



2018 risk management white paper

Active versus passive management of credits

Dr Thorsten Neumann and Vincent Ehlers

Public debate about active and passive management approaches generally fails to distinguish between the different asset classes.

This study looks at the topic with regard to the asset class of European corporate bonds.

Contents

1	Introduction	4
2	Basis – the latest research findings	5
3	The market for corporate bonds	6
4	Investment performance of passively and actively managed funds	8
5	A model for identifying successful active managers	10
6	Conclusion	14

1 Introduction

Passive forms of investment have seen strong growth in recent years, both at global level and in the German market. This trend has provoked a heated debate about the advantages and disadvantages of active and passive management approaches. However, public discussion about active and passive management approaches generally fails to distinguish between the different asset classes, concentrating almost exclusively on investments in equities.

By contrast, the active/passive debate among institutional investors also extends to corporate bonds. Although exchange-traded funds (ETFs) were not widely available in this segment until after the financial crisis, the global market has since expanded to over 300 funds that manage assets of roughly US\$ 440 billion in total. The European market contains an impressive 60 or so funds, with assets under management of almost €40 billion. Further growth of more than 20 per cent per year is expected.

A recent study from Union Investment, which provides the basis for this white paper, weighs up the advantages and disadvantages of passive and active investments. It focuses on European corporate bonds, a particularly important asset class for institutional investors in Europe. The study takes a look at investment performance and the challenges in this market segment, thereby providing support for the decision-making process.

The study starts by summarising the academic literature. It then explains the structural features of the corporate bond market and their impact on the different forms of investment. The main part of the study is a detailed examination of the investment performance of actively and passively managed funds based on an extensive proprietary database. It also analyses the question of how successful active fund managers can be identified ex ante, and with what degree of reliability.

The key points from the study are summarised below (the full version of the study is available from Union Investment at www.die-risikomanager.de).

2 Basis – the latest research findings

The theory in the literature contains controversial opinions

Given the sustained growth of passive investment forms, actively managed funds are already being described as obsolescent by some. However, the research shows that these two types of investment can always coexist.

After all, the higher the proportion of passive investments, the bigger the arbitrage opportunities for active managers. Grossmann and Stiglitz (1980) illustrate the role of active investors with the following thought experiment. If all investors are passive investors, they invest in the market portfolio without considering potentially relevant information. As a result, inefficient market prices become established. For some investors, at least, these provide the opportunity to achieve a superior return compared with the market by actively managing the investment and factoring in relevant information.

According to Sharpe's *The Arithmetic of Active Management* (1991), however, the following restrictions apply. All of the investments together correspond to the market portfolio. If one investor has an overweight position, another investor has to give that position a lower weighting. In this context, active managers come up against not only passive investors who replicate the benchmark but also longterm investors who follow a buy-and-hold approach rather than tracking the benchmark. If one group of investors outperforms the market (before deduction of all fees), this has to come at the expense of another group of investors. All the investors together cannot beat the market. However, this is not the case for the individual active managers, because there are both successful and unsuccessful active managers.

Fama and French (2010) explore the issue of how many funds need to beat their benchmarks for it to be possible to say that active managers, as a group, really do add value. The aim of the analysis is to distinguish between those funds whose superior return is simply due to luck and those funds that in fact use skill to generate an additional return. Even though, according to the zero-skill hypothesis, no active manager actually has the ability (skill) to generate a superior return, some of the managers will always, according to the hypothesis, outperform their benchmark due to coincidence (luck). Because the results of active managers as a group are widely dispersed, there will always be some managers who are successful. Another disputed issue is whether successful active managers outperform their benchmark predominantly using systematic, static factor exposures or primarily due to their genuine performance as a manager (alpha) based on correct investment decisions subject to ongoing review.

► Almost all of the many empirical studies on the issues outlined above relate to equity funds. There have been relatively few studies on fixed-income funds so far. Overall, the existing findings on the issues in the aforementioned debate are contradictory.

3 The market for corporate bonds

Structural challenges for corporate bonds – opportunity or obstacle?

