Distinguishing Factor Strategies in Corporate Bonds and Equities

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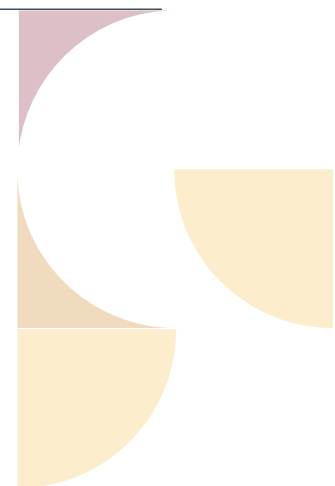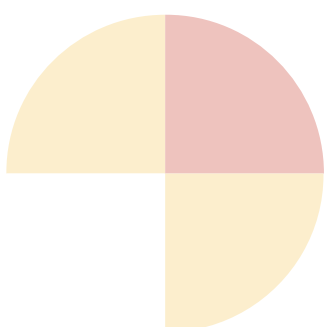
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Introduction

Factor investing is becoming increasingly popular in the corporate bond market. Academic and practitioner evidence demonstrates that well-known equity factors can be redefined to capture excess returns in global corporate bond portfolios. New technologies and ever-increasing computing power allow quantitative fund managers to access large amounts of data necessary for the modelling of factors. This means that institutional investors can opt to invest in a different management approach for corporate bonds based on quantitative factor investing.

In this paper, our experts answer a common question posed by asset owners: What distinguishes corporate bond factor strategies from equity factor strategies?

Authors

Dr Harald Henke is Head of Fixed Income Portfolio Management. Prior to this, Harald was Head of Fixed Income Research, wherein he was responsible for the development of corporate bond models and interest rate forecasts. Harald has a doctorate in finance.

Dr Maximilian Stroh, CFA, is Head of Research Forecasts and responsible for the modelling of risk and return forecasts for equity and credit portfolio management. Maximilian has a doctorate in mathematics and is a CFA Charterholder.

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About Quoniam

Quoniam is a pioneer in quantitative asset management. Our goal is to create client-oriented investment solutions with reliable alpha for institutional investors based on scientific findings and modern technology. As a partner-led company with more than 140 employees in Frankfurt and London, we manage approximately 28 billion euros in equity, fixed income, and multi-asset strategies. Our success is based on efficient processing of the increasing amount of capital market data and information, and employing this data to facilitate reliable investment decisions. We operate independently and seek to create innovative solutions. At the same time, our entrepreneurial freedom is rooted in a solid financial foundation owing to our affiliation with the Union Investment Group. We passionately strive to create value for our clients and make a positive contribution to society. We are committed to the Principles for Responsible Investment and aim to promote sustainable investment globally.

Executive Summary

**2020 – A markedly different year for
equity and corporate bond factor strategies**

In 2020, factor strategies regarding equities underperformed primarily due to the poor performance of the value style. Concurrently, factor performance in corporate bonds did well after an initial drop in March 2020, outperforming standard credit benchmarks by the end of the year. We investigated the commonalities and differences between the two asset classes and identified three areas in which there are significant differences between the two.

**Distinguishing Feature 1:
Asset class complexity**

Fixed income investing is multidimensional; for example, the corporate bond market is segregated across various segments such as credit rating (investment grade vs high yield). This not only increases the complexity of the asset class, but also leads to inefficiencies in the market, causing mispricing in the credit universe. Owing to their systematic approach, factor strategies are well-positioned to exploit these inefficiencies.

Additionally, as the return distribution of credits is more asymmetric than that of equities, with the downside potential exceeding the upside by a wide margin, credit factor strategies must incorporate this feature by using factors that are defined to capture the asymmetry. The diverging level of complexity and efficiency makes it difficult to draw conclusions by comparing the performance and characteristics of different asset classes.

**Distinguishing Feature 2:
Factor definitions**

The factor definitions in both asset classes measure different aspects. Value factors are defined by comparing the price of an asset against a fundamental value measure. However, there is a significant difference between equity value and credit value factors. In equities, value factors tend to be simple (e.g., selecting stocks according to their dividend yields). Relevant measures that are essential for estimating the fair price of a stock, such as future dividend growth, are often ignored because they are very difficult to estimate accurately. In contrast, for corporate bonds, we can estimate

the expected loss of a bond with reasonable accuracy, which allows us to measure its fair value relative to its coupon and risk. In this sense, the equity value factor resembles the carry factor in credit, and the credit value factor is less likely to contribute to large swings in performance as compared to the equity value factor.

The momentum factor in credit is based on the issuer's equity price. This factor works in credits because corporate bond prices react to new information slower as compared to stock prices. In equities, momentum compares the recent price performance across stocks, assuming that the trend will continue. Therefore, the mechanisms through which this factor works in each asset class are very different.

**Distinguishing Feature 3:
Market maturity**

Finally, factor solutions for equities and bonds are at different levels of maturity. There are few active players competing for factor premia in corporate bonds, and these players do not share a consensus on the factors employed and how they are defined. Moreover, there are extremely few credit factor indices, most of which are ambiguously defined. The characteristics of these indices may not be suitable for the asset allocation of all investors, and there are limited passive solutions available, albeit with similar problems.

A future trend

Factor-based or style investing has a large footprint in equity portfolios with applications in active, passive, and smart beta strategies. However, factor-based investing is still in its infancy for fixed income. Studies indicate an increasing interest in factor strategies in recent years. This systematic approach in the asset class may experience increasing demand, providing a tailwind for experienced active-factor managers. Accordingly, we believe it would be prudent for asset owners to investigate factor investing in corporate bonds in more detail.

2020 – A markedly different year for equity and corporate bond factor strategies

Credit and equity factors exhibited divergent performance against the backdrop of the COVID-19 crisis affecting the markets. It was a challenging year for equity factor strategies. While the MSCI World Index in USD achieved a return of 15.90% in 2020, the MSCI World Diversified Multiple-Factor Index, which tracks the performance of four factors, namely, value, momentum, quality, and size, managed a net total return of only 11.05%. Figure 1 displays the performance of single and multi-factor style indices relative to the MSCI World Index.

