CLIFFWATER LLC

Smart Beta and Alternative Risk Premia: An Assessment

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The history of active management has been about product adaptation in the face of growing evidence of market efficiency in the major capital markets. Individual stock selection, which was the hallmark of active management in the early years of institutional money management, has gradually yielded to products capturing and managing characteristics, or "factors", found in broad subsets of securities thought to offer higher risk-adjusted returns compared to a purely passive market index fund. These factor products are not new, but have enjoyed a renaissance in recent years.

Commercially, factor investing has taken two distinct forms: the ubiquitous "Smart Beta" products that are modified index funds, and secondly, what we are calling "Alternative Risk Premia" products that are market neutral, multi-asset, and multi-factor, and use more advanced investment processes and technology.

We find that Smart Beta products have shown little promise of better performance when compared to traditional index funds. On the other hand, Alternative Risk Premia products have demonstrated sufficient early success that allocations within a diversified hedge fund portfolio might be considered and where their better liquidity and lower fees relative to most hedge funds would be particularly welcomed.

Early History

Commercial efforts to improve on broad, capitalization-weighted index funds by over (under) weighting specific factors have a long history. Early adaptors included Wells Fargo Bank, who created the first index fund in the mid-1970s and introduced a "yield tilt" index fund in 1979. Frank Russell Company introduced "value" and "growth" stock indices in 1982. Dimensional Fund Advisors was founded in 1983 to exploit the "small stock effect." Mount Lucas Management published the first "trend-following" index in 1988.

These and other early products each relied upon a thesis of investment behavior or market constraints creating abnormal systematic return, supported by academic studies of back-tested historical performance. Unfortunately, these early factor strategies were largely unsuccessful in producing sustainable excess returns either because of the limits of back-testing or because market efficiency quickly eliminated the opportunity.[1]

A Renaissance

Rob Arnott at Research Affiliates arguably pioneered a rebirth of factor investing in 2004 when he proposed the "fundamental index" which eschewed traditional index weighting based upon market capitalization for weighting based upon accounting-based measures like revenues or book value. Like early factor investing, his alternative proposal for index constituent weighting challenged market efficiency where the optimal risk-adjusted return portfolio is capitalization weighted, which also benefits from minimal transaction costs.

Fundamentalists argue that the market is inefficient and that overvalued stocks are given greater weight in market capitalization indices and undervalued stocks are given less weight. If true, weights based

[1] The trend-following MLM index is perhaps the only exception, but its 0.26 Sharpe Ratio over 26 years is before fees and transaction costs, and to our knowledge was never consistently applied to an actual account over a sustained period.

upon accounting measures that are closer to equal weighting and cause selling (buying) when stock prices rise (fall) might be expected to produce excess returns.

