Quoniam
QUANTITATIVE INVESTMENT ENGINEERING

|insights|

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FACTOR INVESTING IN CORPORATE BONDS: **GETTING THE RIGHT BALANCE**

Over the last few years, factor investing in corporate bonds has significantly gained in importance. However, finding one's way from the attractive risk/return profile proclaimed in academic literature right up to the actual (and successful) portfolio construction can prove to be tricky. In this article, we will take a closer look at one of the most important steps: blending single-factor strategies.

Academic literature comes up with seemingly limitless investment opportunities with regard to systematic factor-based strategies, most of which promise highly attractive returns. In practice, however, executing these single-factor strategies is anything but simple. Risk and liquidity management play an important role in the portfolio construction process; academic literature often fails to take this role into account. The premia realised with single-factor strategies tend to disappear when reality takes hold. Therefore, investors have to appropriately combine single-factor strategies which invest according to fixed rules if they want to benefit from investment strategies.

How can investors make use of factor strategies?

Having determined that blending factors is important, the question arises as to how to do this. Investors can resort to two different approaches: whilst the top-down 'factor mix' concept relies on a mix of various single-factor style portfolios, the 'multi-factor' concept is based on a bottom-up portfolio integration, in which the signals are mixed on the level of individual securities rather than mixing portfolios. Let us refer to an analogy from everyday life in order to answer the question as to which strategy is more suitable. When given the choice of eating the individual ingredients of a cake or the cake itself, one would probably always go for the cake.

„Multi-factor" beats „Factor-mix"

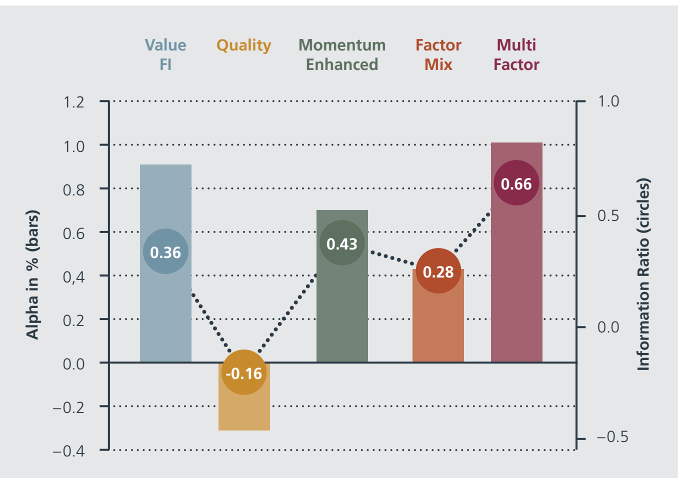

Figure 1: Source: Quoniam

Using a multi-factor approach makes sense, as it entails selection of bonds for the portfolio which have a well-balanced, positive exposure towards many factors. In contrast, pursuing a factor-mix approach would lead to a selection of bonds which could have an extremely positive exposure towards one factor but also a negative exposure towards another factor.

An empirical study of factor investing

To illustrate factor returns, figure 1 shows the performance of long-only portfolios between January 2005 and December 2017. The investment universe comprises bonds with ratings between AAA and BBB- (investment grade); as of December 2017 it contained 11,367 bonds. The set-up compares to a typical academic study. The returns displayed are calculated after transaction costs, and incorporate realistic restrictions in terms of risk and liquidity. The three single factors are (i) 'Value' – which compares a model spread with the market spread; (ii) 'Quality' – which aggregates, amongst other things, profitability, leverage and solvency indicators; and (iii) 'EQ Momentum' – which measures the risk-adjusted performance of the underlying share over a period of twelve months. Both mix strategies (factor mix and multi-factor) blend the three factors in a ratio of 40% Value, 40% EQ Momentum and 20% Quality.

Two aspects stand out in particular: on the one hand, the bottom-up multi-factor strategy – with an alpha of 1.02% and an information ratio (IR) of 0.7 – is, as expected. clearly preferable to a capitalisation-weighted benchmark. Also, the multi-factor strategy generates significantly higher results (IR: 0.7) than the factor-mix

Relative value of a quality portfolio (US corporate bonds)

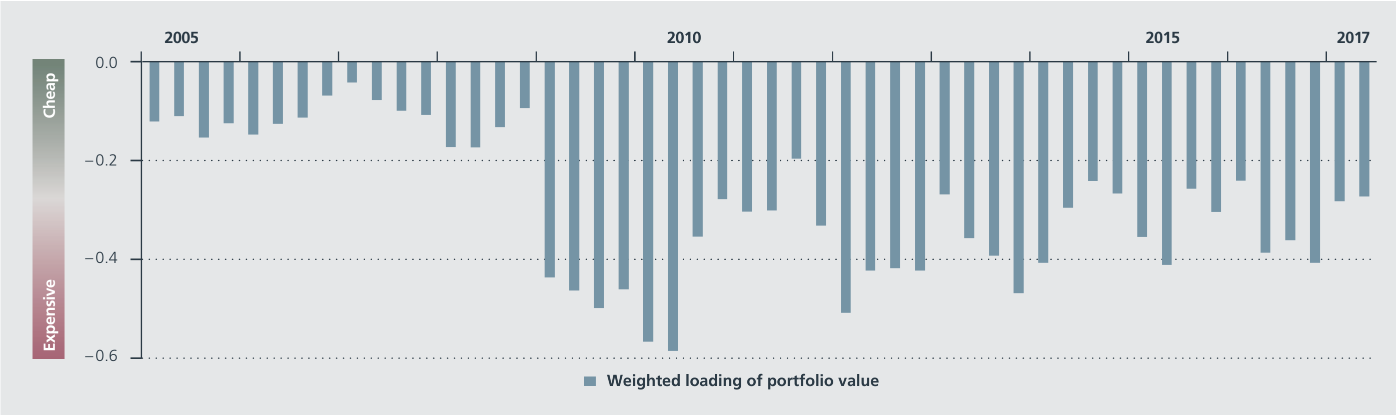

Figure 2: The diagram shows the relative value of Quality in comparison with the market. Source: Quoniam

strategy (IR: 0.3). On the other hand, adding the quality strategy, which counts with a negative alpha on single-factor level, seems quite reasonable. To illustrate why this is the case, please take a look at figure 2 depicting the relative 'Value' of a Quality portfolio; by definition, the benchmark is neutral (0). On average, Quality is more expensive than the market average. Quality becomes (even more) expensive in times of crisis, whereas it is 'cheaper' in phases of economic recovery. Thus, whilst – in the case of corporate bonds – a trade-off does exist between Value and Quality, this trade-off varies according to market phase. Especially in times of crisis, adding Quality can help avoid unwanted tail risks. The cushioning effect that Quality generates in times of crisis more than offsets the marginal performance loss experienced in calm phases. Thus, the maximum drawdown of the multi-factor strategy (–14%) is materially lower than that of the value strategy (–28%) and of the benchmark (–17%).

> The bottom-up mix of factors provides institutional investors with attractive investment opportunities, and high transparency.

How can Quoniam investors benefit from multi-factor strategies?

Under realistic conditions, simple single-factor strategies exhibit lower performance and higher risk. Multi-factor selection strategies, by contrast, use attractive correlation structures between the factors; as a result, their risk/return profile is more appealing. For the last 12 years, Quoniam's Fixed Income strategies have accordingly been based on a multi-factor fair-value model with a realised information ratio of 1.2 combining a wide variety of factors from the areas of Risk, Quality, and Sentiment. In addition to the attractive risk/return profile, this approach offers renewed control over factor exposures, and maximum transparency throughout the investment process.

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