Fractal Volatility Index for RIVN : 0.260. 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 0.260

Analysis Period: 2021-11-18 to 2026-11-18

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): 0.551
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

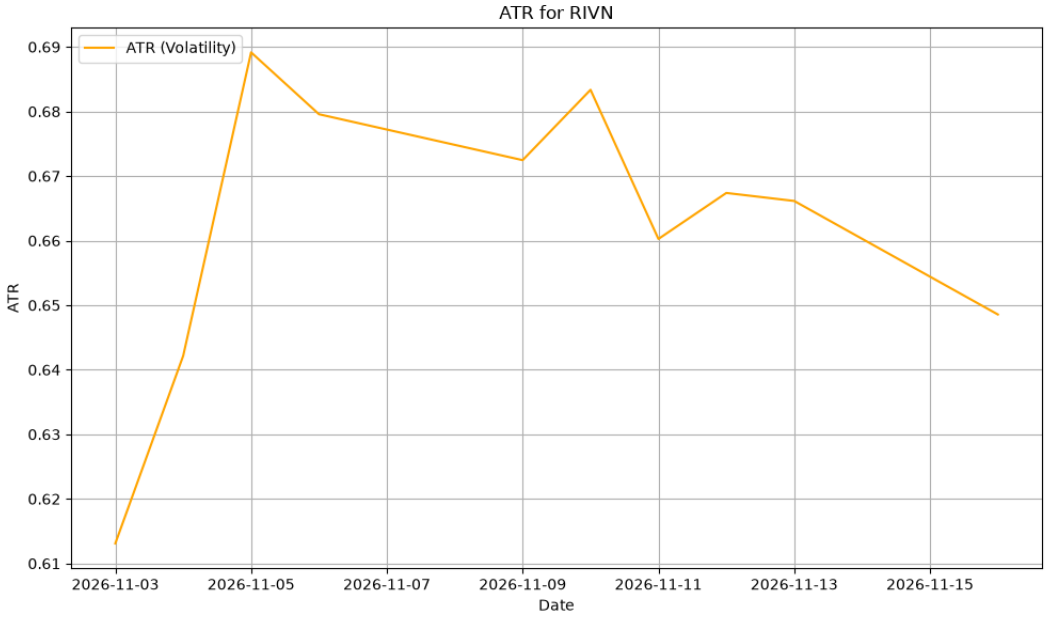
Fractal & Statistical Analysis

FVI Score: 0.260 (Fractal Volatility Index FVI)
DFA Result: 0.4423 (Detrended Fluctuation Analysis)
Lyapunov Exponent: 0.0129 (Measures chaos and predictability)
Hurst Exponent: 0.4967 (Indicates trending or mean-reverting behavior)

Breakout & Recent Price Change Analysis

Breakout Statement: No strong breakout signal detected: The latest closing price of 12.10 is within the Bollinger Bands range (10.97 - 14.34).
Latest ATR: 0.6486

Average True Range (ATR)