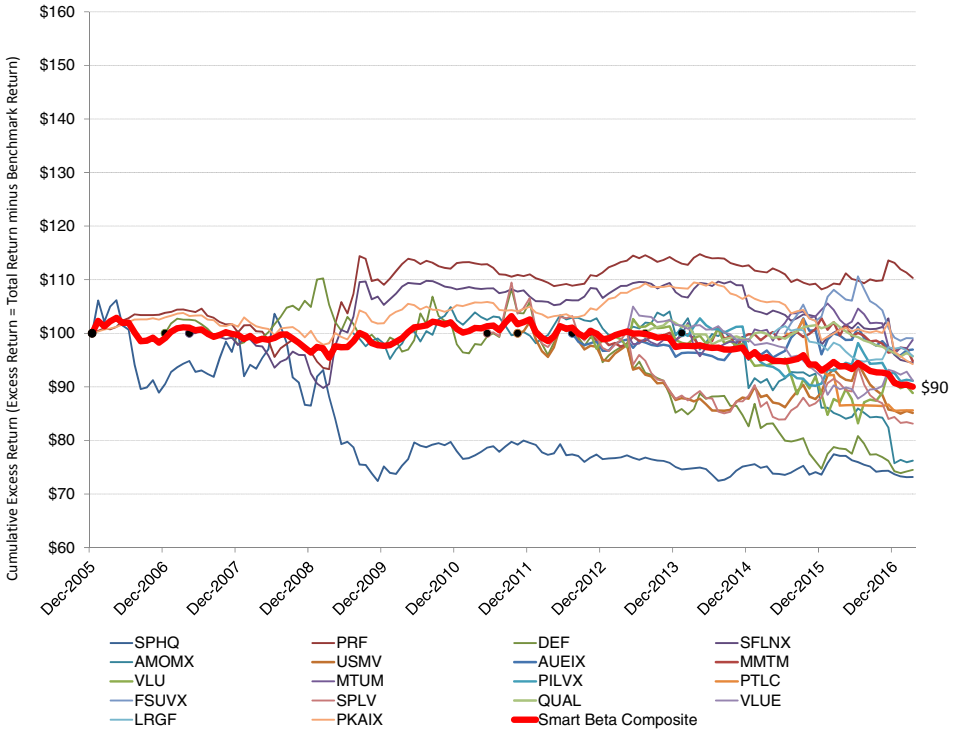
Smart Beta

The rejection of market capitalization weighting has exploded in recent years under the umbrella term "Smart Beta"[2] and has achieved significant early commercial success. Cliffwater estimates there is now approximately $600 billion in Smart Beta products.

Smart Beta generally refers to long-only stock products that overweight a factor or factors thought to offer higher returns. Smart Beta funds vary widely in what factors they overweight but most use one or more of the following: (1) low volatility, (2) quality, (3) value, (4) yield or carry, and (5) momentum. Smart beta funds generally have high correlations to traditional index funds and do not utilize leverage or shorting techniques.

Exhibit 1 reports excess returns for 18 larger, more well-known Smart Beta equity funds. Each line represents cumulative excess return, or the difference between fund total return and its benchmark return. Most of the funds have different starting dates so the individual lines are not directly comparable. Nonetheless, only one of the 18 funds shown delivered a positive excess return – a cumulative value greater than $100 – from the fund's inception date to March 31, 2017. The others report a range of underperformance.

Exhibit 1: Smart Beta Fund Excess Returns vs. Benchmarks[3]
(Fund Inception through March 31, 2017)



Source: Morningstar, Bloomberg and ETF.com

[2] Smart Beta is to contrast it to market beta, which uses market capitalization weights in its calculations.

[3] Funds shown in Exhibit 1 are: Power Shares S&P 500 Quality Portfolio (SPHQ), PowerShares FTSE RAFI US 1000 (PRF), Guggenheim Defensive Equity ETF (DEF), Schwab Fundamental US Large Company Index Fund (SFLNX), AQR Large Cap Momentum Style Fund (AMOMX), iShares Edge MSCI Min Vol USA ETF (USMV), AQR Large Cap Defensive Style Fund (AUIEX), SPDR S&P 1500 Momentum Tilt ETF (MMTM), SPDR S&P 1500 Value Tilt ETF (VLU), iShares Edge MSCI USA Momentum Factor ETF (MTUM), PIMCO RAE Low Volatility Plus (PILVX), Pacer Trendpilot 750 ETF (PTLC), Fidelity SAI U.S. Minimum Volatility Index Fund (FSUVX), PowerShares S&P 500 Low Volatility (SPLV), iShares Edge MSCI USA Quality Factor ETF (QUAL), iShares Edge MSCI USA Value Factor ETF (VLUE), iShares Edge MSCI Multifactor ETF (LRGF) and PIMCO RAE Fundamental US Fund (PKAIX). Cliffwater calculated the excess return of each fund relative to its specific benchmark, which is one of the S&P 500 Index, the Russell 1000 Index, the Russell 3000 Index or the S&P 1500 Index.

The highlighted red line in Exhibit 1 depicts the average excess return for all the Smart Beta funds shown above. Investing across Smart Beta funds would have resulted in a cumulative 10% negative excess return (-0.93% annualized) compared to investing in the equivalent market capitalization weighted benchmark index. The data thus far suggests that Smart Beta funds are falling short of their early promises.

