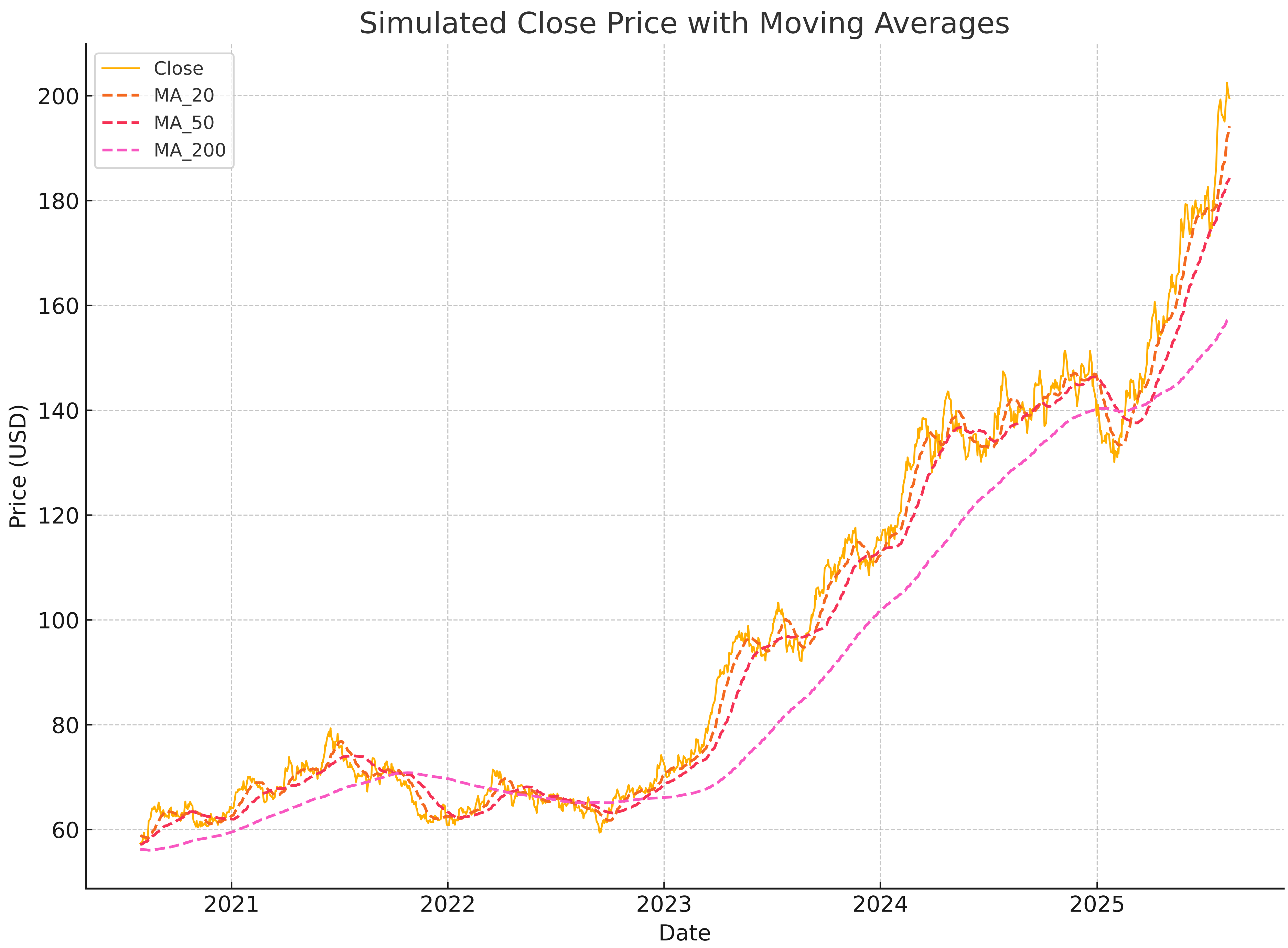