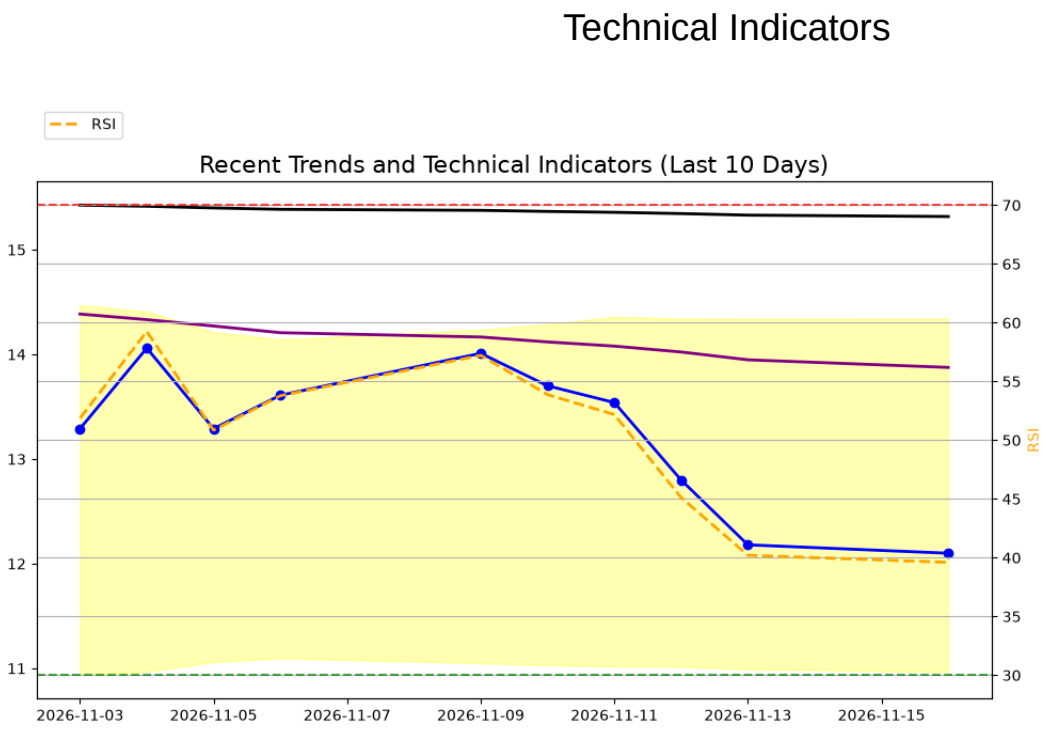


The ATR measures the recent price volatility of a stock, calculating the average range between its high and low prices over a given period (usually 14 days). A higher ATR indicates greater market volatility, and a lower ATR indicates less volatility.

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.



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
- Observation: RIVN's Fractal Volatility Index (FVI) is 0.2603 versus a market-wide FVI of 0.478. Macro proxies read higher: Gold FVI 0.5936, FX FVI 0.4343, TWI FVI 0.4694. Hurst Exponent is 0.4967, DFA is 0.4423, and the Lyapunov Exponent is 0.01294.
- Interpretation: RIVN's FVI is lower than the market-wide and macro proxy FVIs, indicating comparatively lower structural instability in the stock's series over the measured window (FVI is not directional). The Hurst value near 0.5 offers only weak evidence of either persistence or anti-persistence, consistent with noise-like behavior. DFA and Lyapunov are recorded but, absent calibration or benchmarks, they do not by themselves indicate breakout risk or direction.
- Unknown: Absolute characterization of the Lyapunov and DFA magnitudes, and any directional bias in returns.

2. Breakout Evidence
- Observation: Breakout Probability Score (BPS) is 0.5508. The explicit breakout observation states no strong breakout signal; the latest close of 12.10 sits within Bollinger Bands (10.97–14.34).
- Interpretation: BPS suggests current breakout evidence by design, but the band-based observation does not confirm a strong breakout at this time; breakout direction is not determined by the supplied data.
- Unknown: The strength of BPS in the absence of thresholds or historical context.

3. Participation and Technical Context
- Observation: Volume change is +58.214%. Latest ATR is 0.6486 price units; with the 12.10 close, ATR is approximately 5.36% of price.
- Interpretation: Trading activity has increased versus the comparison window, and the ATR quantifies the current realized range, but without historical baselines these do not indicate whether activity or range are elevated or subdued.
- Missing comparisons: Long-run volume averages, historical ATR (or ATR/price) for context, and any change in Bollinger Band width.

4. Macro and Sector Context
- Observation: Gold, FX, and TWI FVIs (0.5936, 0.4343, 0.4694) and the market-wide FVI (0.478) all exceed RIVN's FVI (0.2603). GHG sector variability and company sensitivity scores are not available.
- Interpretation: The broader macro proxies and market exhibit higher structural instability than RIVN's series at present; no causal attribution is made.
- Unknown: Any emissions-related variability assessment for the Consumer Cyclical sector or firm-specific sensitivity.

5. Risk Interpretation
- The balance of evidence most strongly supports structural stability in RIVN's series relative to the market and macro proxies. Breakout-related cues are mixed (BPS versus the non-confirmation from the Bollinger-based observation), leaving uncertainty around breakout conviction and timing.

6. Monitoring Implications
- Indicators to watch: RIVN’s FVI versus market-wide FVI; BPS alongside the explicit breakout observation; volume change and ATR (including ATR/price) for shifts in realized volatility; Hurst’s proximity to 0.5; any notable movement in Lyapunov and DFA; and Gold/FX/TWI FVIs as macro risk proxies.

