



# Cadence Strategic Beta: A Focused Factor-Based Approach

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## IN BRIEF

- Strategic beta portfolios are designed to balance the findings of academic research on the underlying factor betas (or risk premia) with the real world practicalities of properly implementing a passive rules-based investment approach. This approach aims to limit certain risks such as behavioral biases, liquidity risk and price volatility while ensuring a high level of exposure to the underlying factors shown to outperform over a long time horizon.
- Active managers have shown the ability to outperform benchmarks over short time periods (and also with smaller pools of capital and illiquid securities). Yet, we believe almost all of the outperformance found in active portfolios can be explained by tilts towards one or more of the underlying factor betas. In other words, most active investment managers lack the ability to beat the factors that drive outperformance over a long time horizon. In addition, the ability of a fundamental research team to have a deep understanding of the value drivers of each of the securities in a given investment universe is difficult and very expensive at best.
- Passive-based approaches are effective in isolating systematic risk thereby removing human behavioral biases (such as overconfidence and herd mentality) that can impede performance. But, despite their elegant simplicity, passive market-capitalization weighted index approaches can expose investors to unintended risks due to outsized individual securities positions and/or sector concentrations.
- Many first generation strategic beta strategies attempted to improve upon the risks and returns of market cap weighted indices. However, certain weighting methodologies introduced a number of new risks that could also limit the ability to achieve excess returns. More recent attempts by strategic beta providers that combine factors have generally been shunned by sophisticated investors due to their complexity and the potential to introduce additional idiosyncratic risk beyond the factor betas.

## INTRODUCTION TO FACTOR INVESTING

Taking any factor-based approach requires investors to accept a wider framework than the standard definitions of alpha and beta presented by Modern Portfolio Theory. The Capital Asset Pricing Model (CAPM), introduced in the 1960s, established that securities returns only have two main drivers: systematic risk and idiosyncratic risk. The sensitivity to systematic risk, better known as market risk, is measured by beta. All other non-beta excess returns are considered alpha and are generated by the idiosyncratic risks not correlated to the underlying market. Therefore, if one believes fully in the framework presented by the CAPM, deep securities analysis is essential to find buying opportunities mispriced by the market, in order to produce excess return.

In 1976, Stephen Ross introduced a new theory on asset pricing called Arbitrage Price Theory<sup>1</sup> (APT). His findings noted that the expected return of any financial asset can be modeled as a linear function of various macroeconomic factors or theoretical market indices, where the sensitivity to each factor can be represented by a factor-specific coefficient. Since Ross' theory did not actually state what macroeconomic factors or market indices should be used, academics and investment professionals began searching for "factor betas" that might explain the excess returns within actively managed portfolios.

Since Ross' findings in 1976, academics and investment professionals have uncovered a number of factors that can explain most of the alpha or excess return produced by active management. The findings have formed the basis of factor investing where practitioners attempt to isolate one or more risk premia, or factors, that have historically outperformed the underlying benchmark to produce future excess returns. Although some factors are quite effective in explaining excess returns over shorter time periods (e.g., growth, mid-cap, low liquidity), only a few are widely recognized as true equity risk premia factors linked directly to security pricing that have demonstrated the ability to produce excess return over multiple market cycles. These well-recognized risk premia factors are described in greater detail below.

### Recognized Equity Risk Premia Factors

Factor	Selection Criteria	Common Implementation Approaches
<b>Momentum</b>	<ul style="list-style-type: none"><li>High price Momentum</li></ul>	<ul style="list-style-type: none"><li>High relative returns over certain historic time period(s)</li><li>High historic alpha producers</li></ul>
<b>Size</b>	<ul style="list-style-type: none"><li>Smaller capitalization</li></ul>	<ul style="list-style-type: none"><li>Selection of smaller cap stocks (full or free float)</li></ul>
<b>Value</b>	<ul style="list-style-type: none"><li>Low relative valuations</li></ul>	<ul style="list-style-type: none"><li>Stocks with attractive value-focused financial metrics (price to book, P/E, EV/EBITDA, P/cash earnings)</li></ul>
<b>Quality</b>	<ul style="list-style-type: none"><li>Strong balance sheet, dependable earnings growth and wide economic moats</li></ul>	<ul style="list-style-type: none"><li>ROE, earnings stability, debt/equity, cash flow growth, dividend growth stability</li></ul>
<b>Yield</b>	<ul style="list-style-type: none"><li>High dividend yield</li></ul>	<ul style="list-style-type: none"><li>Dividend yield, credit metrics</li></ul>

There have now been a number of studies<sup>2</sup> utilizing backtesting methodologies that have generally confirmed the outperformance of each of the equity risk premia against underlying indices over multiple market cycles. In addition, there are now indices produced by market data providers that allow investors and companies to compare performance of factor-based strategies against common benchmarks. On the following page is an illustration of how the recognized risk premia factors have performed against the underlying MSCI All Country World Index (ACWI) over the past fifteen years.

