Implementation Insight

The Changing World of Alternative Beta

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Why Read On?

When it comes to defining and implementing an alternative beta allocation, a great deal can fall through the cracks between theory and practice. Execution differences, asset-driven erosion of premia, fit with the existing portfolio and hidden costs are only a few of the obstacles that investors must navigate in an increasingly broad and complex sector.

In the past nine months alone, the alternative beta product universe has evolved rapidly as asset managers push to take advantage of rising appetite among pension funds, endowments and sovereign wealth funds pursuing effective (and cost-effective) diversification.

Amid these changes, the sector continues to be remarkably heterogeneous, unlike its increasingly commoditised 'smart beta' cousin. This diversity is not purely the result of obvious variations in the types of risk premia being targeted by individual firms. It also arises from significant practical differences in their methods of implementation and portfolio construction.

Many of these strategies are actually rather challenging to execute profitably, despite their relative conceptual simplicity, and the firms involved - ranging from hedge funds to broad-spectrum global asset managers - bring different infrastructure and expertise to the table. Even nominally similar managers exhibit relatively low correlation with each other when compared with managers in other systematic strategies such as CTAs (*Managed Futures and the Emergence of Core Trend-Following - October 2014*).

Previous bfinance papers published during the past two years have provided an overview of the alternative beta landscape and strategic asset allocation considerations (*Alternative Beta – August 2015*) as well as insights from one investor's journey into these strategies (*DNA of a Manager Search – July 2016*). Here, we seek to go a step further by providing detailed insights on key practical issues, based on information collected during recent manager search projects for pension schemes.

Our hope is that transparency and greater understanding will empower investors to navigate this fast-changing, increasingly popular sector with confidence.

Latest News

So far in 2016

The number of institutional-quality firms offering an established strategy to investors has increased by more than 30%, based on data obtained from multiple manager searches.

Some "early-bird" pricing has been phased out, although very substantial discounts are still available for investors prepared to fund newer products.

There has been some refinement of product type with a stronger focus on classic alternative beta and a decline in the development of strategies which blend traditional risk premia into the mix.

Recap: What Alternative Beta Is (And Isn't)

Enhanced Beta, Engineered Beta, Exotic Beta and even Generic Alpha – at last count we identified more than a dozen terms that seek to describe the umbrella term "alternative beta" in one way or another.

We define it as a return stream that (1) can be generated using a systematic, rules-based process, (2) is largely independent of the direction of the underlying market from which it is generated (thanks to the use of non-traditional investment techniques such as shorting and leverage, as well as the use of derivatives and other synthetic instruments) and (3) for which an economic or behavioural rationale exists, driving a positive expected return over time.

It is important to reiterate that alternative beta investment strategies are not new: the majority of the relevant premia have been studied in academic literature and/or used by hedge funds for decades. Rather it is the increasing acceptance among the investing community of their validity as independent strategies and their utility as standalone products that is relatively recent and rapidly evolving.

One can perhaps split the sector into two main branches, although they are not mutually exclusive:-

Alternative Risk Premia

At risk of over-simplification, one could describe many members of this family as market-neutral (long/short) versions of so-called 'smart betas'. They exploit well-documented premia such as value, carry and momentum as well as quality, low volatility and defensive strategies.

With a few exceptions these can be implemented across the four main asset classes; equities, fixed income, currencies and commodities.

Hedge Fund Beta

These are 'bare bones' systematic implementations of strategies typically employed by hedge funds. Examples are merger arbitrage, convertible arbitrage and trend-following. Short volatility strategies can also fall into this category.

Unlike alternative risk premia, strategies are based more on behavioural or technical / market structure considerations. They often rely on empirical rather than theoretical validation.

Whilst correlations to equity market beta are low, some of these premia tend to be more cyclical over the longer term or sensitive to the performance of traditional markets in the shorter term. As such, the majority of products available in the marketplace today provide exposure to a wide variety of premia, with the aim of providing positive returns in a variety of economic and market conditions. We do note an underlying ability to 'unbundle' premia should investors wish to create customised solutions.

For the avoidance of doubt, alternative beta does not include smart beta, nor should it be confused with hedge fund replication (Alternative Beta, August 2015). That being said, in practice there has been an element of overlap with the latter: a few providers include some traditional risk premia in an effort to deliver a result even closer to the return stream that the relevant hedge fund strategy might produce. Strategies like this are in decline.

