A paper from Aon's UK Investment Committee

The Rise of Factor Investing

How clients should invest

Empower Results®

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Key conclusions

Factor investing has experienced a sharp rise in prominence in recent years. Commonly called “smart beta”, many clients are looking at the best way to invest in this area of equities, but are often quite rightly confused by the plethora of options and approaches. Building on extensive previous work, Aon has embarked upon an in depth project to answer these questions and this paper provides clients with the key conclusions and our recommendations.

- Our preferred factors are low volatility, value, quality and momentum. They all offer the potential for long-term return enhancement and/or risk reduction. There are many others but they do not stand up to as much scrutiny.
- The best approach is to create or use a multi-factor portfolio, containing the four factors we have chosen. An equally weighted “top down” strategy, concentrating on the global developed markets and controlling for regional weights, is currently our preferred approach.
- Medium term asset allocation views can enhance returns further, because factor performance is not consistent and is driven by economic developments.
- The low correlation to actively managed unconstrained equity funds means that the addition of a multi-factor portfolio improves diversification benefits, making it appropriate for most clients.

Factor investing – a reminder

In its simplest form, a factor is a persistent, robust and well-documented driver of risk and return which, if appropriately harnessed, has the potential for long-term return enhancement and/or risk reduction through factor risk premiums or the exploitation of market inefficiencies. Factor investing aims to capture this outperformance through rules-based, transparent strategies, at a lower cost than traditional active management. Whilst the investment approaches have become very prominent in recent years, the concept is a lot older, having been identified as far back as the 1960s. Indeed, many traditional active managers already make use of these factors within their portfolios so clients are likely to have some implicit exposure to factors. Factor investing ensures that these exposures are transparent and balanced and that they are delivered at a much lower fee.

This can be a murky world, where any number of things can be called a factor – indeed, the hundreds of so-called factors that are offered have been referred to as the "factor zoo". Investors need to be careful that a factor is robust and not merely the product of a favourable backward looking performance simulation or back test.

Using a well-known framework[1], we believe that a "true" factor should be:

- **Persistent** – we can see evidence of excess returns relative to relevant benchmarks over very long periods and in lots of different economic environments;
- **Pervasive** – we can see it across different countries and investment universes, including different asset classes in some cases;
- **Robust** – we can still see it if we use different selection criteria, such as earnings yield instead of the book value to price ratio in the case of value stocks, for example;
- **Intuitive** – we can explain it in some way, either based on economic theory or relying on investor behaviour;
- **Implementable** – it isn't just a concept on paper and an investor can actually invest!

But there are also some important risks to factor investing:

- **Long periods of underperformance** – individual factors don't always produce excess returns relative to market cap benchmarks. In fact, they can underperform for multi-year periods if the particular drivers are not supportive.
- **Unintended exposures** – some factor portfolios can be highly concentrated or significantly overweight in specific sectors and countries. This exposes them to risks that are specific to these areas (such as the oil price for energy companies), which is unrelated to the factor.

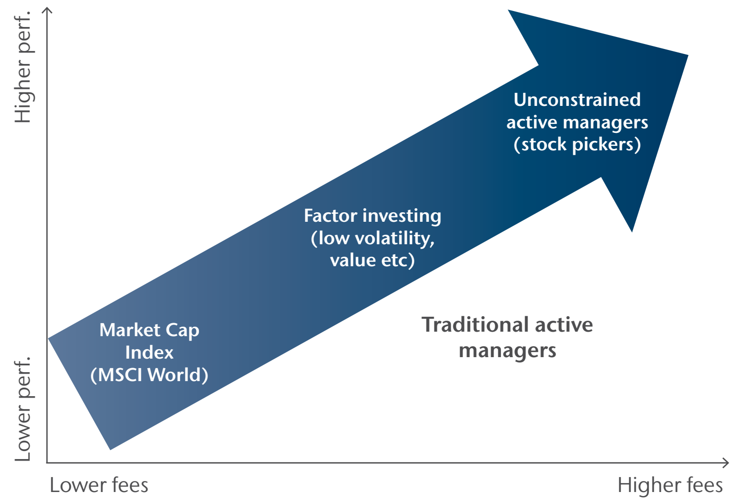
[1] This framework was introduced in the book, ***Your complete guide to factor-based investing: The way smart money invests today*** by Andrew Berkin and Larry Swedroe, 2016

Where does factor investing fit in equity portfolios?

