MORNINGSTAR Indexes

Morningstar Global Factor Indexes Frequently Asked Questions

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Introduction to Factor Investing

What is an investment factor?

An investment factor is a variable that drives returns across many securities. Factors can be observed with common quantitative security characteristics, like valuations or exposure to market or credit risk. They can help explain and predict differences in security returns. Because investors can diversify away firm-specific risk, only factors common across many securities should influence expected returns.

Which factors have been historically associated with strong performance?

Within equities, several factors have been identified as having outperformed the market over long periods. They include value, momentum, quality, small size, yield, and low volatility[1].

Why might these factors continue to work in the future?

These factors have been well-vetted in the academic literature. They are robust to different definitions, have been observed across many different time periods and regions, and their persistence is supported by strong economic rationale, related to either risk or investor behavior.

What should investors know about each factor?

Value: Value investing is about buying low and selling high – targeting stocks trading at low multiples of fundamental measures like earnings, book value, cash flow, sales, and dividends. Value investing is backed by strong economic rationale and empirical evidence. Lower valuations should reflect higher expected returns, either as compensation for risk or because investors may be overly pessimistic about these stocks' prospects.

Momentum: Momentum describes short-term performance persistence. Momentum strategies target stocks with strong recent returns, based on the premise they are likely to continue to outperform. There's substance to this strategy. Prices may adjust more slowly than they should to new information, as investors often initially underreact. This alone can cause performance to persist. Once a trend is established, more investors may jump on the bandwagon, further fuelling price momentum.

Quality: The shares of companies with strong profitability and balance sheets have performed better

1 Low volatility has historically been associated with better risk-adjusted performance than the market, not necessarily higher absolute returns.

historically than less profitable and more highly indebted counterparts. They tend to be less risky than the market and hold up better during downturns, characteristics that intuitively wouldn't lead to an expectation of higher returns. However, investors may have historically underestimated the long-term durability of these firms' strong cash flows, leading to an impressive long-term track record of risk-adjusted returns.

Small Size: Historically, smaller cap stocks have tended to outperform their larger counterparts. The small-cap premium is rooted in risk. Smaller, less proven companies are more volatile than their larger cousins and should compensate investors for the extra risk they bear.

Yield: Higher yielding stocks have historically offered superior returns than their lower yielding counterparts. This strategy targets stocks with high shareholder yields, inclusive of both dividend yield and buyback yield. Companies with generous cash distribution yields tend to be more stable, profitable and trade at lower valuations. Their shareholders are more loyal because they are holding the stock for both income and total return. And the dividend commitment tends to instil discipline and lead to careful stewardship.

Low Volatility: Stocks with low past volatility have tended to offer better risk-adjusted performance than those with high volatility. Unlike many of the other factors, there isn't a clear risk-based explanation for this effect. The anomaly is typically explained through investor behavior, given leverage and tracking error constraints. Professional investors overly focused on returns and unable to leverage their portfolios can crowd into volatile stocks, which have greater upside potential than their more staid counterparts. So can retail investors looking for lottery-like upside. As a result, not only are low volatility stocks more resilient during "risk-off" market environments, but they may also be priced to offer a more favorable risk-reward trade off over the long term.

Index Construction

What are the Morningstar Global Factor Indexes built to do?

The Morningstar Global Factor Indexes are designed to deliver strong exposure to industry-standard equity factors. The indexes are constructed with a transparent, rules-based methodology that aims to mitigate unintended sector and regional biases and facilitate investability.

What stocks are eligible for inclusion?

Each factor index is derived from its corresponding standard parent benchmark from the Morningstar Target Market Exposure Index family, which represents the top 85% of equity market capitalization in its segment. The focus on large- and mid-cap stocks facilitates high investment capacity. To be eligible for inclusion, each stock must have valid factor exposure scores.

How do the Morningstar Global Factor Indexes define each factor?

Value: The Morningstar Global Factor Indexes define value in accordance with the Morningstar Style Box methodology, which is robust and incorporates historical and forward-looking value and growth metrics. The value inputs (weightings in parentheses) include:

1. Price/Earnings Forward (50%)
2. Dividend Yield (12.5%)
3. Price/Book (12.5%)
4. Price/Cash Flow (12.5%)
5. Price/Sales (12.5%)

Lower growth characteristics also translate into higher value style scores.