The value factor drove the poor performance of equity multi-factor investing. The MSCI World Value Index exhibited a net total return of −1.16% in 2020, or −14.72% relative to the MSCI World Index. Notably, the value factor underperformed during the steep market drop in February and March, and during the recovery from April to August as well.

In investment-grade corporate bonds, factor strategies experienced no such effect. The factor performance was almost textbook-like. Riskier factors, such as carry, under-performed during the sell-off in March but staged a strong rally during the market rebound in the following months. The performance of the value factor was positive amid the structural change to an economy that favours providers of digital solutions over more traditional business models. Figure 2 shows the performance of the stylized concentrated single-factor portfolios and a combined multi-factor signal for 2020.

Figure 1: Relative Performance of Equity Style Factors vs MSCI World
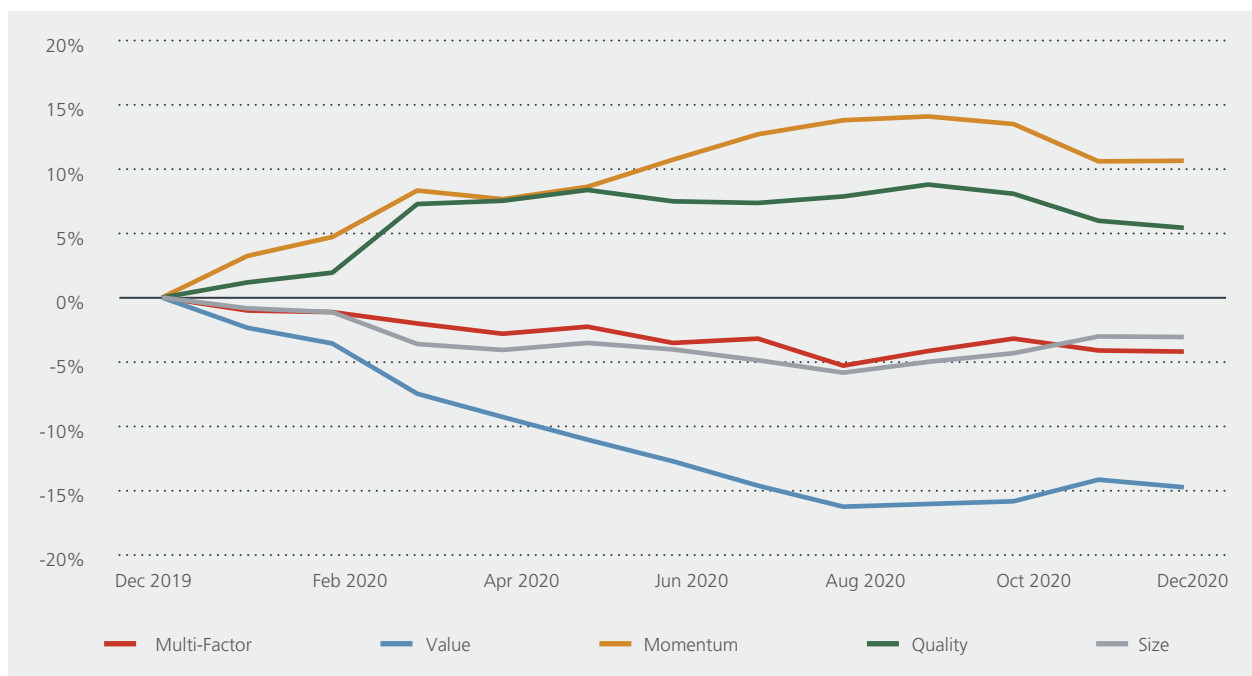
The graph shows relative performance of the MSCI World Size Tilt Index, MSCI World Quality Index, MSCI World Momentum Index, MSCI World Value Index, and MSCI World Diversified Multiple-Factor Index against the MSCI World Index. The calculations are based on the net total returns in USD. Source: Bloomberg L.P.

Figure 2: Relative performance of concentrated credit factor portfolios vs the market
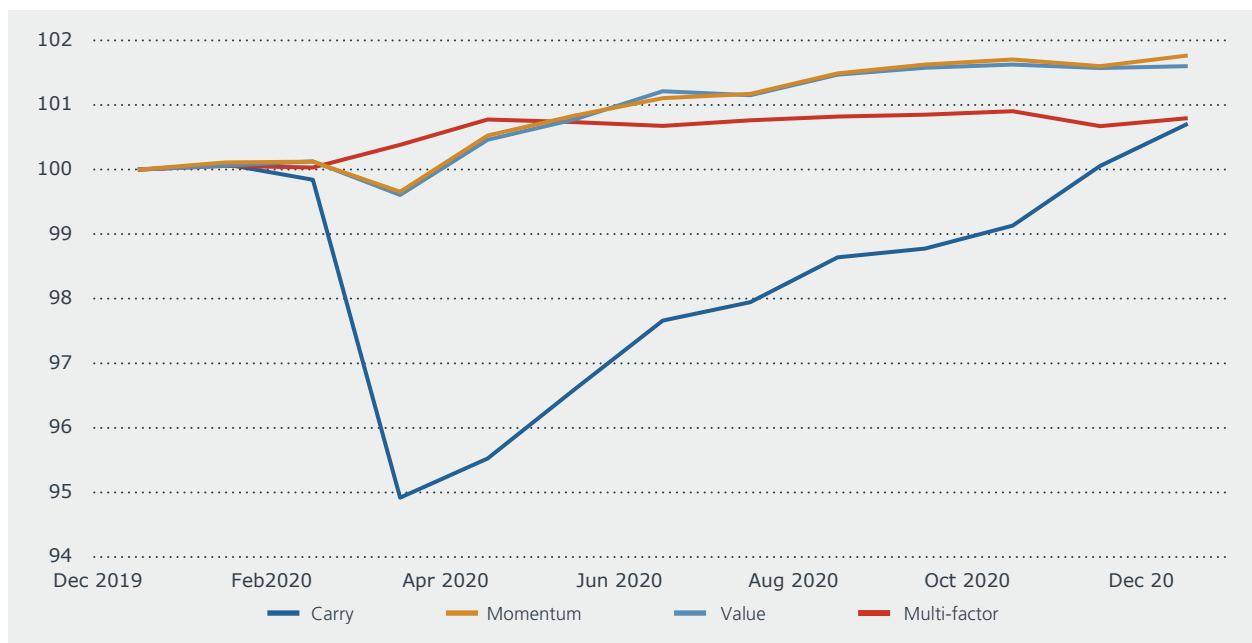
The graph shows the relative performance (100 = benchmark performance) of the top quintile factor portfolios for carry, momentum, value, and the combined multi-factor signals in Global IG credit using Quoniam's factor definition. Source: Quoniam Asset Management GmbH

