

Fractal Volatility Index for IBM : 0.520. 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 0.520

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): 0.143

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: 0.520 (Fractal Volatility Index FVI)

DFA Result: 0.5373 (Detrended Fluctuation Analysis)

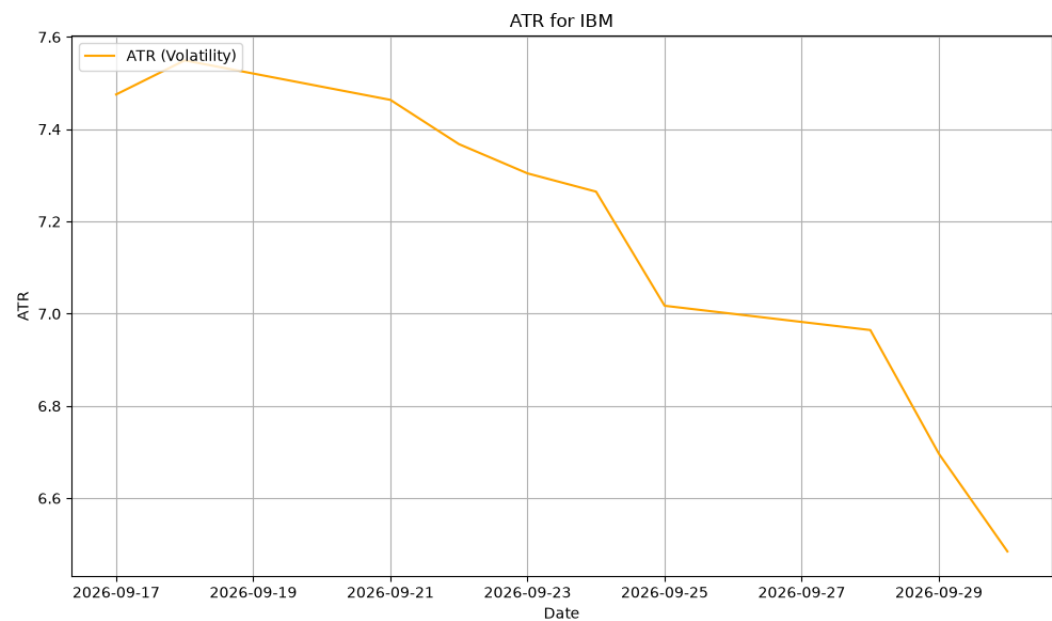
Lyapunov Exponent: 0.0160 (Measures chaos and predictability)

Hurst Exponent: 0.5246 (Indicates trending or mean-reverting behavior)

Breakout & Recent Price Change Analysis

Breakout Statement: No strong breakout signal detected: The latest closing price of 219.93 is within the Bollinger Bands range (216.98 - 249.24).
Latest ATR: 6.4845

Average True Range (ATR)



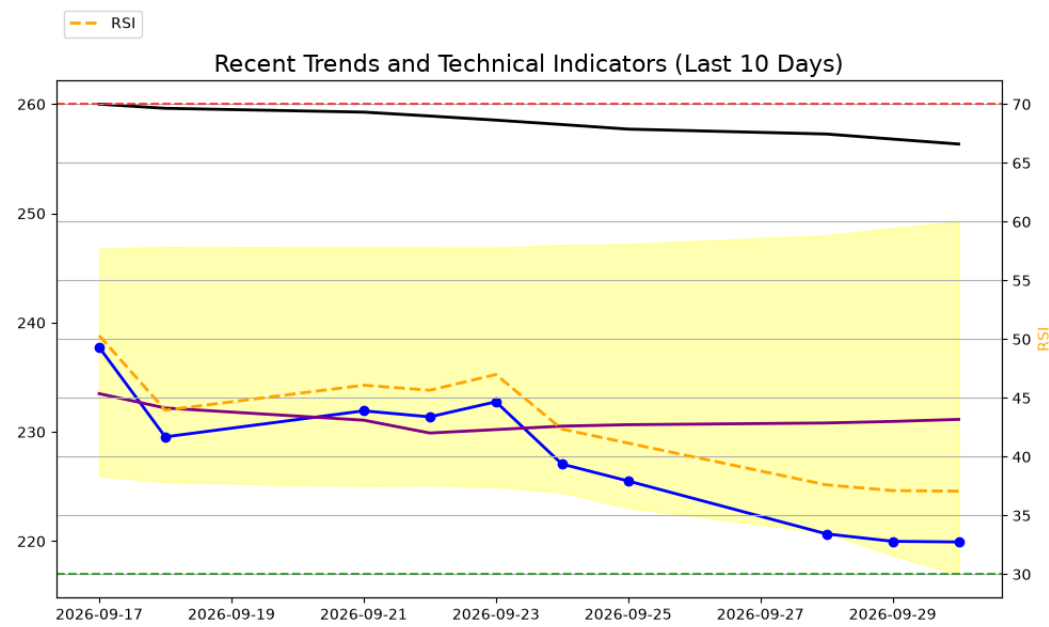
The ATR measures the recent price volatility of a stock, calculating the average range between its high and low prices over a given period (usually 14 days). A higher ATR indicates greater market volatility, and a lower ATR indicates less volatility.