<sup>1</sup>Ross, Stephen A. "The Arbitrage Theory of Capital Asset Pricing." *Journal of Economic Theory* 13 (1976): 341-360. Print.

<sup>2</sup>French, K. R. (n.d.). Retrieved December 01, 2017, from <http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html>

## Net Return of Global Equity Risk Premia Factors (2000-2017)

Factor	Index	Annualized Net Return	Annualized Std Dev <sup>1</sup>	Sharpe Ratio <sup>1, 2</sup>
Benchmark	MSCI ACWI	5.4%	15.5%	0.42
Momentum	MSCI ACWI Momentum	8.6%	15.4%	0.63
Quality	MSCI ACWI Quality	7.1%	13.8%	0.56
Size	MSCI ACWI Small Cap	9.4%	17.3%	0.58
Value	MSCI ACWI Enhanced Value	10.1%	18.2%	0.58
Yield	MSCI ACWI High Dividend Yield	6.5%	15.3%	0.45

Source: MSCI

<sup>1</sup>Based on monthly net total return data

<sup>2</sup>Based on average BBA 1 month LIBOR.

Note: All indices presented are net total returns in USD. Data for each of the following indices has been backtested prior to their respective launch dates as follows: MSCI ACWI Enhanced Value (May 2015), MSCI ACWI High Dividend (January 2012), MSCI ACWI Momentum (February 2013), MSCI ACWI Quality (December 2012), and MSCI ACWI Small Cap (June 2007).

Backtested performance results do not represent the results of actual trading using client assets, but were achieved by means of the retroactive application of a model designed with the benefit of hindsight. Because of the inherent limitations of all models, the model cannot account for the impact that economic, market, and other factors may have on the implementation and ongoing management of an actual investment portfolio. Unlike actual portfolio outcomes, the model outcomes do not reflect actual trading, liquidity constraints, fees, expenses, taxes and other factors that could impact future returns. The model assumptions are passive only—they do not consider the impact of active management. A manager's ability to achieve similar outcomes is subject to risk factors over which the manager may have no or limited control.

Factor investment approaches expose a misleading notion of the CAPM put in widespread practice in traditional portfolio management. As discussed, factors have been used to explain most of the ability to produce excess returns through active management. Therefore all of the high costs and fees associated with fundamental securities analysis passed on to investors are theoretically unnecessary. By simply isolating risk factors through a systematic rules-based passive approach, active implementation costs and behavioral bias could be eliminated, thereby removing their drag on performance for investors.

Although factor theory has been around for decades, only recent advances in technology have allowed investment managers the ability to properly isolate the idiosyncratic risks of a given factor through security selection. At the time of their introduction, market capitalization weightings in indices were necessary due to technological limitations. Before the advance of low cost computing, indices needed to be linked directly to price data to avoid the necessity of periodic rebalancing. Investors were not able to break free from market capitalization indices until the advances in data processing technology in the 1980s and early 1990s. Only then could firms begin to cost effectively systematically select securities through rules-based processes that correlate strongly to the underlying factors.

Factor-based investment approaches certainly have gained a wider acceptance with sophisticated investors in the past few years. A 2017 report by Russell<sup>3</sup> indicated that 60% of global asset owners with more than \$1 billion under management “are currently evaluating smart beta either for an initial allocation or, most commonly, for an additional allocation” (p. 16). We expect that factor-based approaches will become even more accepted in the coming years, particularly as sophisticated investors adapt technology and systems that allow the decomposition of portfolio returns into factor parts.

However, factor investment approaches do not come without risks. We believe the most important risk is that the individual factors can go in-and-out of favor for extended periods of time. For example, momentum was the winning factor through much of the 1990s, while value was heavily rewarded after the bursting of the technology bubble in the early 2000s. Quality and value were the winning factors during the Global Financial Crisis and momentum has been strong over the past few years.

