

Analysis of Trader Behavior vs Market Sentiment (Fear vs Greed)

1. Introduction

Market sentiment plays a crucial role in influencing trader behavior, risk appetite, and market liquidity. This report analyzes the relationship between Bitcoin market sentiment (Fear vs Greed) and historical trader behavior on the Hyperliquid platform. The objective is to understand how profitability, trading activity, and performance vary across different sentiment regimes and to identify insights that can support sentiment-aware trading strategies.

2. Datasets Used

1. Bitcoin Market Sentiment Dataset

This dataset provides a daily classification of market sentiment as either **Fear** or **Greed**, representing the prevailing psychological state of the Bitcoin market.

2. Historical Trader Data (Hyperliquid)

The trading dataset contains over 211,000 individual trade executions, including information such as execution price, trade size, direction, timestamp, and realized profit or loss (PnL). The data was aggregated at a daily level to study overall trader behavior rather than individual trade outcomes.

3. Methodology

The trader execution data was cleaned and standardized by correcting timestamp formats, normalizing column names, and removing irrelevant identifiers. Daily trading metrics were derived by aggregating trade-level data into meaningful behavioral indicators, including total daily PnL, trading volume, trade frequency and win rate.

These daily trading metrics were then merged with the Bitcoin market sentiment dataset using calendar dates. Days without matching sentiment information were excluded to ensure consistency. The final merged dataset enabled a direct comparison of trader behavior during Fear and Greed market conditions.

4. Fear vs Greed Comparison

4.1 Summary of Key Metrics

Metric	Fear	Greed
Average Daily PnL	36,891	11,141
Average Trading Volume (USD)	5.31M	1.49M
Average Trades per Day	679	261
Average Win Rate (%)	32.91	33.60

4.2 Visual Comparison of Trading Behavior

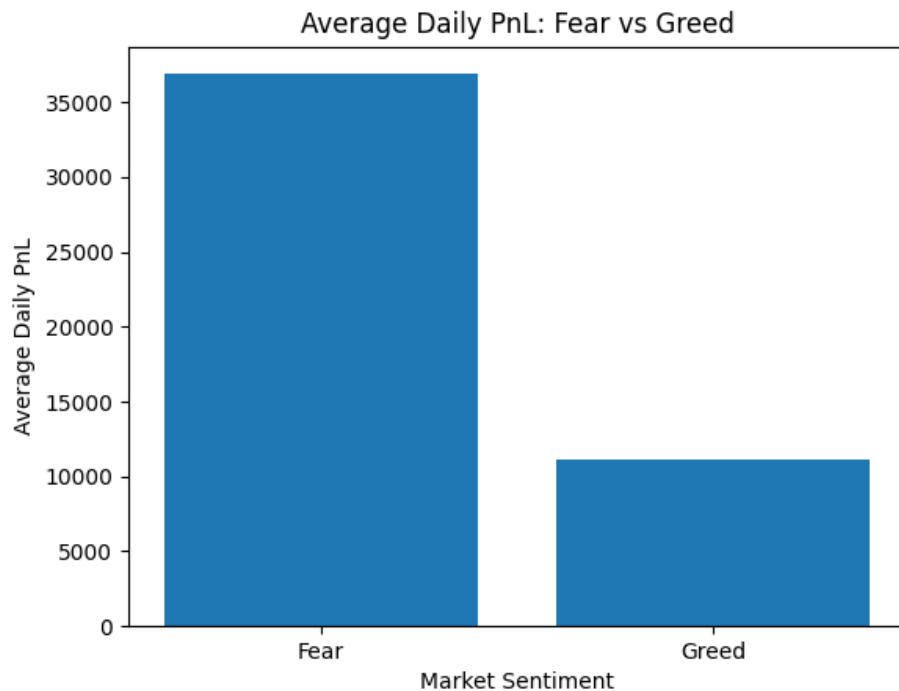


Figure 1: Comparison of average daily profitability during Fear and Greed market conditions.

