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FACTOR INVESTING: FROM THEORY TO PRACTICE

The topic of **factor investing** has been hard to ignore in the last few years. Many new products (often termed *smart beta*) have been launched, seemingly offering a "silver bullet" for investors, claiming sustainable excess returns with high levels of transparency and very low fees.

Mercer has been advising on factor exposures in equity portfolios for well over a decade, including recommending a dedicated low volatility exposure since 2010 and a five factor framework for building robust equity portfolios since 2014. In this paper, we re-examine factor focused "smart beta" strategies in the context of long-only equity investing and consider the practical benefits and challenges they bring.

EXECUTIVE SUMMARY

Overview

Factor investing strategies are not clearly defined and cover a broad range of capabilities and approaches. Equally, factor investing is not a new concept; academics and practitioners have been considering the relationships between the characteristics of stocks and their expected returns for decades,[1] and some single factor products have been around since the mid-2000s.[2]

[1] Ever since the Capital Asset Pricing Model was introduced in the early 1960s, theories have emerged to explain excess returns above the theoretical CAPM model, from Hagen in the 1970s (low volatility) through to Fama and French in the early 1990s (size and value), Jegadeesh & Titman in 1993 (momentum), and Novy-Marx in the 2000s (profitability).

[2] Research Affiliates launched its FTSE RAFI index series in 2005.

However, since 2014 a new range of strategies have been developed that use systematic techniques to gain exposure to a range of well-known risk or style premia in a low cost and transparent way. These are offered as both indices and active (factor) strategies. A summary of our views on these strategies, in the context of the broader universe of approaches to equity investing, is set out as follows:

- **Factor investing is not a passive approach.** Factor strategies and factor indices are active approaches, since all such strategies involve material deviations from the market cap index (the only truly passive approach). In addition, factor strategies can be complex, require active decisions and (like all active approaches) do not guarantee success.

- For investors facing few governance or fee constraints, **we believe that truly unconstrained active strategies offer the potential to capture factor returns in an intelligent way**, while also benefiting from market awareness and idiosyncratic alpha, potentially improving returns, controlling risk and enhancing diversification.

- **Active multi-factor strategies are an appealing option** when there is the need for a single low-cost solution, diversity by factor and transparency. However, approaches vary hugely and each factor strategy needs to be considered on its own merits.

- **Factor indices can be dangerous.** They tend to be naïve in their approach and static in their design. In the case of public indices, rebalancing may be gamed by other investors and they may be prone to crowding (especially where such strategies are also offered in exchange-traded fund format). Although we are generally cautious of index approaches, those that are better able to deal with these issues can offer an alternative to simple market cap index replication with higher return potential and only a marginal fee increase.

In summary, factor strategies vary hugely and should be considered a form of active management, even when offered in index format. Some factor strategies can play a useful role in building robust equity structures, bringing cost and transparency benefits. However, as with all active approaches, investors need to ensure that they have a full understanding of each strategy's characteristics, pitfalls and expectations before investing.

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Actions for Investors

The attractions of factor strategies will vary depending on investor circumstances and beliefs. However, we highlight the following potential actions for consideration:

- Investors with a (traditional) actively managed equity portfolio should ensure that the portfolio is well-diversified by style factor. To the extent that such portfolios are over/underexposed to certain factors, actively managed (as opposed to index) factor strategies may play a useful role in plugging any gaps (that is, as a "completion portfolio").

- Investors who are able to develop a higher degree of conviction in the investment case for factor exposures than they can for traditional active management may wish to hold a core of their equity exposure in active (non-index) multi-factor strategies. This reflects the fact that an investor's conviction level will play an important role in determining the likelihood that an investor holds on to a manager during periods of underperformance versus market cap.

- Investors who already make use of traditional quant strategies may wish to review such holdings against comparable (but typically lower cost) actively managed multi-factor strategies. In some cases, investors may find that a well-constructed active multi-factor strategy offers very similar factor biases and portfolio oversight to a traditional quant strategy, but at a lower fee level.

- Investors making use of factor indices may wish to compare such approaches against active multi-factor strategies. For a relatively small increase in fee level, active multi-factor approaches offer superior risk management and portfolio evolution over time.

