Fractal Volatility Index for IBM : 0.539. 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: International Business Machines IBM FVI 0.539

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): -1.057
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

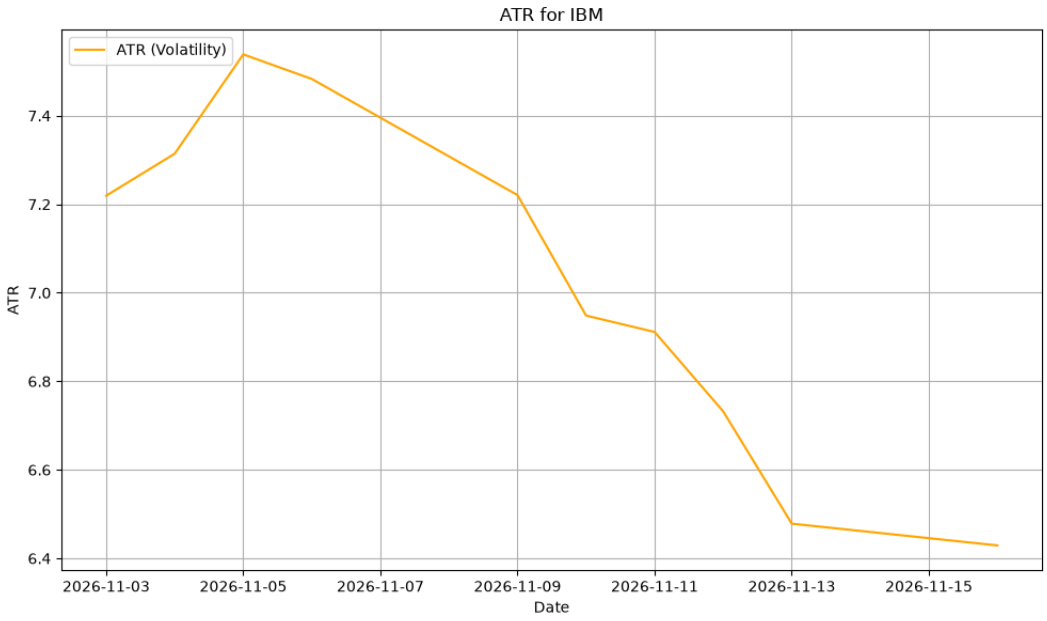
Fractal & Statistical Analysis

FVI Score: 0.539 (Fractal Volatility Index FVI)
DFA Result: 0.5422 (Detrended Fluctuation Analysis)
Lyapunov Exponent: 0.0162 (Measures chaos and predictability)
Hurst Exponent: 0.5381 (Indicates trending or mean-reverting behavior)

Breakout & Recent Price Change Analysis

Breakout Statement: No strong breakout signal detected: The latest closing price of 242.51 is within the Bollinger Bands range (240.39 - 259.03).
Latest ATR: 6.4292

Average True Range (ATR)