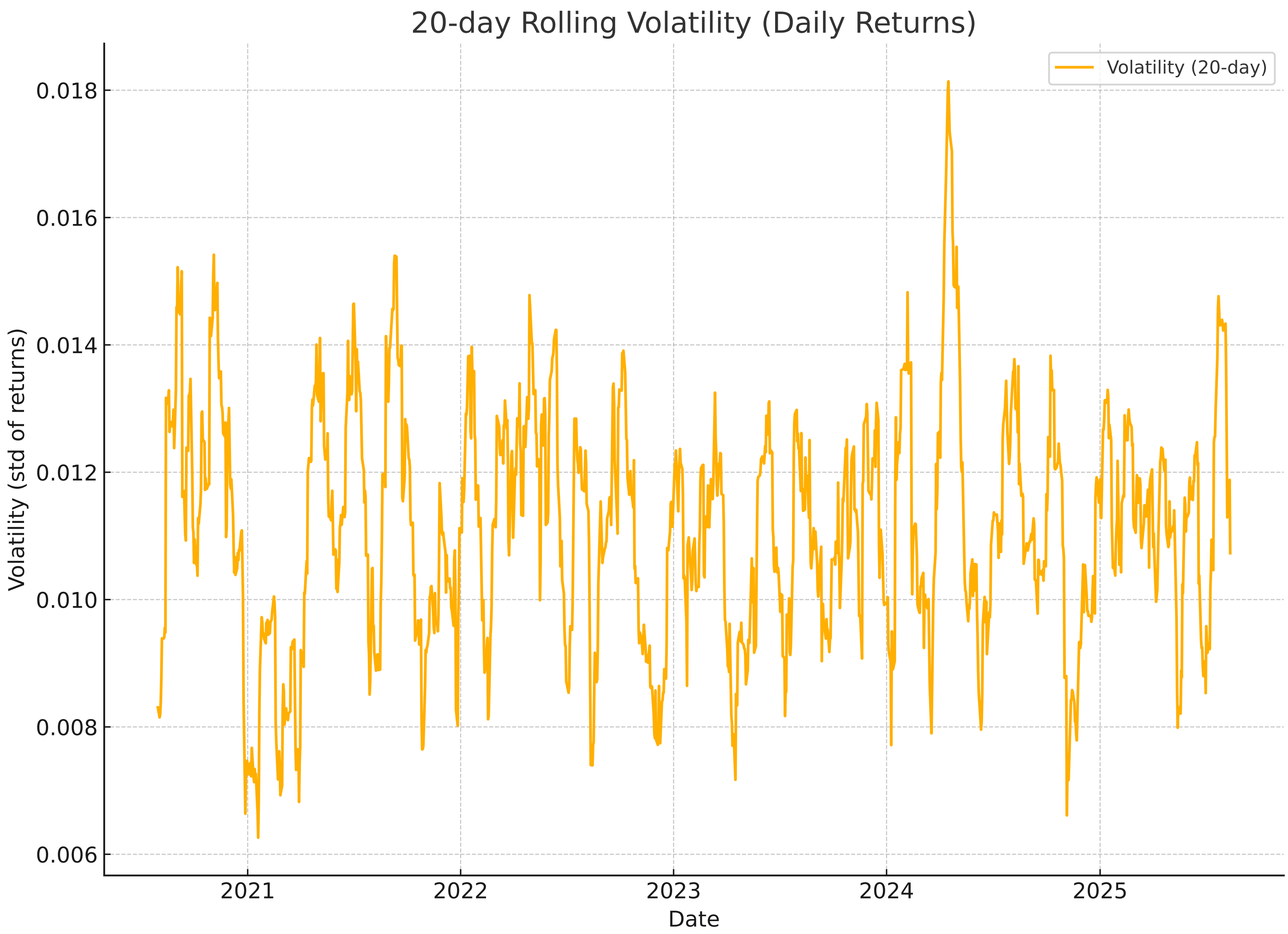
Coca-Cola Stock Analysis & Prediction

