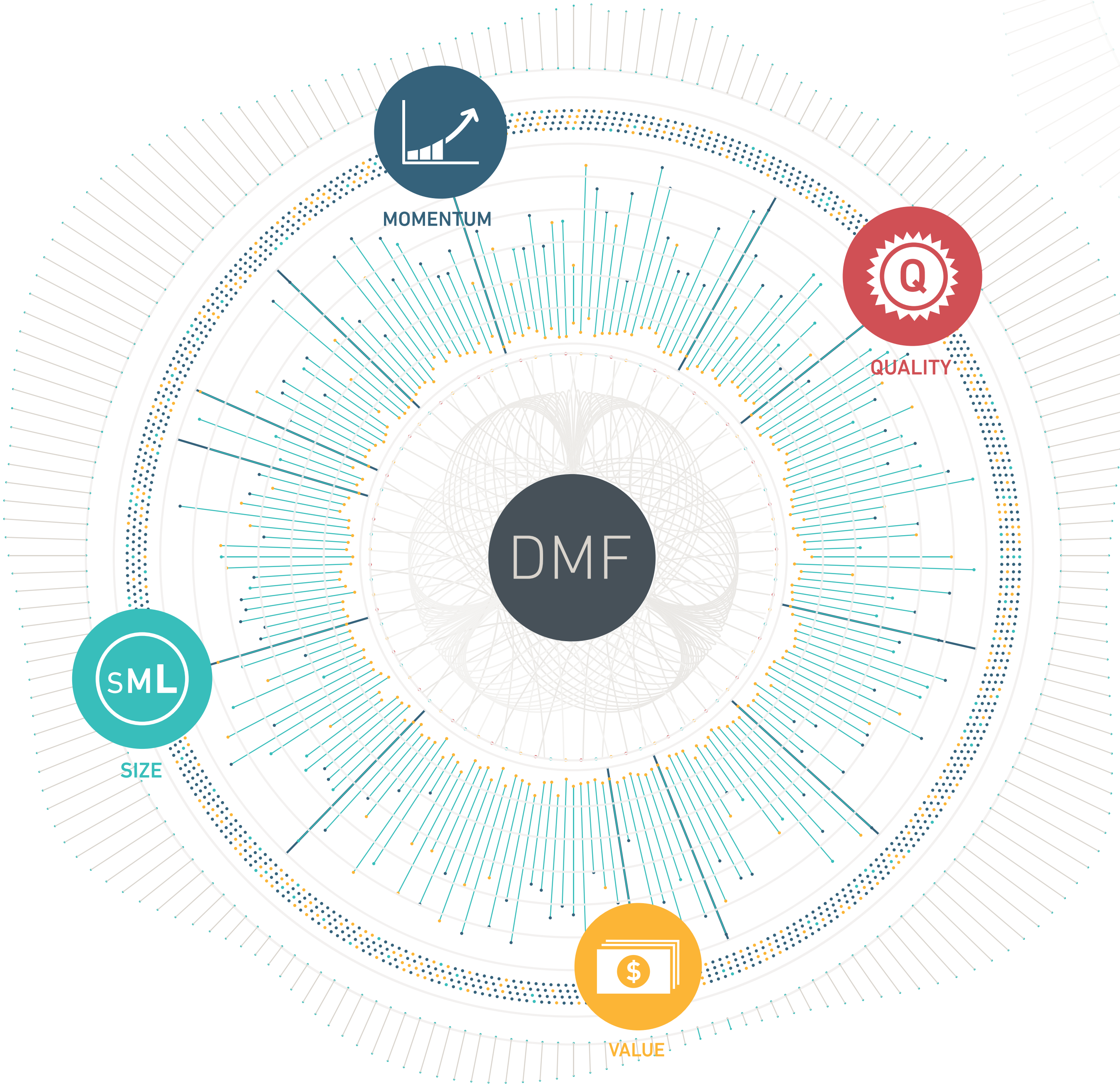

MSCI DIVERSIFIED MULTIPLE-FACTOR INDEXES

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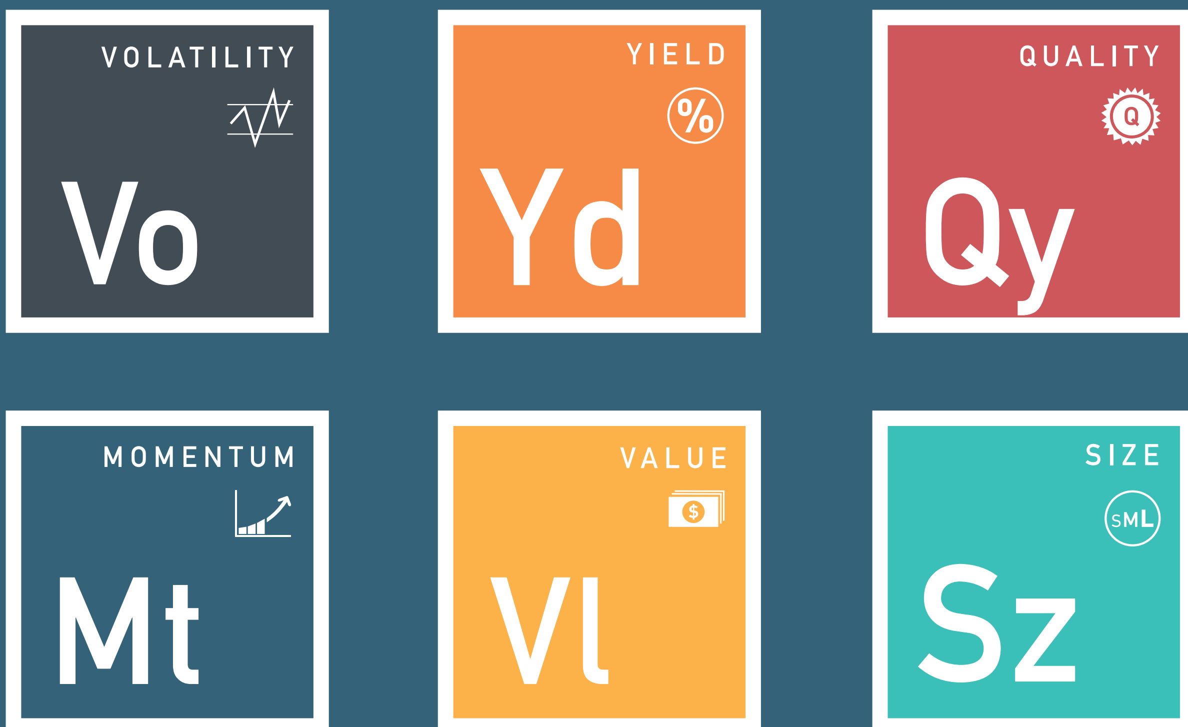
ELEMENTS OF PERFORMANCE™

Factors by MSCI



Factors are the building blocks of many portfolios – the elements capable of turning data points into actionable insights.

MSCI DIVERSIFIED MULTIPLE-FACTOR INDEXES

A factor is any characteristic that helps explain an asset's long-term risk and return profile. Certain factors have demonstrated a significant premium over the long run. As a result, factor investing—which aims to harvest these historically persistent benefits—has gained popularity in recent years.

Investors introducing factor strategies into their portfolio typically start out with single factor allocations. However, diversification across factors may help generate smoother performance and potentially protect against periods of single factor underperformance. Multiple-factor indexes are designed to represent the performance of such a strategy.

MSCI Diversified Multiple-Factor Indexes (DMF) are rules-based, transparent indexes that aim to reflect the performance of a strategy that seeks higher exposure to four style factors – **Value, Momentum, Low Size and Quality** – while controlling forecasted risk.

VALUE MOMENTUM SIZE QUALITY

VALUE

RELATIVELY CHEAP STOCKS

The foundation of value investing is the idea that cheap assets have historically outperformed expensive, on average, in the long-term. Value is pro-cyclical, meaning it has tended to perform well in periods of economic expansion.

Graham and Dodd's Margin of Safety:
Price of the firm is less than conservative estimates of cash flow generated from the firm's assets

HOW DOES MSCI TARGET VALUE?
MSCI uses a combination of Price to Earnings (66%) and Price to Book descriptors (33%).

MOMENTUM

RISING STOCKS

The momentum factor is the historical tendency of outperforming stocks to continue performing well in the near-term. Momentum has tended to benefit from continued trends in the market and economy.

The momentum factor has been well documented in academic literature, with more than 300 studies1 across global regions and asset classes.

