Exploring How Profitability, Risk, Volume, and Leverage Align With Market Mood

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Final Summarized Insights & Explanations

1. Impact of Market Sentiment on Trader Profitability

- **Statistical Testing** (independent t-test comparing "Fear" vs "Greed" trades):
    - *t-statistic*: **-5.805**
    - *p-value*: 6.49×10^{-9} ($\ll 0.001$)
- **Result**: Highly significant difference in mean profitability.
- **Interpretation**:
  Average Closed PnL in "Fear" periods is significantly lower than in "Greed" periods. Traders, on average, performed better in bullish/greedy sentiment phases.

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2. Profitability & Volume Patterns

From aggregated metrics:

- **Highest mean PnL**: *Greed* ≈ **87.89** → despite lower average trade size (~\$3,183), profit per trade is strong.
- *Fear*: Mean PnL ≈ **50.05** with higher average trade size (~\$5,260) → traders risk more in fear but earn less per trade.
- *Extreme Greed*: Mean PnL ≈ **25.42** with very high trade sizes (~\$5,660 avg) → extreme bullishness may dilute per-trade returns.
- *Neutral*: Lowest mean PnL ≈ **22.23** with moderate volumes.

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3. Risk & Positioning Indicators

- **Trade Size USD**: Peaks in *Fear* (total ≈ \$704M) — suggests liquidity and high exposure even during low sentiment.
- **Fees**: Highest average fees in *Neutral* (1.22) and *Fear* (1.08) → possibly due to higher-frequency trading or less efficient execution.

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4. Trade Side Behaviour by Sentiment

- *Fear & Neutral*: **BUY ≈ 49%**, **SELL ≈ 51%** (fairly balanced)
- *Greed*: **SELLs dominate (57.5%)** — possibly traders taking profits during bullish runs.

- *Extreme Greed*: Slight SELL bias (**51.6%**).

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5. Hidden Trends / Observations

- *Fear markets*: Traders still take large positions (avg $5.26K) → combined with higher volatility, this may explain high losses and lower mean PnL.
- *Greed markets*: Lower average trade size yet higher returns → possibly due to favourable market momentum.
- *Extreme Greed*: High trade sizes but reduced mean PnL → euphoria may lead to over-leveraging or poor entries.
- **Top Accounts**: A few accounts control the majority of traded volume (top account alone traded over $420M) → sentiment could heavily influence these whales' strategies.

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6. Strategic Implications

- **Adapt Position Sizing to Sentiment**: In *Fear* periods, large positions historically yield lower profitability — apply tighter risk control.
- **Opportunistic Entries in Greed**: Data shows higher profits align with bullish sentiment — may justify selective risk-on strategies.
- **Monitor Extreme Sentiment Flows**: *Extreme Greed* sees spikes in volume but drops in average profit — possible trend exhaustion warning.
- **Side Preference Awareness**: Excess SELLs in *Greed* may signal maturing uptrends and potential reversals.

Overall Conclusion

Market sentiment directly correlates with measurable differences in trading behaviour and profitability.

- **Fear periods** — despite high volumes — underperform in profitability.
- **Greed periods** — statistically significant higher returns but shifting trade side patterns (more SELLs).

Integrating sentiment metrics into trading models could improve **timing**, **position sizing**, and **side selection**, particularly for large accounts in volatile phases.