

Fractal Volatility Index for RIVN : 0.164. Market Wide FVI:0.478

(0 - 0.33: Stable, 0.33 - 0.66: Moderate Volatility, 0.66 - 1: High Volatility)

Red: High Risk FVI zone, Orange: Medium Risk FVI zone, Green: Low Risk FVI zone



Verv Stock Analysis Report: Rivian Automotive Inc RIVN FVI 0.164

Analysis Period: 2021-10-02 to 2026-10-02

The Fractal Volatility Index (FVI) is scaled between 0 and 1 reflecting the stock's overall volatility. A higher score indicates greater unpredictability and market instability.

Unlike traditional volatility indicators like VIX or Beta, FVI does not track short-term fluctuations—it detects hidden instability before it manifests in price swings.

FVI is a composite score that incorporates Lyapunov Exponent, Hurst Exponent, and Detrended Fluctuation Analysis (DFA).

Breakout Probability

Breakout Probability Score (BPS): -0.699

Breakout Probability Score (BPS) quantifies price momentum likelihood: BPS > 1.5 suggests high breakout potential, while BPS < 0.5 indicates consolidation.

(BPS > 1.5 High breakout potential - Strong momentum, watch for confirmation.)

(BPS 0.5 - 1.5 Moderate breakout likelihood - Possible move, monitor closely.)

(BPS < 0.5 Low breakout probability - Likely consolidation or range-bound.)

Request ID: FVI

Account ID: WeeklyReport

Fractal & Statistical Analysis

FVI Score: 0.164 (Fractal Volatility Index FVI)

DFA Result: 0.3571 (Detrended Fluctuation Analysis)

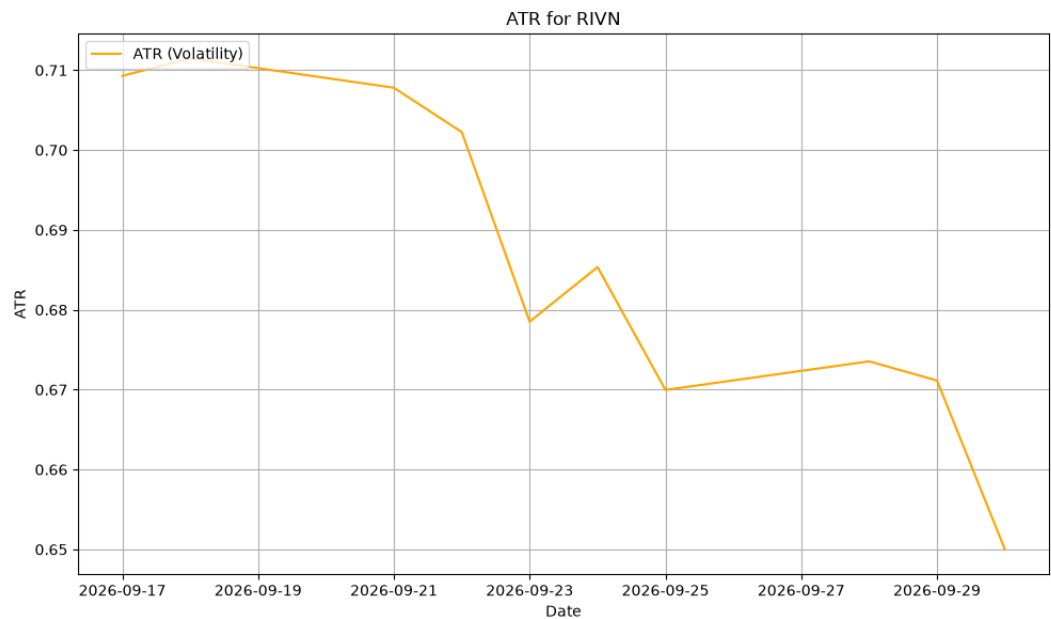
Lyapunov Exponent: 0.0126 (Measures chaos and predictability)

Hurst Exponent: 0.5116 (Indicates trending or mean-reverting behavior)

