Risk
Awards
2019

Index provider
of the year

Scientific Beta
An EDHEC-Risk Institute Venture

EDHEC Scientific Beta

Not everyone in financial markets would like to be described as bookish, but ERI Scientific Beta is making the moniker work. The indexing offshoot from Edhec Business School is winning fans with its academic approach.

While researchers at other index providers are under pressure to help produce new products and so struggle for time to verify past research or explore ideas from first principles, Scientific Beta is an academic shop, clients say.

As one puts it, the indexer differentiates through its academic credentials; so it guards them carefully. "They have an impressive corpus of research – something you don't really see elsewhere." ERI Scientific Beta's marketing serves its research, not the other way around, he adds.

The indexer's preference for sticking to what is verified by multiple academic studies rather than fashion new indexes based on less extensive testing, also wins plaudits.

"At the end of the day, you don't buy a risk premia when you invest in one of these indexes, you buy a backtest," says another client, who explains he's learnt to be cynical about new, 'better', products based on less extensive testing.

He recalls how the promised outperformance for a clutch of new commodity indexes launched a decade ago melted away in live performance. Strategies proven in multiple academic studies are the most reliable, he says.

The numbers speak for themselves. Assets replicating Scientific Beta indexes grew by $9 billion to $34 billion in the first six months of 2018. A further $5 billion to $8 billion of deals in the pipeline are due to complete before the end of March 2019, according to Eric Shirbini, head of research.

The indexer launched five years ago with the mission of maximising the impact of academic research in the indexing space. It started with 12 people; now it has 50 and is hiring more.

"We are an academic institution. We strive to provide a great deal of transparency about what we do, because we hear a lot of rhetoric from others in the market," Shirbini says.

In 2018, Scientific Beta started offering market beta adjusted versions of its indexes, in which the firm either leverages up the index to achieve a market beta of one or advises on futures overlays to achieve the same goal without borrowing.

It's an important step, at a time when market and sector beta explains much of the underperformance seen in factor indexes and strategies, relative to the market.

Calculating the market beta precisely, though, can be complex. The turnover in factor portfolios means historical calculations for the portfolio as a whole are unrepresentative of the beta of the current portfolio. So Scientific Beta must calculate betas at individual stock level where return data is notoriously noisy.

Scientific Beta has also launched an index that applies the beta-adjustment idea in reverse: adjusting market beta to zero. An ETF linked to the index allows portfolio managers to obtain factor exposures in their portfolios without changing their overall market exposure.

About half of mandates in the pipeline include these beta-adjustment features, Shirbini says.

Long-only managers expect to take on market risk as well as earn a factor premium when investing in factor indexes, Shirbini explains, but investing in factor-based strategies actually reduces the exposure.

"When you invest in a factor index you change the market beta of your strategy. You end up with a market beta of around 0.8 or 0.9. You are missing out on about 10% to 20% of the most important risk of all: market risk," he says.

The market beta of multi-factor strategies is even lower because of tilts towards low volatility stocks and quality stocks, which tend to have lower betas. By eliminating unrewarded risk, factor portfolios also further reduce their risk and therefore their beta to the wider market.

In the long run, that doesn't matter, because the return to the factor will outrun the return from the market. The short run, though, can be a different story.

"In a year like 2017 in the US, where equity markets went up 20%, if you only had 80% exposure to the market you missed out on 4% in returns. That has nothing to do with the factors. It's an incidental thing that happens when you invest in an index," Shirbini says.

In other research, Edhec has been one of a group of challengers to the orthodoxy on how to construct multi-factor indexes and strategies, advocating a top-down approach where managers combine individual factor "sleeves" – one for value, one for momentum, and so on.

That contrasts with a bottom-up methodology – favoured across the industry in recent years – whereby managers choose stocks based on composite scores across several factors at once.

The top-down approach had been seen as leading to portfolios with unwanted factor exposures: the stocks in a quality sleeve, for example, might also have exposures to momentum.

"If you want to add a particular factor to a portfolio you have got to be very careful." If you don't do it right you are going to introduce negative exposure to other factors. "If you add a value factor, for example, you could destroy your momentum or low-volatility exposure," Shirbini says.

Scientific Beta addresses this problem by removing stocks from each single factor index that carries negative or very low exposures to other factors, and has shown that doing so is a sound way to deal with the problem.

"We filter out all the companies that introduce negative exposure. We take them out of the index altogether. It's as simple as that."

Scientific Beta argues that a bottom-up approach wrongly assumes a direct relationship between the factor scores of individual stocks and returns. Shirbini points to studies by academics such as Cederburg and O'Doherty (2015) and Patton and Timmerman (2010) that show a non-linear relationship.

"If you've got twice the factor exposure, that doesn't lead to twice the return," he says. "Stock level signals are noisy, so we only use them as a broad signal to remove a group of stocks."

At the same time, if you use stock signals to determine weightings in indexes you end up with very concentrated portfolios, Shirbini says. "We prefer to use well-diversified stock weighting schemes such as equal-weight or maximum decorrelation that reduce exposure to unrewarded idiosyncratic risk, because a reduction in unrewarded risk also increases the Sharpe ratio."

The re-emergence of the top-down approach promises to make life simpler for managers and asset allocators, Shirbini says.

"If you use the bottom-up approach that makes use of stock level characteristics through an optimiser, it's a kind of a black box approach, and you cannot fully understand why you've got the exposures you've got. It's basically a combination of lots and lots of different elements. Using separate sleeves has been very useful, because you have more control and more visibility." Investors might choose to increase the weighting on one sleeve versus another, for example. ∎