ADVANTAGES OF MULTI-FACTOR APPROACHES IN FIXED INCOME

By Andrea Dacquin

Factor-based strategies are increasingly being used not only for equities, but also for bonds. It is crucial for investors to look closely at the details, because the different systematic approaches can vary considerably.

An important incentive in the use of factor-based strategies in fixed income markets is that of risk reduction, which is achieved by diversification over a number of factor classes that have low correlations with one another. Another incentive is the prospect of a higher extra return. A systematic, factor-based evaluation of the corporate bond universe not only allows the usual large issuers to be considered, but also enables investment opportunities to be seized more effectively among smaller issuers who have less research coverage. Manager diversification is another argument in favour of using multi-factor investing. The distribution of outperformance for a factor-based approach differs from the distribution experienced with regard to a traditional investment approach, in terms of size and timing. The former thus also complements the latter in a meaningful way in the management of institutional fixed income investments.

COMPLEXITY AND COMBINATION OF FACTORS

Academic studies have shown that there are many hundreds of factors that have systematically led to excess returns in the past, compared to traditional indices based on market capitalisation. To simplify matters, however, the vast majority of factors can be grouped into a few superordinate styles. In contrast to equity investments, the correct modelling of downside risks is particularly important in the case of bonds, which is why fair value models that relate valuation and risk to one another are suitable. Enhanced by the 'Quality' and 'Sentiment' (Momentum) factor categories, a balanced multi-factor approach results. On the one hand, the complexity of the calculation of the factors has a decisive influence on the result, and this is where a detailed approach - with enhanced data input – is advantageous. On the other hand, the way in which factors are combined is also relevant: in principle, investors can choose between a mixture of portfolios made up of single factors (a top-down approach) or a mixture of factor signals at single-issue level as part of an integrated multi-factor approach (a bottom-up approach). The factor exposure of the overall portfolio in the top-down approach is low due to negative correlations between the individual factor groups: it must therefore be obtained through very distinct positioning within the individual portfolios. Therefore, it seems that the top-down approach is not very practicable, particularly in fixed-income, as such extreme single-factor portfolios are unlikely to be implementable. With an integrated multi-factor approach, the factor signals are combined at the level of single securities, taking into account duration and yield curve risks. Such an active factor investing approach focuses on utilising issue-specific information inefficiencies, and not just on simply replicating risk premia.

Photo: Archive Quoniam AM

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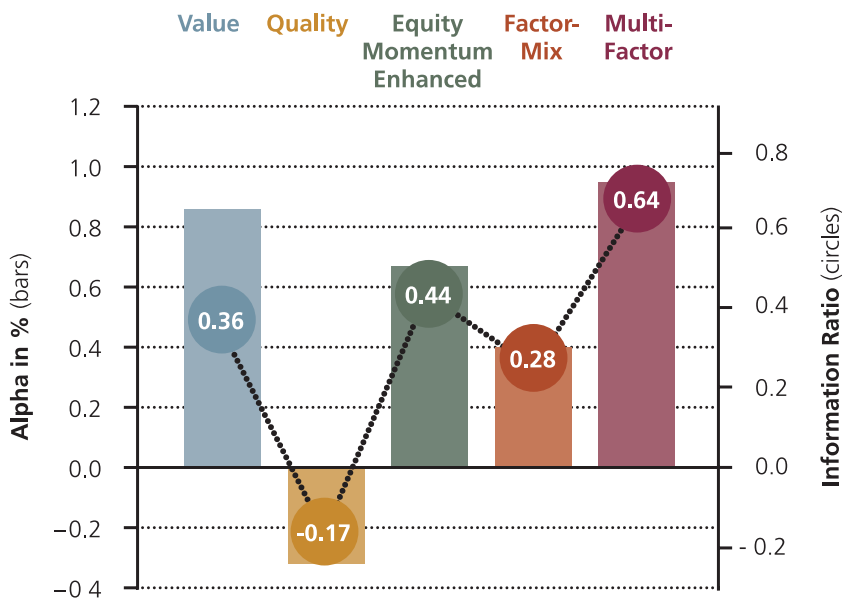
EMPIRICAL ANALYSIS OF DIFFERENT APPROACHES

The effects of these two different approaches can be illustrated by means of an empirical study. In order to illustrate single factor returns, the figure shows long-only-portfolios over a period from January 2005 to December 2018. The investment universe comprises 11,367 bonds ranging from AAA to BBB in ratings. First, three individual factors were considered: 'Value' – which relates a model spread to the market spread in order to determine the attractiveness of a security's valuation; 'Quality' – which aggregates key parameters, including those relating to profitability, leverage and solvency, and finally 'Equity Momentum' – which measures the risk-adjusted performance of the underlying share over a period of 12 months. Second, the results of the factor mix strategy and the multi-factor strategy are presented. The former combines three individual factors with a ratio of 40 per cent 'Value', 40 per cent 'Equity Momentum' and 20 per cent 'Quality'.

As a result, it is obvious that the bottom-up multi-factor strategy, with an alpha of 0.95 per cent and an information ratio (IR) of 0.64, is clearly preferable to a capital-weighted benchmark. With an IR of 0.64, the multi-factor strategy also achieves significantly better results than the factor mix's IR of 0.28. Incidentally, it makes obvious sense to add 'Quality', a strategy that displays a negative alpha at single factor level. Even if the correlation between 'Value' and 'Quality' is not constant over time, both factors are fundamentally opposed. This is particularly noticeable during times of crisis. In such a scenario, 'Quality' – on average, more expensive than the market average – will become (even) more expensive, but 'cheaper' again when the economy recovers. This trade-off between 'Value' and 'Quality' in corporate bonds means that by adding 'Quality' in times of crisis, unwanted tail risks can be reduced. The cushioning effect of mixing factors in these times more than offsets the marginal performance loss experienced during calm market periods. Thus, the maximum drawdown of the multi-factor strategy (-14 per cent) is markedly lower compared to the value strategy (-28 percent) and the benchmark (-17 per cent).

An important incentive in the use of factor-based strategies in fixed income markets is that of risk reduction.

Figure 1: Empirical analysis: multi-factor beats factor mix



The returns displayed are calculated after transaction costs, and taking realistic restrictions in term of liquidity and risk into account (01.2005 - 12.2018)

Source: Quoniam AM

INTEGRATION OF SUSTAINABILITY INTO FACTOR STRATEGIES

We now manage more than 40 per cent of our total assets on the basis of sustainable investment criteria. The prerequisite for the efficient integration of sustainability aspects into quantitative factor strategies is to have a high-tech infrastructure for processing data, with suitably reliable data sources. In principle, sustainability aspects can be integrated into a quantitative investment process in two ways. First, negative screening identifies issuers with problematic business practices, such as child labour, or problematic business activities – involving the production of weapons of mass destruction, for example. The second way allows quantitative sustainability measures such as ESG scores or the carbon footprint of issuers to be integrated into the portfolio construction. However, this approach also emphasises the importance of ensuring that the primary investment objectives, such as risk-adjusted performance, are not compromised. The way in which sustainability aspects are considered also depends to a large extent on individual client preferences, for example there are major country-specific deviations in respect of the use of nuclear energy. «

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