HOW DOES MSCI TARGET MOMENTUM?
MSCI measures momentum by a 12 month relative strength of alpha.

QUALITY

SOUND BALANCE SHEETS

Quality aims to reflect the performance of companies with durable business models and sustainable competitive advantages.

Quality is a defensive factor and has tended to benefit during periods of economic contraction. Quality includes dimensions of profitability, earnings stability and balance sheet strength.

HOW DOES MSCI TARGET QUALITY?
MSCI uses a comprehensive view of Investment Quality, Earnings Quality, and Profitability, among other dimensions.

SIZE

SMALLER COMPANIES

The size factors is the historical tendency of small company stocks to outperform stocks with larger market capitalizations. The size factor is pro-cyclical, meaning it has tended to do well in periods of economic expansion.

Size has been well studied by academics and investors, notably by Banz (1981) and Fama-French (1992).

HOW DOES MSCI TARGET SIZE?
MSCI implements size through lower market capitalization companies.

LONG TERM OUT PERFORMANCE VS SHORT TERM CYCLICALITY

Historically, certain factors have generated excess risk-adjusted returns over long time periods, while demonstrating cyclicality over shorter time periods. Factors have been subject to varying performance cycles —including periods of underperformance than can span several years, as shown below.

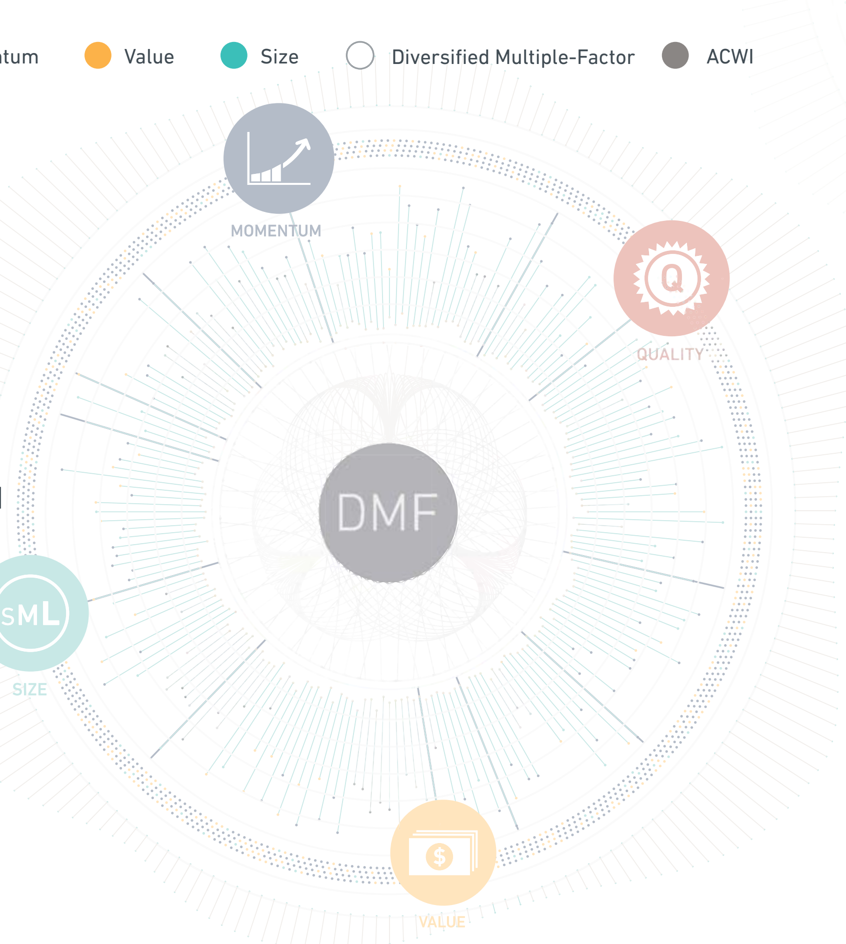
HOW SIX FACTORS HAVE PERFORMED RELATIVE TO EACH OTHER: MSCI ACWI

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
61.0%	1.1%	0.2%	-5.8%	63.9%	29.1%	26.8%	30.9%	24.8%	-25.1%	57.1%	19.8%	6.0%	18.6%	27.5%	11.6%	3.4%	11.0%	34.0%
44.9%	0.2%	-7.2%	-7.0%	56.4%	27.5%	24.3%	29.8%	20.0%	-35.9%	46.8%	19.8%	2.4%	18.1%	26.8%	8.8%	2.4%	10.6%	30.0%
36.8%	-9.1%	-8.2%	-9.2%	43.0%	24.6%	20.5%	29.7%	16.3%	-41.0%	41.1%	16.3%	2.1%	16.8%	25.0%	8.1%	2.0%	9.3%	29.0%
29.1%	-10.3%	-9.8%	-9.7%	34.6%	22.4%	18.2%	25.9%	15.1%	-41.8%	38.3%	15.0%	0.1%	16.7%	23.9%	6.4%	2.0%	8.5%	26.3%
26.8%	-10.9%	-12.0%	-9.8%	32.9%	21.9%	11.4%	25.6%	12.9%	-42.7%	36.8%	13.2%	-3.5%	16.6%	23.4%	4.7%	-1.8%	8.1%	26.3%
22.3%	-12.6%	-13.2%	-11.6%	31.3%	20.5%	10.2%	23.3%	12.2%	-43.3%	35.4%	12.1%	-6.9%	15.5%	19.0%	2.4%	-4.5%	6.2%	24.6%
13.2%	-13.9%	-15.9%	-16.2%	28.5%	15.8%	9.6%	21.5%	9.8%	-45.0%	19.9%	11.2%	-12.4%	15.3%	17.7%	2.0%	-4.6%	6.1%	19.9%
12.1%	-21.0%	-17.2%	-19.0%	23.0%	13.4%	8.3%	18.7%	7.6%	-45.2%	18.0%	8.7%	-13.7%	10.8%	16.0%	0.1%	-6.1%	4.8%	18.6%

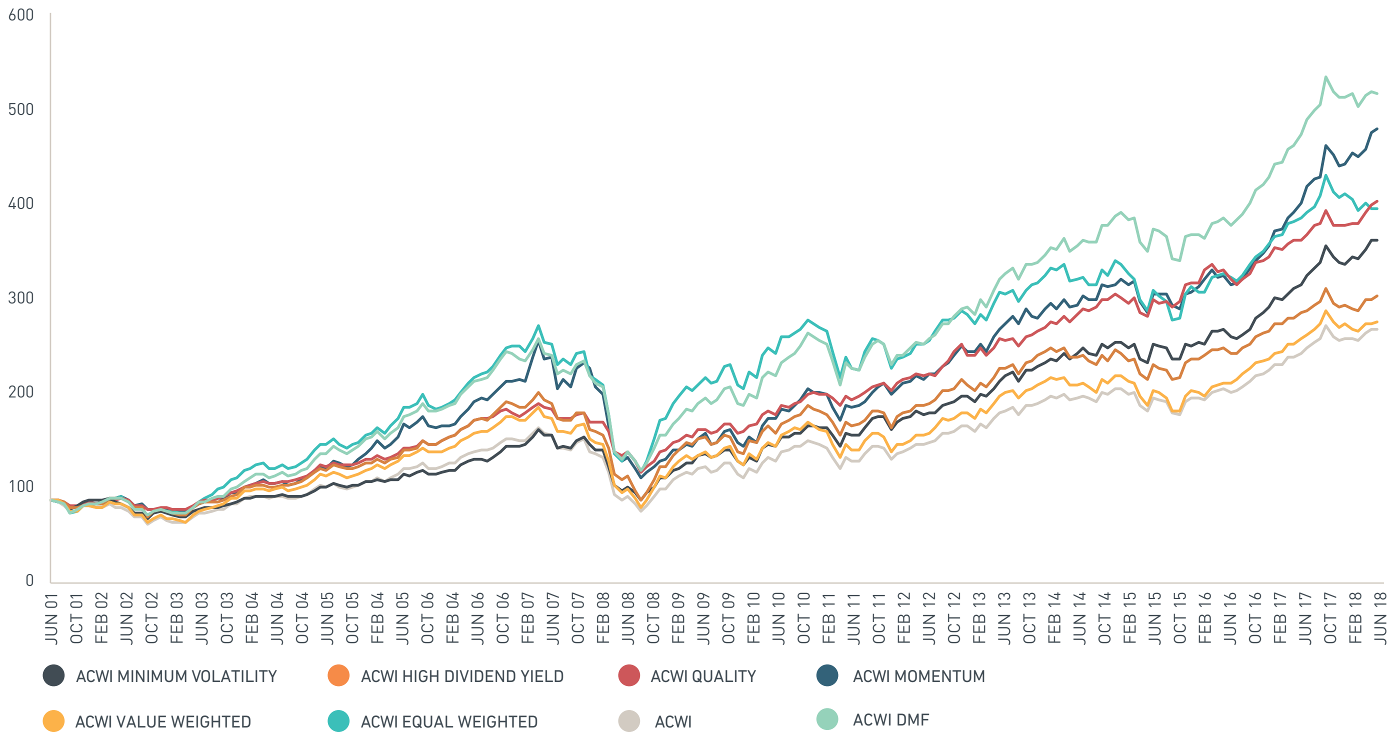
Volatility   Yield   Quality   Momentum   Value   Size   Diversified Multiple-Factor   ACWI