- Investors with largely passively managed (market cap) equity holdings may wish to consider introducing some exposure to actively managed or index-based multi-factor strategies. Although we would not advocate replacing a large passive equity portfolio in its entirety with a single multi-factor approach (due to a desire to control the risk allocated to a single active strategy), investing a portion of the portfolio in a multi-factor approach offers the potential for an improvement in risk-adjusted returns.

FACTOR INVESTING AND PORTFOLIO CONSTRUCTION — A RECAP

In 2014, Mercer issued guidance on using factors as a framework for building robust long-only equity portfolios.[3] We believe this advice continues to be relevant. The key tenets of this advice are:

1. Long-only mid/large cap equity portfolios are best implemented using broad global mandates.

2. In certain market segments (for example, emerging markets and small cap stocks), specialist managers can enhance a broad global approach.

3. Robust equity portfolios should be diversified across multiple factors, and we believe there are five important groups of factors that can enhance the portfolio risk-return profile.

4. Incorporating sustainability and ESG (environmental, social and corporate governance) considerations can further improve the risk-return outcome.

An example framework is shown below:

FACTOR	BROAD GLOBAL MARKETS	GLOBAL EMERGING MARKETS	SMALL CAP MARKETS
Value			
Size			
Low volatility	Sustainability/ESG integration		
Profitability			
Momentum			

The complexity of the structure and the type of strategy used will vary by client objectives, restrictions (for example, fees, governance) and beliefs. However, an ever-increasing range of options is available — the remainder of this paper considers the relative merits of these options.

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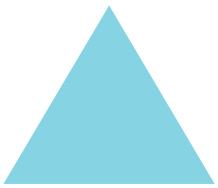


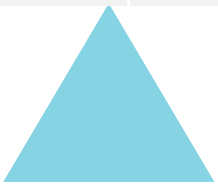
[3] See: *Equity Portfolio 2.0: Evolving Our Guidance* — Mercer, 2014.

IMPLEMENTATION OPTIONS

The following table summarizes the options available to investors for implementing an equity portfolio, ordered (from left to right) by increasing judgmental input and the commensurate increasing costs.

On the far left are traditional market cap-weighted passive indices that can be tracked with a very low base fee. On the far right are traditional active strategies, both quantitative and fundamental (or judgmental) strategies. Investors in more active strategies pay a higher management fee, reflecting the increasing judgment from the manager, in the expectation that this will generate superior risk-adjusted returns.

	MARKET CAP INDICES	*FACTOR INDICES*	*ACTIVE FACTOR STRATEGIES*	TRADITIONAL QUANTS	TRADITIONAL ACTIVE
Description	Market cap weighted indices	Non-market cap weighted indices explicitly targeting one or more factors	Actively managed strategy explicitly targeting one or more factors	Quantitative strategies typically with factors implicitly targeted	Judgmental stock-picking strategies
Active/Passive	Passive	Active	Active	Active	Active
Fees	Very low (5–15 bp)	Very low (10–20 bp)	Low (15–45 bp)	Medium (avg 45 bp)	Medium–high (avg. 60 bp)
Performance potential	None	Medium	Medium	Medium–high	High
Exposure to factor(s)	None	High	High	Medium–high	Varies (generally low)
Turnover	Low	Varies	Varies	Varies (generally high)	Varies
Transparency	High	High	Medium–high	Medium	Low
Capacity	High	Typically high	Typically high	Varies	Typically low
Process evolution	No	No	Yes	Yes	Yes



Until recently, investors had the choice of tracking a market cap index or investing in one or more traditional active approaches. However, the development of the middle two groups (often collectively referred to as *smart beta strategies*) is relatively recent. Although they are far from a homogenous group, factor strategies are typically characterized by:

- Low cost
- Transparent process targeting well-known risk premia
- Focused on absolute, not relative risk[4]

[4] A common proxy for absolute risk would be volatility, whereas a proxy for relative risk would be tracking error.

Within this space, we define two distinct groups of factor strategies as follows:

- **"Factor Indices":** Investment strategies offered as an index with a published (non-market cap) weighting scheme and that (in general) are explicitly designed to provide exposure to one or more factors or risk premia. This may be developed by an index provider or an asset management firm. As with market cap-weighted indices, factor indices are typically available to be tracked by a third-party asset manager at a low fee.