Breakout & Recent Price Change Analysis

Breakout Statement: No strong breakout signal detected: The latest closing price of 14.94 is within the Bollinger Bands range (14.64 - 16.31).
Latest ATR: 0.6500

Average True Range (ATR)



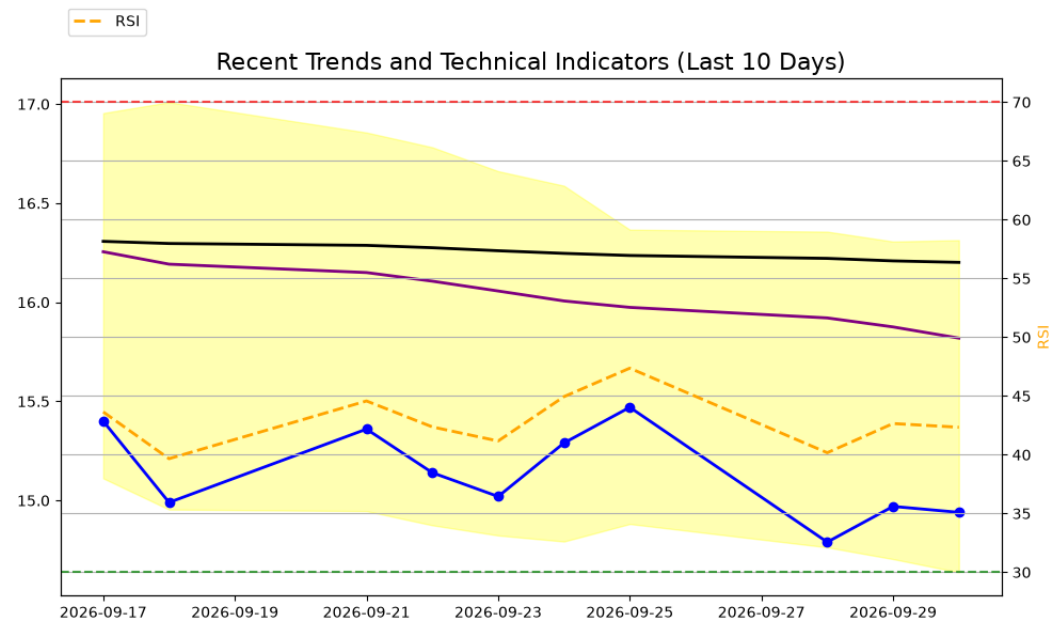
The ATR measures the recent price volatility of a stock, calculating the average range between its high and low prices over a given period (usually 14 days). A higher ATR indicates greater market volatility, and a lower ATR indicates less volatility.

Low ATR (below 2): Stable stock, Moderate ATR (2-5): Mild volatility, High ATR (above 5): Highly volatile stock

Technical Indicators

Technical indicators are based on historical price and volume data used in technical analysis to forecast financial market direction. They help identify trends, momentum, volatility, and potential entry and exit points in the market.

Technical Indicators



Left y axis - Stock Price. Right y axis - RSI range values (30 - 70)

Close Price(blue line with circles) - Key indicator of the stock's price action and is often used to identify trends or patterns. A rising close price generally indicates an upward trend, while a falling close price shows a downward trend.

SMA_50 and SMA_200 - (purple line SMA_50, black line SMA_200) Simple Moving Averages (SMA) calculated over 50 and 200 periods. Helps identify the direction of stock price trend.

Bollinger Bands - (shaded in yellow): Bollinger Bands consists of upper, middle and lower prices. The middle line is the moving average. Price reaching the upper band can indicate an overbought condition, suggesting the stock might be due for a pullback. Price touching the lower band could indicate an oversold condition, suggesting a potential buying opportunity. When the price moves outside the bands, it may indicate extreme conditions.

Relative Strength Index RSI - (orange dotted line): The RSI is a momentum oscillator that measures the speed and change of price movements. An RSI above 70 suggests the stock is overbought and might be due for a pullback. An RSI below 30 suggests the stock is oversold and might be due for a rebound. An RSI in between indicates a more neutral market condition.