In Figure 2, on the one hand, it is observable that the carry factor came under pressure in March 2020, underperforming the market by approximately 5%. However, when the markets recovered, the factor rallied back strongly, ending the year at +0.71%. On the other hand, equity momentum – a factor negatively correlated with carry – remained stable in March, outperforming all other factors by mid-year. It then lagged in the second half of 2020, ending the year at +0.80%. Value and the combined multi-factor signal were somewhere in between, underperforming the market by around 0.5% in March but rebounding quickly and outperforming the benchmark by between 1.6% and 1.8%, respectively, over the course of the year. While these stylised factors are difficult to implement in

real-world portfolios, 2020 was characterised by the outperformance of actual credit factor portfolios as well. When we compare the performance differences between equities and corporate bonds, the question arises as to why factor strategies in both asset classes performed differently to such an extent. Specifically, were fixed income investors just lucky to decouple from equities in the 2020 crisis or do the two approaches differ in important aspects such that return patterns and other characteristics show little commonality?

Distinguishing Feature 1: Asset class complexity

More inefficiencies, higher complexity: Factor strategies in fixed income offer many opportunities

Credit factor investing uses company-level information similar to that of the equity factor approaches. However, any company may issue multiple bonds, which can have very different characteristics. Moreover, fixed income strategies are frequently customised with respect to different rating categories, maturity ranges, and segments of the capital structure.

The most well-known segmentation is the rating-related distinction between investment grade and high yield having separate investor classes, which leads to well-known inefficiencies such as the fallen angel effect. Bonds that are downgraded from investment grade to high yield usually display strong price discounts in the immediate aftermath of the downgrade amid forced selling, and only gradually revert to a fair level over the following months. Moreover, issuers frequently have multiple bonds with different characteristics, such as maturity or the position of the bond in the capital structure (secured vs unsecured or senior vs subordinated), as well as variations in liquidity due to differences in the amount outstanding (small vs large bond issues) or age (on-the-run vs off-the-run bonds). Finally, these bonds may differ in various other aspects, such as coupon conditionality (step-up coupons linked to rating or the achievement of certain business goals), call and put features, or even the use of the proceeds of the issuance (such as social or green bonds), which may attract or discourage investors.

In summary, the investment universe for corporate bonds is more complex and segmented, leading to inefficiencies, mispricing, and structural market effects. Fixed income investors must manoeuvre through this complexity to outperform the market. Due to its systematic nature, a quantitative factor approach is well-positioned to exploit the resulting inefficiencies.

Asymmetric return profile: Avoiding losers is crucial for successful corporate bond management

The key characteristic of investment-grade corporate bonds is their asymmetric return profile. IG credits rarely exhibit strong positive credit excess returns because their lifespan is limited, and barring a default, their final price is deterministic. However, if this default case becomes more likely or materialises, the downside can be severe and, in a worst-case scenario of an expected recovery rate of zero, approach 100% of the invested capital. This is different from equities, which exhibit a much more symmetric return distribution.

> Due to its systematic nature, a quantitative factor approach is well-positioned to exploit the inefficiencies of the fixed income markets.

This has implications for the construction of a factor strategy. In equities, a successful factor model must avoid an overweight in areas of the market that experience strong underperformance, like banks in 2008 or energy in late 2015, and concurrently, avoid underweights in sectors that strongly outperform the market (e.g., the tech sector in 2020). For corporate bonds, the latter case is less relevant and limited to periods with extremely elevated spread levels. In normal market environments, the outperformance potential of single sectors relative to the market is rather limited for investment-grade bonds.

This indicates that a credit factor strategy must be particularly well-suited for avoiding the worst performers, which clearly impacts the choice of factors and the design of factor strategies in corporate bonds. Selected factors naturally differ between the asset classes, as they have different qualities in determining winners and losers. A good example is the equity momentum in corporate bonds. Kaufmann and Messow (2020) show that equity momentum helps forecast rating downgrades over the following year. For US-Dollar IG bonds, they demonstrate that the bonds in the lowest equity momentum quintile suffered, on average, a rating downgrade by 0.5 notches over the following year, whereas the number was between 0.2 and 0.3 for the remaining four quintiles. Therefore, any strategy avoiding bonds with the worst equity momentum will avoid bonds with above-average downgrade probability as well.

With differences in factor definitions and the ways in which these factors impact performance, their efficacy in factor investing for corporate bonds and equities varies considerably. Therefore, one should avoid drawing conclusions from the mechanics and performance of one asset class with respect to another asset class. In the following chapter, we analyse the differences between factors in equities and corporate bonds in more detail.

Distinguishing Feature 2: Factor definitions

Fixed income value is risk-adjusted, and therefore, more balanced

Value is defined by comparing the price of an asset against a fundamental value measure. A well-known example of value investing in equities is buying stocks with a high dividend yield. The price of a stock, P_0, should equal the discounted value of all future dividends, D. Under the simplifying assumption that the discount rate is constant over the time horizon, the discount rate can be split into a risk-free part, i, and a risk premium RP. Thus, P_0 can be expressed as follows:

$$P_0 = \frac{D_1}{1 + i + RP} + \cdots + \frac{D_\infty}{(1 + i + RP)^\infty}$$

Under the additional assumption that dividends have a constant growth rate g, i.e., Di = D(i-1)(1+g), the above-mentioned equation can be written as

$$P_0 = \frac{D_1}{i + RP - g}$$

Hence, the risk premium for a stock can be explained as the sum of its dividend yield and its dividend growth rate minus the risk-free rate.

$$RP = \frac{D_1}{P_0} + g - i$$

The risk-free rate is the same for all stocks. A simple value strategy of investing in stocks with a high dividend yield is naïve in that it ignores the growth rate of future dividends.

