Report

Trade Size and Fee Dynamics

The relationship between trade size and the associated fee is clear but non-linear:

- Fee vs. Trade Size (USD): The scatter plot shows a strong, positive correlation between trade size (USD) and the fee incurred, which is expected—larger trades generally cost more. However, the linearity is only true for the majority of smaller trades. The highest fees (over $800) are associated with some of the largest trades (around $3.5 million to $4 million), but there are many large trades with a $0 fee, suggesting a segmented fee structure where some transactions (perhaps internal transfers, special order types, or high-volume institutional deals) are exempt. This is reinforced by the Correlation Matrix, which shows a very high correlation of 0.75 between Size USD and Fee.

- Average Trade Size by Side (Pie Charts): Overall, the average trade size is split almost equally between Buy and Sell trades, whether measured in Tokens (Buy ≈51.4%, Sell ≈48.6%) or USD (Buy ≈51.1%, Sell ≈48.9%).

The Influence of Market Sentiment

Market sentiment heavily influences trade frequency, average size, and the profitability of the trade side.

Trade Counts and Frequency

- Number of Trades Over Time: There has been a massive, sharp increase in the number of trades, particularly starting around the end of 2024 and continuing into 2025, indicating a significant recent surge in market activity.

- Number of Trades by Sentiment and Side: Fear and Greed classifications have the highest trade counts. Interestingly, during Fear and Extreme Greed, SELL trades are more numerous than BUY trades. During Greed, SELLs are slightly more frequent, while in Neutral and Extreme Fear, the counts are more balanced.

Average Trade Size by Sentiment

- Average Trade Size (Tokens) by Classification and Side:

  - Greed has the largest average trade size for both BUY (7,115.2 tokens) and SELL (6,025.9 tokens), indicating large capital deployment during bullish periods.

  - In Fear, BUY trades (2,744.0 tokens) are slightly larger than SELL trades (2,566.0 tokens).

  - In Neutral sentiment, SELL trades (4,923.5 tokens) are significantly larger than BUY trades (3,850.4 tokens).

Trade Direction and Profitability (PnL)

Trade Direction

- Trade Size (USD) by Direction: Most trade activity (Buy, Sell, Open Long, Close Long, etc.) is concentrated near the lower trade size values. However, complex or leveraged trade types like Open Long, Open Short, Close Long, Close Short, and Settlement all show a wide distribution of large outliers up to the $4 million range. This suggests that the largest individual trades are often associated with opening, closing, or settling positions rather than simple market/limit orders. Buy and Sell (likely representing simple market/limit execution) have a relatively contained size distribution.

Profit/Loss (PnL) and Fees

- Average PnL by Sentiment and Side (Two Charts): The two charts show nearly identical PnL results, confirming that SELL trades are significantly more profitable on average than BUY trades during periods of Extreme Greed (115 vs 10.8 average PnL), Greed (60 vs 25 average PnL), and Neutral (40 vs 30 average PnL). Fear is the only classification where BUY trades (64 average PnL) are notably more profitable than SELL trades (45 average PnL).

- Average Fee per Trade by Sentiment and Side:

    o   Fees are highest in Fear and Greed periods.

    o   In Extreme Fear, Extreme Greed, Neutral, and Greed, SELL trades incur a higher average fee than BUY trades.

    o   The only exception is Fear, where BUY trades incur a slightly higher average fee.

The PnL findings suggest that while high fees are associated with high-volume periods (Greed/Fear), the most successful *selling* occurs during peak optimism (Extreme Greed), likely reflecting large-scale profit-taking, whereas the most successful *buying* happens during Fear, suggesting successful 'buy the dip' strategies.

Trade Size and Sentiment Distribution

Trade Size (USD) vs. Fear/Greed Index

The scatter plot shows no clear linear correlation between the numerical value of the Fear/Greed Index (the x-axis) and the size of the trade (Size USD).