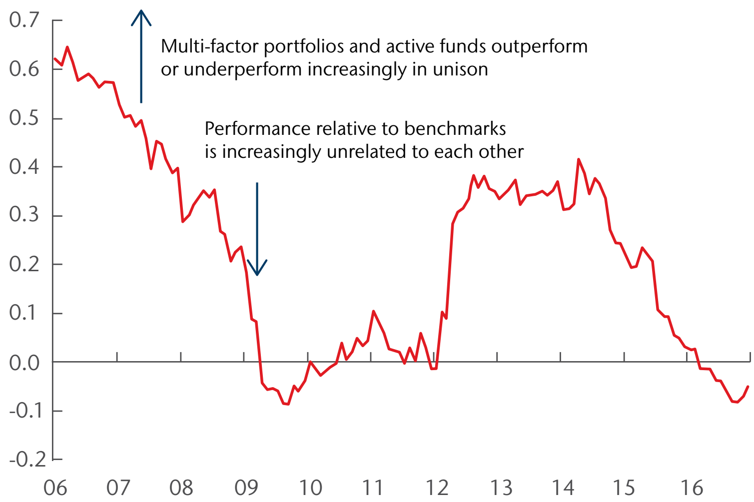
The chart to the right shows how outperformance potential and costs rise as we move further away from the benchmark market cap index. Historically, there has been a wide gap in fees between passively tracking the benchmark index and employing active managers with the aim of outperforming. Factor investing narrows this gap significantly and clients who have opted for passive management purely on the basis of fees should consider whether a multi-factor portfolio better suits their needs.

There are active managers with sufficient skill that are not constrained by benchmarks (unconstrained active managers) and are able to outperform a multi-factor portfolio in the long term. It is worth paying higher fees to these managers. However, there are many more traditional 'active' managers who make extensive use of factors in building their portfolios and who struggle to outperform a multi-factor portfolio over time. We do not believe that clients should pay active fees for such managers and they should consider investing in a multi-factor portfolio instead.

Importantly, we found that the outperformance of multi-factor portfolios had a low correlation to the performance of our actively managed unconstrained equity funds. This means that even investors with exposure to skilful active unconstrained equity managers should also consider an allocation to a multi-factor portfolio to diversify their sources of outperformance.



Low correlation between the performance of multi-factor portfolios and unconstrained active managers



Source: Aon Hewitt

Note: This chart shows the correlation of the performances of a representative multi-factor portfolio and of our buy list of unconstrained global actively managed funds relative to their benchmarks over rolling three year periods

Past performance is not a guide to future returns

We recommend four primary factors – value, momentum, low volatility and quality

As part of our research project, we initially screened the universe for those factors that we believed had intuitive risk or behavioural explanations for outperforming the market. We then conducted dozens of backward looking performance simulations (back tests) on several of the factors that also fitted our other criteria, by looking at their returns across different regional markets and over time periods that were not covered in the original research. We ensured that these factors offered an acceptable and consistent premium in easily replicable and investable portfolios.

Whilst many index providers use more complicated criteria for their index construction, we chose to use only the most basic metrics to define and construct our factor portfolios as we felt that the simplest approach should be the toughest test of the effectiveness of factor investing.

As a result of this in-depth work, we chose four factors that we believe offer the most robust premiums. These are set out in the following table together with the generally accepted explanations for their superior risk-adjusted returns.

	Value	Momentum	Low volatility	Quality
What is it?	Cheaper than average stocks have delivered higher returns than expensive stocks	Stocks with strong recent performance have earned a return above stocks with weak recent performance	Stocks with low volatility have earned a higher return than stocks with high volatility	Stocks of higher quality companies have earned a premium over stocks of lower quality companies
Why does it work?	Cheaper stocks are quickest to respond positively to an upturn in the economy and profits	Tendency of investors to chase the winners upwards	Low return prospects make it difficult for institutional investors to meet return targets, meaning they are ignored	Quality stocks do not have the highest growth prospects and consequently are less favoured in strong bull markets
	OR	OR	OR	OR
	Investors prefer the higher return prospects of companies with strong growth, which can often disappoint	Under-reacting to incoming new information about stocks	Investors like the new possibility, however small, of making large returns from high growth stocks and are often disappointed. Low volatility stocks suffer much less in downturns	Stable earnings mean they suffer less in market downturns

In addition to these four factors, we found that using an alternative weighting methodology, such as equal weighting, to construct these factor portfolios generally improved the risk and return characteristics.

Combining these factors into a multi-factor portfolio is the best approach – stick to the developed markets

While investing in one or two of the above factor portfolios is viable, single factors are best used when trying to offset factor exposures elsewhere in a portfolio. Our research shows clearly that a combination of the four factors into one multi-factor portfolio is the best approach. This smooths out the ride and also mitigates some of the risk of underperformance from any one individual factor. For example, we know that the return drivers for value stocks can very often be a mirror image to those of low volatility stocks. Crucially, the multi-factor portfolio does not eliminate all of the different premiums and it has performed impressively over almost 20 years (our data covers a 19 year period to be precise). The table below sets out the key return and risk results of our preferred multi-factor portfolio, both over the full period and since the global financial crisis. The figures have been adjusted for estimated transaction costs.