Likewise, the price of a risky bond, P, can be expressed as follows:

$$P_0 = \frac{C_1}{1 + i + S} + \cdots + \frac{100 + C_T}{(1 + i + S)^T}$$

where S is the credit spread over the duration-matched risk-free rate, and C is the annual coupon of the bond. In this case, S can be directly measured, but since the bond is risky, there is an unknown probability that it will default before maturity. Thus, the spread S contains one part that compensates an investor for the expected loss in the event of a default, and we denote this part of the spread as EL. While a single default has little impact on a diversified portfolio, defaults tend to cluster during bad economic times. Thus, one can assume that another part of the spread S, which is denoted by RP, incentivizes risk-averse investors to hold risky bonds in their portfolio.

$$S = EL + RP \iff RP = S - EL$$

In the equities example, the risk premium cannot be extracted from the dividend yield alone because future dividend growth is unknown. However, a dividend yield strategy selects stocks based only on their dividend yields, ignoring expected dividend growth. Similarly, in credits, the part of the spread that compensates for expected losses due to a default is unknown. Therefore, a carry strategy that only invests in bonds with the highest spreads, S, without considering EL is comparable to a high dividend yield strategy in equities. The difference between equity and fixed income is noteworthy. In equities, the dividend yield strategy is considered value investing. However, a carry strategy in fixed income would not be classified as a value strategy.

In fixed income, value factors account for the risk differences between bonds. A short-dated bond of a high-rated company usually has a low spread, while a long-dated bond of a low-rated company has a higher spread. However, this spread difference may not indicate that the latter bond is cheap and the former is expensive. It could be that the short-dated bond is cheap because its fair value spread is even lower than the market spread, whereas the long-dated bond is expensive despite its higher spread if the fair value estimate suggests an even higher fair spread.

Academic papers usually define value as the residual from a cross-sectional regression of the spread onto variables impacting the default probability. Instead of ignoring the EL part of the risk premium, credit factor strategies attempt to model it. The equivalent in equities would be to regress dividend yields on model-based estimates for future dividend growth and use the residual as a value factor. In other words, value investing in credits is based on a relative value concept, whereas in equities, it is more of an absolute value definition.[1]
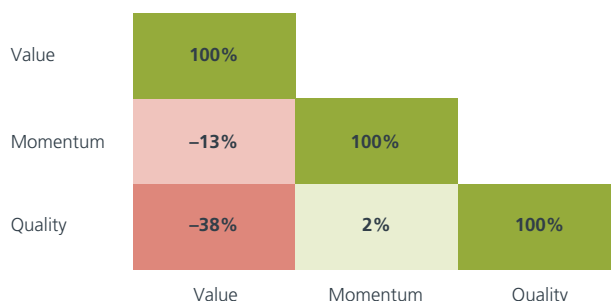
These theoretical arguments are clearly visible in the data. For example, when we look at cross-sectional factor exposure correlations over time, it is evident that fixed income (FI) value behaves differently from equity (EQ) value. In Figure 3, we show that the time-average exposure correlations between FI carry, FI quality, and FI EQ-momentum are similar to the exposure correlations between EQ value, EQ quality, and EQ momentum. Furthermore, in Figure 4, we display the factor return correlations between the credit factors and the equity value factor. We observe that the correlation between EQ value and FI carry returns is twice as high as the correlation between the EQ value and FI value returns. Thus, both analyses support our previous theoretical argument that EQ value behaves more like FI carry as opposed to FI value.

Figure 3: Factor exposure correlations

PANEL A: Global credit universe: The Pearson correlations are calculated by date, averaged over all dates, and weighted by market value.
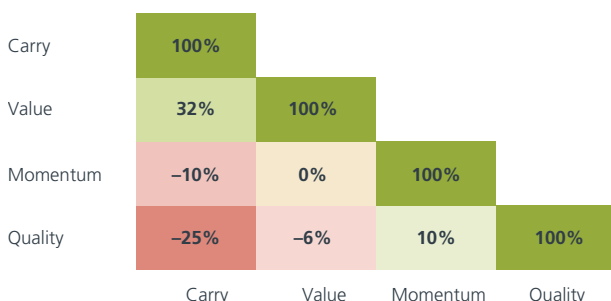
PANEL B: Global equity universe: The Pearson correlations are calculated by date, averaged over all dates, and weighted by the market cap, USD free.

	Carry	Value	Momentum	Quality
Carry	100%			
Value	32%	100%		
Momentum	−10%	0%	100%	
Quality	−25%	−6%	10%	100%

	Value	Momentum	Quality
Value	100%		
Momentum	−13%	100%	
Quality	−38%	2%	100%

The figures above show the average cross-sectional correlation of style factor exposure Pearson correlations over time. Calculations are based on data from 01/2000 to 03/2021 and weighted by market value. For Panel A, we use asset-level Quoniam-style factor exposures of non-financial corporate bonds with an investment grade rating denoted in USD and EUR. For Panel B, we use company-level Quoniam-style factor exposures for global equities. Source: Quoniam Asset Management GmbH

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1) Note that this does not imply that equity value measures absolute cheapness of a stock without comparing it to other stocks. All factor strategies in this article are relative in the sense that we compare assets against similar assets and invest in the more attractive ones.

Figure 4: Return correlations between fixed income factors and the equity value factor
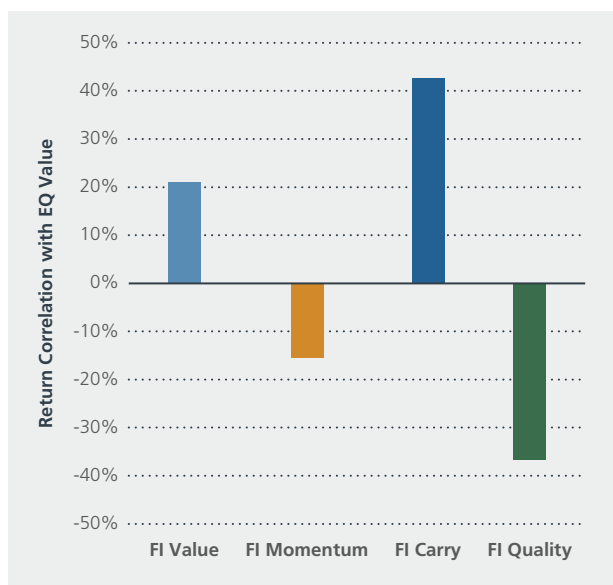
The figure above shows the Pearson correlation between monthly style factor returns. Calculations are based on data from 01/2000 to 03/2021. To calculate the style factor returns, we calculate the monthly returns of the top quintile portfolio (weighted by the market cap) and subtract the market-cap weighted benchmark returns for each factor.
Source: Quoniam Asset Management GmbH

An absolute value perspective can lead to the selection of risky assets during a crisis. Typically, prices react faster than the fundamental measures against which they are compared; specifically, in factors such as P/B, P/E, or dividend yield. In fixed income, this holds for the carry factor, in which we compare prices to coupons and principals. As prices drop, the assets most affected by the crisis appear to be the most attractive from an absolute value perspective. While it is true that they often have substantial rebound potential, eventually, these assets show increased risk during an ongoing crisis.

