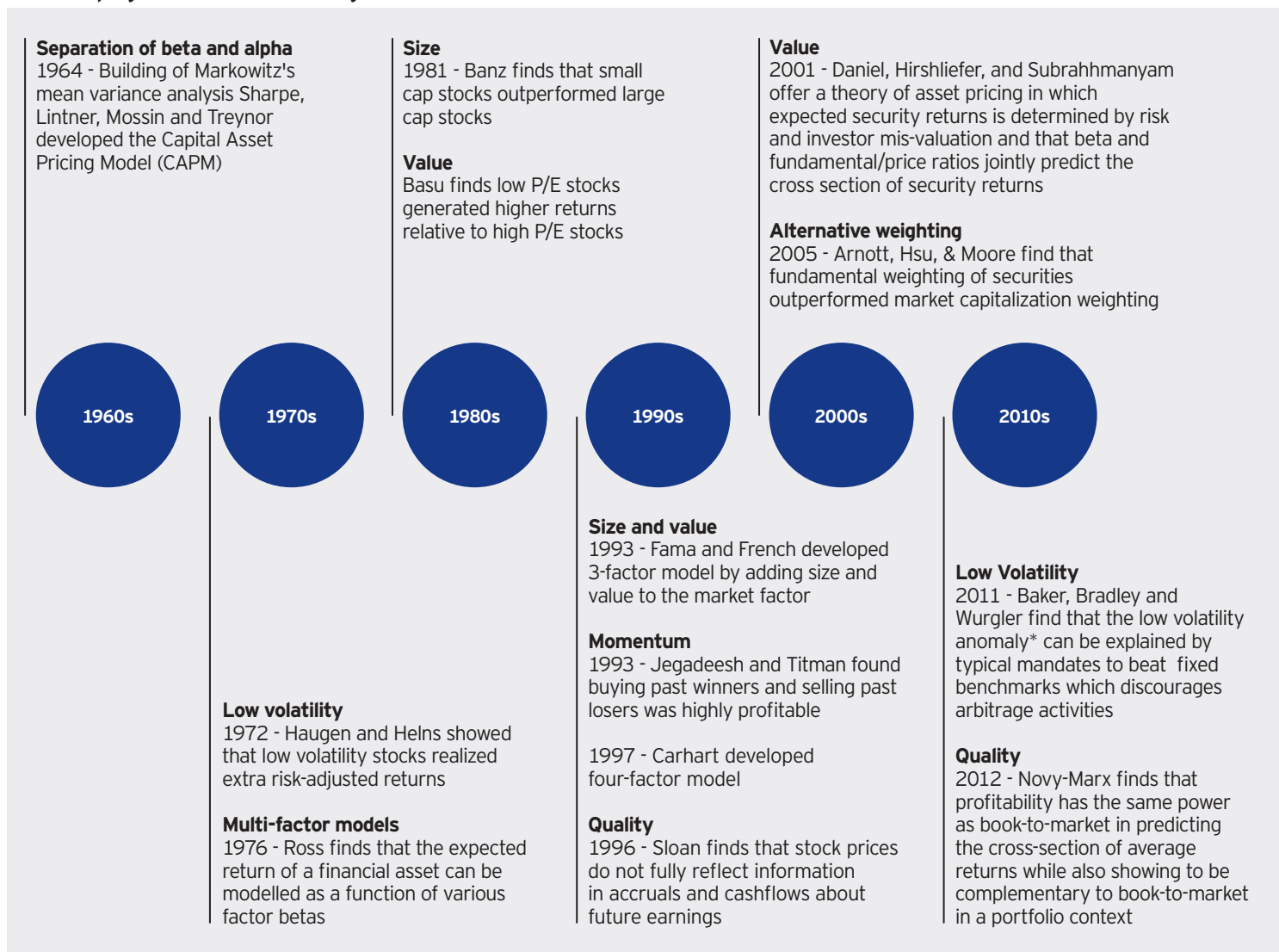




## Understanding smart beta

Smart beta has become one of the most popular concepts in modern finance. Also known more recently as strategic beta and alternative beta, the concept is far from new and has been around for decades as investors have used alternative weighting and factors to manage portfolio risk and return. Throughout the years, several academics have identified risk factors explaining excess returns over extended time frames. Specifically, the research of Eugene Fama and Ken French in the early 1990s, which focused on size and value, was built upon Harry Markowitz's idea of maximizing expected return for a given level of risk. Since this groundbreaking research, additional investment factors have been identified, isolated and delivered in a way that enables investors to pursue investment performance and/or help manage portfolio risk.