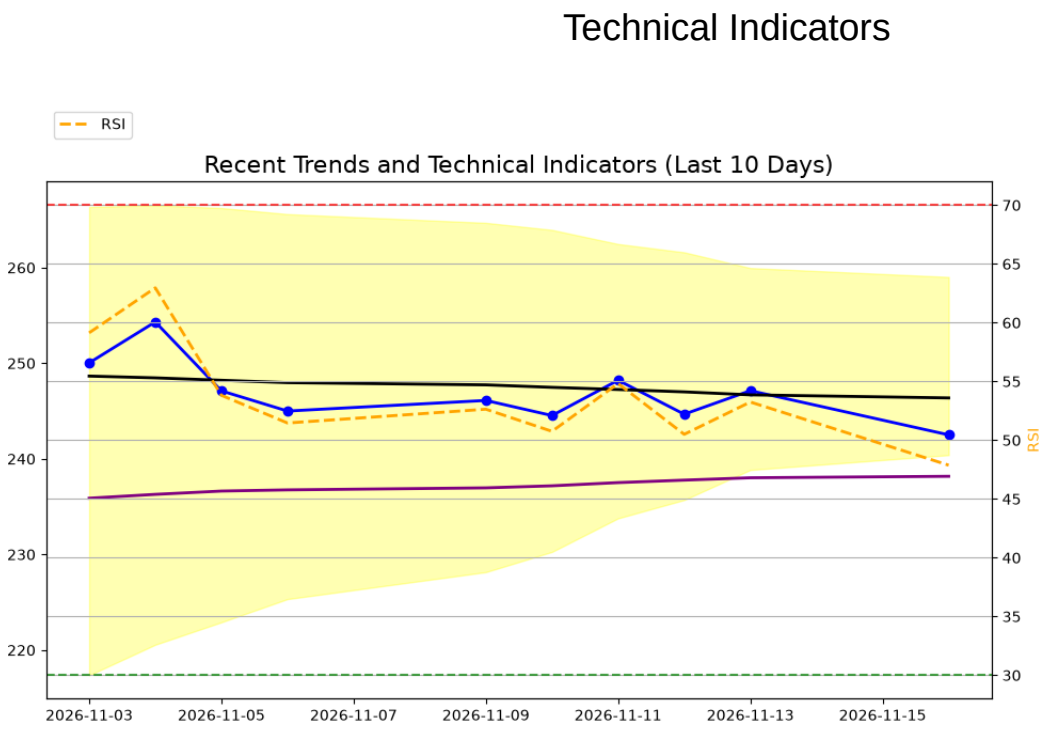


The ATR measures the recent price volatility of a stock, calculating the average range between its high and low prices over a given period (usually 14 days). A higher ATR indicates greater market volatility, and a lower ATR indicates less volatility.

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: Stock FVI is 0.5392 versus the market-wide FVI of 0.478. FVI measures structural instability, not direction.
- Interpretation: IBM's FVI above the market-wide level suggests relatively higher structural instability than the broad market at present.
- Hurst Exponent: 0.5381 — slightly above 0.5, providing mild evidence of persistence in returns; this is weak and does not imply direction.
- DFA: 0.5422 — indicates a scale-dependent correlation structure is present; by itself it does not predict a breakout or direction.
- Lyapunov Exponent: 0.0162 — a sensitivity/divergence measure; without a supplied threshold, its magnitude cannot be classified.

2. Breakout Evidence
- Observation: Breakout Probability Score (BPS) is -1.0565. The latest close (242.51) is within Bollinger Bands (240.39–259.03), and the explicit observation states no strong breakout signal.
- Interpretation: Taken together, the BPS reading and the in-band close indicate weak current breakout evidence; breakout direction is not determined by the supplied data.

3. Participation and Technical Context
- Volume change: +11.253% (reported factually; no attribution of cause).
- Latest ATR: 6.4292 (price units; no high/low classification without historical or price-normalized context).
- Beta: 0.764 (reported factually as a measure of market co-movement).
- Missing comparisons for stronger conclusions: historical/normalized ATR (e.g., ATR/price), typical volume baseline or moving average, and longer-horizon context for BPS and band positioning.

4. Macro and Sector Context
- Cross-asset structural instability (FVI): Gold 0.5936 > IBM 0.5392 > Market-wide 0.478 "H TWI 0.4694 > FX 0.4343. This ranks gold as the most structurally unstable proxy among those supplied, with FX the least; no specific cause is inferred.
- GHG context: Technology sector variability score is low (0.048), and IBM's sector sensitivity is 0.04825. These indicate low emissions-related variability at the sector level; this is not a comprehensive measure of geopolitical, energy, or supply-chain exposure.

5. Risk Interpretation
- The evidence most strongly supports moderate structural uncertainty: IBM's FVI is above the market-wide FVI, Hurst suggests only mild persistence, and DFA confirms a correlation structure without directional implications. Concurrently, BPS and the in-band close indicate no strong breakout characteristics at this time.

6. Monitoring Implications

- Monitor: stock FVI relative to market-wide FVI (for shifts in structural instability), BPS (for any emerging breakout evidence), the price's position relative to Bollinger Bands (confirmation of regime changes), Hurst/DFA (for persistence/structure drift), Lyapunov (for sensitivity changes), and volume/ATR trends (for realized participation and range dynamics). Track macro proxy FVI readings (Gold, FX, TWI) for changes in cross-asset instability that could inform background conditions.

FINAL TAKEAWAY

IBM currently exhibits structurally higher instability than the market (FVI 0.539 vs 0.478) with only mild persistence and no strong breakout evidence. The key uncertainty to monitor is the Breakout Probability Score for any sustained shift from the current non-breakout state.