- **"Active factor strategies":** Like factor indices, active factor strategies are explicitly designed to provide exposure to one of more factors. However, these are offered as an active systematic (quantitative) strategy rather than as an index. They may use judgment to deviate from the process, and the approach may evolve over time. There is significant overlap between factor strategies and traditional quantitative approaches; however, the key differences are that factor strategies (1) offer greater transparency, (2) are offered at a lower cost and (3) typically focus on absolute risk not tracking error optimization.

PROS AND CONS OF FACTOR STRATEGIES AND INDICES

We consider both factor indices and active factor strategies to be "active" — they require regular rebalancing to realign positions to the target weighting scheme and (typically) are designed to deliver a superior risk/return outcome compared to a market cap-weighted (passive) strategy. Equally, active decisions are required in how to design and implement the weighting and rebalancing scheme in order to meet the strategy's objectives. As such, they are exposed to many of the benefits (higher return potential and/or better risk management) and drawbacks (higher fees and no guarantee of success) of traditional active strategies.

However, while not passive, factor strategies do have a number of advantages over traditional active approaches. The main benefits of factor strategies compared to traditional active strategies are as follows:

- **Low management fees**

- **High levels of transparency**, enabling performance attribution and clear separation of alpha and beta

- **Targeted factor exposures** aiding portfolio construction, enhanced diversification and tailored solutions

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The most significant (and obvious) advantage of factor indices and strategies is the **lower management fees**. For example, Mercer's 2016 fee survey shows the median fee in the global equity universe for a $100 million investment was 0.6%. That contrasts with the fee for tracking a factor index, which is in the region of 0.1%–0.2% — a reduction of circa 50 basis points. Fees for active factor strategies (as opposed to factor indices) vary but are generally closer to the factor index level (0.15%–0.45%).

However, there are some clear challenges when considering factor strategies:

- **Factor/strategy selection:** Responsibility for factor and strategy selection rests with the asset owner and requires active decisions. This is analogous to the challenge of manager selection under a traditional active approach and raises additional question over the accountability for factor performance.

- **Naïve factor capture:** To aid transparency and lower cost, factor strategies may use simplistic or naïve metrics to capture factors. This may erode their ability to capture the targeted factor in an "intelligent" way.

- **Modeled on historical performance patterns:** Factor strategies are solely reliant on the targeted factor(s) and may struggle to react to changing market conditions or an environment in which previously unidentified factors are the key drivers of stock performance.

- **Limited live track records:** Multi-factor strategies were typically launched after 2014, making an assessment of live performance in different market conditions challenging (though we note that some of the earliest single factor indices were launched from around 2007 onward).

These challenges are relevant for all factor strategies and indices. However, there are some additional concerns specifically related to factor strategies offered as an index. These include:

- **Lack of flexibility due to rigid index rules:** This lack of flexibility may lead to an inability to address concentrations of risk, valuation bubbles or crowding.

- **Known rebalancing cycles:** Indices that follow published rebalancing schedules can be gamed, as other market participants can predict the index changes with a high degree of confidence and take advantage of the upcoming activity.

- **Naïve factor capture:** Public indices use published factor groups, metrics and weighting schemes. Very little is proprietary in an index approach, which focuses on a limited range of metrics, reducing the ability to diversify and making it more likely that the efficacy of their factors will erode over time.

We are generally cautious of factor indices for the reasons highlighted. However, as with all factor approaches, factor indices are active and each requires an assessment on its own merits. We believe those indices that most successfully capture the benefits of factor approaches in general (low cost and transparent) while offsetting the issues we highlighted provide a viable alternative to market cap-weighted indices with the potential for an enhanced risk-return profile.

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PERFORMANCE EXPECTATIONS

As noted above, one of the key differences between factor strategies and traditional active strategies is the increased use of judgment and the associated higher management fee. So how should an investor assess the potential benefits of a more active approach to factor capture? A key challenge is the limited live performance data on factor strategies, with most strategies having less than three years of performance history.

Traditional active strategies generally target 2% or 3% per annum excess return, gross of fees. However, we need to take into account the risks of bad selection and mis-firing strategies. Allowing for this, and assuming a well-structured program based on solid forward-looking manager selection, we believe that it is reasonable to expect a return from active management in large cap developed market universes in the range 1.0%–1.5% per annum gross of fees.[5]

Historical analysis suggests the expected return to factors over the long term is in the region of 0.5%–1.5% per annum[6] (noting that this is based on back-tested data, which ignores transaction costs).

