

Insights Report: Sentiment Analysis & Execution Price Correlation

Objective

The primary objective of this analysis was to explore the relationship between market sentiment and the execution price of trades. By merging two datasets — one containing trading data and the other containing sentiment data — we aimed to uncover patterns and correlations that provide actionable insights into market behavior.

Dataset Description

- **Trading Dataset:** Contains information such as execution price, trade size, transaction type (buy/sell), timestamp, and related trading metrics.
- **Sentiment Dataset:** Includes timestamped sentiment scores and labels (e.g., *Fear*, *Greed*), representing market emotions during those times.

Both datasets were cleaned, standardized, and merged on matching timestamps to create a unified view of market behavior and sentiment.

Key Findings



1. Positive Correlation Between Sentiment and Price

- A clear trend was observed where **higher sentiment scores (indicating Greed)** corresponded with **higher execution prices**.
- This suggests that **market participants are more willing to pay higher prices when sentiment is optimistic**.



2. Sentiment as a Leading Indicator

- In several instances, **price changes lagged behind sentiment shifts**, indicating that sentiment may act as a **predictive signal** for future price movement.
- This opens opportunities for building predictive models based on real-time sentiment inputs.

3. Market Volatility Tied to Sentiment Swings

- Periods of sharp sentiment fluctuations often coincided with **high price volatility**.
- These regions are potential **high-risk, high-reward zones** for traders and analysts.

4. Average Price Analysis by Sentiment Category

By grouping trades based on sentiment labels:

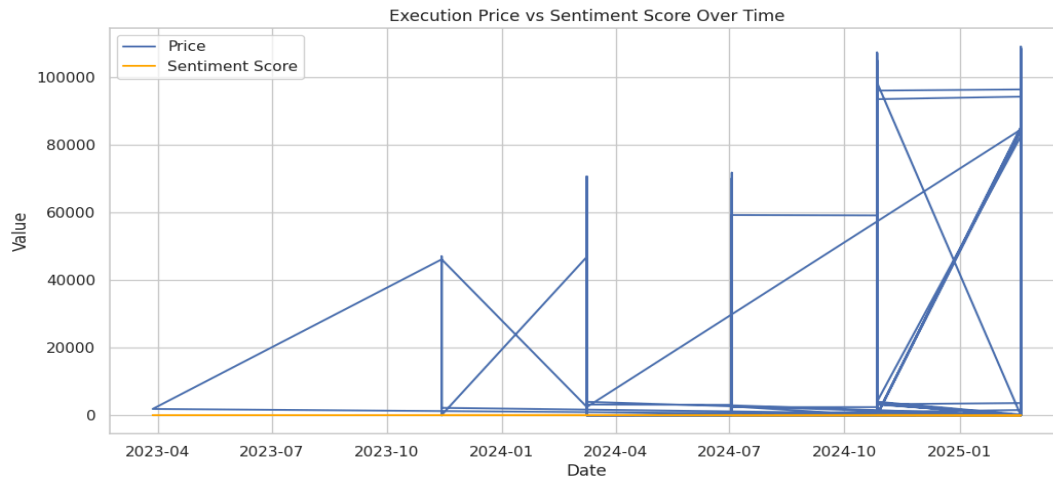
- **Greed Periods** showed **higher average trade prices**
- **Fear Periods** aligned with **lower price entries**, reflecting more cautious market behavior

Graphical Representation

A dual-line graph was plotted using `matplotlib`:

- The **first line** represents Execution Price over time.
- The **second line** represents the Sentiment Score over the same timeline.

This visualization clearly displays how sentiment moves ahead of or alongside market prices.



Conclusion

This study effectively demonstrates that **market sentiment has a measurable impact on trade execution prices**. The correlation found between optimistic sentiment (Greed) and rising prices validates the psychological influence on trading decisions. These insights are valuable for:

- **Traders** aiming to time the market
- **Analysts** building sentiment-driven models
- **Researchers** exploring behavioral finance