The distinctions above are not strict. Currency carry, for instance, is noted above as an alternative risk premium but global macro hedge funds frequently make use of the strategy. Yet this system of classification can provide a helpful starting point for understanding the provider and product landscape.

More importantly, the distinction also aligns with observed differences in investor appetite.

Investor Approach

"The investors we've worked with typically want either one of two things: a strong focus on the classically defined, academically established factors or as much coverage as they can possibly get for diversification. In both cases, the funding tends to come from equities, although there are cases where it has replaced all or part of an existing hedge fund allocation."

Toby Goodworth, Managing Director - Diversifying Strategies

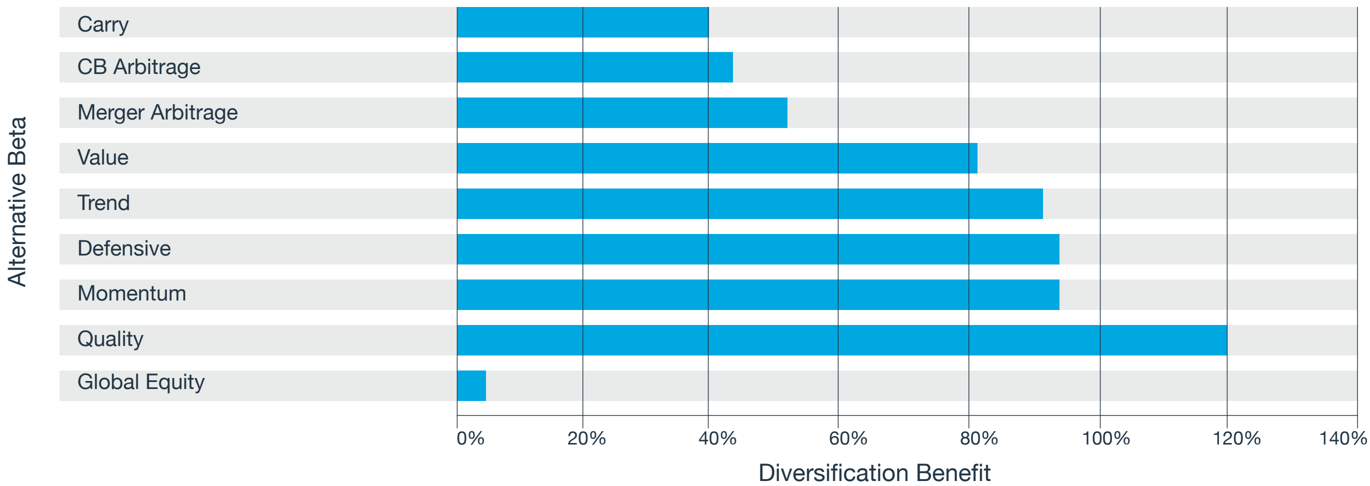
By far the most popular application, based on conversations with our clients, is as an alternative or a complement to a hedge fund portfolio. This story can take many forms. Alternative beta can be a viable option in circumstances where regulations or reputational considerations prohibit hedge fund investments. It may even be preferable where such restrictions are not in place. In certain cases, it now provides the "core" to a diversifying allocation while high-conviction direct hedge fund investments serve as "satellites"; investors taking this approach are typically concerned with reducing overall fees.

For other investors, alternative beta represents a logical extension to smart beta or long-only factor-based investments. Here it provides new ways of adding depth in asset classes outside of equities such as currency or commodities, scaling up exposure to particular premia without adding market risk, or simply broadening the range of available strategies.

Some interest has also emerged from pension funds with very traditional portfolios in light of prevailing market dynamics. For these institutions, the historic diversification benefits provided by a traditional portfolio of equities and bonds have become less effective ; alternative beta may offer a comparatively liquid, transparent way of answering that conundrum.

Irrespective of their reason for accessing alternative beta, all clients expect it to provide diversification at the overall portfolio level. As such it can be helpful to begin any allocation exercise with a risk factor analysis in order to assess which sub-strategies, or combinations thereof, might fit best with the wider portfolio. It could be the case, particularly if an investor has an allocation to smart beta equity strategies or hedge funds elsewhere, that particular elements may be less diversifying.