Stock Information

Market Capitalization: 233567715000, Industry: INFORMATION TECHNOLOGY SERVICES, Latest Volume: 5150813, Description: International Business Machines, Sector: TECHNOLOGY, Price to Book: 6.57, Trailing PE: 21.09, Forward PE: 18.52, Enterprise to Ebitda: 16.33, Enterprise to Revenue: 4.146, Profit Margins: 0.16

The trading volume has changed by 11.25% 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: 0.76
Beta of 0.76 suggests low volatility compared to the market.

Stock Investment Character Report

Analysis based on supplied stock characteristics and market context.

Investment Character: Steady Operator
Resilience: 62%
Momentum: 15%
Structural Stress: 45%
Narrative Dependence: 30%
Confidence: 58%

Calculated Metrics:
- Price-Volume Divergence: 0.000
- Volatility Dissonance Index: -0.358

Evidence:
- Beta below 1 indicates lower sensitivity to market moves relative to the broader market.
  Indicators: Beta=0.764, Market-wide FVI=0.478
  Supports: Resilience
- ATR exceeds the supplied high-volatility threshold (>5), indicating elevated recent trading-range volatility.
  Indicators: ATR=6.429202228431623
  Supports: Structural Stress
- FVI sits in the moderate range and is above the market-wide FVI, suggesting moderate structural volatility slightly higher than the market backdrop.
  Indicators: Fractal Volatility Index=0.539, Market-wide FVI=0.478
  Supports: Structural Stress
- Negative breakout score and price remaining within Bollinger Bands indicate no strong breakout momentum.
  Indicators: Breakout Probability Score=-1.0565224574450398, Bollinger Bands=240.39-259.03, Latest Close=242.51
  Supports: Momentum
- A 16% profit margin provides operating support, while valuation multiples appear moderately demanding but not extreme based on the supplied figures.
  Indicators: Profit margin=0.16, Trailing P/E=21.09, Forward P/E=18.52, EV/EBITDA=16.33, EV/Revenue=4.146
  Supports: Resilience

Assessment:
IBM currently presents as a steadier, lower-beta technology services name with operating support (16% margin) and moderate structural volatility. Recent trading-range volatility is high by ATR, but FVI is only moderate and there is no confirmed breakout momentum. Valuation is not minimal yet appears within a supported range given the operating margin, reducing reliance on a pure narrative. Overall, this tilts toward a steady operator rather than momentum or speculative character.

Limitations:
- Earnings detail is incomplete: trailing and forward EPS are listed as 0, which conflicts with the supplied P/E ratios and limits earnings-based analysis.
- No data on revenue growth, cash flows, or balance sheet leverage to deepen operational resilience assessment.
- ATR is absolute and, while thresholded here, lacks historical context for IBM specifically.
- Volume and its change do not establish accumulation or distribution, and Bollinger Band evidence only confirms absence of a breakout.