The active/passive discussion focuses mainly on the question of whether active managers can beat their benchmark. But it is often forgotten that passive investments generally underperform their benchmark indices even before factoring in costs, because they entail replication/market entry costs. This is particularly true in the case of investments in corporate bonds.

In this market segment, investors have to take account of the structural features. While this is particularly challenging for passive investors, it offers upside potential for active investors.

Closely replicating an index becomes virtually impossible in a passive investment strategy due to the structural disadvantage of high transaction costs.

The challenge for passive investments in corporate bonds is that because of the structural features, they typically have to bear costs that are specifically higher for passive investments than for actively managed funds. There are various reasons for this, including:

Liquidity and benchmark characteristics

- The low level of liquidity in corporate bond markets leads to wide bid-ask spreads (to the extent that supply exists at all). As a result, the transaction costs for any portfolio adjustments are high.

- The typical benchmark has a large number of individual securities. The composition of the index changes frequently due to new issues, maturing bonds and debt tender offers. Replicating these changes leads to high costs for passive investors.

- ETFs are used for short-term tactical investments more frequently than actively managed funds. Tactical investors' sporadic inflows and outflows therefore necessitate regular portfolio adjustments, particularly in the case of ETF solutions. This leads to high costs. The implicit trading costs generated by short-term investors are socialised and borne by all investors. During a sell-off, for example, when investors withdraw high volumes within a short period, investments may potentially have to be sold at very unfavourable prices. In principle, this affects both passive and active investments. However, actively managed funds benefit in this situation from a greater degree of freedom and are better able to manage portfolio adjustments. Closely replicating an index is virtually impossible in a passive investment strategy due to the structural disadvantage of high transaction costs. Consequently, the

investment strategy tends to opt for a rough approximation of the benchmark rather than replicating it. Investors accept that there will be a relatively high tracking error. The performance of a passive investment that supposedly generates reliable returns is therefore relatively uncertain. By contrast, actively managed funds are better at factoring the low level of market liquidity and frequent benchmark adjustments into their investment policy because, unlike passive investments, there are barely any situations in which they are forced to act. Active investors are better placed to take account of the wide bid-ask spreads in their investment policy and can therefore adopt a more long-term approach in their decision-making.

Market efficiency

Furthermore, active investors in European corporate bonds are faced with relatively inefficient markets, with disproportionately strong demand. On the one hand, the European Central Bank (ECB) will continue to purchase high volumes of bonds until the end of 2018 and reinvest maturing bonds from 2019 onward in order to inject liquidity into the economy. On the other hand, regulatory incentives (e.g. Solvency II) are prompting major groups of institutional investors – such as insurance companies and pension funds – to invest heavily in corporate

bonds. Strong demand pushes up prices, squeezes yields and reduces the spreads of the bonds.

In the bond market, which is shaped by supply and demand, the interests of these major groups of investors – who are not purely driven by profit – lead to distorted prices that are inconsistent with rational economic theory. An active investor can utilise these inefficiencies for his or her own benefit. Here is an example: Rating downgrades, particularly in the high-yield segment, result in particularly sharp price falls in the prevailing market structure. That is why the distribution of yields on corporate bonds is fundamentally asymmetrical, i.e. a large number of small securities with slightly above-average returns on the one hand and a small number of securities with returns that are well below average on the other. Active managers' investment strategies therefore focus on avoiding poorly performing bonds.

New issue premiums, arbitrage opportunities and, above all, the overweighting and underweighting of market segments can generate an additional return.

► All in all, the market for corporate bonds has a range of features that represent a significant challenge for passive managers but that can be used by active managers to achieve a superior return.

4 Investment performance of passively and actively managed funds

Investment performance reveals the advantages of actively managed funds

The study included an empirical investigation of the extent to which the situation outlined above is reflected in the investment performance of passively and actively managed funds. The empirical analysis looks at the performance of the 26 largest ETFs and a universe of 178 actively managed funds for European corporate bonds. The years since 2011 were chosen as the analysis period because the range of ETFs was relatively small before that. The study examines performance before costs, as this is the only way to assess purely the management performance without the effect of fees. After all, fees are of course heavily influenced by the market situation or negotiations.