AI Executive Assessment

1. Volatility Structure

The Fractal Volatility Index (FVI) of Rivian Automotive Inc (RIVN) is 0.1635 which is significantly lower than the market-wide FVI of 0.478. This indicates that RIVN exhibits less structural instability compared to the broader market. The Lyapunov Exponent, at 0.0126, suggests a certain degree of sensitivity and divergence within the system, but without a supplied threshold or market-wide equivalent, a precise interpretation is difficult. The Hurst Exponent of 0.5116 is slightly above 0.5, indicating weak evidence of persistence in the stock's price series. The DFA score of 0.3571 reveals a scale-dependent correlation structure, but does not independently predict volatility or price direction.

2. Breakout Evidence

The Breakout Probability Score (BPS) for RIVN is -0.6989, which does not provide strong evidence of an imminent breakout. This is consistent with the observation that the latest closing price of 14.94 is within the Bollinger Bands range (14.64 - 16.31), suggesting no strong breakout signal.

3. Participation and Technical Context

RIVN has seen a volume change of 16.65%, however, without corresponding price-change evidence, we cannot confirm price-volume. The latest Average True Range (ATR) is 0.6499, but without a historical or price-normalised comparison, it's difficult to classify it as high or low.

4. Macro and Sector Context

The Gold FVI is 0.5936, the FX FVI is 0.4343, and the TWI FVI is 0.4694. These figures suggest varying degrees of structural instability in their respective series, but we cannot assign specific causes without further evidence. There are no available GHG scores for the Consumer Cyclical sector or for RIVN specifically, limiting our ability to assess emissions-related variability.

5. Risk Interpretation

Based on the supplied evidence, RIVN displays moderate uncertainty with its lower FVI compared to the market and no strong breakout evidence. However, there is a certain degree of structural stability, given the Hurst Exponent's weak indication of persistence. We cannot translate this structural risk into a prediction of price direction.

6. Monitoring Implications

The indicators that would merit continued observation include the FVI, given its relative stability compared to the market, and the BPS, in the event that breakout evidence strengthens. The Lyapunov Exponent and Hurst Exponent may also provide further insight into the stock's sensitivity and persistence respectively.

FINAL TAKEAWAY

Rivian Automotive Inc (RIVN) currently exhibits moderate uncertainty with relative structural stability compared to the broader market, and no strong breakout evidence. The key indicators to monitor for

future insight into the stock's behaviour include the Fractal Volatility Index and the Breakout Probability Score.

Stock Information

Market Capitalization: 21674473000, Industry: AUTO MANUFACTURERS, Latest Volume: 20009161, Description: Rivian Automotive Inc, Sector: CONSUMER CYCLICAL, Price to Book: 4.293, Enterprise to Ebitda: -1.955, Enterprise to Revenue: 3.733, Profit Margins: -0.55

The trading volume has changed by 16.65% over the past week, indicating potential shifts in market sentiment. Please factor this into the volatility and risk analysis.

Beta measures stock volatility relative to the overall market: 1.62

Beta of 1.62 suggests high volatility compared to the market.

Stock Investment Character Report

Analysis based on supplied stock characteristics and market context.

Investment Character: Structurally Stressed

Resilience: 35%

Momentum: 10%

Structural Stress: 70%

Narrative Dependence: 55%

Confidence: 58%

Calculated Metrics:

- Price-Volume Divergence: 0.000

- Volatility Dissonance Index: 0.965

Evidence:

- Company-specific FVI is in the Stable range while the market-wide FVI is Moderate.

Indicators: Fractal Volatility Index=0.164, Market-wide FVI=0.478

Supports: Resilience

- Loss-making with negative EBITDA and no earnings support on trailing or forward basis.