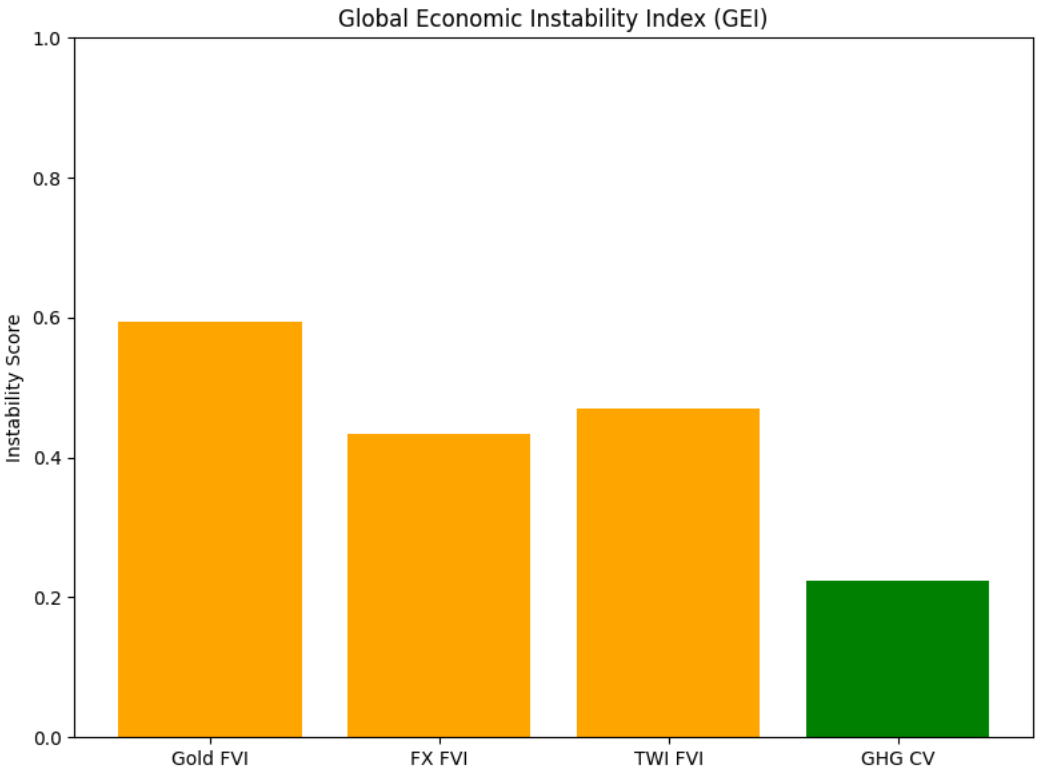
Medium-Term Fit:
Potential fit for an independent thesis favoring large-cap technology services exposure with below-market beta, moderate structural volatility, and acceptable but not minimal valuation, where the investor prioritizes steadier operational profiles over breakout-driven momentum.

Fractal Volatility Indices

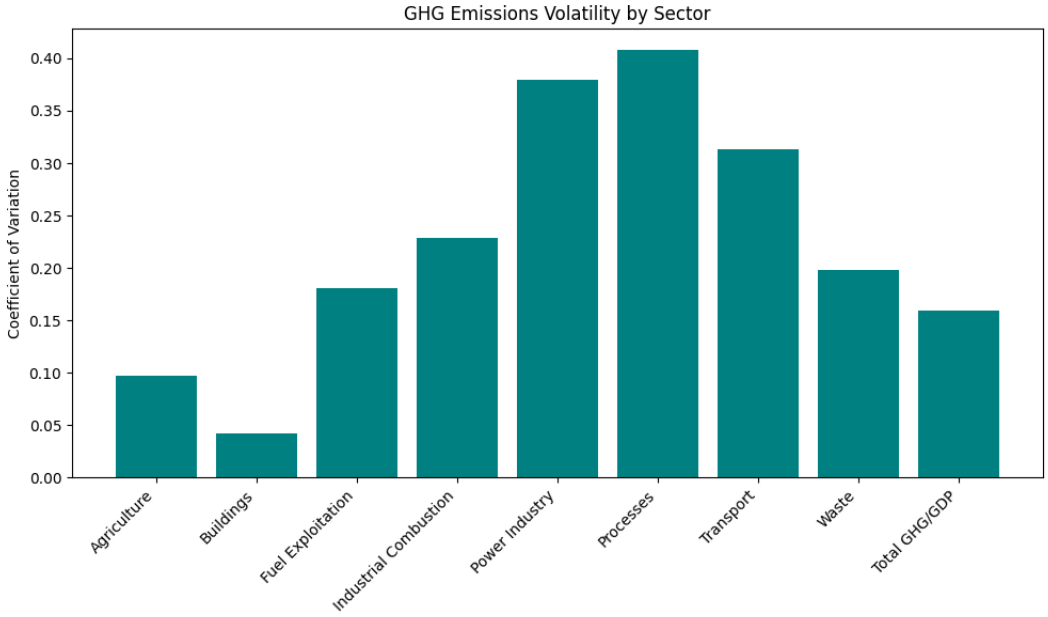
Global Geopolitical Fractal Volatility (Gold, Forex, TWI (Tariffs) and GHG Emissions)
FVI_GOLD: 0.593608 => Moderate gold volatility indicates increased investor caution
FVI_FX: 0.434301 => Moderate FX volatility indicates ongoing currency-market adjustment
FVI_TWI: 0.469352 => Moderate trade-weighted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



Low GHG impact (0.048) for the Technology 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.

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