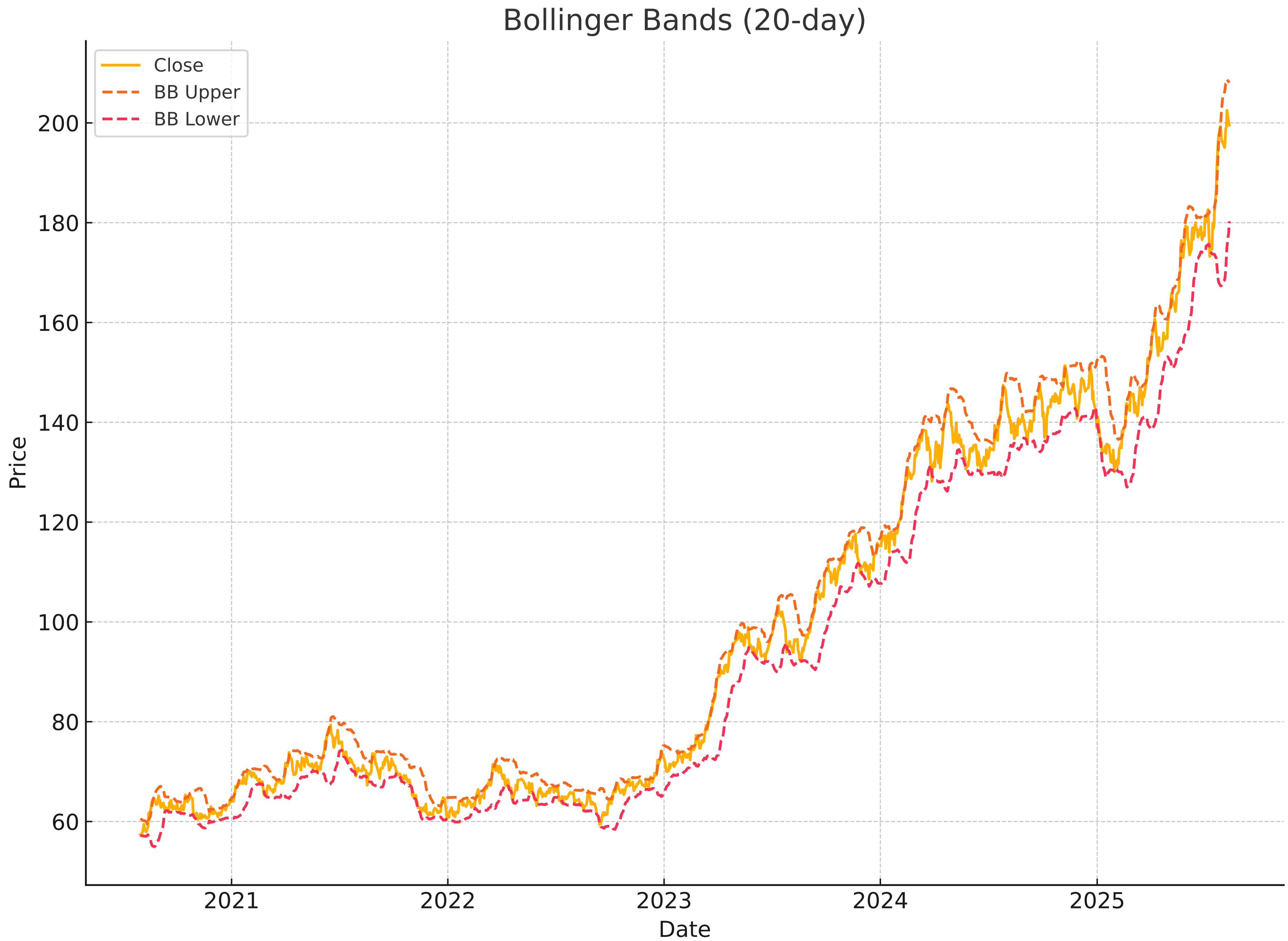
Generated: 2025-08-12

Simulated historical data (GBM-like) used due to no internet access.