<sup>3</sup>Smart beta: 2017 global survey findings from asset owners. (2017, November 09). Retrieved December 01, 2017, from <http://www.ftsrussell.com/smart-beta-survey>

## Calendar Year Returns of Select Global Equity Risk Premia Factors (2000-2017)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Value -0.1%	Momen -7.4%	Value 63.3%	Value 28.6%	Momen 26.3%	Value 30.4%	Momen 24.4%	Quality -36.2%	Value 46.0%	Momen 16.0%	Momen 1.9%	Momen 17.5%	Momen 26.8%	Quality 8.2%	Momen 1.9%	Value 12.6%	Momen 33.5%
Yield -7.7%	Yield -10.4%	ACWI 30.4%	Momen 21.5%	Value 23.8%	Yield 28.7%	Quality 19.5%	Yield -41.6%	Yield 37.1%	ACWI 12.7%	Quality 1.6%	ACWI 16.1%	Value 24.4%	Momen 5.9%	Quality 1.5%	Yield 10.0%	Quality 28.4%
Quality -12.3%	Value -11.9%	Yield 31.9%	Yield 19.6%	ACWI 10.8%	Momen 23.0%	Value 14.6%	ACWI -42.2%	Quality 36.0%	Quality 11.5%	Yield -0.7%	Value 15.9%	Quality 23.2%	ACWI 4.2%	ACWI -2.4%	ACWI 7.9%	ACWI 24.0%
ACWI -16.2%	Quality -16.5%	Momen 30.8%	ACWI 15.2%	Yield 9.5%	ACWI 21.0%	ACWI 11.7%	Value -43.6%	ACWI 34.6%	Value 10.6%	ACWI -7.3%	Quality 14.9%	ACWI 22.8%	Yield 1.3%	Value -5.0%	Quality 5.5%	Yield 18.9%
Momen -17.5%	ACWI -19.3%	Quality 22.5%	Quality 12.9%	Quality 7.8%	Quality 18.2%	Yield 9.0%	Momen -45.2%	Momen 19.3%	Yield 7.8%	Value -12.8%	Yield 14.4%	Yield 18.2%	Value -0.4%	Yield -5.4%	Momen 4.2%	Value 18.3%

Source: MSCI factor indices. Abbreviations used are as follows: Value = MSCI ACWI Enhanced Value, Yield = MSCI ACWI High Dividend, Momen = MSCI ACWI Momentum, Quality = MSCI ACWI Quality.

Note: All indices presented are net total returns in USD. Data for each of the following indices has been backtested prior to their respective launch dates as follows: MSCI ACWI Enhanced Value (May 2015), MSCI ACWI High Dividend (January 2012), MSCI ACWI Momentum (February 2013) and MSCI ACWI Quality (December 2012). Backtested performance results do not represent the results of actual trading using client assets, but were achieved by means of the retroactive application of a model designed with the benefit of hindsight. Because of the inherent limitations of all models, the model cannot account for the impact that economic, market, and other factors may have on the implementation and ongoing management of an actual investment portfolio. Unlike actual portfolio outcomes, the model outcomes do not reflect actual trading, liquidity constraints, fees, expenses, taxes and other factors that could impact future returns. The model assumptions are passive only—they do not consider the impact of active management. A manager's ability to achieve similar outcomes is subject to risk factors over which the manager may have no or limited control.

As factors can have extended out-of-favor periods, the time horizon for achieving outperformance with a factor-based investment strategy should not be measured in months or quarters, but over several years or multiple market cycles. We believe that the minimum time horizon for investors to achieve outperformance using a factor-based approach is seven to ten years. This is equal to the length of an average market cycle over which a prudent investor should diversify their bets over a number of factors, to help diversify away the risk of any factor(s) underperforming for an extended period of time.

Many other primary risks associated with factor-based investing are shared with quantitative investment management in general. The overriding risk is that it is difficult to create investment models that capture all of the complexities and idiosyncrasies of the human behaviors that drive markets. For this reason, factor investment managers make a number of simplifying assumptions regarding orthogonality, the normality of returns and the stability of correlations, and assume that these remain in place at all times. These assumptions obviously do not always hold true. Yet, over various market cycles these assumptions have remained generally intact except for periods of significant market dislocations where market behaviors are materially stressed. During these times, factor-based and quantitative strategies in general can and have underperformed.