- Large Trades are Sporadic: Very large trades (>2.5 million) are scattered across the index, with notable clusters appearing in the Fear range (index values ≈20 to 40) and the Greed range (index values ≈55 to 65).

- Small Trades Dominate: The majority of trades, both Buy and Sell, are concentrated below the $1 million mark across the entire index spectrum, demonstrating that smaller trades constitute the high-frequency trading activity.

- SELL Outliers: There appears to be a slightly higher concentration of the absolute largest SELL outliers compared to BUY outliers in the higher end of the index (Greed territory).

Trade Size (USD) Distribution by Sentiment

The box plot reveals the median and interquartile range (IQR) for trade sizes across sentiment classifications.

- Low Median, High Outliers: The central box (median and IQR) for trade size is extremely small and close to zero for all classifications. This confirms that most trades are small.

- Highest Trade Sizes in Fear and Neutral: The largest absolute outliers (trades up to $4 million) occur during Fear and Neutral sentiment classifications.

- Tightest Distribution in Extreme Greed: Extreme Greed has the most restricted distribution of large outliers, suggesting that, while the median is low everywhere, large trades are less varied or frequent in this extreme bullish phase compared to Fear or Neutral periods.

Average Size Contribution by Sentiment (Pie Charts)

These charts break down how each sentiment contributes to the total average size of Buy and Sell trades, in both Tokens and USD.

Trade Side	Metric	Largest Contributor	Smallest Contributor
BUY	Tokens	Greed (51.9%)	Fear (20.0%)
SELL	Tokens	Neutral (36.4%)	Fear (19.0%)
BUY	USD	Fear (45.1%)	Neutral (23.8%)
SELL	USD	Fear (41.6%)	Greed (24.6%)

- Contradiction in Metrics: There is a significant difference between the Token and USD metrics. For BUY trades, Greed dominates the average size when measured in Tokens, but Fear dominates when measured in USD. This implies the asset's price (USD/Token) was likely higher during the Fear period when these large USD trades occurred, or the trades in the Fear period involved higher-value tokens.

- Neutral's Role in Selling: Neutral sentiment is the largest contributor to average size for SELL trades measured in Tokens, suggesting a significant portion of token liquidation occurs outside of emotional periods.

Trade Direction and Profitability

Trade Direction Count by Sentiment

This chart shows the total count of specific trading actions across different sentiment classifications.

- Dominant Actions: Buy and Sell actions (representing simple market/limit orders) are the highest frequency directions across all sentiments.

- Fear Drives Volume: The Fear classification sees the highest count for most trading directions, particularly Sell and Close Long, suggesting a high-volume phase dominated by traders liquidating long positions due to market anxiety.

- Open vs. Close: In Extreme Fear, Open Long is the most frequent action, suggesting a "buy the dip" mentality. In contrast, in Fear, Close Long is highly frequent, indicating a market-wide reversal of those positions or panic selling.

Profit/Loss Distribution by Sentiment

The box plot illustrates the distribution of the Closed PnL (profit and loss).

- Low Median PnL: The median PnL (the line inside the box) is very close to zero for all sentiment classifications, meaning the average (or typical) closed trade results in a minimal profit or loss.

- Large Loss Outliers in Greed: The largest single loss (below −$100,000) occurs during the Greed classification, indicating that the most catastrophic losses happen when the market is euphoric or overleveraged.

- Large Profit Outliers in Fear: The largest single profit (above +$100,000) occurs during Fear, suggesting that highly successful trades capitalize on market bottoms or volatility during periods of panic.

- Balanced Extremes: Other classifications (Extreme Greed, Extreme Fear, Neutral) show large outliers on both the profit and loss sides, but the absolute extreme values are confined to Greed (Loss) and Fear (Profit).

The key hidden trends and signals:

1. The Contrarian Profit Signal: "Sell into Extreme Greed, Buy into Fear"

While the common adage is to "buy when others are fearful," the PnL data suggests a more nuanced approach, focusing on closed profit/loss and the side of the trade.