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) for IBM is 0.520, slightly higher than the market-wide FVI of 0.478, indicating a slightly higher structural instability in IBM's price series relative to the overall market. The Lyapunov exponent of 0.016 suggests a low sensitivity and divergence within the system, while the Hurst exponent of 0.525 is slightly above 0.5, indicating a weak evidence of persistence over the observed series. The DFA of 0.537 suggests a moderate scale-dependent correlation structure in the price series.

2. Breakout Evidence

The Breakout Probability Score (BPS) for IBM is 0.143, which is a relatively low score, indicating weak evidence of a potential breakout. This aligns with the breakout observation that the latest closing price of 219.93 is within the Bollinger Bands range (216.98 - 249.24), suggesting no strong breakout signal at the moment.

3. Participation and Technical Context

The volume change for IBM is 0.665%, and the latest Average True Range (ATR) is 6.484. Without historical or price-normalised comparison, these figures provide limited insight into the stock's trading activity or price movement.

4. Macro and Sector Context

The FVI for Gold, FX, and TWI are 0.594, 0.434, and 0.469 respectively. These figures represent the structural instability in their respective series, but without additional context, it's challenging to attribute specific causes. The GHG sector sensitivity score of 0.04825 indicates low emissions-related variability in the Technology sector, which includes IBM.

5. Risk Interpretation

The evidence provided points towards moderate uncertainty for IBM. The slightly elevated FVI relative to the market and the weak evidence of persistence in price series suggest a degree of instability. However, the low BPS and the contained price within the Bollinger Bands range signal limited breakout potential.

6. Monitoring Implications

Given the current evidence, it would be beneficial to continue monitoring the FVI for any significant changes in structural instability, the BPS for emerging breakout signals, and the GHG sector sensitivity score for changes in sectoral emissions-related variability.

FINAL TAKEAWAY

The analysis indicates moderate uncertainty for IBM, with slightly higher structural instability compared to the market but limited breakout potential. Key areas to monitor include the FVI for changes in volatility structure and the BPS for potential breakout evidence.

Stock Information

Market Capitalization: 207203615000, Industry: INFORMATION TECHNOLOGY SERVICES, Latest Volume: 4569780, Description: International Business Machines, Sector: TECHNOLOGY, Price to Book: 6.33, Trailing PE: 19.53, Forward PE: 17.39, Enterprise to Ebitda: 15.66, Enterprise to Revenue: 3.982, Profit Margins: 0.155

The trading volume has changed by 0.66% 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: 0.71

Beta of 0.71 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: 60%

Momentum: 20%

Structural Stress: 40%

Narrative Dependence: 30%

Confidence: 62%

Calculated Metrics:

- Price-Volume Divergence: 0.000

- Volatility Dissonance Index: -0.472

Evidence:

- FVI of 0.520 falls in the 'Moderate volatility' range per the supplied scale and is above the market-wide FVI of 0.478.

Indicators: FVI=0.520, Market-wide FVI=0.478

Supports: Structural Stress

- Beta below 1 indicates the stock has been less sensitive than the overall market.

Indicators: Beta=0.708

Supports: Resilience

- ATR is above 5, which is 'High' per the supplied thresholds, indicating a wide recent trading range in absolute terms.

Indicators: Latest ATR=6.4845

Supports: Uncertainty

- No strong breakout signal is detected and the latest close is within the stated Bollinger Bands.

Indicators: Breakout Probability Score=0.1431, Bollinger Bands=216.98-249.24, Latest close=219.93

Supports: Momentum

- The company shows a positive profit margin alongside mid-to-high valuation multiples; EPS fields provided are zero.

Indicators: Profit margin=0.155, Trailing P/E=19.53, Forward P/E=17.39, EV/EBITDA=15.66, P/B=6.33, Trailing EPS=0, Forward EPS=0

Supports: Resilience

Assessment:

IBM appears operationally steady with a positive profit margin and lower-than-market beta supporting resilience. Structural instability is moderate per the FVI, while ATR indicates a recently wide trading range that adds near-term uncertainty without confirming momentum. Breakout evidence is weak and the price remains within Bollinger Bands, pointing to limited confirmed momentum at present. Valuation multiples are on the demanding side but not extreme, suggesting modest valuation sensitivity rather than narrative dependence.

Limitations:

- Earnings quality and growth trajectory cannot be assessed from the supplied data; both trailing and forward EPS are zero, limiting clarity.

- ATR is absolute and lacks historical normalization beyond the provided thresholds, so time-based context is absent.

- Volume and its change do not establish accumulation, distribution, or confidence per the rules, limiting read-

through on participation.

Medium-Term Fit:

May suit an investor seeking lower-beta technology services exposure with moderate structural volatility, aiming for steadier operations while remaining valuation-aware and not reliant on breakout momentum.