Our research results also lead us to a number of important conclusions for the construction of a multi-factor portfolio. These are:

- **Concentrate on global developed markets** – we got inconclusive results from our portfolio back tests in the Emerging Markets and the historic stock level accounting data is less reliable.
- **Begin by equally weighting the factors** – we found that there was little extra return to be earned by using more sophisticated weighting schemes for the four individual factor portfolios and an equal strategic weight from the outset is simplest to track and understand.
- **Neutralise the regional weights** – while sector weights are broadly in line with the market cap index weights when factors are combined in a multi-factor portfolio, this is not the case for regional weights. We therefore prefer neutralising the regional weights relative to the market cap index, in order to reduce any exposures unrelated to the factors.

Key return and risk results from our multi-factor portfolio back test

	Dec 1997 – Dec 2016	Mar 2009 – Dec 2016
Annualised return (%, p.a.)	8.9	15.2
Outperformance relative to the benchmark (%, p.a.)*	3.6	2.4
Annualised risk (Standard Deviation, %)	15.1	14.1
Risk adjusted return (Sharpe ratio)	0.43	1.04
Information ratio**	0.82	0.90
Sensitivity to the market (beta)***	0.93	0.96

* The benchmark is the MSCI World Index, ** Risk adjusted return to relative to the benchmark as opposed to the Sharpe ratio, which is relative to the risk-free cash rate, *** A figure less than 1 indicates lower sensitivity to market movements.

Past performance is not a guide to future returns

How should you construct a multi-factor portfolio? Top down vs. bottom up

A "top down" selection approach in this case refers to selecting the stocks that are highest ranked for each factor, creating individual factor portfolios and then combining them in a simple way – in our preferred case, equally weighted across the factors. In contrast, a "bottom up" approach selects the stocks that are highest ranked across an average of all four of the factors from the start and combines them in adherence to these rankings – there are no individual factor portfolios. Below are the advantages and disadvantages of both approaches.

In terms of the evolution of factor investing, we can identify three distinct phases for the industry. Factor investing version 1.0 offered individual factor portfolios and alternative weighting approaches, version 2.0 is offering top down multi-factor portfolios that are simple combinations, and version 3.0 is to offer more sophisticated multi-factor portfolios that are built from the bottom up. The factor investing industry is on version 2.0 currently, with version 3.0 products only available through more expensive and more opaque quantitative fund managers.

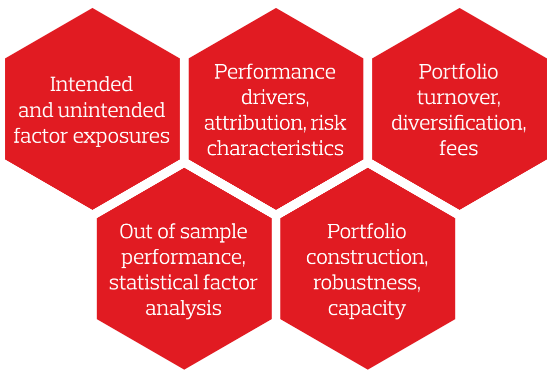
	Top down	Bottom up
What is it?	Create individual factor portfolios then combine them into one multi-factor portfolio	Select stocks using the weighted average of the four factor rankings for each stock. No individual factor portfolios
Advantages	Simpler approach, easy to understand, easy to track performance of each factor and sub-portfolio, easy to make portfolio tilts to one factor over another	Ability to achieve much better and consistent factor exposures, no offsetting weightings
Disadvantages	Slightly clunky, not getting the maximum exposure to the factors, risk of offsetting weights to individual stocks across the factor portfolios, possibly higher turnover	More difficult to attribute performance to individual factors, analysis is more complicated, more difficult to tilt the portfolio dynamically across the factors

How we select single and multi-factor products

Our manager selection team has created a list of approved products for both advisory and delegated clients using a similar methodology to our active manager selection process. The focus is on indices that robustly capture the factor premium at low cost.

We are also working with active quantitative managers to design bottom up multi-factor portfolios at a fee level which is much closer to that of tracking a multi-factor top down index.

What we look for when selecting products



Medium term views enhance returns further

A crucial finding from our research was that, although individual factors can underperform for multi-year periods, they aren't synchronised. In other words, the economic conditions that trigger the underperformance of value stocks, for example, are rarely the same conditions that would trigger the underperformance of low volatility stocks. This means that it is entirely possible, indeed recommended, that investors in top down multi-factor portfolios look to apply medium term economic and market views in order to tilt towards the factors most likely to perform well. Aon has a strong and well-regarded Medium Term Asset Allocation capability and we recommend clients make use of this service.

Our core recommendation

Given the results of our research, we recommend investors consider a developed market focused multi-factor portfolio approach, equally weighting our four preferred individual factor portfolios (value, low volatility, quality, momentum) from the outset. Thereafter, medium term views can be applied to dynamically tilt the portfolio to enhance returns further. Finally, our results indicate that there is merit to neutralising the regional weights relative to the benchmark market cap index.

We're here to empower results

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About Aon

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