EACH OF THE FACTOR INDEXES HAS EXPERIENCED, AT A MINIMUM, A CONSECUTIVE TWO-TO-THREE YEAR PERIOD OF UNDERPERFORMANCE.

SOME FACTORS HAVE UNDERGONE EVEN LONGER DRAWDOWNS: THE LOW SIZE FACTOR WENT THROUGH A SIX-YEAR PERIOD OF UNDERPERFORMANCE IN THE 1990S.



CUMULATIVE PERFORMANCE FOR MSCI FACTORS



A DIVERSIFICATION SOLUTION: MULTIPLE-FACTOR INDEXES

Although individual factor returns have been highly cyclical, each factor has historically demonstrated distinct drivers and generally low correlations to other factors. As such, diversification across factors has historically generated smoother performance and protected against periods of single factor underperformance.

BENEFITS OF MSCI DIVERSIFIED MULTIPLE-FACTOR INDEXES

- **Transparent and Systematic**: Investors benefit from full transparency into the underlying building blocks of multiple-factor indexes. This fosters easy and consistent analysis of aggregate and underlying positions, exposures and risks—all with the same level of granularity.
- **Efficiency**: Multiple-factor indexes aim to maximize their exposures to factor premia. While factor investing is not new, advancements in data and technology allow us to develop factor indexes for a broader audience.

MSCI DIVERSIFIED MULTIPLE-FACTOR INDEXES METHODOLOGY

MSCI Diversified Multiple-Factor (DMF) Indexes are built to maximize exposure to multiple factors while maintaining total risk similar to that of the underlying market.

TOP-DOWN VS BOTTOM-UP APPROACH

The DMF Indexes are constructed using a bottom-up approach versus a top-down approach. In a top-down methodology, factors such as size, value, quality and momentum are combined at the index level, acting as building blocks in the index construction. By contrast, a bottom-up approach constructs the index at the constituent level, targeting select factor exposures while maintaining market risk.

TOP-DOWN	BOTTOM-UP
Factor blend at index level	Factor optimization at stock level
KEY FEATURES	**KEY FEATURES**
INDEX LEVEL	STOCK LEVEL
TRANSPARENCY	CONTROLLABILITY
FLEXIBILITY	EFFICIENCY RESPONSIVE
PORTFOLIO CHARACTERISTICS	**PORTFOLIO CHARACTERISTICS**
LOWER AVERAGE FACTOR EXPOSURE	HIGHER AVERAGE FACTOR EXPOSURE
LOWER HISTORICAL ACTIVE RETURN	HIGHER HISTORICAL ACTIVE RETURN
LOWER TRACKING ERROR	HIGHER TRACKING ERROR

As you can see, each approach provides different benefits and considerations for investors to choose from. If the goal is to maintain consistent factor exposure over time, a bottom-up, security-level optimization approach—like the one employed by the MSCI Diversified Multiple-Factor Indexes—is designed for more **efficient, controlled** and **persistent** capture of the intended factor exposures.

MSCI DIVERSIFIED MULTIPLE-FACTOR INDEXES

WHICH FACTORS ARE TARGETED?

- **Value, momentum, low size and quality.**
- Low volatility is excluded because the DMF Indexes aim to deliver a risk profile similar to the market. The inclusion of low volatility would result in below-market risk. Yield is excluded because of its positive correlation with value and quality factors.

HOW IS THE INDEX CONSTRUCTED?

- The four factors - value, momentum, low size and quality - are **equally weighted**.
- Bottom-up construction with equal emphasis on the 4 target factors.

