



## Trading Analytics Report

# Market Sentiment Analysis (Feb 2018 - May 2025)

Insights from the Fear & Greed Index



## Data Overview & Preparation

### Data Loading & Initial State

- Dataset: **df\_fgi**
- Dimensions: **2644 rows, 4 columns**
- Columns: **timestamp, value, classification, date**
- Initial Data Types: All **object** dtype

### Data Cleaning Highlights

- **No missing or empty rows** found.
- Type Conversions:
  - ``timestamp`` → **int64**
  - ``value`` → **Int64** (nullable integer)
  - ``date`` → **datetime64[ns]**
- **No duplicate entries** (based on timestamp and date).
- Dataset sorted **chronologically** by timestamp.

Visual representation of the data cleaning process.



## Core Sentiment Metrics

### Value Range & Central Tendency

- `value` range: **5 to 95**
- Mean `value`: Approximately **47** (indicating a Neutral sentiment on average)
- Mode `value`: **50** (most frequent sentiment score)

### Distribution & Time Span

- Distribution: **Bell-shaped** with a central peak between **40-60** (the "Neutral zone").
- Time Series Span: From **February 2018 to May 2025**.
- Data Consistency: Unique date entries per row, suggesting **consistent daily data**.

Illustrative histogram showing the bell-shaped distribution of sentiment values.



## Market Sentiment Over Time

### Value Over Time

The time series plot reveals significant **market sentiment volatility** across the years, showcasing periods of extreme fear and greed.

### Value by Classification

Box plots validate the **correct alignment of classifications** with their respective value ranges. For instance:

- **Extreme Fear** → Lower values
- **Extreme Greed** → Higher values



## Enhanced Insights & Relationships

### Feature Engineering

New features were engineered to provide deeper analytical perspectives:

- **value\_7day\_avg**: 7-day moving average of sentiment value.
- **value\_30day\_avg**: 30-day moving average of sentiment value.
- **daily\_change**: Daily change in sentiment value.

### Correlation Matrix Insights

- **Strong Positive Correlation**: Between `value` and its moving averages (`value\_7day\_avg`, `value\_30day\_avg`). This indicates that longer-term trends closely follow the immediate sentiment.
- **Low Correlation**: With `daily\_change`. This signals that daily changes effectively capture **short-term volatility**, distinct from the overall sentiment trend.

Mock correlation matrix highlighting relationships between features.



## Illustrative Trading Performance

While the provided data focuses on market sentiment, here are **illustrative trading metrics** based on how one might interpret and act upon such sentiment data. These are for demonstration purposes.

### Key Performance Indicators (KPIs)

- Total Trades (Illustrative): **1,500**
- Win Rate (Illustrative): **58%**
- Average Profit per Trade (Illustrative): **+\$120**
- Average Loss per Trade (Illustrative): **-\$80**

### Notable Trends & Market Conditions

- Periods of "**Extreme Fear**" (low sentiment values) often precede market rebounds, suggesting potential buying opportunities.
- Periods of "**Extreme Greed**" (high sentiment values) often precede market corrections, suggesting caution or profit-taking.
- The `value` directly reflects market sentiment, which is a crucial factor influencing short-term market movements and investor behavior.

A conceptual dashboard showing potential trading performance metrics.



### Actionable Insights & Tips

#### Interpreting Sentiment for Strategy

- **Fear as Opportunity:** When the sentiment index is low (Extreme Fear), it often indicates a market bottom or a strong buying opportunity for contrarian investors.
- **Greed as Caution:** High sentiment values (Extreme Greed) can signal an overheated market, prompting caution or consideration for profit-taking.

#### Leveraging Engineered Features

- **Volatility Awareness:** The `daily\_change` feature is key for understanding short-term market movements and can be particularly useful for day traders.
- **Trend Identification:** `value\_7day\_avg` and `value\_30day\_avg` provide smoother trend lines, ideal for identifying longer-term market direction and reducing noise from daily fluctuations.



Use these insights to refine your trading strategies and navigate market cycles effectively.



## Report Summary

The comprehensive analysis of the Fear & Greed Index (`df_fgi`) from February 2018 to May 2025 provides a robust framework for understanding market sentiment. Key insights include the bell-shaped distribution of sentiment values, the strong correlation of sentiment with its moving averages, and the utility of daily changes for capturing short-term volatility. This data can be leveraged to inform strategic trading decisions, identifying potential entry points during periods of fear and exit points during periods of greed.

**Empowering smarter trading decisions through data-driven insights.**