### Academic progression of factor investing



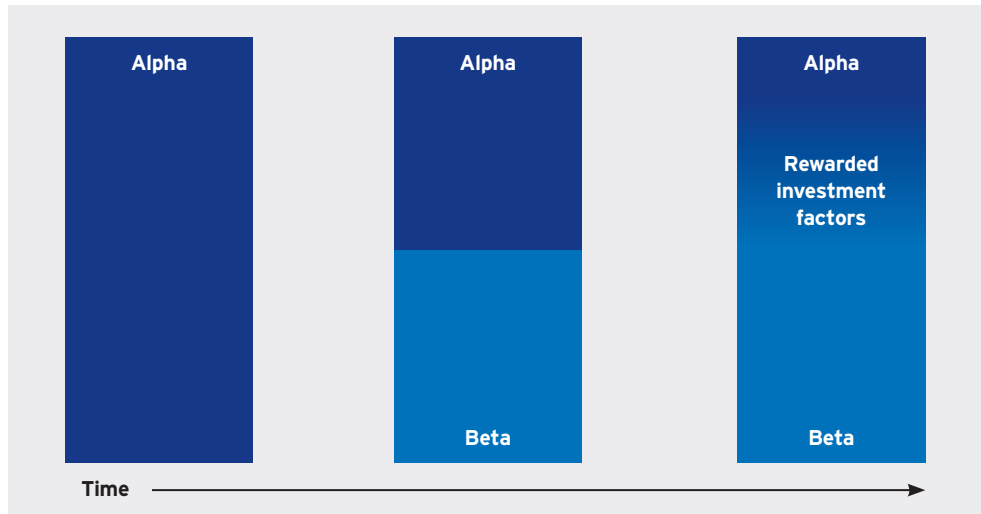
Source: Invesco. For illustrative purposes only.

\* A common assumption in finance is that increasing a portfolio's risk exposure should generate a higher return. In contrast, the low volatility anomaly refers to the observation that historically, portfolios of lower-volatility stocks produced higher risk-adjusted returns than portfolios with high-volatility stocks.

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## The traditional investment paradigm is rapidly evolving.

We believe the ability to leverage factor index strategies delivered through the ETF structure is a game changer for portfolio construction.



*For illustrative purposes only and should not be deemed as an asset allocation recommendation.*

### Evolution of alpha

Prior to the breakthrough from Eugene Fama and Ken French identifying value and style as risk factors, active managers tilted towards these factors to generate alpha. Traditional beta represents the risk and return profile of a given asset class such as equity and is known as “market risk” capturing all investment factors in a particular market. The portion of excess return, positive or negative, relative to the return of a benchmark index is known as alpha. Over time, these risk factors have become understood, identified, extracted and repackaged in a systematic way to become “smart beta” instead of “traditional alpha.” Through this process, value and style exposures continued to evolve and are now broadly understood and categorized as traditional beta, or a rewarded investment factor.

Today, smart beta is about providing exposure to risk factors across asset classes that have also been found to explain additional sources of returns over longer time horizons. Smart beta methodologies aim to make risk factors available, while attempting to provide different risk/return characteristics than the broad market.

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### Characterizing smart beta

When asked to define smart beta exchange-traded funds (ETFs), indexes based upon pre-determined rules and formulaic construction with access to a variety of risk factors are often discussed. In many ways, investors can view smart beta as a means to deconstruct investment factors and performance attributes that historically were broadly bundled.

Smart beta investment methodology offers two key attributes:

1. Alternative index weighting and
2. Rules-based index construction

### Smart beta index weighting

Smart beta indexes use alternative methods to determine a stock’s index weight. An alternative strategy implies a departure from the risk-return profile of a market-cap-weighted strategy.

Examples include:

- Equal weighting - Index components are assigned in equal weights.
- Fundamental weighted - Ranks and assigns companies per fundamental measures of company size of sales, cash flow, book value and dividends.
- Single factor weighting - Weighting by single factors such as low volatility or momentum.