WHAT CONSTRAINTS ARE USED TO MEET INDEX OBJECTIVES?

- At each semi-annual index review, we apply constraints which aim to **ensure replicability** while **achieving a target market risk profile**.
- These constraints include limits on the minimum and maximum weights of sectors, countries and single stocks. We also limit the **maximum turnover to 20% at each semi-annual review**.

HOW ARE THE INDEX CONSTITUENTS IDENTIFIED?

- The DMF Indexes are constructed using Barra Open Optimizer in combination with MSCI's Barra Equity Factor Model.

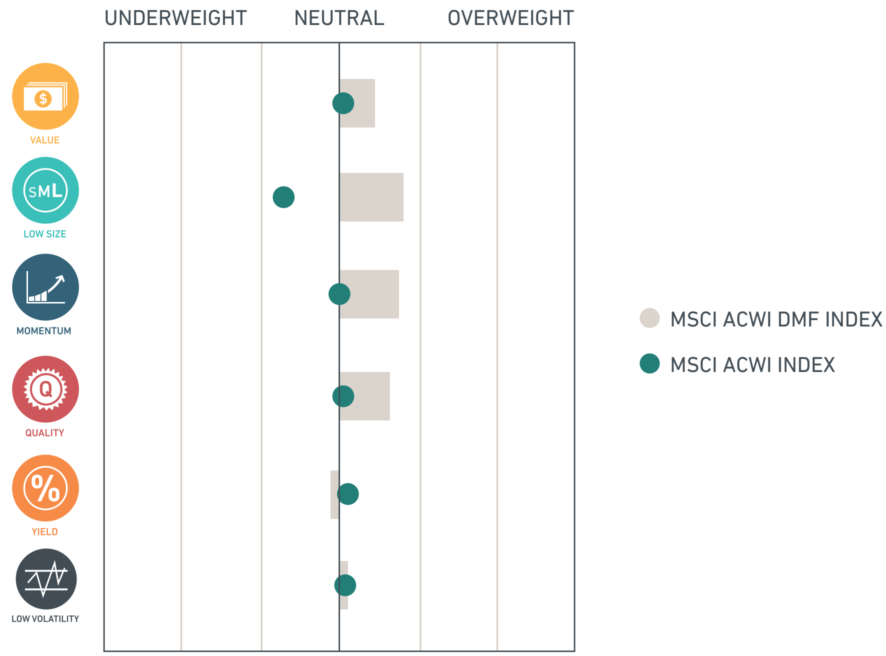
WHY MSCI?

Using an obsession with data, an innovative spirit, and a drive to go further for our clients, MSCI worked to perfect a breakthrough method for factor investing. For over 40 years MSCI, beginning with Barra, invented a common language to explain risk and return through the lens of factors. MSCI is uniquely positioned to help investors use factors to explain return, manage risk and construct portfolios.

While factor investing is not new, MSCI factor indexes allow for a broader audience to utilize the merits of factors. MSCI has developed Factor Indexes in consultation with the world's largest investors and has research backed by four decades of factor data.

MSCI DIVERSIFIED MULTIPLE-FACTOR INDEXES

THE FACTOR BOX IS POWERED BY MSCI FaCS AND PROVIDES A VISUALIZATION DESIGNED TO EASILY COMPARE FACTOR EXPOSURES BETWEEN INDEXES AND BENCHMARKS.



GLOBALLY, 66% OF LOW VOLATILITY EQUITY ETF ASSETS ARE LINKED TO MSCI INDEXES[1]

[1] Bloomberg and MSCI data, as of March 31, 2018. Data calculated by aggregrating the number of share classes of all exchange traded funds tracking an MSCI index, as identified by separate Bloomberg tickers using MSCI classification of factor indexes. Only primary listings, and not cross-listings, are counted.

msci.com/factor-investing

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ABOUT MSCI

For more than 40 years, MSCI's research-based indexes and analytics have helped the world's leading investors build and manage better portfolios. Clients rely on our offerings for deeper insights into the drivers of performance and risk in their portfolios, broad asset-class coverage and innovative research.

Our line of products and services includes indexes, analytical models, data, real-estate benchmarks and ESG research.

MSCI serves 99 of the 100 largest money managers, according to the most recent Pensions & Investments ranking.

For more information, visit us at www.msci.com.