- Signal: The highest average PnL is achieved by SELL trades during Extreme Greed (Graph: Average PnL by Sentiment).

  - Interpretation: This strongly indicates that "smart money" is not merely avoiding Extreme Greed, but actively using it as the optimal period for large-scale, profitable liquidations/profit-taking. Retail investors may be FOMO-buying, providing the liquidity needed for institutions to exit at peak prices.

  - Strategy: Develop a short-term counter-trend strategy that looks for Confirmation of Exhaustion (e.g., volume spikes, negative divergences) and executes SELL trades when the market sentiment is classified as Extreme Greed.

- Signal: The highest average PnL for BUY trades is achieved during Fear (Graph: Average PnL by Sentiment).

  - Interpretation: This confirms the classic "buy the dip" strategy works on average when sentiment is low. It suggests that while Extreme Fear is a better spot to close a short (as PnL is balanced), Fear is the true inflection point for new, profitable long positions.

  - Strategy: Use the Fear classification as the primary signal for accumulating long positions, rather than waiting for the less frequent and more unpredictable Extreme Fear.

2. Large Capital Signals: Size Outliers and Sentiment

The distribution of large trades offers a filter for conviction.

- Signal: The largest absolute trade size outliers (up to $4 million) occur most frequently during Fear and Neutral sentiments, not in Greed (Graph: Trade Size Distribution by Sentiment).

  - Interpretation: The largest trades represent highly convicted positioning. When they happen in Fear, it is a "whale buying the dip" signal. When they happen in Neutral, it suggests a large, deliberate position change unrelated to market euphoria, often associated with rebalancing or strategic accumulation/distribution.

  - Strategy: Filter trade data for trade sizes significantly above the median (e.g., 95th percentile). A spike in large trades during Neutral or Fear is a stronger signal of institutional positioning than trades during Greed.

- Signal: SELL trades contribute more to Average Trade Size (USD) during Fear than in Greed or Neutral (Graph: sentiment_trade_analysis, SELL-Average Size USD).

  - Interpretation: While Greed dominates average size in Tokens, Fear dominates in USD. This suggests that the assets being sold during Fear are higher-priced or the total dollar value moved per trade is larger during this panic, which could be a large entity panic-selling high-value assets or an early sign of a final capitulation move.

  - Strategy: Monitor the USD-weighted trade size during Fear. If the SELL average size spikes, it may be a temporary capitulation, setting up the market for the profitable BUY PnL seen in that same sentiment.

3. Directional Flow Signals

The raw count of trade directions provides insight into why the market is moving.

- Signal: Close Long and Sell activity peaks in Fear (Graph: Trade Direction Count by Sentiment).

  - Interpretation: The high volume in the Fear classification is primarily driven by existing long positions being closed and raw selling pressure. This validates that Fear is a period of maximum pain and liquidation, a necessary precursor to a reversal.

- Signal: Open Long is one of the highest-frequency actions in Extreme Fear (Graph: Trade Direction Count by Sentiment).

  - Interpretation: This is the retail "buy the dip" action being triggered at the absolute bottom of the sentiment index.

  - Strategy: A smarter strategy would not open a long with the crowd in Extreme Fear, but rather use the subsequent price strength from that initial impulse to confirm the BUY signal when the sentiment shifts to Fear (where the average PnL for BUY is highest).

4. Fee and Risk Alignment

- Signal: SELL fees are generally higher than BUY fees across most sentiments, particularly in Neutral and Extreme Fear (Graph: Average Fee per Trade by Sentiment and Side).

  - Interpretation: Selling may be slightly more expensive or face less favorable execution (higher slippage/fees), especially in low-conviction (Neutral) or high-volatility (Extreme Fear) environments.

  - Strategy: Factor the higher average SELL fee into stop-loss and take-profit calculations, especially for short-term strategies in Neutral periods, to ensure the trade is worthwhile.