Overall, the performance of passively managed products lags behind that of the indices they are replicating: The volume-weighted average¹ of the ETFs is below their benchmarks in every calendar year. Over the analysis period as a whole, the funds underperform their benchmarks by 0.46 per cent per year before costs.

By contrast, the majority of the actively managed products deliver a superior performance: Although widely dispersed, the median² performance of the analysed funds beats the benchmark in every calendar year, generating an additional return of 0.32 per cent per year over the period as a whole. The best 20 per cent of the actively

managed funds outperform their benchmarks by an impressive 0.89 per cent; the best 10 per cent go even better with a highly attractive excess return of 1.25 per cent or more per year.

Whereas passively managed products for European corporate bonds all lag behind the indices that they are replicating, active managers beat their benchmarks on average. This confirms that they are capable of utilising the particular structure of the corporate bond market for their own benefit.

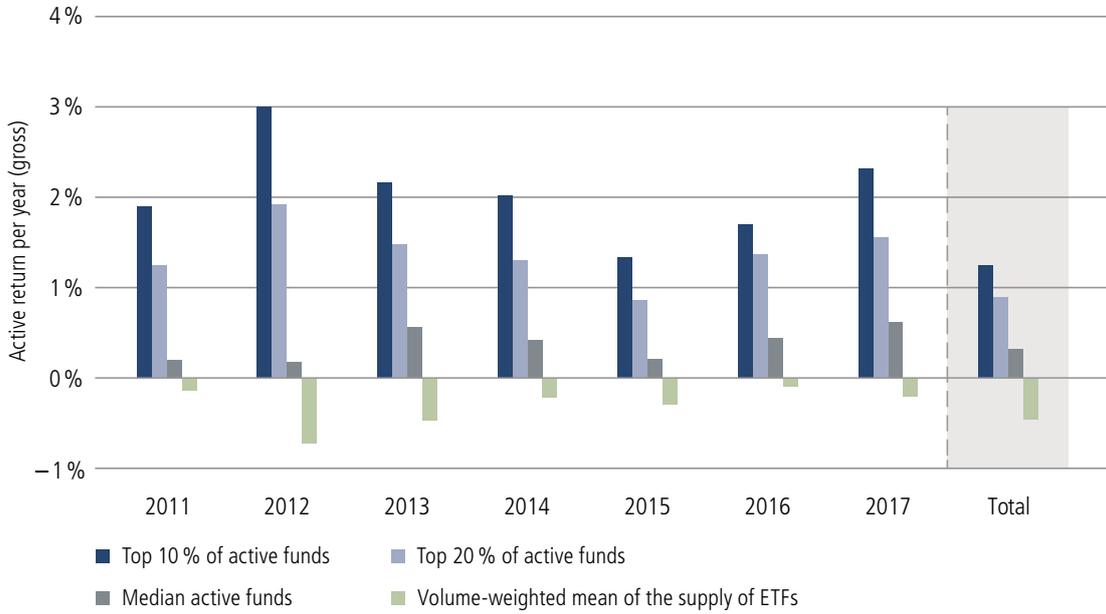
► Overall, the performance of passively managed products lags behind that of the indices they are replicating.

¹ For ETFs, the volume-weighted average is a suitable measure because the supply of ETFs in the market is dominated by a few high-volume products. Because of this scarcity on the supply side, the study only analyses twelve ETFs in 2011 and 26 ETFs in 2017.

² In the large group of actively managed funds, the median, the top 10 per cent quantile and the top 20 per cent quantile are good measures for describing the dispersion of returns with the greatest possible reliability. Possible outliers thus have less of a bearing.

