

PortfolioEffect

Volatility and Risk Factors Database

Financial database that offers intraday metrics of price volatility, alpha, beta and high-order moments for 8,000+ US stocks, stock indices and ETFs since 2013

Available Datasets

PortfolioEffect service employs latest advances in high frequency market microstructure theory to produce traditional price metrics using tick-level market data. When used as inputs to a risk model or a trading strategy, these estimates bring a dramatic improvement in relevance and precision.

Metric	Description
RET	Average return (expected return)
VAR	Variance (volatility, squared standard deviation) of price returns
SKEW	Skewness of price returns
KURT	Kurtosis of price returns
MOM3	3rd moment of price returns
MOM4	4th moment of price returns
ALPHA	Alpha (Jensen's alpha, excess return, ex-post alpha) of price returns
BETA	Beta (market sensitivity) of price returns
HURST	Hurst exponent (long memory measure) of price returns
FDIM	Fractal dimension of price returns

Window Length

Each metric is available in multiple flavors, depending on the rolling window length used for its calculation. Metrics at longer windows (e.g. 1 week) are less sensitive to recent price changes, while capturing important aspects of long-term price behavior. Same metrics at shorter time windows (e.g. 1 day) use fewer price points, but are much more responsive to the latest market dynamics (e.g. new volatility regime after a news release).

Length	Description	Available on Quandl
1_WEEK	1 week (5 trading days) window	Yes
1_DAY	1 day window	Yes
1_HOUR	1 hour window	No
1_MIN	1 minute window	No
1_SEC	1 second window	No

Methodology

The metrics are computed using a time series of high frequency price returns of an instrument in a rolling window of given length and then rescaled to a 1 day horizon.

PortfolioEffect features a next-generation "smart" model pipeline for high frequency data. Returns are processed with a series of auto-calibrating models for high frequency market microstructure noise, price jumps/outliers, fat distribution tails (extreme events), long memory (price fractality) and intraday risk factors (single index model).

Using high frequency data dramatically improves precision of statistical estimates due to the so-called bias-variance trade-off. High frequency data provides many more recent/fresh data points, thus decreasing the variance of estimates, without using stale data points that would increase the estimation bias. Please, visit our website documentation section to learn more about PortfolioEffect's methodology.