Low volatility utilizes volatility rankings while seeking to minimize the impacts of market fluctuations. Momentum ranks securities relative to peers using relative strength methodology to identify the strongest and weakest investment trends.

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### Challenges of market-cap weighting

1. Portfolio weight of a given security is explicitly determined by current share price, meaning that as securities become more “popular” and increase in price, they receive greater portfolio weight.
2. Securities that may currently be out of favor with lower or falling share prices receive lower representation in a portfolio, even at times when their fundamentals might suggest an increased allocation.
3. There is no mechanism to force reallocation and the portfolio will “rebalance” as share prices change.

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### Rules-based construction

Rules-based methodologies may focus on a single screen or factor within an index, such as dividends or low volatility. Others will screen for multiple factors. These indexes will systematically rebalance at pre-determined time frames using pre-defined construction rules, with securities added or removed to keep the market exposure for the given factor(s). Given the objective nature of these approaches, the index will rebalance regardless of market sentiment.

Both active and passive smart beta ETF strategies utilize a different approach than market-cap weighting and sever the link between the price of a given security and its weight in an index.

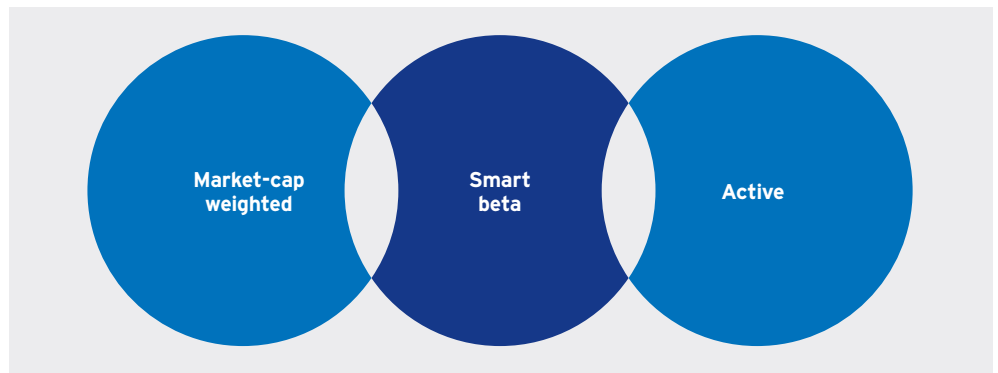
### Market-cap index weighting

Market-cap index weighting determines an index weight by the market value of a stock in relationship to the market value of all stocks in the index. For example, the market value of Stock XYZ is the number of shares outstanding multiplied by the current price of Stock XYZ. Its index weight is this market value divided by the cumulative market value of all stocks in the index.

While some smart beta ETFs are actively managed with the goal of outperforming a stated index, the majority are passively managed with the objective of tracking their respective indexes. Smart beta methodologies strive to make risk factors available to investors in more systematic ways while attempting to provide different risk/return characteristics than the broad market.

#### Smart beta ETFs:

- May outperform a benchmark
- Replicate an index with rules-based methodology
- Have the ability to potentially reduce risk with diversification beyond a single security
- Offer liquidity<sup>1</sup>, lower costs<sup>2</sup> and transparency<sup>3</sup>



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### Smart beta and factors

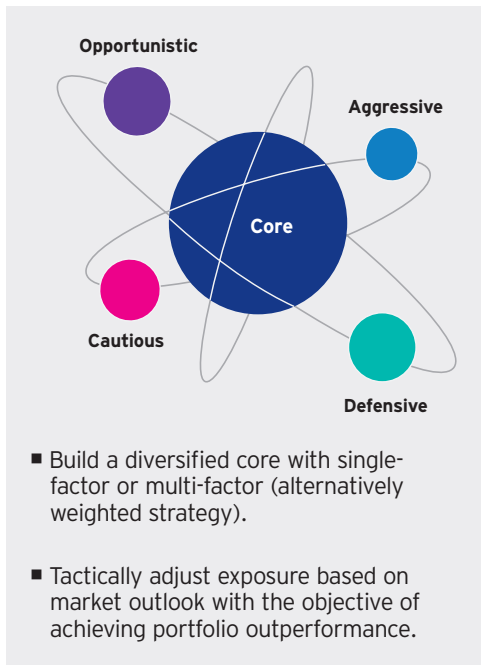
Smart beta ETFs are one type of investment product or tool used to deliver factor exposure. We believe factor investing has the potential to drive more precise investment and asset allocation decisions in an attempt to optimize a truly diversified portfolio targeting a specific risk/return objective. Unlike traditional stock picking, this investment approach seeks exposure to particular factors rather than focusing on sectors, geographies or investment styles. A list of common factors is shown in the table below.