[5] The average "value add" (that is, excess return above the benchmark) across 31 equity universes with 10 years of history is 1.3% per annum (Mercer measures the performance of its A-rated strategies on a quarterly basis). This is based on data over 10 years to 31 March 2017 on a gross of fee basis.

[6] See *Equity Portfolio 2.0 – Evolving Our Guidance*, Mercer, 2014. Although some of the longer-term historical analysis on factor returns shows higher outperformance figures relative to the market index, it is important to note that there has also been an observed decline in factor premia since their publication in academia. McLean and Pontiff (*Does Academic Research Destroy Stock Return Predictability?*, 2014) suggest a "publication effect " to be a circa 31% reduction in return potential.

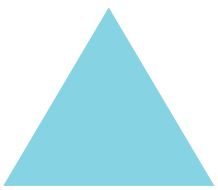
As such, it is perhaps fair to estimate that the return to active management is (in general terms) approximately 50% from factors and 50% from some other exposures (skill, luck or undefined factor exposure). This is supported by analysis from MSCI,[7] which suggests the return from factors accounted for 55% of the return to active managers (note: this includes industry, sector, currency and style factors, with style factors accounting for largest proportion at 34%).

Taking these return estimates and combining with the expected management fee, we can estimate the expected net return to investing in the various approaches (the example below focuses on large cap developed markets). However, we stress that this is a broad brush estimate that we might expect to hold over the long term; in reality, the returns to factors and active management will vary significantly over time, across markets and depending on the level of active risk taken.

	MARKET CAP INDEX	MULTI-FACTOR INDEX	ACTIVE MULTI-FACTOR	ACTIVE QUANT (2% TARGET ALPHA)	TRADITIONAL ACTIVE (3% TARGET ALPHA)
Return expectations (gross)	0%	0.5% p.a.	0.75% p.a.	1.0% p.a.	1.5% p.a.
Indicative management fees	5– 15 bps	10–20 bps	15–35 bps	30–60 bps	40–80 bps
Return expectations (net)*	–0.1% p.a.	c.0.35% p.a.	c.0.5% p.a.	c.0.55% p.a.	c.0.9% p.a.

* For an investor able to achieve fees at the lower end of the fee ranges shown.

The data in the table are long-term estimates for returns using indicative fee ranges. In practice, the actual fees paid by different investors vary significantly. The management fee will have a meaningful impact on the net return received, and we advise investors to negotiate fee schedules based on a realistic return expectation — these are likely to be at the lower end of the ranges shown in the table.



INCORPORATING SUSTAINABILITY

As highlighted at the start of this paper, Mercer's advice includes incorporating sustainability considerations across an equity program in order to reflect ESG risks and opportunities. We do not go into detail on this topic in this paper, but a summary of our advice is highlighted below:

[7] *Anatomy of Active Portfolios — How Factor Exposure Affect Fund Performance*, MSCI, 2017.

- **Index approaches:** Mercer's ESG (passive) ratings can be used to identify passive managers who are being effective stewards of capital. These ratings consider manager voting and engagement practices, resources required to implement stewardship responsibilities, initiatives to promote and enhance ESG integration, and the level of firm-wide commitment and industry collaboration.

- **Factor indices:** Some indices can incorporate a tilt to ESG factors within the index methodology. However, we do not believe that ESG factors can be as effectively incorporated into an index approach as the other factors discussed in this paper. Having said that, ESG tilts and exclusions can easily be incorporated to meet specific investor requirements.

- **Active factor strategies/traditional active:** Mercer has ESG ratings on all active strategies that also have investment ratings (including active factor strategies). Biasing the portfolio toward active strategies with high ESG ratings, particularly 1 and 2 rated strategies, provides a straightforward approach to introducing an ESG focus to the equity portfolio. Including thematic or sustainability-focused portfolios can introduce a more explicit ESG tilt.

CONCLUSION AND ACTIONS

The evolution of factor-biased investment strategies has a number benefits for investors, particularly in an increasingly fee-pressured environment. However, we do not believe that factor strategies are a silver bullet for equity portfolios — they are typically lower cost and more transparent, but a more naïve form of active management. Index approaches in particular can be dangerous, as they lack oversight and may be subject to crowding and gaming by other investors. In addition, factor strategies and indices require a similar degree of due diligence and governance to traditional active approaches and, as such, do not necessarily resolve the governance burden for investors.