Figure 4.1

Performance of the ETFs and active managers

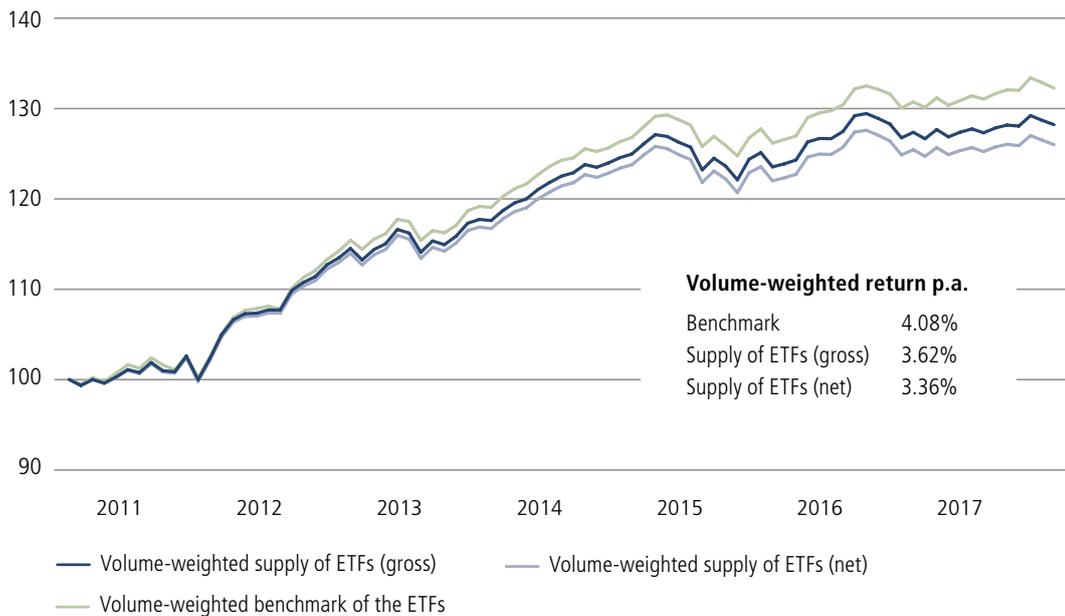


Sources: Morningstar, Bloomberg, Union Investment.

Figure 4.2

Consistently inferior performance by the supply of ETFs

(Price standardised to 100 as at 1 January 2011)



Sources: Morningstar, Bloomberg, Union Investment.

5 A model for ex ante identification of successful active managers

Risk factor model adds value

The majority of active managers beat their benchmarks. However, in practical terms, this still does not answer the question of whether successful active managers can be identified ex ante, and with what degree of reliability.

The study examines whether the separation of active returns adds any value when selecting a successful manager. These returns are broken down into alpha, which can be interpreted as the manager's performance, and factor contributions that are attributable to structural exposures to the risk factors in the asset class. The higher the alpha of an active manager, the more confidence there should be that he or she will continue to deliver a superior performance in future.

Regressions of active returns on the underlying risk factors in an asset class are a tried-and-tested instrument for analysing return structures. In this study, the following risk factor model is developed for the active return $r_{i,t}^{active}$ on corporate bond funds:

$$r_{i,t}^{active} = \alpha_i + \beta_i^{Spread} r_{i,t}^{Spread} + \beta_i^{Carry} r_t^{Carry} + \beta_i^{FinNonFin} r_t^{FinNonFin} + \epsilon_{i,t}$$

The variables are defined as follows:

- $r_{i,t}^{Spread}$ = return on fund benchmark – return on German government bonds (5–7 years)
- r_t^{Carry} = return on German government bonds (5–7 years)
- $r_t^{FinNonFin}$ = return on financials – return on non-financials

Manager alpha

Manager alpha α_i is the part of the active return $r_{i,t}^{active}$ on a fund i that cannot be explained by the risk factors spread, carry and FinNonFin (spread between financials and non-financials). Manager alpha should therefore be attributable to individual investment decisions, including decisions about security selection, performance

The risk factor model identifies alpha with high statistical significance.

effects resulting from participating in new issues and the timing of risk factors. The model separates from this the influence of exposures to the relevant risk factors, i.e. overweighting and underweighting in credit-rating and duration segments or sectors, provided they are of a permanent and static nature.