### EVOLUTION OF STRATEGIC BETA STRATEGIES

Strategic beta strategies attempt to use a disciplined rules-based investment approach to improve upon the risk and return profile presented by traditional market capitalization-weighted indices. Despite deploying a passive approach, strategic beta strategies deviate from the underlying benchmarks, thereby taking on a degree of active market risk. Because of this, strategic beta strategies share benefits presented by traditional active and passive indexing approaches.

The most basic of strategic beta strategies introduced in 2000 were essentially style tilts (e.g., growth or value) on the major equity indices. More advanced strategies were introduced beginning in 2005. Most of these first generation strategic beta strategies used a single method to modify the weightings of a selected index combined with periodic rebalancing to lock in gains and redistribute capital to underpriced securities. By changing the weightings away from market capitalization to some other methodology, these first generation strategic beta strategies aimed to improve performance while lowering risks associated with sector and holdings concentrations.

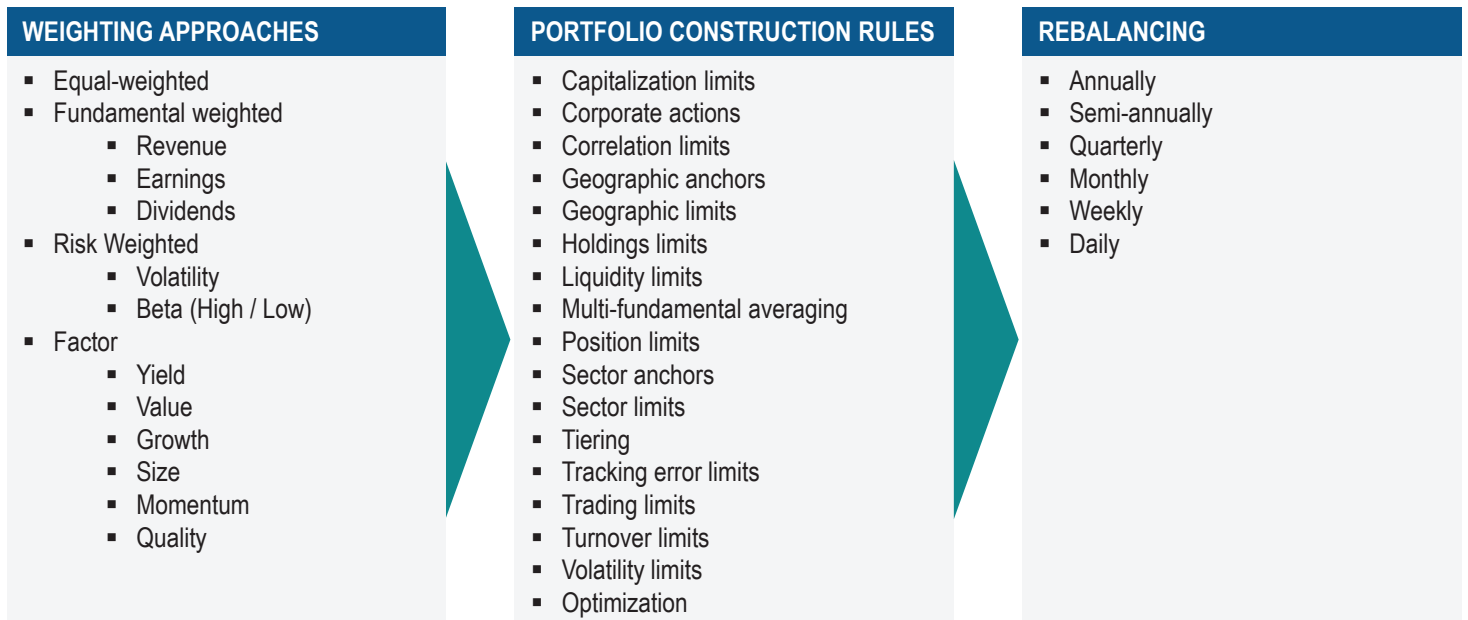
## Common First Generation Strategic Beta Approaches