Figure 1: Diversification Benefits to a Pension Fund Client's Portfolio



'Diversification benefit' measures how well constituents act together to reduce aggregate portfolio risk, from 0% (no benefit) upwards. It is derived from the ratio of component risk in combination with the investor's portfolio to component risk in isolation.

Investor Approach continued

Such a study can help inform investors' decisions on whether to stick to classic alternative risk premia or look at more esoteric hedge fund betas. Additionally it can be used to instruct managers on the need for specific requirements or relevant customisations at the tender phase of a manager selection exercise. Common requests we see here are the exclusion or underweighting of trend-following premia, or the exclusion of short volatility premia.

The findings can indicate whether a customised solution is required in place of a flagship product or whether combining different managers may be optimal, for example using a standalone strategy alongside a broader multi-premia manager.

The addition of core trend-following - one of the most diversifying alternative beta strategies with a number of high quality products available - can prove particularly beneficial in this regard.

There are further reasons why it may make sense to employ more than one provider. As explored later in this paper (p.08 - 09), we find low correlation even between managers whose offerings - in terms of the choice of risk premia - may appear superficially similar. Deeper analysis reveals significant differences in the way models are formed, how premia are characterised and the way they are combined at the portfolio level.

Products and Providers

We estimate that the universe of alternative beta providers has increased by more than 30% so far this year.

For example, a September 2016 search for a UK pension fund revealed approximately 40 firms offering a relevant, available, institutional-quality product. A very similar hunt in January 2016 for a U.S. plan showed approximately 30 (*DNA of a Manager Search – July 2016*). These two searches encompassed both 'Alternative Risk Premia' and 'Hedge Fund Beta' strategies, with both the clients keen to obtain the broadest possible range of appropriate diversifying return streams and, specifically, seeking an alternative to investing in hedge funds.

It is conceptually convenient to split the universe into two camps, as shown below. These, it should be noted, do *not* map onto the two categories defined on page 06: we see material examples of broad-spectrum managers chasing esoteric or technical betas as well as hedge funds employing 'alternative risk premia.'

Broad-spectrum asset managers
(approximately two thirds of universe)

Two thirds of firms are broad-spectrum asset managers with an established quantitative capability, which is a sine qua non of launching an alternative beta strategy.

Their research teams tend to be dominated by graduates and PhDs from mathematics and the hard sciences.

They tend to focus on the classic "alternative risk premia" of Value, Carry, Momentum and/or Trend. Many teams feature close current links with academia with individuals actively authoring research papers.

Hedge fund managers
(approximately one third of universe)

Approximately one third are hedge fund managers that have launched products alongside their existing funds.

They include CTAs and systematic macro funds as well as multi-strategy systematic managers. Typically, the models they employ have been used previously in the firm's alpha products, adding substance to the narrative that an increasing proportion of historic alpha can now be re-interpreted as beta.

These managers are more likely to offer performance fee structures in a sector dominated by flat pricing – a topic explored further below (p. 09 - 10).

At a Glance: Products and Providers continued

The majority of alternative beta products include a range of sub-strategies across asset classes, but there are a number of asset class- or strategy-specific offerings. The bulk of these are in the equity long/short space but standalone strategies can also be found for carry, volatility, merger arbitrage, and core trend-following.

In virtually all cases, products are typically managed to a target level of volatility. Although many managers also express a target return, most prefer to rely on an implied return by stating an expected Sharpe ratio, often in the range 0.5-1.0 with a consensus expectation of 0.7-0.8.

Since the managers aim to be largely insensitive to equity risk, most include an equity beta limit as an additional objective, targeting quite strict market neutrality (equity beta +/- 0.1). This can be achieved through design at the portfolio construction level or through a hedging overlay. That being said, trend following strategies employ slightly higher limits (+/- 0.4). in the short term due to the more directional nature of these strategies versus other alternative betas. In practice, the average 3-year beta to equities (MSCI World) across all products analysed was 0.09 and the highest observed value was 0.49 for a strategy that has a heavy weighting to trend-following.

Among the alternative beta products analysed, there was significant variation in the number and range of premia targeted by each manager. The most commonly used approaches (carry, trend-following and equity styles) are illustrated in Fig. 2.