The findings for the fund universe analysed in the study show that the risk factor model identifies alpha with high statistical significance. Alpha therefore undoubtedly exists for a large number of funds.

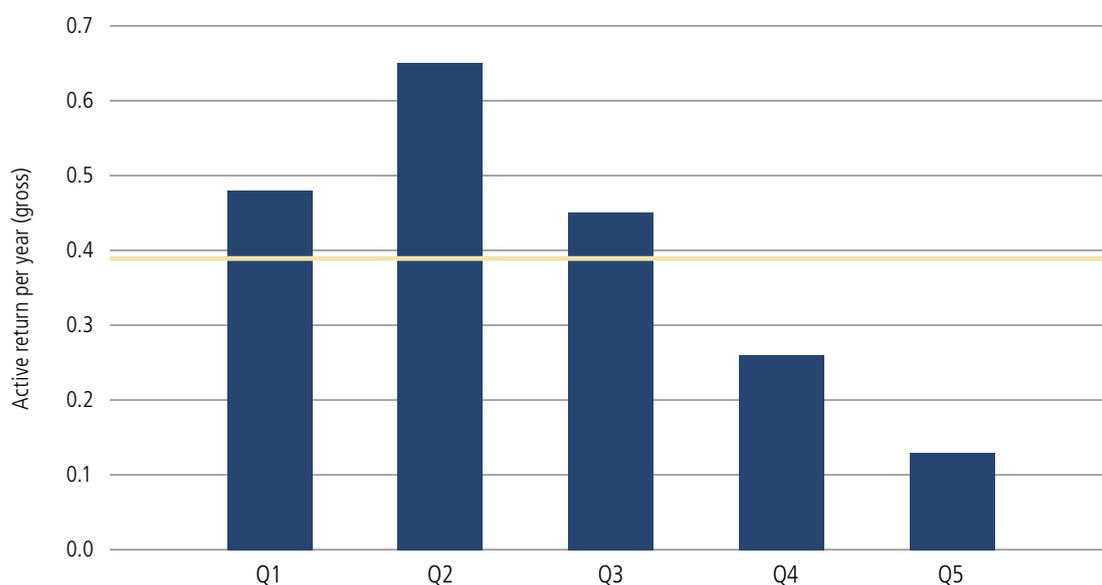
However, knowing this only adds value when it comes to selecting a manager if a manager's alpha from the active return in the past

has predictive power for his or her active return in the future. To this end, the risk factor model for each calendar year is estimated and the calendar-year return $r_{i,t}^{active}$ and alpha $\alpha_{i,t}$ for the calendar year T are determined. The study's findings confirm – again with high statistical significance – that a high alpha achieved by a manager in one calendar year adds value for the forecast of superior performance in the following year. According to these findings, the separation of alpha does therefore provide a statistical benefit for the ex ante selection of successful managers.

This added value can also be quantified in economic terms. To this end, the study analyses the following investment strategy. At the start of each year, all actively managed funds are sorted according to their alpha in the previous year and assigned to quintile portfolios, the first quintile containing those with the highest alpha. Each quintile portfolio is held for a year and its performance is monitored. At the end of each calendar year, the quintile portfolios are rebuilt according to the funds' alpha in the past year. Afterwards, it is possible to evaluate the performance of this investment strategy over the entire period (2011 to 2017) for each of the five quintile portfolios.

Figure 5.1

Quintile portfolios sorted according to the previous year's alpha



Sources: Morningstar, Bloomberg, Union Investment.

The chart shows the outcome of this investment strategy. The first and second quintiles show an active return of 0.48 per cent and 0.65 per cent respectively per year, which is well above the average for all managers of 0.39 per cent. Furthermore, the active returns decline in the lower quintiles. Selection based on alpha in the previous year therefore offers a certain discriminant power for active returns in the following year.

To avoid any misinterpretation, it should be pointed out that manager performance is widely dispersed even in the top quintile. The latter also includes managers who underperform in subsequent periods.