Weighting Approach	Benefits	Drawbacks
<b>Equal Weight</b> Equal weighting all securities within the index	<ul style="list-style-type: none"> <li>Most common approach due to simplicity of understanding and implementation</li> <li>Removes link between security prices and index weighting</li> </ul>	<ul style="list-style-type: none"> <li>Small cap tilt bias often results in higher volatility</li> <li>Capacity issues can limit implementation for broad capitalization portfolios</li> <li>Liquidity issues for smaller cap securities</li> <li>Higher turnover creates higher trading costs and tax inefficiencies</li> </ul>
<b>Fundamental</b> Uses financial data and business metrics to weight the portfolio	<ul style="list-style-type: none"> <li>Overcomes issues associated with market capitalization and equal weight approaches</li> <li>Portfolios typically have a value tilt as financial data and metrics aim to identify underpriced securities</li> </ul>	<ul style="list-style-type: none"> <li>Issues similar to Equal Weight approach</li> <li>Portfolios do not fully capture value factor</li> <li>Value can be out of favor for extended periods</li> <li>Varying methodologies of employing financial data or metrics and complexity can lead to confusion among investors</li> </ul>
<b>Risk Weighted</b> Aims to improve risk profile by limiting weighting of securities showing high historic price volatility	<ul style="list-style-type: none"> <li>Aims to improve portfolio efficiency through limiting price risk / variance</li> <li>Viewed as complementary to inexpensive beta approaches</li> </ul>	<ul style="list-style-type: none"> <li>Ignores return</li> <li>Approaches vary widely from simple volatility weighted portfolios (weight determined by inverse of variance) to those that combine the limiting of volatility and correlation through optimization frameworks</li> <li>Multiple issues surrounding ignoring valuation and correlation in a number of these strategies</li> </ul>
<b>Single Factor</b> Creation of portfolios that exploit factors recognized academically to outperform over time	<ul style="list-style-type: none"> <li>Aims to provide active management outperformance</li> <li>Low cost due to passive implementation</li> <li>Factors recognized academically to outperform over time include Value, Quality, Momentum, Yield and Size</li> </ul>	<ul style="list-style-type: none"> <li>Requires prior quantitative investment experience to fully capture factor exposure</li> <li>Assumes risk factors are stable over time</li> <li>Factors can underperform on an excess return basis for lengthy periods of time</li> <li>Capacity issues for size factor</li> </ul>

The first generation strategic beta strategies that now have ten plus year track records have generally improved upon the risk and return profile of the respective benchmarks over a full market cycle. In addition, many newer strategic beta strategies utilizing first generation approaches have also delivered strong risk-adjusted performance over conventional market cap weighted strategies despite their shorter track records. Nevertheless, one must acknowledge that the most basic and most widely adopted of the first-generation strategic beta strategies may have more difficulty achieving the desired risk-adjusted performance improvements over time as investors' allocations to these assets increase.

The past few years have seen a proliferation of a second generation of strategic beta strategies that utilize more complicated approaches to drive risk and returns (the following chart attempts to provide a menu of the various factors and rules that are combined to create many of these second generation investment approaches). These more complicated strategic beta strategies have caused a great deal of confusion among even the most seasoned investors, as the combinations of multiple methods and rules used to construct the portfolios make the resulting performance profile difficult to envision.

## Common Elements Used in Second Generation Strategic Beta Equity Approaches



Many recently introduced second generation approaches use highly complex multi-factor structuring in an attempt to further improve on the risk and return profile of the underlying index. In actuality, many of these new multi-factor approaches end up resembling absolute-return strategies with high tracking error against the intended benchmarks. In general, sophisticated investors have been less partial to these multi-factor approaches due to their complexity, the difficulty of envisioning the true characteristics of the resulting stream of returns, and the potential to introduce unintended idiosyncratic risks or style tilts. Also, we feel it is important to note that multi-factor strategies are not best suited for two other important portfolio objectives: risk mitigation and exposure management.

The benefit of strategic beta strategies revolves around capturing the alpha promised by active-based strategies at a lower cost. We believe this is best done by isolating securities that contribute to the factor to achieve a high level of exposure, while taking great care to reduce unintentional exposures that could dilute the results that should be obtained from the targeted investment factor.

## **INDEX DESCRIPTIONS**

The MSCI ACWI Index covers mid and large cap securities across 23 Developed Markets (DM) and 24 Emerging Markets (EM) countries. MSCI Diversified Multiple-Factor Indexes use the Barra product risk tools to construct indexes that track the performance of four factors – Value, Momentum, Quality and Yield.

## **ABOUT CADENCE CAPITAL MANAGEMENT**

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## **FOR FURTHER INFORMATION**

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