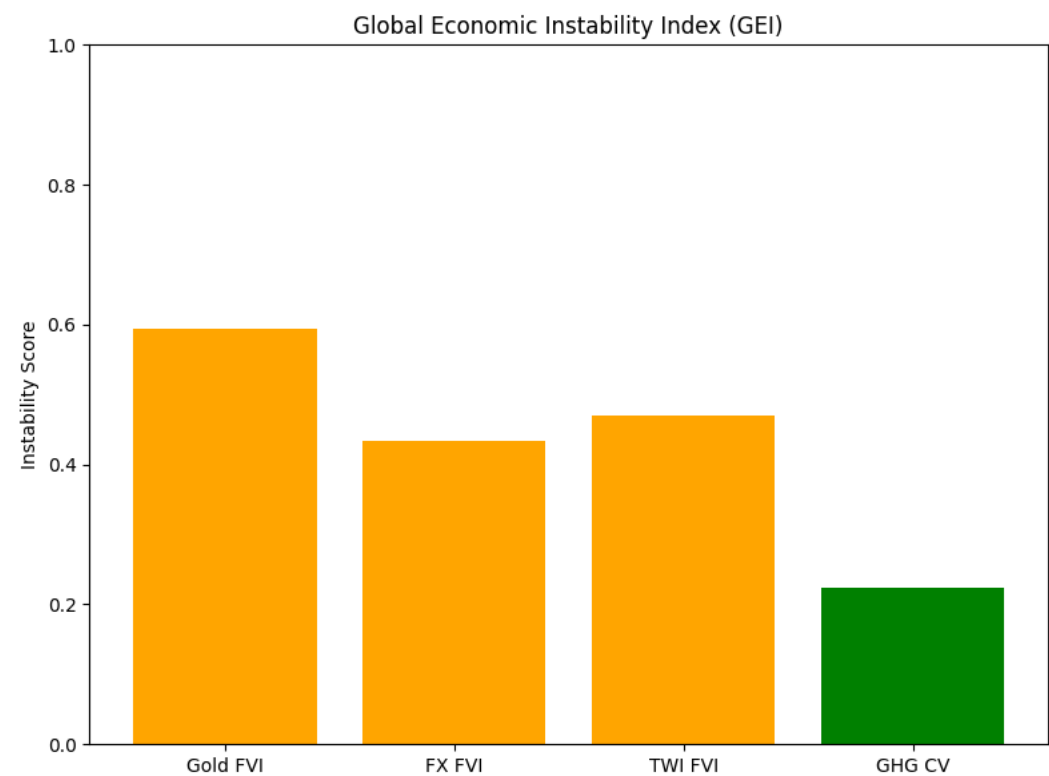
Fractal Volatility Indices

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

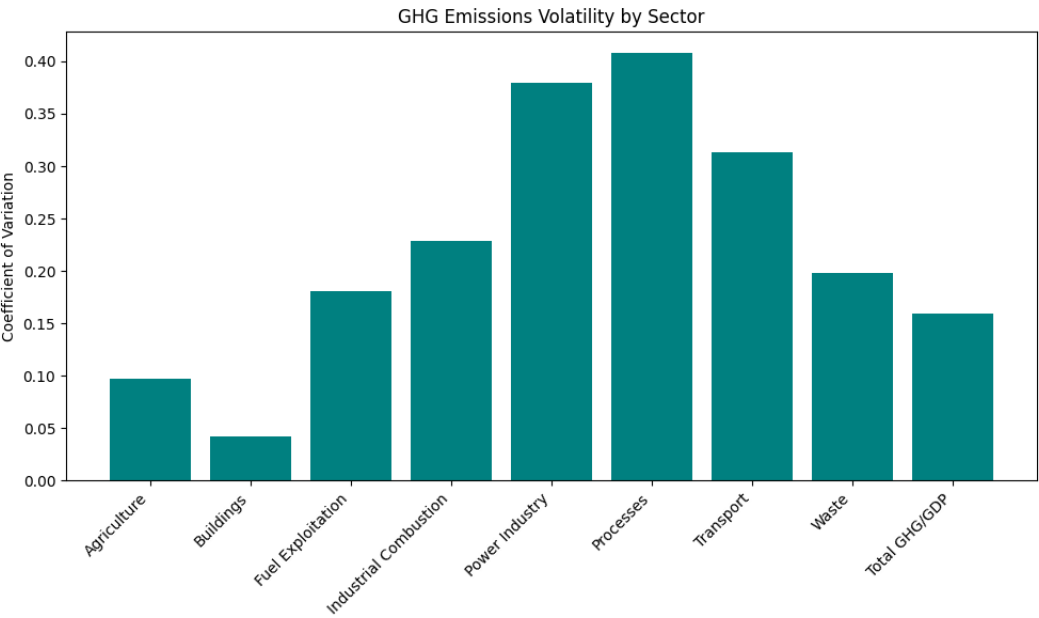
FVI_GOLD: 0.593608 => Moderate gold volatility indicates increased investor caution
FVI_FX: 0.434301 => Moderate FX volatility indicates ongoing currency-market adjustment
FVI_TWI: 0.469352 => Moderate trade-weighted volatility indicates some external-sector adjustment
GHG_CV: 0.223036 => Moderate GHG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

_____END OF REPORT_____