A relative value perspective is an effective way to mitigate this behaviour during a crisis. This is particularly worthwhile when the information used to model risk premia is at least as timely as the market price of the assets that the approach is trying to forecast. For a credit value factor, timely data can be used from options and equity markets while in equities, the relative value approach is much more difficult to employ. This is because an estimate of the growth rates of dividends over a long time-horizon is much less precise, and subject to unpredictable structural changes as compared to the default probability of an IG corporate bond with an average duration of less than eight years in global credit.

'When we look at cross-sectional factor exposure correlations over time, it is evident that fixed income value behaves differently from equity value.'

Figure 5 illustrates the risk characteristics of the top 1% of Quoniam's credit value factor on March 19, 2020 (the climax of the spread widening during the COVID-19 crisis) and April 30, 2021 (when spreads reached a multi-year low after a rally of more than one year). The spread accounts for all bonds in the global credit universe, which are displayed as green dots, their risk characteristics, measured as option-adjusted spread on the horizontal axis, and duration to worst on the vertical axis. Additionally, it highlights the bonds that comprise the top 1% within the value category with orange dots showing the risk characteristics relative to the whole universe for the cheapest bonds in the universe on the selected days.

Figure 5: Risk characteristics of Quoniam's top value forecasts on March 19, 2020, *(Panel A)* and on April 30, 2021 *(Panel B)*

PANEL A: Global credit universe on March 19, 2020
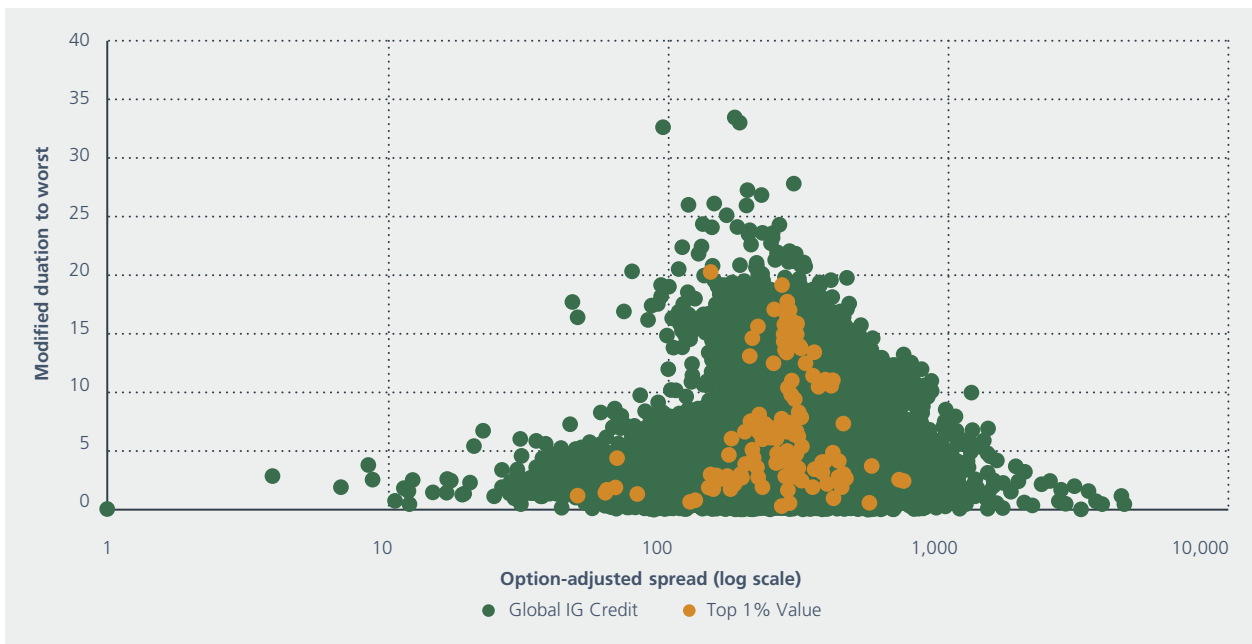
PANEL B: Global credit universe on April 30, 2021
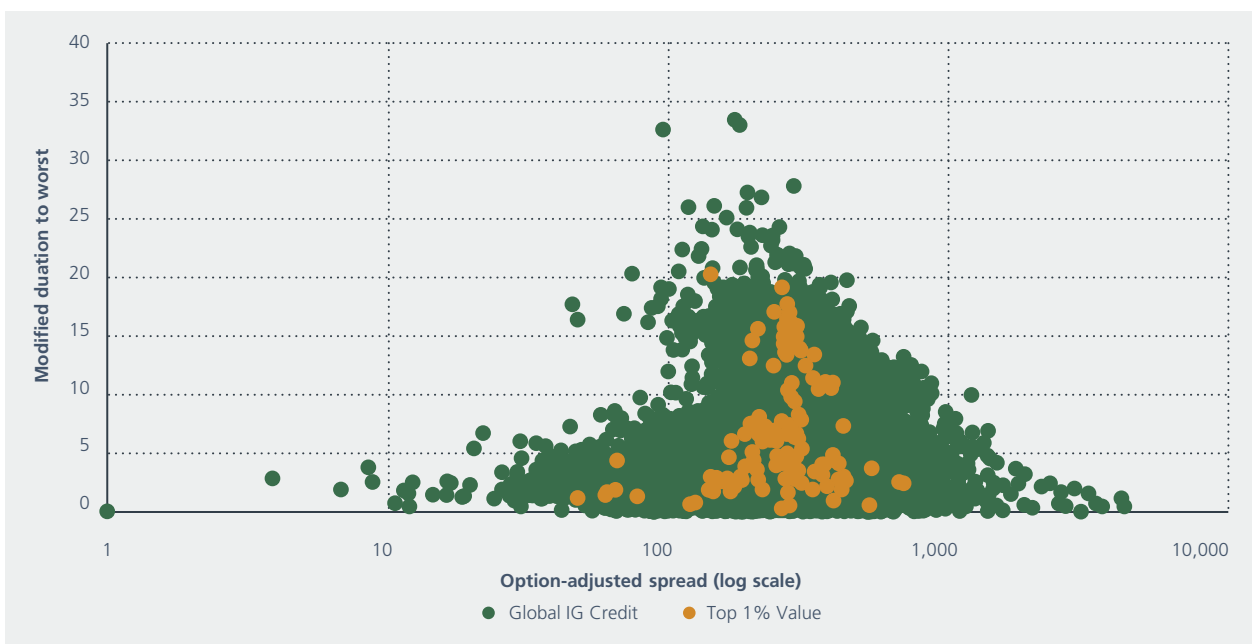
The graphs display option-adjusted spreads (horizontal axis) and duration to worst (vertical axis) for the global investment grade credit universe on 19 March 2020 (Panel A) and 30 April 2021 (Panel B). The orange dots represent the top 1% bonds according to Quoniam's value factor definition, while the green dots represent all other bonds. Source: Intercontinental Exchange Inc., Quoniam Asset Management GmbH

