Influence of Bitcoin Market Sentiment on Trading Behavior and Outcomes

A data-driven study of trader performance on Hyperliquid under Fear–Greed market conditions

1. Executive Summary

This report investigates how Bitcoin market sentiment impacts trader behavior and performance on the Hyperliquid platform during the period December 2024 to April 2025. By integrating daily Bitcoin Fear & Greed Index data with granular trade-level records, the analysis evaluates variations in trader profitability, risk exposure, and trading intensity across different sentiment environments.

The findings indicate that trader performance does not improve monotonically with rising market optimism. Phases characterized by moderate fear tend to exhibit superior risk-adjusted outcomes and elevated participation, whereas greed-dominated periods show weaker win rates and reduced profitability, suggesting the influence of behavioral biases such as overconfidence. Additionally, extreme sentiment conditions are linked to disproportionate downside risks, highlighting the critical role of structured risk management.

2. Data Overview

The analysis is based on two primary data sources:

Bitcoin Market Sentiment Data

- Daily Bitcoin Fear & Greed Index scores
- Sentiment classifications: Extreme Fear, Fear, Neutral, Greed, Extreme Greed

Hyperliquid Trader Activity Data

- Trade-level records including execution prices, trade size, realized profit and loss, and timestamps
- Trades across multiple crypto assets; however, the core analysis focuses on Bitcoin (BTC) trades to maintain consistency with the sentiment indicator

Trades were matched to sentiment values using the execution date. Any trades occurring on dates without available sentiment data were excluded to ensure analytical reliability.

3. Methodological Approach

Bitcoin market sentiment was considered a macro-level indicator of market risk and psychology. Trader behavior was examined across three key dimensions:

- Profitability: mean realized PnL and proportion of profitable trades
- Risk Exposure: average loss per losing trade and extreme downside risk (worst 5% losses)
- Trading Activity: average position size and mean number of trades executed per day

Profit-based calculations were restricted to closing trades only, ensuring that performance metrics reflected realized outcomes rather than position initiation activity.

4. Key Findings

4.1) Profitability Trends

- Trading periods marked by Fear demonstrate relatively strong average returns and high win rates, indicating disciplined execution during pessimistic market phases.
- Greed-driven markets record the lowest win rates and weakest average profitability, even though trading activity remains moderate.
- Extreme Greed periods show elevated average profits but substantially lower participation, implying selective engagement rather than widespread risk-taking.

Key Insight:
Higher market optimism does not necessarily translate into better trading performance. Behavioral overconfidence during greed phases appears to negatively affect decision quality.

4.2) Risk Dynamics

- The most severe downside losses are observed during Extreme Fear and Neutral conditions, revealing latent volatility risks.
- Losses during Greed periods are generally smaller on average but occur more frequently, reflecting lower-quality trade selection.
- Risk asymmetry becomes more pronounced under extreme sentiment environments.

Key Insight:
Calm or euphoric markets can conceal significant downside exposure, making tail-risk safeguards essential beyond obvious stress periods.

4.3) Trading Activity and Behavioral Patterns

- Trading frequency reaches its highest levels during Fear, suggesting that traders actively seek opportunities during market pullbacks.
- Greed phases show moderate activity paired with suboptimal outcomes, consistent with overtrading behavior.
- Extreme Greed corresponds to reduced market participation, indicating cautious or highly selective trading.

Key Insight:
Peak trading engagement occurs during controlled pessimism rather than during periods of widespread market enthusiasm.

5. Strategic Implications

The observed patterns lead to the following actionable considerations:

Fear-Dominated Markets:

- Emphasize selective trade entry with controlled position sizing
- Historically associated with stronger risk-adjusted performance

Greed-Dominated Markets:

- Limit trade frequency
- Apply stricter entry and validation criteria to mitigate overconfidence

Extreme Sentiment Conditions:

- Enforce tighter exposure limits
- Prioritize capital preservation to manage tail-risk events

Overall Recommendation:

- Use Bitcoin market sentiment as a risk-adjustment framework, not as a direct signal for market direction.

6. Assumptions and Limitations

- Bitcoin sentiment is used as a proxy for broader cryptocurrency market psychology.

- Leverage effects are inferred indirectly through position size due to the absence of explicit leverage data.
- The analysis is observational in nature and does not establish causal relationships.

7. Conclusion

The results demonstrate that trading behavior and outcomes vary significantly across market sentiment regimes. Contrary to common intuition, fear-driven environments often provide more favorable conditions than greed-dominated markets. Integrating sentiment-aware risk controls into trading strategies can meaningfully enhance consistency, discipline, and long-term performance.