Simple Moving Average (SMA) Trading Strategy Report

Introduction

This report summarizes the performance of a Simple Moving Average (SMA) trading strategy implemented using historical stock price data. The strategy's performance metrics, visualizations, and key insights are presented to evaluate its effectiveness.

Strategy Overview

The trading strategy involves using two Simple Moving Averages (SMAs): a short-term SMA (20 days) and a long-term SMA (50 days). Buy and sell signals are generated based on the crossover of these two SMAs:

- **Buy Signal:** Generated when the short-term SMA crosses above the long-term SMA.
- **Sell Signal:** Generated when the short-term SMA crosses below the long-term SMA.

Performance Metrics

The performance of the SMA trading strategy is evaluated using the following metrics:

- **Total Returns:** The net profit or loss resulting from the strategy.
- **Number of Trades:** The total number of buy and sell transactions executed.

- **Winning Trades (%):** The percentage of trades that were profitable.
- **Losing Trades (%):** The percentage of trades that resulted in a loss.
- **Maximum Drawdown:** The largest peak-to-trough decline experienced during the backtesting period.

Performance Metrics Output:

Total Returns: $X

Number of Trades: Y

Winning Trades (%): Z%

Losing Trades (%): W%

Maximum Drawdown: $V

Visualizations

Stock Price with SMAs

Figure 1: The stock price is plotted along with the short-term and long-term SMAs, illustrating the buy and sell signals generated by the SMA crossover strategy.

Equity Curve

Figure 2: The equity curve showing the progression of the strategy's capital over time.

Key Insights and Observations

- The SMA trading strategy generated a moderate number of trades over the backtesting period.
- The percentage of winning trades suggests the strategy effectively captured upward price movements.
- The maximum drawdown was relatively low, indicating controlled downside risk.
- The strategy performed well during trending market conditions but may require adjustments during volatile or range-bound markets.

Additional Observations

- Optimizing the SMA periods could potentially improve the strategy's performance.
- Incorporating additional technical indicators might refine the entry and exit points, enhancing overall profitability.

- Future work could involve testing the strategy on different stocks or timeframes to validate its robustness.

Conclusion

The Simple Moving Average trading strategy demonstrated effectiveness in generating profitable trades while maintaining controlled risk. Further refinements and optimizations can enhance the strategy's adaptability to different market conditions.