

FACTOR PROFILE: LOW VOLATILITY

INSIGHTS AND DESIGN OF OUR ADVANCED FACTORS

Equity factors represent systematic, persistent drivers of return that reflect how markets price risk, behavior, and business fundamentals over time. Decades of academic and empirical research, including Northern Trust Asset Management's *Foundations in Factors*, show that factors such as value, quality, momentum, and low volatility have historically delivered differentiated risk and return profiles relative to capitalization weighted markets. These return patterns are commonly linked to a combination of economic foundations and behavioral frictions, including investor preferences, constraints, and misperceptions, that tend to persist through market cycles. Importantly, while factor exposures are systematic, their effectiveness is highly sensitive to how they are defined, measured, and implemented. Simplistic constructions can amplify cyclicalities, introduce unintended risks, or dilute the underlying signal. As a result, disciplined factor design, grounded in economic intuition, robust empirical evidence, and thoughtful portfolio construction, is essential to improving the durability, risk efficiency, and overall investor experience of factor driven strategies.

QUANTITATIVE STRATEGIES

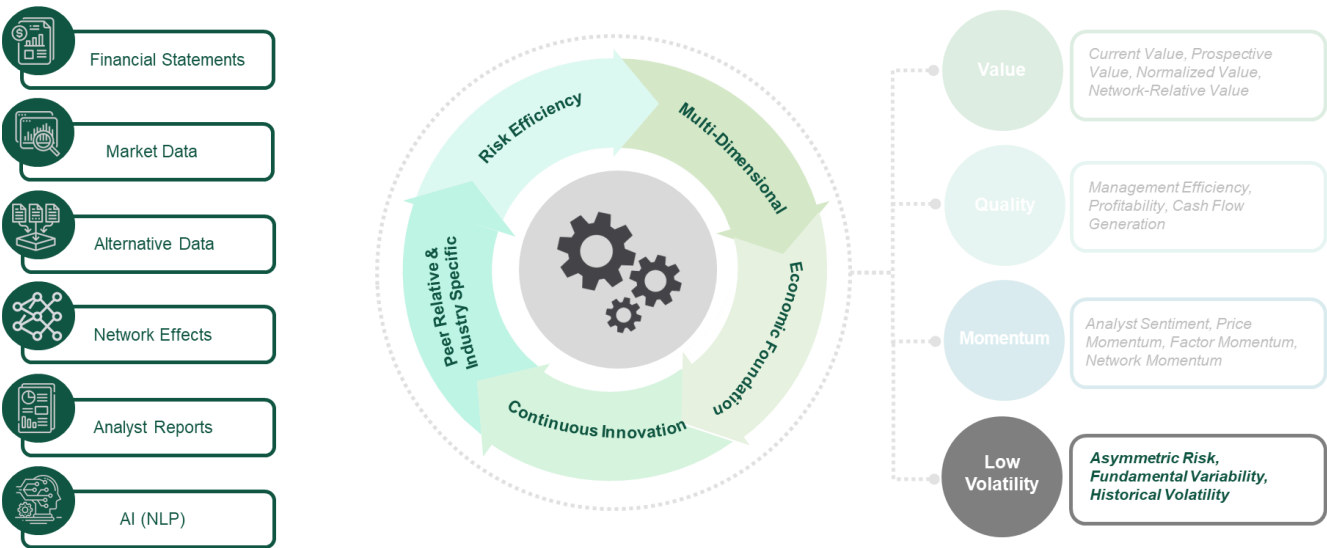
Northern Trust Asset
Management

OUR FACTOR FRAMEWORK

Our multi-dimensional factor framework recognizes factor premia as complex, unobservable phenomena that are best captured through diversified signals rather than single metrics. Across Value, Quality, Momentum, and Low Volatility, the framework integrates traditional financial data with alternative and text based data, network analytics, and advanced processing techniques to capture multiple economic and behavioral dimensions of each factor, while deliberately managing unintended exposures. This approach reflects our view that robust factor definitions must evolve alongside markets, data availability, and the structure of the global economy.

Our factors are built with a strong emphasis on risk efficiency. We explicitly neutralize uncompensated risks and use peer-relative comparisons to improve measurement consistency across the investment universe, extending beyond standard classifications to incorporate proprietary network relationships. The framework is context-aware, recognizing that risk and business models vary meaningfully across sectors. Continuous innovation is guided by a disciplined, evidence-based research process that preserves core economic intuition while refining measurement, supporting resilient, differentiated, risk-adjusted outcomes across market cycles.