Indicators: Profit margin=-0.55, Enterprise value to EBITDA=-1.955, Trailing EPS=0, Forward EPS=0, Trailing P/E=0, Forward P/E=0

Supports: Structural Stress

- Valuation multiples are present despite the absence of earnings, implying reliance on future improvements for justification.

Indicators: Price-to-book ratio=4.293, Enterprise value to revenue=3.733

Supports: Narrative Dependence

- Negative breakout score and price remaining within Bollinger Bands indicate no confirmed breakout momentum.

Indicators: Breakout Probability Score=-0.6989427120334332, Breakout statement=No strong breakout signal detected: price 14.94 within Bollinger Bands (14.64 - 16.31)

Supports: Momentum

- Higher market-relative sensitivity (Beta>1) contrasts with low recent trading-range volatility (ATR below low threshold), while time-series measures provide no decisive classification.

Indicators: Beta=1.618, Latest ATR=0.6499929550604173, Hurst Exponent=0.5116378446294619, DFA Result=0.35706533437907767

Supports: Uncertainty

Assessment:

Rivian shows operational stress, with significant losses and negative EBITDA, even as structural instability (FVI) reads Stable. Momentum evidence is weak: the negative breakout score and trading within Bollinger Bands argue against a breakout-driven phase. Volatility signals are mixed—elevated market sensitivity by Beta alongside low recent ATR—suggesting calm recent ranges but susceptibility to broader market moves. Valuation metrics in the absence of earnings indicate some dependence on future execution and narrative to sustain multiples.

Limitations:

- No data on revenue growth, cash flow, liquidity, or order backlog limits assessment of durability and runway.

- ATR lacks historical normalization, so recent range calm cannot be compared to the stock's own past.

- Volume change and technical context are insufficient to infer accumulation, distribution, or imminent price

direction.

Medium-Term Fit:

May suit an independent thesis focused on long-term EV adoption and scaling to profitability, accepting operational losses, higher market sensitivity, and uneven momentum while monitoring progress toward margin improvement and operating leverage.