Figure 2: Percentage of Managers Targeting Various Risk Premia by Asset Class

	Equity	Fixed Income Rates	Fixed Income Credit	Commodities	Currencies	Other Strategies
Carry	29.4%	76.5%	41.2%	70.6%	100.0%	+59% implementing some form of short volatility strategy
Defensive / Low Risk	76.5%	11.8%				
Momentum	64.7%	5.9%		17.6%	11.8%	+24% with event-driven strategies (merger and/or convertible arbitrage and others)
Size	41.2%					
Trend	94.1%	94.1%	29.4%	94.1%	88.2%	
Value	94.1%	47.1%		41.2%	58.8%	

Short volatility is proving to be a marmite factor: potential investors either love it or hate it.

All of the managers we've spoken to, including those who do not include it in their portfolios, do consider short volatility to be a valid risk premium in that it has a positive expected return, negative skew and a clear compensation for bearing a particular risk. Yet it provides comparatively weak diversification benefits, given its tendency to perform poorly when equity markets fall. Some managers are prepared to customise their strategies, carving out the short volatility element, but not all are willing. The issue of customisation is addressed in further detail below (Vehicles and Liquidity).

The equity size factor often proved less popular amongst managers than other premia due to capacity and liquidity constraints, as well as correlation with other factors. Liquidity constraints also influence the extent to which credit is used. We have shown it here as a separate asset class but in reality, where it is used, it is often simply viewed as an extension of sovereign fixed income. Separate from trend-following, roughly a quarter of managers were active in the Hedge Fund Beta strategies of merger and/or convertible arbitrage and others.

Under the Bonnet

While most alternative beta strategies are conceptually relatively simple, they are not necessarily easy to implement profitably. This may be one reason for the major practical differences we observe across the manager universe - there is no obvious 'best approach'.

Almost all products in the space rely on some form of risk parity portfolio construction concept to drive allocations across risk premia. This, in fact, appears to be the a priori starting point for all offerings in this universe. Despite a common central approach we see a wide variety of different methods ranging from straightforward equal contribution to portfolio volatility to those that incorporate higher moments, VaR-based metrics or expected drawdowns. A very small minority of managers introduce explicit factor timing, with others expressing scepticism that this can be done in a robust manner over the long term.

The implementation variation continues when we look at the individual factors, such as the example of equity value explored here:-

Implementation variation in practice: Equity Value

The most simple and liquid method of investment would be to take a long position in an equity value index future such as the Russell 1000 Value and a short position in the corresponding growth index in a beta-neutral manner. Many managers instead prefer to implement through a long/short portfolio of single name equities, using their own metrics of value rather than those adopted by an index provider. The choice of metric - P/B, P/E, P/CF – differs as well, and premia construction is often cited as a source of value-add by managers. At the more complex end of the spectrum, the manager may even combine multiple measures of value at the single name level with the resulting portfolio delivering long positions in the best-scoring quintile and short positions in the worst-scoring quintile. In many - but not all - cases the signals from different risk premia are combined and netted within the asset class (equity) so that instruments which score well across the board have a higher weight than those with more mixed results.

A word of caution is warranted. Along with greater construction complexity comes greater risk of over-fitting or data mining. For any quantitatively oriented asset manager, the challenge of in-sample versus out-of-sample modelling is a constant battle, and one that is not limited to alternative beta.

This issue also colours another key challenge for investors in this sector: the prevalence of backtested or pro forma track records, given that many products have only recently been incarnated. Scepticism and an experienced eye are required to assess the quality of such data. As well as the quality of a firm's modelling or backtesting infrastructure, investors should consider the inclusion of trading cost estimates and more subtle points such as market impact assessment.

Our analysis indicates that backtests for some of the newer capabilities are unrealistically attractive. However, for managers with a reasonable length of live trading in their strategy (>2 years), we did not find any obvious discontinuities within risk/return profiles when switching from backtested to realised track records. In addition, we perceive that the backtests provided by the hedge fund manager group tended to be more appropriate. Overall, a focus on capability rather than performance will provide superior results.

Under the Bonnet continued

Another consideration with assessing backtests is the likely persistence of the targeted premium over time. It's important to understand whether the returns demonstrated are purely exploiting recent, potentially transient phenomena or whether their investment approaches have a long-term economic or behavioural rationale that should stand the test of time.