The graphs indicate that the top 1% value quantile did not show substantially higher risk, both at the height of the sell-off in March 2020 and at the end of a strong rally in April 2021, as compared to the overall sample. In terms of duration, the top 1% percentile does not show a larger risk as compared to the overall sample. In terms of spreads, none of the spread outliers are classified as the top value; among the bonds with normal spreads, the top value observations seem to be at the lower end of the spread distribution, with only four observations above 500 basis points in March 2020 and only three bonds above 200 basis points in April 2021.

As credit value factors are distinctly different from equity value factors, their performance patterns differ as well, impacting the overall performance of a multi-factor strategy. This marks an important difference between factor investing in credits and equities.

Equity momentum – Using information from faster-reacting asset classes

Another difference between equities and corporate bonds is the difference in the speed at which both asset classes incorporate new information into asset prices; in general, corporate bonds are slower than equities in this respect (see Downing, Underwood, and Xing (2009), as well as Chordia, Goyal, Nozawa, Subrahmanyam, and Tong (2017), among others). This implies that for the pricing of relatively slower reacting corporate bonds, information from relatively faster reacting equities of the same company can be used to arrive at a more precise credit return forecast.

Academic literature on factor investing in corporate bonds overwhelmingly identifies equity momentum as a factor that can select between better and worse performing corporate bonds (see Gebhardt, Hvidkjaer, and Swaminathan (2005), Polbennikov and Desclee (2017), and Henke, Kaufmann, Messow and Fang-Klingler (2020), among others). Therefore, most credit factor investing approaches use this cross-asset class relationship, which is unavailable to equity factor strategies.

Moreover, there is a conceptual difference between using equity momentum as a factor for predicting equity as opposed to credit returns. Equity momentum in equities suggests that price trends in past individual equities will continue in the future. If momentum works in the equity market, it suggests a behavioural explanation, such as the market underreacting to news and only gradually incorporating information into asset prices.

On the other hand, equity momentum as a factor in corporate bonds is based on the abovementioned idea that there are pricing differences between different assets of the same company, which can be systematically exploited. If equity momentum has predictive power for corporate bond returns, it suggests that there are differences in the speed of the incorporation of information between asset classes due to the segmentation in investor bases or other differences. This points to a structural inefficiency in the corporate bond market, which can be exploited by equity momentum.

In Figure 6, we present empirical evidence for this argument. We observe that the monthly factor returns of the equity momentum strategy in equities are uncorrelated with the equity momentum strategy in credits. Therefore, the same factor, equity momentum, in both credit and equities, can work for different reasons with different mechanics, and one must be careful while applying insights from one asset class, including performance-related aspects, to the other.

Figure 6: Return correlations in percent between fixed income factors and the equity momentum factor
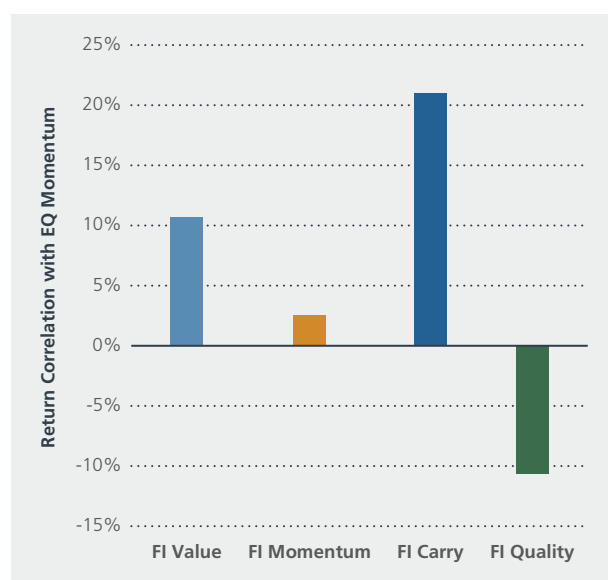
This figure shows the Pearson correlations between monthly style factor returns. Calculations are based on data from 01/2000 to 03/2021. To calculate equity and credit style factor returns, we calculate the monthly returns of the top quintile portfolio (weighted by the market cap) and subtract the market-cap weighted benchmark returns for each factor. Source: Quoniam Asset Management GmbH

Distinguishing Feature 3: Market maturity

Factor strategies for equities are well established. According to a recent study (bfinance, 2020), more than 10% of global equities are managed using factor approaches. This has led to the emergence of a multitude of factor indices and, consequently, ETFs on these indices. Therefore, investors interested in factor investing in equities can choose from a wide range of active and passive products, leading to increased competition for existing factor premia. Premia that were historically associated with straightforward definitions of factors have decreased considerably. Thus, active managers seeking to provide systematic out-performance to their clients rely on more sophisticated factor definitions to outperform the market.