FINAL TAKEAWAY

RIVN currently shows comparatively lower structural instability than the market and macro proxies, and no strong breakout is confirmed by the latest band-based observation. The key uncertainty is whether BPS strengthens and aligns with an explicit breakout signal; monitor BPS versus the breakout observation, together with changes in RIVN’s FVI and realized volatility (ATR and volume).

Stock Information

Market Capitalization: 17778033000, Industry: AUTO MANUFACTURERS, Latest Volume: 35068364, Description: Rivian Automotive Inc, Sector: CONSUMER CYCLICAL, Price to Book: 3.124, Enterprise to Ebitda: -1.955, Enterprise to Revenue: 2.733, Profit Margins: -0.459

The trading volume has changed by 58.21% 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: 1.64
Beta of 1.64 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: 30%
Momentum: 35%
Structural Stress: 70%
Narrative Dependence: 55%
Confidence: 55%

Calculated Metrics:
- Price-Volume Divergence: 0.000
- Volatility Dissonance Index: 0.917

Evidence:
- RIVN's structural instability reading is in the Stable range and below the market-wide FVI.
  Indicators: Fractal Volatility Index=0.260, Market-wide FVI=0.478
  Supports: Resilience
- The stock is more volatile than the market overall while its recent absolute trading-range volatility is low per the provided ATR thresholds.
  Indicators: Beta=1.644, Latest ATR=0.6485598303923937
  Supports: Uncertainty
- The company is unprofitable with negative EBITDA and lacks earnings-based valuation support.
  Indicators: Profit margin=-0.459, Enterprise value to EBITDA=-1.955, Trailing P/E=0, Forward P/E=0, Trailing EPS=0, Forward EPS=0
  Supports: Structural Stress
- Breakout evidence is not confirmed; price remains within the Bollinger Bands despite a mid-level breakout probability score.
  Indicators: Breakout Probability Score=0.5508033360712912, Breakout statement=No strong breakout signal detected: price 12.10 within Bollinger Bands (10.97 - 14.34)
  Supports: Momentum

Assessment:
Operational indicators point to stress, with negative margins and EBITDA alongside the absence of earnings-based valuation metrics. Structurally, the trading framework appears stable (low FVI), but risk sensitivity is elevated (high Beta) even as recent trading-range volatility is low (ATR). Momentum is unconfirmed given the lack of a band breakout despite a mid-level breakout probability. Overall, the profile skews toward structural stress rather than resilient or momentum-driven behavior.

Limitations:
- No data on revenue growth, cash flow, balance sheet leverage or liquidity to gauge financial durability.
- ATR is absolute and not normalized to price history, limiting comparability.
- No historical or trend context for valuation ratios or profitability, constraining severity assessment.
- Supplied data does not establish price direction, causation, or the durability of any recent activity.

Medium-Term Fit:
Best aligned with an independent thesis focused on a high-beta, loss-making auto manufacturer where the investor is specifically targeting operational turnaround and scale-up execution, accepting elevated risk while