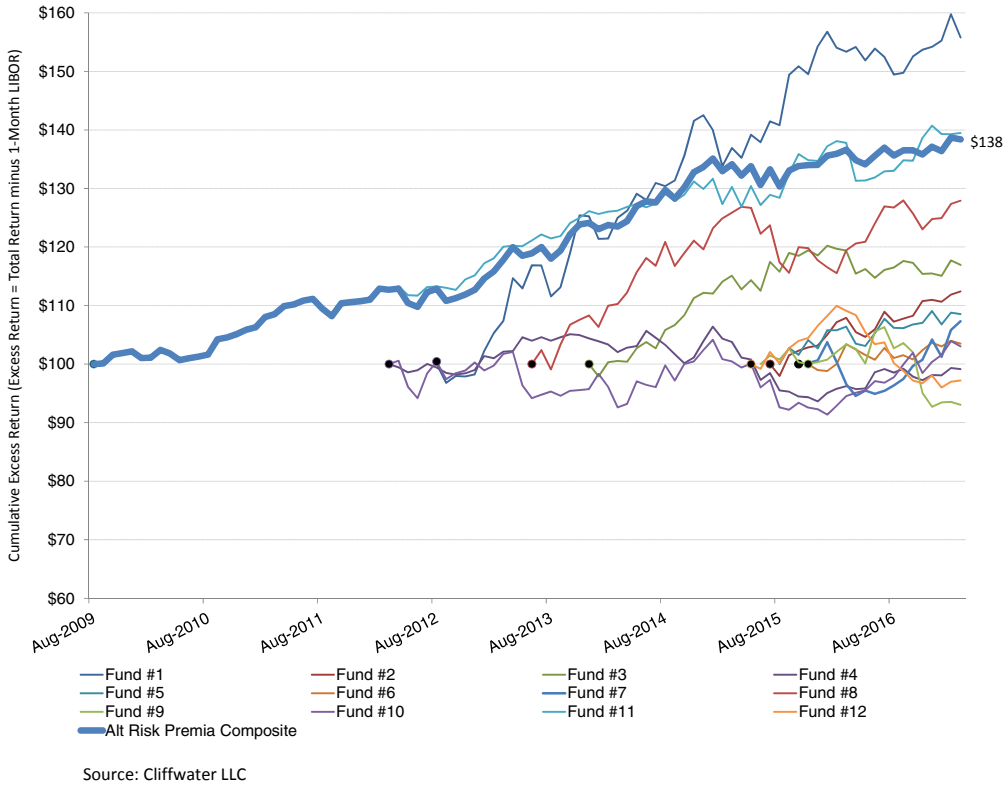
Alternative Risk Premia (Market Neutral)

Alternative Risk Premia (aka "ARP") products are factor-based but differ in many ways from Smart Beta. First, ARP is multi-asset class (equities, fixed income, currencies, commodities, and sometimes credit) with equities representing a minority of risk exposure. By contrast, Smart Beta is generally equity-only. Second, ARP will generally incorporate many more factors than Smart Beta and use them differently by asset class. Third, ARP portfolios are constructed to be market neutral, utilizing leverage and shorting factors that are less desirable. And finally, some ARP managers dynamically allocate to factors rather than static over or underweights, as is generally present in Smart Beta funds.

Cliffwater estimates that approximately $200 billion is invested in alternative risk premia funds.

Exhibit 2 reports cumulative excess returns for certain multi-factor alternative risk premia hedge funds that Cliffwater views as institutional-quality.[4] The funds have relatively short track records and we report excess returns over one month LIBOR, a common benchmark for funds that have an absolute return orientation.

Exhibit 2: Alternative Risk Premia Hedge Fund Excess Returns vs. LIBOR
(Fund Inception through March 31, 2017)



Source: Cliffwater LLC

Most of the funds shown have generated at least modest positive returns (in excess of 1-month LIBOR) with relatively low volatility since their inception dates. The heavy blue line shows an average excess return for the 12 individual alternative risk premia funds.

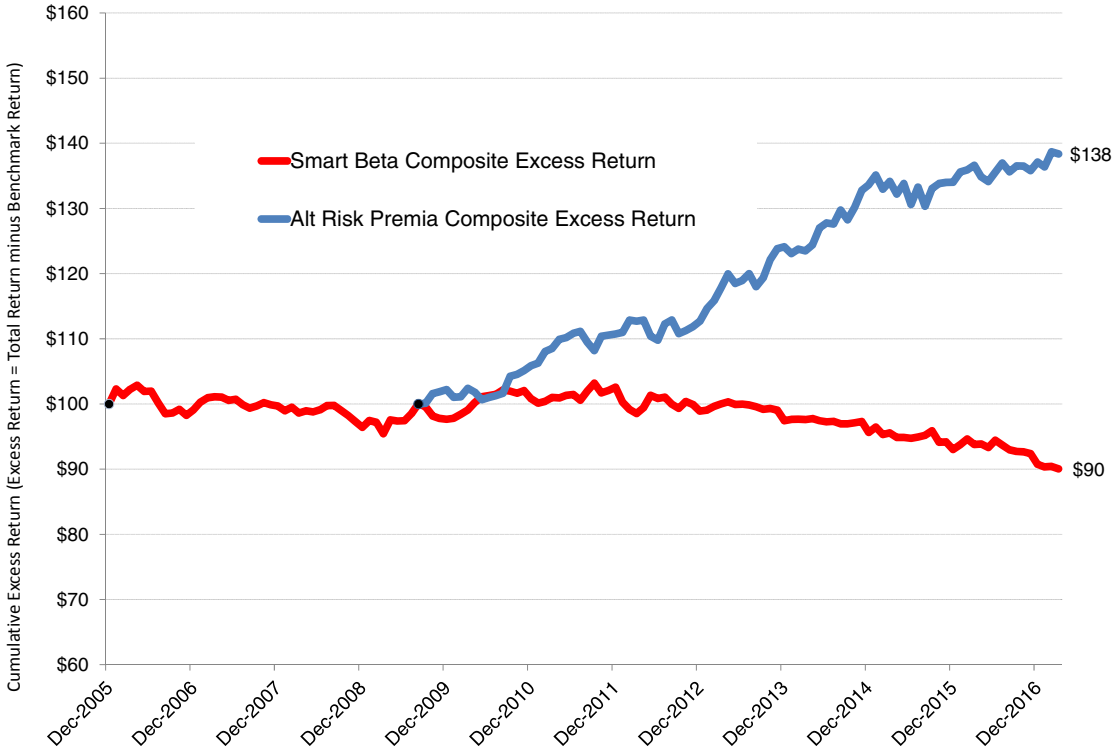
[4] The funds included in Exhibit 2 are the multi-factor alternative risk premia hedge funds to which Cliffwater has assigned an A- or B-rating.