A PROVEN MULTI-DIMENSIONAL FRAMEWORK TO ASSESS SECURITY CHARACTERISTICS



Source: Northern Trust Asset Management, For Illustrative Purposes Only.

OUR APPROACH TO LOW VOLATILITY

Low volatility reflects the tendency for stocks with more stable and asymmetric return profiles to deliver more favorable long term outcomes than their riskier counterparts. Rather than focusing solely on minimizing variability, the factor is rooted in the idea that downside risk matters more than upside variability. Historically, stocks that experience smaller and less severe drawdowns have tended to compound returns more efficiently over time, particularly across full market cycles. Behavioral forces help explain this pattern, as investors often favor stocks with lottery like payoffs or highly skewed return profiles, while undervaluing the benefits of consistency, resilience, and downside protection. However, assessing low volatility effectively requires moving beyond simple measures of price variability. Traditional definitions can obscure important differences in how risk is realized, particularly during periods of market stress.

Our approach reflects the view that not all volatility is equal: downside risk is more consequential than upside variability, and stocks with asymmetric return profiles have historically delivered more resilient long term outcomes. We apply a systematic, peer-to-peer framework across the full investment universe, allowing us to identify low volatility characteristics on a like-for-like basis while avoiding the sector and structural biases that can arise from simplistic definitions. The themes driving our factor definition are outlined below:

Asymmetric risk signals form a core component of our approach. These measures focus on the distribution of returns rather than their average level, helping identify stocks that exhibit greater downside volatility relative to upside potential. Securities with negatively skewed return profiles tend to experience more frequent and severe drawdowns, making them less attractive in a low volatility context. Simply avoiding these patterns can materially improve the asymmetry of portfolio outcomes over time.

Fundamental variability provides a complementary, non-price based lens on volatility. By examining the stability of underlying business fundamentals—such as variability in sales and free cash flow—we seek to identify stocks with more predictable economic profiles. These signals help anchor low volatility exposure in company fundamentals rather than market noise, and they tend to reduce turnover relative to approaches that rely solely on recent price movements.

Historical volatility completes the approach by capturing realized price variability over multiple horizons. Rather than relying on a single lookback window, we use smoothed measures that balance responsiveness with stability, emphasizing recent behavior while maintaining a longer term perspective. Together, these diversified signals allow us to capture the low volatility effect in a disciplined, risk efficient way that emphasizes resilience, consistency, and downside protection.

The low volatility factor is distinct from other equity factors due to its inherent low-beta bias. The exhibit below shows annualized alpha after controlling for market beta and compares the risk, return, and drawdown characteristics of low- and high-volatility stocks. As widely documented in the academic literature, low volatility stocks have delivered counterintuitive outcomes relative to the predictions of modern portfolio theory: within equities, higher risk has not reliably translated into higher returns.

EXHIBIT 1: LOW VOLATILITY RISK AND RETURN OUTCOMES

The advantage of our diversified, multi-dimensional approach to harvest the low volatility factor

Market Universe	Factor (Low Volatility)	Ann. Alpha (%)	Return (%)	Risk (%)	Sharpe Ratio	Max. Drawdown (%)
U.S.	Northern Trust (Long-Short)	5.3%				
	Lowest Vol Quintile		10.9%	13.9%	0.79	-19.0%
	Highest Vol Quintile		8.8%	26.6%	0.33	-38.3%
Developed Markets ex. U.S.	Northern Trust (Long-Short)	4.7%				
	Lowest Vol Quintile		8.4%	11.4%	0.74	-21.6%
	Highest Vol Quintile		5.5%	20.5%	0.27	-31.7%
Emerging Markets	Northern Trust (Long-Short)	3.4%				
	Lowest Vol Quintile		8.0%	15.5%	0.52	-23.2%
	Highest Vol Quintile		5.4%	26.8%	0.20	-33.3%

Source: Northern Trust Asset Management – Quantitative Strategies. Based on long-short backtests using the Russell 1000, MSCI World Ex-US, and MSCI Emerging Markets indexes, weighted by alpha times the square root of market cap. Period: January 1996 - January 2026. Simulated performance for illustrative purposes only. Northern Trust represents a proprietary advanced definition described herein. This table does not show actual performance results. For illustrative purposes only. Past performance is not indicative or a guarantee of future results. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index.

REFERENCES AND RELATED READING

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