Momentum: This factor is measured as the trailing 12-month return (in local currency), excluding the most recent month, minus the local risk-free rate. This definition aligns with the momentum factor as defined by the academic literature.

Quality: This is measured as the equally weighted z-score of a company's profitability (trailing 12-month return on equity) and the z-score of its financial leverage (trailing 12-month debt/capital).

Small Size: This factor is measured as the normalized value of the logarithm of a firm's market capitalization, where smaller stocks are favored.

Yield: This is measured as the trailing 12-month shareholder yield, which includes dividends and net buybacks. Total shareholder yield offers a more complete picture of shareholder distributions than dividend yield alone.

Low Volatility: Weighted average of idiosyncratic volatility over the past six months (50%), total volatility over the past six months (25%), MAX5/lottery factor (25%), which is based on the highest five day returns over the past month where lower values are favored. This composite provides a more complete view of risk than a security's total volatility alone.

Does Morningstar measure factor characteristics relative to the sector, or eligible universe?
Value, quality, yield, and small size are defined on a sector relative basis within each region. Most of the historical benefits from these slow-moving factors has come from intra-sector stock selection, as sector-specific dynamics reduce cross-sector comparability[2]. Intra-sector ranking reduces persistent sector tilts that could contribute to active risk.

Low volatility and momentum are ranked relative to the full eligible universe within each region. These price-based factors tend to be faster-moving than the other four factors and more comparable across sectors. Here, factor driven sector tilts may be more beneficial, especially for momentum.

How are the Morningstar Global Factor Indexes constructed?
Within each parent index, constituents are ranked by their factor exposure. All factors are measured relative to each broad region[3]. The quality, size, value and yield factor exposures are also measured on a sector relative basis. For low volatility and momentum, no sector relative adjustments are made. The highest ranking 30% of the parent index's float-adjusted market capitalization is targeted for inclusion in each index.

Constituents are weighted by the product of their float-adjusted market capitalization and strength of their factor exposure, subject to constraints to limit unintended risk.

What constraints do the indexes apply?
Sector, regional, and individual stocks weights are constrained relative to the underlying universe to limit

2 Bryan, Alex. "The Impact of Industry Tilts on Factor Performance." Morningstar. Mar. 15, 2017.
https://www.morningstar.com/content/dam/marketing/shared/pdfs/Research/The_Impact_of_Industry_Tilts_on_Factor_Performance.pdf?
3 The regions for relative scoring are defined in the Morningstar Risk Model. These include: Developed North America, Developed Europe, Developed Asia Pacific, Emerging Latin America, Emerging Europe, Emerging Asia Pacific, Emerging Middle East & Africa.Developed

unintentional bias (constraints are looser for momentum and low volatility than for the others). Turnover buffer rules are also applied to mitigate potential transaction costs. The constraints are iteratively relaxed if a solution is infeasible.

How often are the indexes reconstituted?

The indexes are rebalanced and reconstituted semi-annually in June and December.

Application

How can investors use these indexes?

Investors can use these indexes as the foundation for long-term investment strategies, to express tactical views on factors, or as performance benchmarks. They are well-suited for factor rotation strategies, given their consistent starting universe and target market coverage. Regardless of the market environment, these indexes are effective tools for evaluating and managing factor exposures.

What are the benefits of using multiple factor indexes together in a portfolio?

While there is strong empirical and theoretical support for factor investing, a given factor won't always outperform. Cyclicality is a feature not a bug of factor investing. Diversifying across factors can help reduce the risk of extended periods of underperformance, while leaving room for potential outperformance. Each Morningstar Global Factor Index provides similar coverage of the market, which should facilitate efficient use together in a portfolio for factor diversification or factor rotation.

About Morningstar Indexes

Morningstar Indexes was built to keep up with the evolving needs of investors—and to be a leading-edge advocate for them. Our rich heritage as a transparent, investor-focused leader in data and research uniquely equips us to support individuals, institutions, wealth managers and advisors in navigating investment opportunities across major asset classes, styles and strategies. From traditional benchmarks and unique IP-driven indexes, to index design, calculation and distribution services, our solutions span an investment landscape as diverse as investors themselves.

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