Alternative risk premia strategies generally have attractive fee structures relative to most hedge funds and are offered in a variety of different investment vehicles, including mutual funds, hedge funds, exchange-traded funds and customized separately managed accounts. Institutional investors have allocated to alternative risk premia funds as part of a diversified hedge fund portfolio. However, investors may also work with alternative risk premia providers to customize solutions that are most complementary to their current portfolio. For example, an allocation to momentum beta would likely exhibit attractive correlation characteristics to a portfolio with an implicit value bias.

Smart Beta, Alternative Risk Premia Comparison

Exhibit 3 shows cumulative excess returns for the Smart Beta Composite (red) and the Alternative Risk Premia Composite (blue). This chart shows that Alternative Risk Premia funds have significantly outperformed Smart Beta funds on an excess return basis (relative to their respective benchmarks).

Exhibit 3: Smart Beta, Alternative Risk Premia Excess Return Comparison
(Composite Inception through March 31, 2017)



Source: Morningstar, Bloomberg and ETF.com, Cliffwater LLC

Due Diligence Considerations

As noted above, there has been a proliferation of alternative risk premia product offerings over the past several years. Cliffwater believes that investors should exercise caution in conducting investment due diligence on these products because there is significant variation in their relative quality. Investors should keep the following considerations in mind when evaluating alternative risk premia managers:

1. There is general agreement in the academic and investor communities about identifying common alternative risk premia, but much less agreement about how to measure or implement these factors. For example, researchers have shown that there can be a negative correlation of as high as -0.75 between different types of equity value factors. Alternative risk premia managers can add value through the sourcing, cleaning and analysis of quantitative data.

2. Alternative risk premia strategies generally have short live track records and investors should be cautious about overly optimistic back-tests.
3. Investors should target alternative risk premia factors that isolate the desired alternative beta, while limiting exposure to market beta and other alternative betas.
4. Portfolio construction varies significantly across alternative risk premia product offerings, as some managers attempt to isolate individual risk premia while others pursue a multi-factor approach. Other important differentiators from a portfolio construction perspective are the portfolio weighting methodology and whether or not managers attempt to add value by timing alternative risk premia factors.[5] Most multi-factor risk premia offerings utilize a risk parity-style approach to portfolio construction whereby alternative risk premia factors are equally risk-weighted.
5. Alternative risk premia managers may attempt to control risk by underweighting certain alternative risk premia factors during periods of elevated market volatility. This is especially important for managers who invest in the short volatility/volatility capture premium, which is subject to large losses during periods of market dislocation and higher realized volatility.

Conclusion

Smart Beta products have seen significant asset inflows over the last five years. However, they have yet to demonstrate superiority over traditional capitalization weighted index funds. Market neutral Alternative Risk Premia products that use the same concepts but in more sophisticated ways have shown greater promise, but their track records are short.

Cliffwater believes that an allocation to Alternative Risk Premia can be a cost-effective way for institutional investors to access return sources that higher fee hedge funds would otherwise deliver. However, investors should exercise care in conducting due diligence on these funds, many of which have short track records and/or weak product design.

Kevin Lenaghan
Managing Director

[5] Cliff Asness from AQR Capital Management and Rob Arnott, co-founder of Research Affiliates, have an ongoing debate about whether it is possible to successfully time alternative risk premia factors. Mr. Asness argues that tactically adjusting alternative risk premia factor weights is akin to market timing and is not a reliable method of enhancing returns.