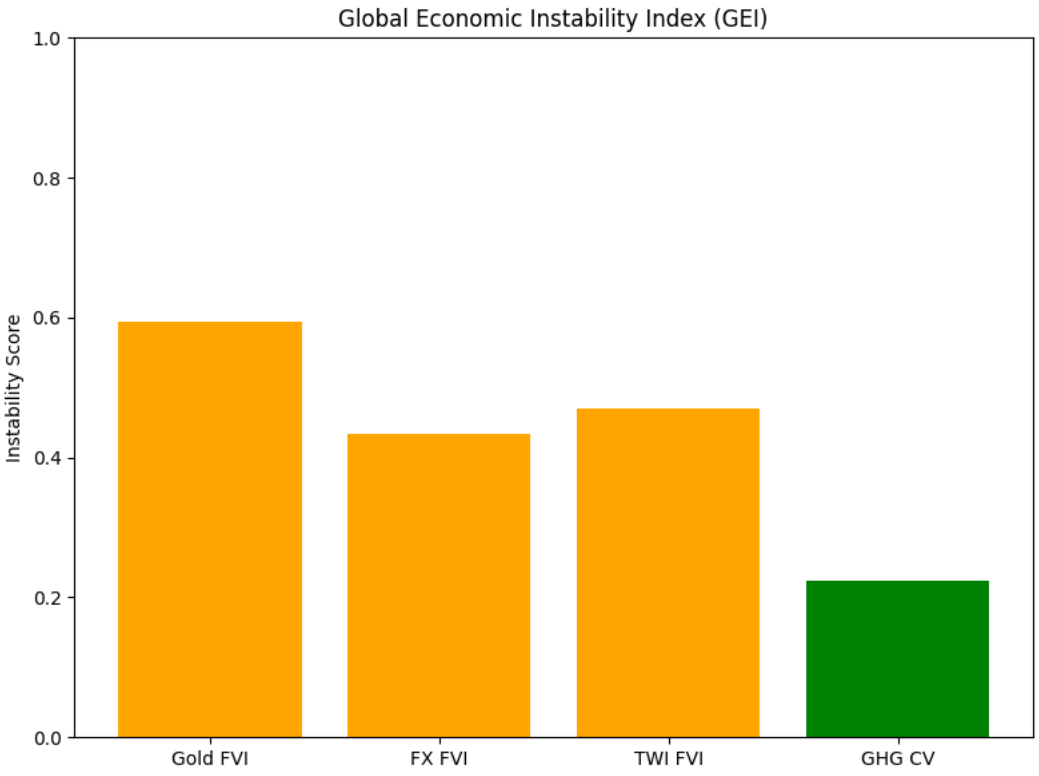
monitoring for improving profitability or clearer momentum confirmation.

Fractal Volatility Indices

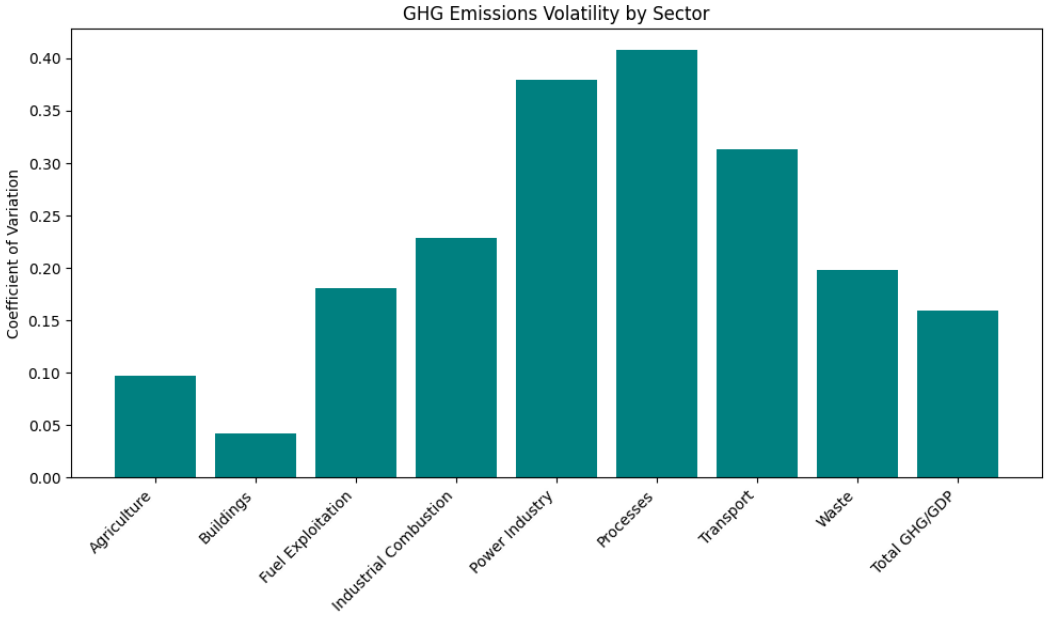
Global Geopolitical Fractal Volatility (Gold, Forex, TWI (Tariffs) and GHG Emissions)
FVI_GOLD: 0.593608 => Moderate gold volatility indicates increased investor caution
FVI_FX: 0.434301 => Moderate FX volatility indicates ongoing currency-market adjustment
FVI_TWI: 0.469352 => Moderate trade-weighted 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_____