Execution methods also vary substantially. With systems and infrastructure that have typically been developed for faster trading and more complex alpha strategies, the hedge fund managers as a group generally have a higher focus on transaction costs and implementation efficiency. This includes greater use of Direct Market Access and internal trading algorithms as opposed to broker-provided execution.

These differences may help to explain why the managers in this sector, even those targeting what appear to be a similar selection of betas, prove to be weakly correlated to each other. Product pairwise correlations across the sector average 0.37 over five years or since inception, with the lowest observed figure being zero and the maximum 0.74. As such, combining multiple managers can prove beneficial to overall diversification.

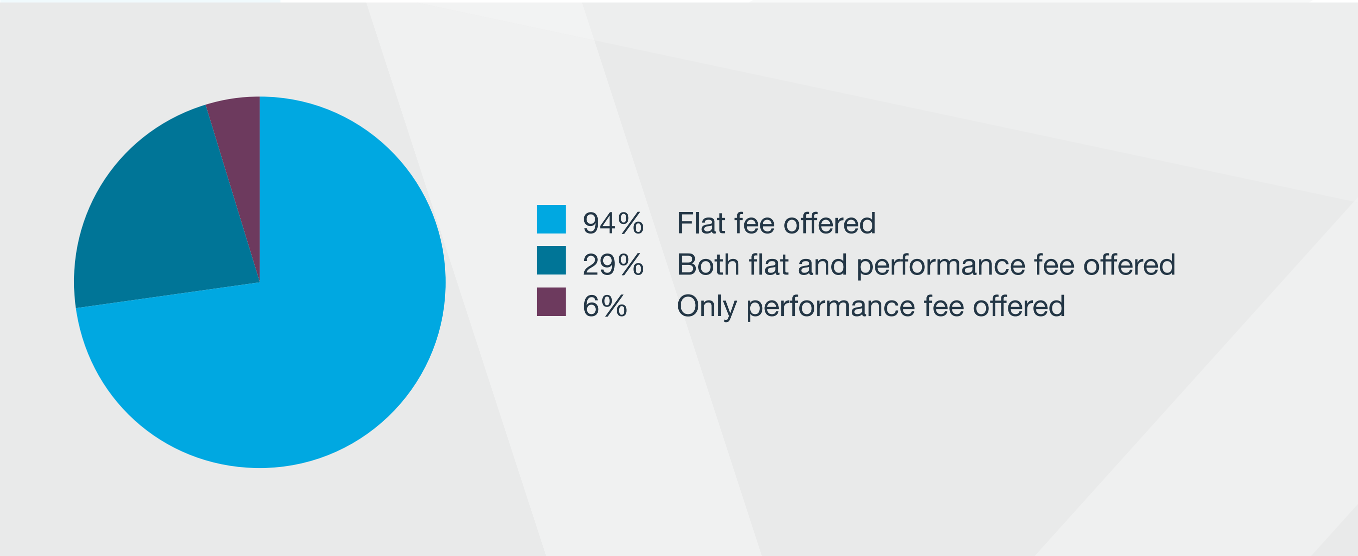
Management Fees and Hidden Costs

Investors we speak with show a strong preference for flat fee structures and this, on the whole, is what the industry is now delivering.

94% of managers present flat fees as an option, 6% only offer performance fee structures and 29% give investors a choice of either.

Over time we expect a continuing decline in the use of performance fees for this sector, although they do remain an option today for clients who prefer a lower base fee impact during periods when the strategies underperform expectations.

Figure 3: Management Fees



Management Fees and Hidden Costs continued

The actual price varies hugely, as illustrated by the table in Figure 4, which captures fee data from two similarly defined searches in 2016. Headline figures range from 30 to 150 basis points.

These are only quoted fees, of course. In practice, significant discounts can be achieved. For some of the newer strategies and funds, early bird fees provide savings averaging 31% against rack rates, ranging from 12% to as high as 50%. Even for more long standing products, some discount can be gained for mandates of scale. We are also seeing some evidence that U.S. providers tend to quote higher fees than their European counterparts.

Most managers don' t charge a premium for a managed account versus a pooled fund, but a few do charge an additional 5-10bps. In addition, fund costs typically add 5-15bps on top of these quoted figures.