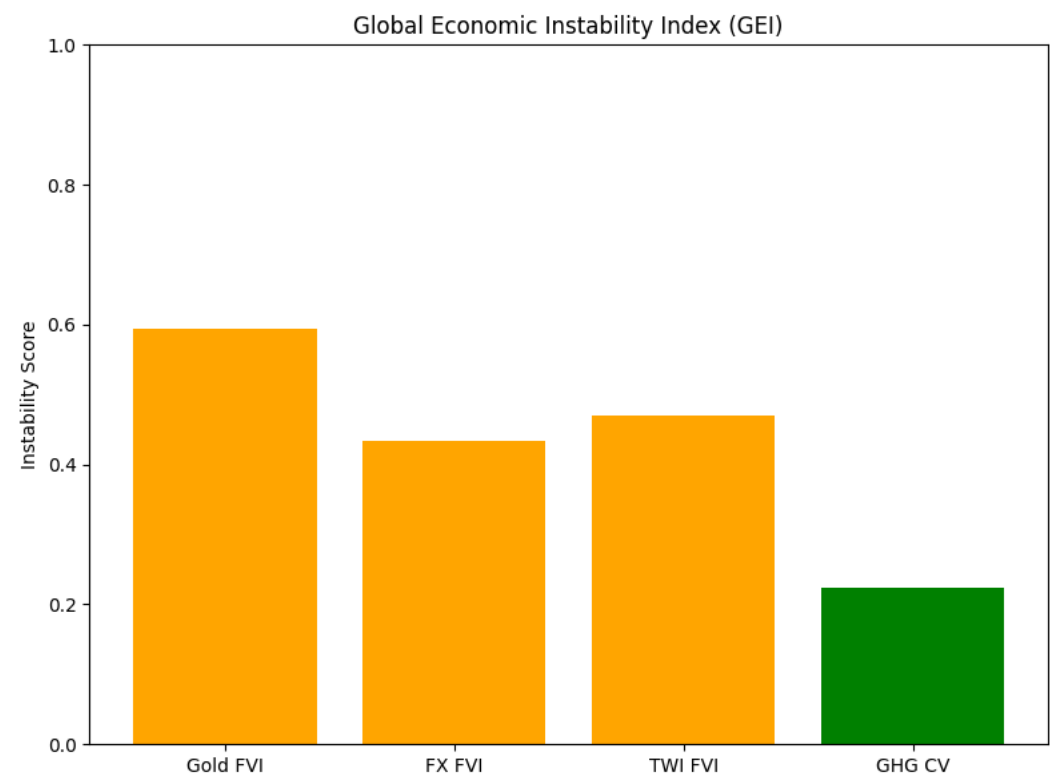
Fractal Volatility Indices

Global Geopolitical Fractal Volatility (Gold, Forex, TWI (Tariffs) and GHG Emissions)

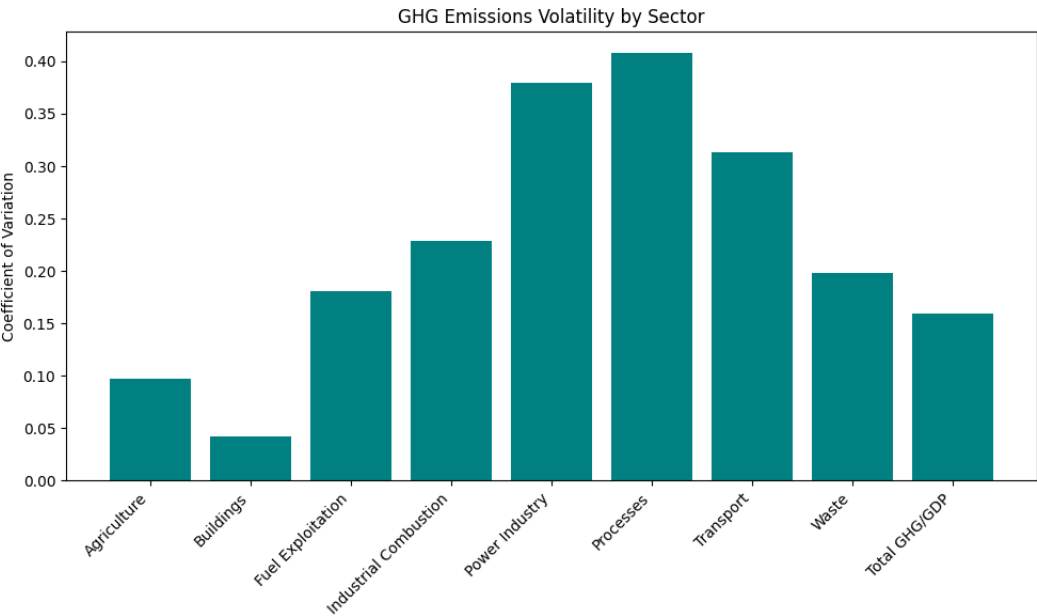
FVI_GOLD: 0.593608 => Moderate gold volatility indicates increased investor caution
FVI_FX: 0.434301 => Moderate FX volatility indicates ongoing currency-market adjustment
FVI_TWI: 0.469352 => Moderate trade-weighted volatility indicates some external-sector adjustment
GHG_CV: 0.223036 => Moderate GHG sector variability indicates some sector-level carbon-risk dispersion

Primary Risk Driver: Gold volatility is a good proxy for global geopolitical risk. 0.593608.

Global Geopolitical Volatility



Volatility Indicators of GHG Emissions by Industry and GDP



No GHG score available for Consumer cyclical sector.

Disclaimer: The Fractal Volatility Index (FVI) measures structural market instability, not short-term price direction. High FVI (red dot) does not necessarily indicate a price breakout—rather, it signals unpredictable price behavior and potential structural shifts. While market instability can precede significant moves in either direction, Verv Stock Reports do not predict price trends but offer insight into underlying volatility patterns. Investors should interpret FVI alongside fundamental and technical analysis before making decisions.

_____END OF REPORT_____