We continue to believe that a factor framework remains the most robust framework around which to build a long-only equity portfolio, and factor strategies can play a valuable role within that framework. We urge investors to consider whether they have genuine diversity across as broad a range of return drivers (factors and manager alpha) as possible, and consider whether they are capturing those factors as efficiently as possible.

We continue to believe that a factor framework remains the most robust framework around which to build a long-only equity portfolio, and factor strategies can play a valuable role within that framework.

APPENDIX

Further Considerations

The question of factor investing goes well beyond a simple debate around factor indices versus active factor strategies versus traditional active approaches. Questions arise around which approach is best suited to capturing which factors and whether to capture those factors separately or in combination. Our views are summarized in the table below.

FACTOR	FACTOR INDEX	ACTIVE FACTOR STRATEGY	TRADITIONAL QUANT	TRADITIONAL JUDGMENTAL	COMMENTS
Value	✓	✓	✓✓	✓✓	Can be captured systematically or judgmentally. Mild concern that indices lack breadth or evolution.
Size[8]	×	×	✓✓	✓✓	Best captured in a multi-factor framework; Capture "pure" small cap exposure separately via active mandate
Momentum	×	×	✓	✓	Best captured in a multi-factor framework; challenging to capture in isolation due to fat tails and high implementation costs
Profitability	×	×	×	✓✓	Weak empirical evidence in isolation, stronger in combination with other factors; quality best captured with judgmental assessment of sustainability and alongside value.
Low volatility[9]	?	✓✓	✓	✓	Low volatility is best captured in an active systematic but targeted way; factor indices may bring unintended and unmanaged risks
Multi-factor	✓	✓✓	✓✓	×	Challenges in capturing multiple factors in traditional judgmental strategies; preference for active oversight of process and portfolios.

The key principles underpinning these views are:

- We have a general **preference for active approaches** over factor indices for accessing all factors. Active strategies are better able to evolve as the market environment changes, are less exposed to the risk of crowding and can be implemented more efficiently (that is, you are not forced to buy specific stocks). Ultimately, we believe they can deliver superior gross of fee returns.

[8] Denotes a tilt away from the largest companies within a given market cap weighted universe.

[9] "Quality" and "variable beta" strategies also offer equity strategies with defensive return profiles. Quality strategies typically capture elements of profitability or low volatility factors. Variable beta may capture a range of factors (or none) with the defensive return profile driven by allocations to low beta non-equity assets or shorting.

- Only factor strategies that incorporate **value lend themselves to capture via an index**. All other factor strategies (when targeted in isolation) are prone to periods of over-valuation. We believe value can be efficiently accessed via fundamentally weighted strategies that are high liquidity, low turnover and transparent. Equally, the live track record of fundamentally weighted indices is reasonable when compared to traditional active strategies. However, we retain a preference for more active value approaches (either judgmental or quantitative) due to the potential for more nuanced portfolio construction and process evolution over time.

- **Low volatility is most efficiently captured using unconstrained active systematic strategies** (that is, active factor strategies) that can use variance-covariance optimization to reduce volatility while actively managing market dynamics as they evolve. Low volatility indices may provide reasonable exposure; however, they may be prone to risks (such as extreme valuation) that are hard to manage within an index context over the short to medium term.

- **Quality (or "profitability") does not lend itself to traditional quantitative capture** — the efficacy of the factor in isolation over the long term has been relatively weak, and we believe success requires a forward-looking assessment of the sustainability of the "quality" of the company balanced against its valuation. We believe this is best achieved via a strategy that incorporates a judgmental assessment of businesses' sustainability (quality) and the appropriate valuation.

- **Momentum is the most challenging factor to capture in isolation** due to the high levels of turnover it can generate and the fat tails around the distribution of returns. The empirical evidence suggests active returns to momentum-biased strategies have been volatile and (over long periods) relatively weak. However, it can be a useful addition to multi-factor strategies (whether in index or active form).

- **There is merit in multi-factor strategies and indices** — they avoid the pitfalls of single factor strategies, blend factors at the stock level, can incorporate valuation consideration (helping avoiding bubbles) and offer non-trivial cost advantages compared to actively managed approaches. However, they are generally complex and lack transparency; multi-factor indices therefore need careful consideration and assessment, as the approaches to constructing strategies/indices and their outcomes can vary significantly.

For more information, please visit our website.

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