Performance fee structures, were typically offered by managers with a hedge fund background. The most expensive proposals were for a 1% base fee plus 10% performance fee, with the lowest being 0.35% plus 10%. With the average hedge fund fee sitting at 1.58% plus 19.4%, according to the 2016 Prequin Global Hedge Fund Report, these figures do represent a significant reduction in expense if the investor's aim – as is often the case – is to replace part or all of a hedge fund allocation.

Figure 4: Product Headline Fees and Scaled to a 10% Volatility

Search Date: January 2016	**Headline flat fee**	**Flat fee Scaled for 6% vol**
Range	47 - 150 bps	30 - 117 bps
Best quartile	58 bps	42 bps
Median	74 bps	53 bps
Worst quartile	91 bps	61 bps

Search Date: September 2016	**Headline flat fee**	**Flat fee Scaled for 6% vol**
Range	30 - 140 bps	21 - 140 bps
Best quartile	68 bps	57 bps
Median	80 bps	69 bps
Worst quartile	100 bps	87 bps

Worth noting: the later mandate was significantly smaller than the earlier one, which does in part account for the slightly higher median.

Customisation and Choice of Vehicle

With most managers offering separate accounts as well as pooled funds, investors can achieve a degree of customisation as long as they're prepared to allocate a sizeable sum: $100 million was the most common figure required for a segregated mandate, although the lowest we observed was $50 million.

This minimum for segregated accounts is higher than that seen for more traditional mandates thanks to greater implementation complexity, multiple trading counterparties and higher frequency of trading , to name but a few factors.

It's interesting to note that, on average, the hedge fund providers currently seem less open to customisation than the more traditional asset managers, with the latter more willing to remove one or two undesired sub-strategies or alter the volatility constraints. That being said, none are particularly keen on letting clients cherry-pick and scale the elements they desire.

In common with many other alternative investments, managers typically offer alternative beta strategies via offshore funds, such as Cayman-domiciled master-feeder structures, though UCITS-compliant products are also available. There can be difficulties in implementing certain elements within a UCITS framework: restrictions on direct investments may rule out commodity strategies, for instance, or gross exposure limits may be binding for fixed income relative value.

Fund liquidity terms vary from daily to weekly or even monthly. Given a typical institutional investor's decision-making timeframe, these may be considered functionally equivalent. Where longer terms are used, strategies are typically more exposed to less liquid markets such as credit. Typically, alternative beta strategies are at the most liquid end of the alternatives spectrum with the large majority of portfolios' key positions being in instruments such as futures, FX forwards, and single name (large cap) equities.

Three Takeaways

Being up-to-date is key: the number of accessible, institutional-quality providers has increased by more than 30% since the beginning of 2016 and pricing has moved on likewise. Six month-old lists will not be accurate today.

One size does not fit all: with diversification as the primary objective, the construction of an appropriate alternative beta strategy for a particular investor should consider the interaction with the rest that investor's portfolio. Not all alternative beta sub-strategies prove beneficial in each case. Targeting specific areas, such as core trend-following, alongside broad multi-premia managers can be advantageous.

Beta choices are only the beginning: the product range is highly heterogenous with pairwise correlation averaging just 0.37 (maximum 0.74). This is not simply a result of targeting different premia but stems from variations in managers' implementation methods and portfolio construction.

Office locations

Amsterdam
Symphony Building, 26th Fl
Gustav Mahlerplein 3 - 115
1082 MS Amsterdam
Netherlands
T +31(0)20 2601 265
www.bfinance.com

London
Clareville House
26-27 Oxendon Street
London SW1Y 4EL
England
T +44 20 7747 8600
www.bfinance.co.uk

Montréal
1250 René Lévesque Blvd. W
Suite 2200, Montréal QC
Canada H3B 4W8
T +1 514 393 4899
www.bfinance.ca

München
Promenadeplatz, 8
D-80333 München
Deutschland
T +49 89 55 29 59 00
www.bfinance.de

Paris
49, avenue d'léna
75116 Paris
France
T +33 1 45 02 64 00
www.bfinance.fr

Sydney
Level 13
135 King Street, Sydney
Australia
T +61 2 8973 7503
www.bfinance.com