Multi-factor strategies do not play a significant role in credit investing. Significantly less than 1% of global credit assets are managed systematically (bfinance, 2020). Consequently, there is less competition for factor premia and, therefore, the premia of credit factors remain stable and meaningful in the credit markets. Simpler factors have not been arbitraged away, which provides an opportunity for investors. Moreover, owing to the structure of the market, passive strategies are not likely to gain a comparable market share as in equities, and the complexity of the asset class acts as a natural barrier to entry. Therefore, credit factor strategies are not exposed to the same level of competition as in equities. Additionally, benchmarks are weighted by the amount of debt issued, which gives fixed-income benchmarks different risk characteristics. Active strategies in credits are, on average, more successful than in equities.

While credit factor strategies have gained popularity in recent years, there is still no consensus about which factors to incorporate into a strategy and how exactly to express these factors. Some strategies use carry as a factor, while others do not. In some strategies, a quality or low risk factor plays a role; in some, it does not. Some approaches equally weight the factors, and some weight them based on their individual information ratios. Although equity momentum and value are factors that are employed in

multi-factor credit strategies universally, there are considerable differences, for example, in the way value factors are constructed.

To demonstrate this point, we calculate four different value measures that are prominently employed in the literature on credit factor investing. We choose the value factors from Henke, Kaufmann, Messow, and Fang-Klingler (2020), Houweling and van Zundert (2017), Israel, Palhares, and Richardson (2018), and Lee, Meyer-Brauns, Rizova, and Wang (2020) as four typical examples of value definitions in the literature and calculate these four factors for the global credit universe. The average cross-sectional factor exposure correlation between these four factors is 0.46, ranging between 0.84 and –0.04.

Taken together, these results indicate that there are no signs of crowding in factors by active managers, or of their premia disappearing in the market.

Factor ETFs do not play a significant role in fixed income

Passive or heuristically constructed smart beta factor portfolios are widely used in equities. There is a wide range of factor indices, with hundreds of offerings among regions and styles. Moreover, several providers offer ETFs on these factor indices as a cheap way to gain some basic factor exposure.

In the corporate bond space, factor strategies have not progressed significantly. Firstly, factor indices have been introduced only recently, and the coverage of factors is not widespread. At the same time, the factor definitions vary considerably from those of specialised active managers. For example, some existing indices for quality and low risk are defined using the bond rating as the sole quality factor, or the effective duration of each bond as a measure of low risk. While the duration of the bond is clearly a risk indicator, it not the only one. Not considering credit risk may lead to a factor that is characterised by short maturities, which nevertheless, can be exposed to considerable credit risk exposure.

Secondly, such simple factor definitions lead to portfolios that considerably differ from the overall investment-grade credit universe regarding their risk characteristics. Factors, such as duration, are already definitions of risk, while ratings tend to be correlated with duration, as issuers of lower rating quality may struggle to issue long-dated bonds and are more likely to be concentrated in the shorter maturity spectrum of the market. Investors may struggle

> **There is no indication that credit factor premia diminished over the recent years.**

to fit portfolios built on such factors into their overall asset allocation, wherein certain requirements regarding duration and other potential risk factors exist. To this end, active factor solutions are much more flexible in accommodating investor needs.

Finally, while a small number of factor ETFs have been launched, they have not attracted significant interest from credit investors. This is unsurprising given the lower importance of passive solutions in the fixed income space as compared to equities. As there are more inefficiencies in corporate bonds, on average, active strategies tend to have better results than passive solutions. Further, fixed income investors tend to prefer more customised solutions relative to equity investors, with restrictions on maturities, subordinated bonds, financials, and call structures being the most popular solutions. The larger number of possible customisation requirements require a larger number of factor ETFs that are specifically dedicated to these investment universes. Thus far, there is no indication of any such trend.

These complexities pose considerable challenges for passive solutions, which are likely to remain unresolved in the short term. The following statement, taken from the website of the largest fixed income ETF provider, iShares, indicates that the complexity is considerable even for the most experienced players in the market:

"However, given the challenges of targeting factors within fixed income, and the relative infancy of the fixed income smart beta landscape, we believe it is best to consult with an experienced smart beta investment provider in order to better understand and benefit from fixed income smart beta strategies." [2]

2) (https://www.ishares.com/us/strategies/fixed-income-factors; retrieved on May 14, 2021)

Summary

While factor strategies in equities recently experienced a period of underperformance, we did not observe a similar performance drag for fixed income factor strategies. We argue that this is not purely coincidental, and that there are three main differences between factor strategies in equities and corporate bonds. Firstly, corporate bonds constitute an asset class with considerable additional complexity and inefficiencies that can be exploited to capture recurring risk premia. Secondly, credit factor strategies use different factors or define them differently as compared to equities. Value is a relative, that is, risk-adjusted, measure, and therefore more balanced in its risk characteristics. Equity momentum, a frequently used variable in factor strategies, captures information from the faster adjusting stock prices of the same company and uses them to improve corporate bond forecasts. Lastly, the market structure is different in fixed income compared to equities, with fewer players in the market for factor solutions, a low percentage of overall investments in factor strategies, and a lack of consensus on which factors to use in these strategies and how to define them. This means that there is currently no pressure on existing factor premia and no trend to arbitrage them away. The absence of a large set of passive factor ETF strategies to choose from and the tendency of fixed income investors to strongly customise their fixed income funds makes competition from passive offerings unlikely in the foreseeable future.