Factor	
Value	Seeks to capture excess returns to attractively priced assets.
Size	Seeks to capture excess returns to smaller market cap companies.
Low volatility	Utilizes volatility rankings while seeking to minimize the impacts of market fluctuations.
Momentum	Ranks securities relative to peers using relative strength methodology to identify the strongest and weakest investment trends.
Quality	Seeks to capture excess returns to companies by indicators of quality as defined by profitability, quality of earnings, operational efficiency and managerial strength.
Dividend yield	Shows how much a company returns to its shareholders on an annual basis. Companies characterized as high dividend tend to issue higher annual payouts.

<sup>1</sup> Liquidity: Shares are not individually redeemable and owners of the shares may acquire those shares from the Fund and tender those shares for redemption to the Fund in Creation Unit aggregations only, typically consisting of 10,000, 50,000, 75,000, 80,000, 100,000, 150,000 or 200,000 shares.

<sup>2</sup> Lower costs: Since ordinary brokerage commissions apply for each buy and sell transaction, frequent trading activity may increase the cost of ETFs

<sup>3</sup> Transparency: ETFs disclose their full portfolio holdings daily. Diversification does not guarantee a profit or eliminate the risk of loss.



*For illustrative purposes only.*

### Smart beta in practice

Through smart beta ETFs, investors have the ability to express market views, fine-tune exposures or diversify through core and satellite positions in pursuit of building better investment portfolios.

### Long-term core allocation

When developing a long-term core portfolio allocation strategy, a financial advisor might begin by selecting smart beta equity and fixed income strategies in allocations that align with an investor's specific wealth accumulation goals, income needs and risk tolerance. Further refining the core allocation, an advisor might suggest selections that allow an investor to pursue a particular investment bias (e.g., growth over value, corporate bonds over government-backed securities or international markets over domestic markets).

### Tactical satellite allocation

The satellite portion of a portfolio is generally considered to be the actively managed component and is used to capture the performance of specific market segments that an investor believes will enhance the portfolio's overall performance, either through lower correlation of asset classes or through attempts to add alpha and/or reduce volatility. Investors concerned about the uncertainty of interest rates might consider fixed-income ETFs that may allow for more responsiveness to changing market conditions.

## Glossary and terms

Beta: is a measure of risk representing how a security is expected to respond to general market movements. For example, a beta of one means that the security is expected to move with the market. A beta of less than one means the security is expected to be less volatile than the overall market. Betas greater than one are expected to exhibit more volatility or movement than the general market.

## Important risk information

There are risks involved with investing in ETFs, including possible loss of money. Index-based ETFs are not actively managed. Actively managed ETFs do not necessarily seek to replicate the performance of a specified index. Both index-based and actively managed ETFs are subject to risks similar to stocks, including those related to short selling and margin maintenance. Ordinary brokerage commissions apply. The fund's return may not match the return of the index.

Factor investing is an investment strategy in which securities are chosen based on certain characteristics and attributes.

Smart beta represents an alternative and selection index-based methodology that seeks to outperform a benchmark or reduce portfolio risk, or both in active or passive vehicles. Smart beta strategies may underperform cap-weighted benchmarks and increase portfolio risk. There is no assurance that an investment strategy will outperform or achieve its investment objectives.

This does not constitute a recommendation of any investment strategy or product for a particular investor. Investors should consult a financial advisor/financial consultant before making any investment decisions.

Low volatility cannot be guaranteed.

***Before investing, investors should carefully read the prospectus/summary prospectus and carefully consider the investment objectives, risks, charges and expenses. For this and more complete information about the Funds call 800 983 0903 or visit [invesco.com](http://invesco.com) for prospectus/summary prospectus.***

Note: Not all products available through all firms.