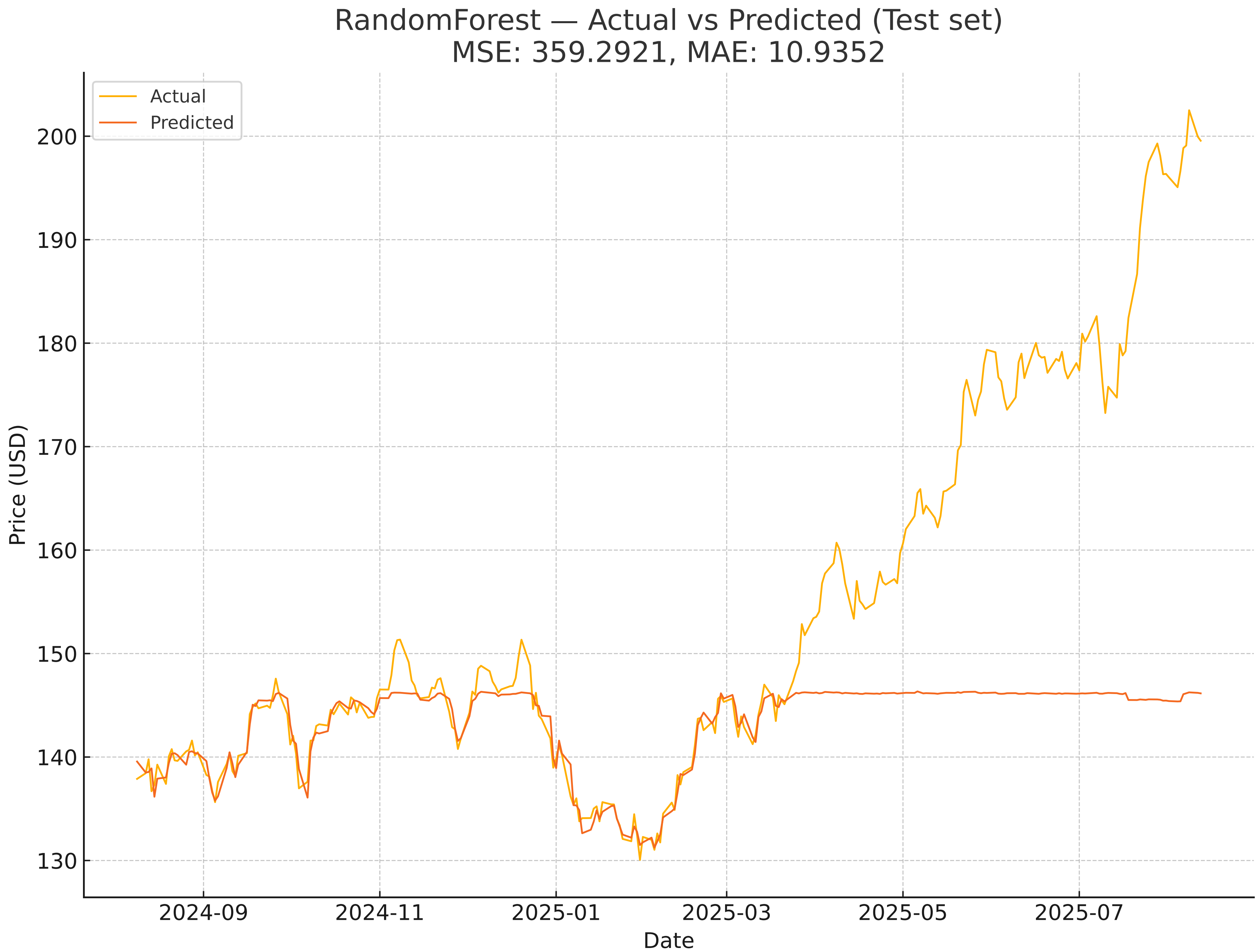
Pipeline: EDA → Feature Engineering → RandomForest Model → Simple Backtest


Simulated Close Price with Moving Averages
Close
MA_20
MA_50
MA_200
Price (USD)
200
180
160
140
120
100
80
60
2021
2022
2023
2024
2025
Date


20-day Rolling Volatility (Daily Returns)
Volatility (20-day)
Volatility (std of returns)
0.018
0.016
0.014
0.012
0.010
0.008
0.006
2021
2022
2023
2024
2025
Date



Bollinger Bands (20-day)
Close
BB Upper
BB Lower
200
180
160
140
120
100
80
60
Price
2021
2022
2023
2024
2025
Date


RandomForest — Actual vs Predicted (Test set)
MSE: 359.2921, MAE: 10.9352
Actual
Predicted
200
190
180
170
160
150
140
130
Price (USD)
2024-09
2024-11
2025-01
2025-03
2025-05
2025-07
Date

Simple SMA Backtest (20/50) — Summary

Total trades executed: 31

Final portfolio value starting with $100,000:195$,853.13

1. 2020-02-13 — BUY 1789.0 shares @ $55.89

2. 2020-03-19 — SELL 1789.0 shares @ $52.86

3. 2020-04-20 — BUY 1653.0 shares @ $57.21

4. 2020-05-21 — SELL 1653.0 shares @ $53.86

5. 2020-06-18 — BUY 1539.0 shares @ $57.82

6. 2020-11-10 — SELL 1539.0 shares @ $60.57

7. 2020-12-24 — BUY 1474.0 shares @ $63.28

8. 2021-03-08 — SELL 1474.0 shares @ $66.36

Notes & Next Steps

1. This report uses simulated data because the environment has no internet access.

2. Replace simulated data with real KO historical CSV or enable internet and re-run the pipeline to fetch from yfinance.

3. Consider hyperparameter tuning (RandomizedSearchCV), try LightGBM / XGBoost for improved performance.

4. Use rigorous backtesting frameworks (vectorbt, backtesting) and account for transaction costs & slippage.

5. Deploy via Streamlit or Flask for an interactive dashboard with live predictions.