Factor investing in credit – A future trend

Factor strategies in fixed income were a niche topic that only started garnering attention from investors in the mid-2010s. Large asset owners have begun looking into separate allocations for factor-based fixed income strategies, and the first exclusive factor searches in corporate bonds have occurred. According to the study cited above (bfinance, 2020), the number of active fixed income factor strategies has doubled between 2017 and 2020, reflecting this rising trend. In a low-yield environment, diversification of styles and alpha sources is more important than ever, and factor investing in corporate bonds can make an important contribution towards achieving this goal. With more money flowing into factor strategies, this trend will constitute a tailwind for bonds with strong factor characteristics, and the performance of factor strategies in general.
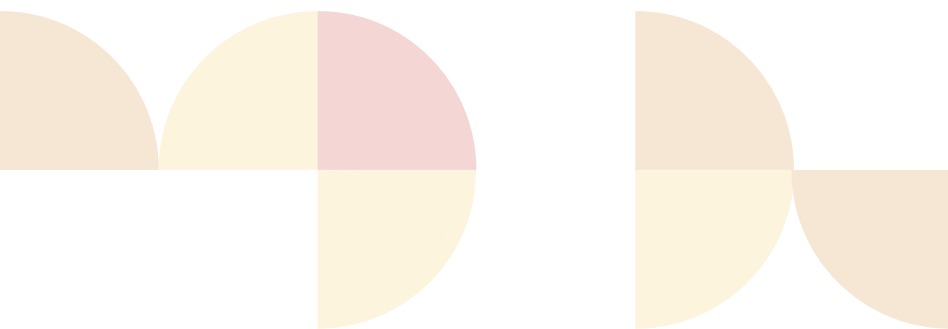
Key definitions

WHAT IS FACTOR INVESTING?

Factors are properties that are common across securities, explaining the return and risk of an asset.

WHY FACTOR INVESTING?

Our research breaks down a stock or bond's behaviour into individual factors or components. In this way, we identify hidden sources of return and risk that traditional, discretionary strategies often cannot.

WHY MULTI-FACTOR INVESTING?

Diversifying factors leads to more stable forecasts, and therefore better returns for the portfolio. Example: Combining the value factor with a momentum factor.

WHY QUANTITATIVE MODELS?

To find hidden sources of return, we need to cover a large universe. Quantitative models combined with computing capacity allow us to deconstruct the flood of data in the market to add value to your portfolio.

Source: Quoniam Asset Management

Fixed income factor definitions

VALUE - cheap bonds outperform expensive bonds. Our value signal is the standardised difference between market spread and a proprietary fair value spread estimate. We run a multi-variate regression using composite variables to arrive at a fair value estimate.

MOMENTUM - issuers with strong recent performance of equities continue to perform well in the near future. We use equity momentum for corporate bonds because studies show that there is a lead-lag relationship between stocks and corporate bonds, and that equity momentum has predictive power for bond downgrades.

CARRY - bonds with higher spreads and steeper credit curves yield higher return. We merge spread and spread rolldown into one signal. Accordingly, we focus not only on higher yield, but also on the additional higher rolldown returns of bonds at steeper parts of the curve.

FIXED INCOME FACTOR INVESTING AT QUONIAM

We have 15 years of experience in applying a systematic factor-based approach to corporate bond investing, giving us a unique position in the market [3]. Our models and processes reflect what we have learned through various market cycles, including the global financial crisis of 2007/2008 and the COVID-19 crisis of 2020, allowing us to prepare optimal portfolios for difficult markets in the future. We are familiar with a wide range of constraints, such as non-financial portfolios, specific duration and rating requirements, as well as ESG restrictions.

EUR investment grade corporates	Global investment grade corporates	USD investment grade	Global high yield
2005	2009	2015	2016

3) Source: bfinance, The Rise of Fixed Income Factor Investing, August 2020.
Most quantitative fixed income asset managers have less than three years' track record.

Source: Quoniam Asset Management

Other publications

Our researchers not only derive ideas from external sources, but also actively contribute to the debate by publishing journal articles and white papers. Some recent publications for fixed income include:

Quoniam's credit factor investing philosophy	Henke, Kaufmann, Messow and Fang-Klingler: **"Factor Investing in Credit"** The Journal of Index Investing 11 (1), 2020 *https://jii.pm-research.com/content/11/1/33*
Does readability of company filings provide information for credit excess returns?	Fang-Klingler: **"Impact of Readability on the Corporate Bond Market"** The Journal of Risk and Financial Management 12 (4), 2019 *https://www.mdpi.com/1911-8074/12/4/184*
Application of equity momentum to Euro credit	Kaufmann and Messow: **"Equity Momentum in European Credits"** The Journal of Fixed Income 30 (1), 2020. *https://jfi.pm-research.com/content/early/2020/04/15/jfi.2020.1.097*
Applying machine-learning techniques to the equity momentum factor	Kaufmann, Messow, Vogt: **"Boosting the Equity Momentum Factor in Credit"** CFA Institute Financial Analysts Journal, forthcoming. *https://www.tandfonline.com/doi/full/10.1080/0015198X.2021.1954377*

Please refer to our website for further information:
https://www.quoniam.com/

9. Literature

bfinance; 2020
"The Rise of Fixed Income Factor Investing"
Research Paper

Chordia, T., Goyal, A., Nozawa, Y., Subrahmanyam, A., and Tong, Q.; 2017
**"Are Capital Market Anomalies Common to Equity and Corporate Bonds Markets?
An Empirical Investigation"**
Journal of Financial and Quantitative Analysis 52 (4): 1301–1342

Downing, C., Underwood, S., and Xing, Y.; 2009
"The Relative Informational Efficiency of Stocks and Bonds: An Intraday Analysis"
Journal of Financial and Quantitative Analysis 44 (5): 1081–1102

Gebhardt, W. R., Hvidkjaer, S., and Swaminathan, B.; 2005
"Stock and Bond Market Interaction: Does Momentum Spill Over?"
Journal of Financial Economics 75 (3): 651–690

Henke, H., Kaufmann, H., Messow, P., and Fang-Klingler J.; 2020
"Factor Investing in Credit"
The Journal of Index Investing 11 (1): 33–51

Houweling, P., and van Zundert, J.; 2017
"Factor Investing in the Corporate Bond Market"
CFA Institute Financial Analysts Journal 73 (2): 1–16

Israel, R., Palhares, D., and Richardson, S.; 2018
"Common Factors in Corporate Bond Returns"
Journal of Investment Management 16 (2): 17–46

Kaufmann, H., and Messow, P.; 2020
"Equity Momentum in European Credits"
The Journal of Fixed Income 30 (1): 29–44

Lee, M., Meyer-Brauns, P., Rizova, S., and Wang, S.; 2020
"The Cross-Section of Corporate Bond Returns"
Working Paper

Polbennikov, S., and Desclée, A.; 2017
"Equity Momentum in Credit (EMC) Scorecard."
Barclays Research

Disclaimer

The use of investment services as well as investments in financial instruments are conjoint with risks.
For more information and guidance on opportunities and risks, please visit www.quoniam.com/riskstatement