BlueCove Insights

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What is Scientific Fixed Income Investing and Why Should Investors Embrace It?

Science and technology have only recently begun to disrupt the active fixed income asset management industry, as they have so many industries before it. With the necessary conditions now in place for scientific fixed income investing to flourish, investors have available to them both an alternative and a complement to the traditional active fixed income strategies that dominate their portfolios today.

The Industry Today

Perhaps surprisingly, science and technology are today in only the early stages of disrupting the active fixed income[1] asset management industry. The great majority of managers still operate a traditional, discretionary business model in which the exercise of subjective judgement dominates every phase of a (generally team-siloed and star manager-dominated) investment and asset allocation process. At an industry level, such an approach has tended to prove sub-optimal[2]. We attribute this to the latitude it offers for the exercise of cognitive and emotional bias; the reliance it places on the subjective forecasting abilities of a small number of key individuals; the challenges it faces in handling both exponential growth in data sets and the fast-growing breadth of the asset class; and the way in which it tends to vest the ownership of intellectual investment property in the individual rather than the firm. We believe that adopting a scientific approach to the management of fixed income assets allows these issues to be addressed and investor outcomes to be improved.

What Do We Mean By Scientific Fixed Income Investing?

BlueCove's scientific approach to the management of fixed income aims to strip the traditional investment process of its weaknesses. It is thus reduced to its component parts (universe definition, data sourcing, alpha sourcing, portfolio construction, trade execution and process review) and then reassembled, with people and technology assigned the roles to which they are best suited. Human discretion remains central to the process but is directed away from areas in which it is relatively weak (such as subjective forecasting) and towards those in which it is relatively strong (such as objective analysis)[3]. Technology is given the tasks to which it is uniquely suited (such as processing vast quantities of diverse investment data, or unemotionally assessing risk, return and liquidity trade-offs in portfolio construction). A siloed investment process dependent upon individual discretion at every stage is thus replaced by a firm-level investment process in which human discretion is principally focused on process design and improvement.

What Is Scientific Investing Not?

Scientific fixed income investing is not a 'black box'; when operated properly it is rigorously transparent in its decision and performance attribution. It does not dispense with human discretion; it redirects it towards the design, construction and monitoring of the investment process. It is not auto-execution; deep asset class expertise underpins multiple components of the process, including risk, transaction cost and liquidity modelling. It is not rigid; manual intervention[4] by asset class experts occurs when, for instance, corporate actions or liquidity considerations dictate. It is important to point out that it is also not homogenous as a discipline; each scientific manager takes its own evidence-based approach to the investment process, with some focusing on top-down market factor and style-driven approaches and others on bottom-up issuer and/or issue insights. What scientific managers do have in common is

1. References in this paper to fixed income include corporate credit, which makes up >20% of global fixed income markets. Source: BlueCove, Bloomberg.
2. 68.7% of actively managed investment grade funds and 99.2% of actively managed high yield funds underperformed their benchmarks between 2005 and 2019. Source: S&P Dow Jones Indices Research: SPIVA US Scorecard, Year End 2019.
3. As discussed in publications such as Daniel Kahneman's 'Thinking Fast and Slow', 2011. See also 'Superforecasting' by Philip Tetlock and Dan Gardner, 2015.
4. Manual intervention is conducted scientifically and aids model improvement and design. All interventions are catalogued and marked for this purpose.

that they are truth seeking as well as return seeking; as evidenced by their frequent academic collaboration in the common interest.

Why Should Investors Care?

The scientific method is designed to provide fixed income investors with a number of tangible benefits. The redeployment of human discretion in the investment process seeks to minimise cognitive and emotional bias and increase the chance of repeatable outcomes. The assignment of data processing and analysis to technology maximises investment breadth. Transparency in decision-making allows for granular decision/performance attribution and continuous improvement of the investment process as a result. A firm-level investment process minimises key person risk and improves knowledge management[5]. An emphasis on modular capabilities rather than premeditated product lends itself well to partnership with solutions-orientated investors. ESG, being data-driven, is easily assimilated into a scientific investment process. Finally, scientifically managed strategies will tend to generate returns with a low to negative correlation to those of traditional managers, making them complementary to as well as competitive with their traditional counterparts[6].

Why Has It Taken So Long To Arrive?

Investors often question why it has taken so long for scientific fixed income investing (and particularly scientific credit investing) to emerge, given that scientific investing has been around for years in equity markets and that the relative complexity of fixed income as an asset class logically makes it fertile ground for the scientific approach. The answer lies in this very complexity; the four essential preconditions for scientific investing (data availability, market structure, market breadth and depth of research) have taken longer to manifest themselves in an asset class that, while of a similar size to that of equities (some US$60 trillion in each case[7]), is far more fragmented and heterogenous. In recent years, however, all this has changed; fixed income markets today boast the availability of data, the market structure, the breadth of securities and the depth of research necessary fully to implement the scientific approach to fixed income investing first envisaged by the pioneers of the discipline at Barclays Global Investors and others some fifteen years ago[8].

Now It Is Here, Will Everybody Do It?

Despite the conditions now being in place, there will likely continue to be a shortage of true scientific fixed income managers. This is because, as others have observed[9], the scientific method requires a classically trained scientific mindset to be installed at a firm level. The investment process is founded, from data collection through to trade execution, on the formulation of carefully constructed hypotheses that are then subject to a recurring process of measurement, learning and adjustment. The result is a structured process in which individuals must seek to prove the model wrong, and not the other way around: technology-driven investment with human assistance rather than vice-versa. This is both an expensive business model to build and a difficult one for discretionary managers

5. Van Gelderen, Eduard and Monk, Ashby H. B., 'Knowledge Management in Asset Management', August 11th, 2015.
6. AQR, 'Alternative Thinking', 3Q17.
7. Morgan Stanley, 'Quant Investing – Bridging the Divide', 1 October 2017; 'The World's 500 Largest Asset Managers', Willis Towers Watson, Bloomberg, Morningstar, and BlueCove estimates.
8. Liquidity and transaction costs are sometimes claimed to be obstacles to scientific fixed income investing. We disagree. Liquidity and transaction cost models are integral elements of the scientific investment process.
9. David Siegel, 'Quant's Best Strategy is from the 17th Century', Wall Street Journal, May 26th, 2017.

to retrofit without significant cultural and commercial collateral damage. It is also very different from the 'quantamental' compromise many will inevitably offer in lieu. The medium-term alpha opportunity available to scientific fixed income managers in an uncrowded space should be meaningful as a result.

What Does The Future Look Like?

Fixed income has been described as the 'final frontier' for scientific investing[10], and we would agree. Major developments in global fixed income markets from an investor perspective are rare, and there have arguably been only four in the last half century or so: the creation of the Eurobond market in the 1960s; the launch of passive fixed income products in the 1980s; the development of the credit default swap market in the 1990s; and the birth of a global credit market at the turn of the millennium. The scene would appear to be set for scientific fixed income investing to become the next such development, as the gap between the demands of a fast-growing, complex, data-rich asset class on the one hand and traditional approaches to managing it on the other widens with every day that passes. The scientific method has, after all, been at the forefront of successfully solving hard problems for over four hundred years[11]. It would seem high time that the fixed income asset management industry updated itself accordingly.

10. Cliff Asness, Bloomberg interview, May 16th, 2018.
11. David Siegel, 'Quant's Best Strategy is from the 17th Century', Wall Street Journal, May 26th, 2017.

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