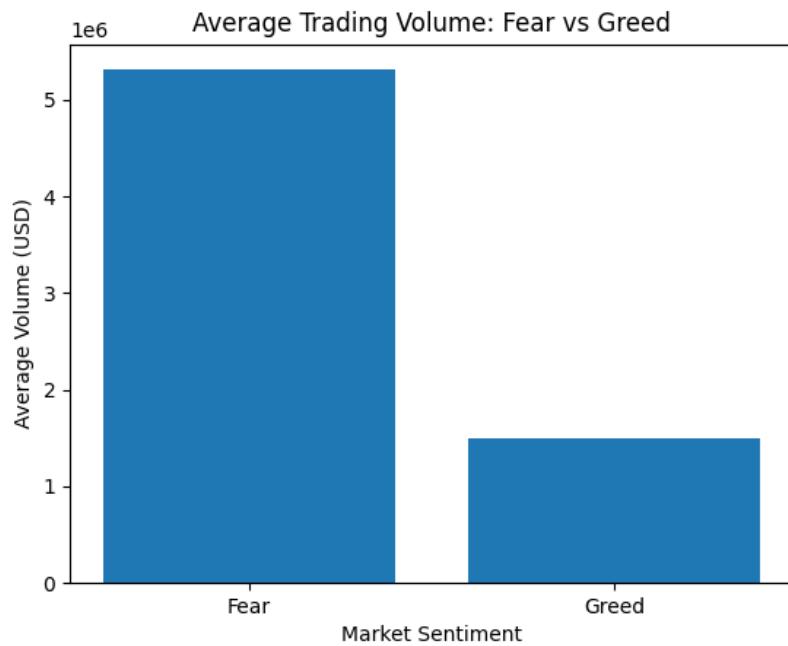


Figure 2: Average trading volume observed across different market sentiment regimes

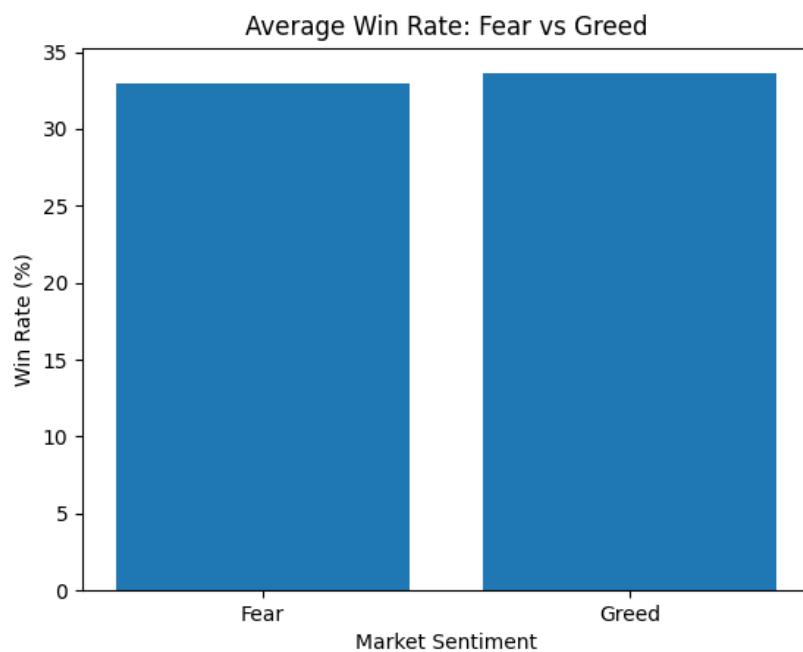


Figure 3: Comparison of win rates during Fear and Greed phases

Interpretation of Results

Profitability:

Average daily profitability during Fear periods is more than three times higher than during Greed periods. This suggests that Fear-driven markets, despite higher uncertainty, provide stronger profit opportunities for active traders.

Trading Volume and Activity:

Both trading volume and the number of trades per day are significantly higher during Fear regimes. This indicates increased market participation, likely driven by heightened volatility, liquidations, and rapid price movements.

Win Rate Stability:

Win rates remain relatively stable across both sentiment regimes, with only marginal differences between Fear and Greed. This implies that higher profitability during Fear is not due to improved trade accuracy, but rather due to larger price movements and trade size.

5. Strategic Trading Insights

- Fear periods tend to offer deeper liquidity and greater volatility, creating higher-impact trading opportunities.
- Increased trading activity during Fear does not improve win rate, highlighting the importance of disciplined risk management.
- Market sentiment should be used as a **risk-adjustment and position-sizing signal**, rather than a direct directional indicator.
- Greed phases, while psychologically optimistic, appear to offer fewer high-magnitude trading opportunities compared to Fear phases.

6. Conclusion

This analysis demonstrates that market sentiment significantly influences trader behavior and market dynamics. Fear-driven markets consistently exhibit higher trading activity, liquidity, and profitability, despite similar win rates when compared to Greed periods. Incorporating sentiment-aware strategies can help traders better align risk exposure with market conditions and improve overall trading performance.