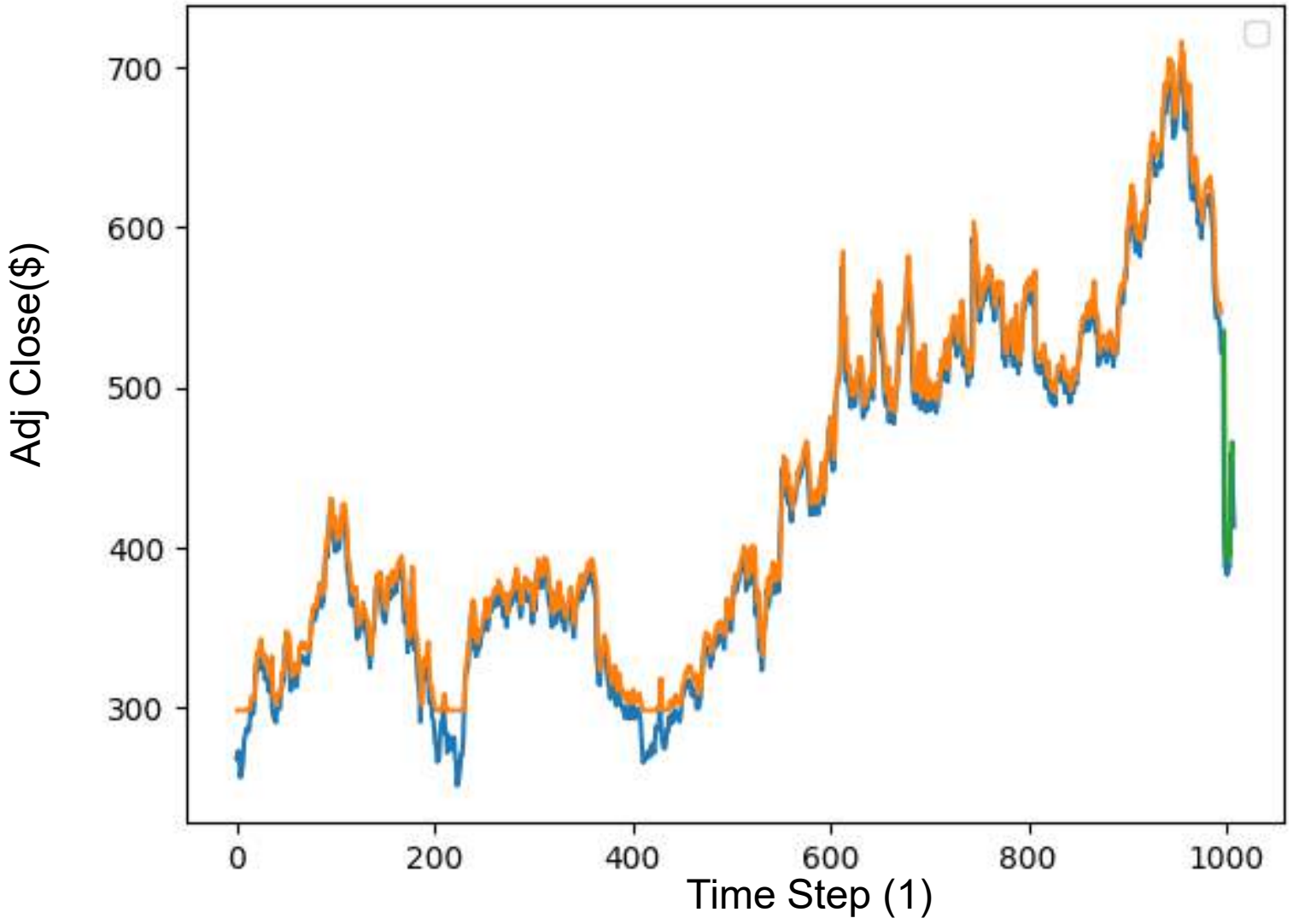
Monte Carlo Simulation



Facebook Prophet



LSTM



LSTM

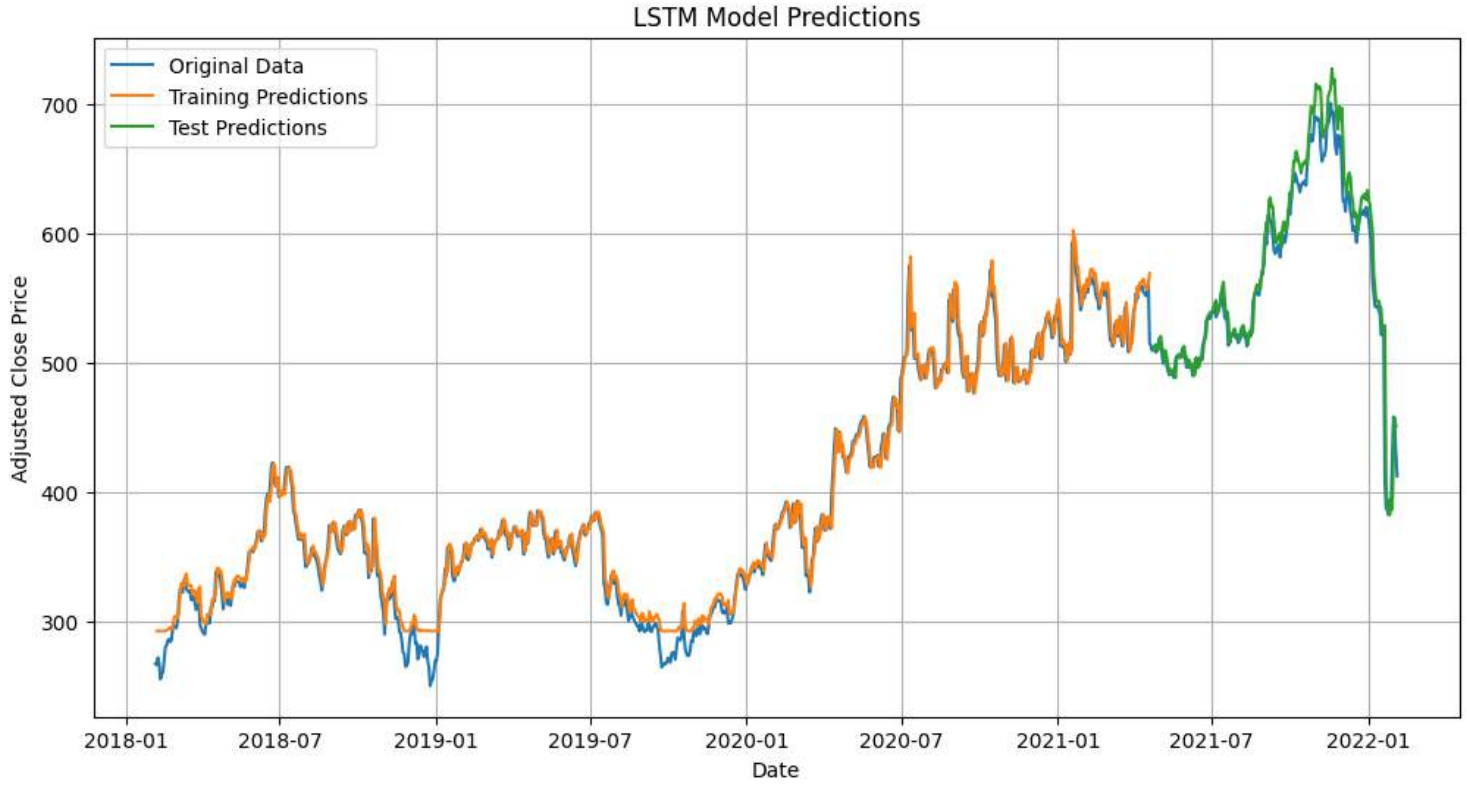
Initial gradual ascent suggests a period of steady growth or recovery, potentially reflecting market optimism for investors.

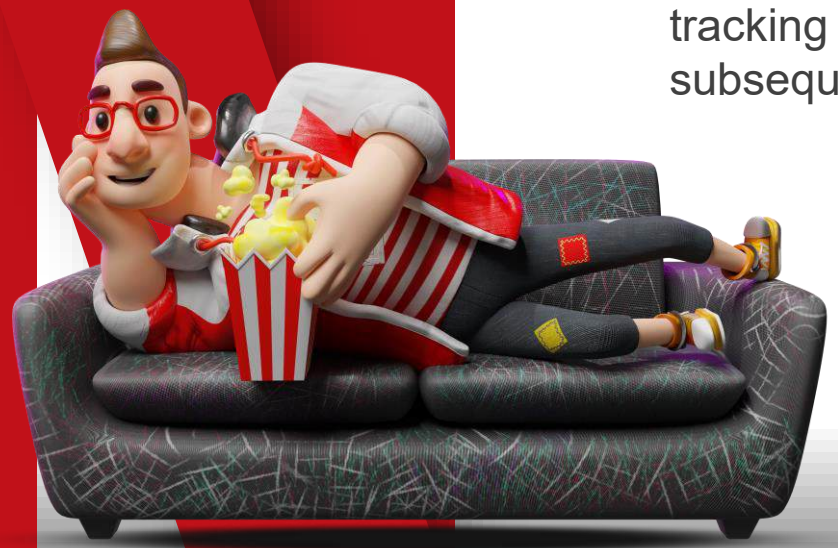
First significant dip might correlate with mid 2018 investors react negatively to unexpected downturns.

Subsequent recovery could indicate market correction or positive company news, possibly a reassuring statement or strategic shift.

A sharp peak follows, perhaps due to a well-received content release or favorable earnings report boosting investor confidence.

Sudden steep decline aligns with Q2's massive subscriber loss, triggering a sell-off and a bearish market sentiment





Recommendations

Strategic Patience: Hold the NFLX stock if you currently own shares and believe in the company's long-term potential and resilience, especially in light of the recent subscriber growth and advancements in content and market strategy.

Cautious Entry: For potential new investors, consider initiating a small, measured position post the upcoming earnings report, closely tracking the company's performance and market trends to inform subsequent investment decisions.

THANK YOU