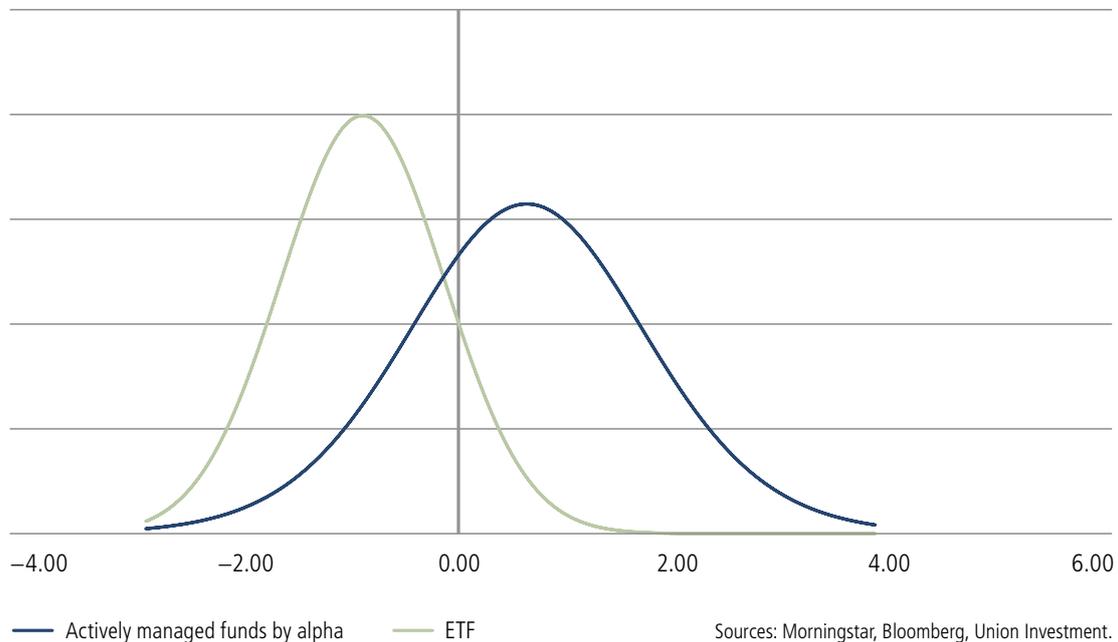
However, 70 per cent of all funds whose alpha is in the top quintile in one year go on to beat their benchmark the next year.

70 per cent of all funds whose alpha is in the top quintile go on to beat their benchmark the next year.

Only 30 per cent of this group underperform the next year. These findings suggest that the corporate bond market is not efficient; they also contradict the zero-skill hypothesis examined by Fama and French (2010).

Figure 5.2

Approximated distribution of the annual active returns of all the ETFs and the actively managed funds in the first alpha quintile



When it comes to making an investment decision in practice, the results for alpha-based manager selection can be compared with the investment opportunities in ETFs. The chart above shows the distribution of the calendar-year active returns for the two groups of funds. When sorted by alpha for the previous year, the active returns of the managers in the top quintile show a relatively symmetrical distribution (blue) with a positive mean in the next year. In the analysis period from 2011, the probability of a superior performance in the following year is 70 per cent.

By contrast, the alternative option of investing in ETFs shows a negative mean in the distribution of active returns. The probability of achieving a superior performance with an ETF in the next year is only around 15 per cent, while the probability of under-performance is 85 per cent.

► The study's findings highlight the strong appeal of actively managed funds when it comes to investing in European corporate bonds. Unlike passively managed ETFs, active managers have delivered compelling results in this decade.

6 Conclusion

Choosing the right manager is crucial with actively managed funds

The European corporate bond market presents challenges for investors, such as low liquidity levels, distorted price structures and benchmarks that are difficult to replicate. These parameters are detrimental to passively managed ETF investments but create good foundations for successful active management.

The empirical findings of the study show that for the reasons stated, passive investments in this market segment consistently deliver an inferior performance. However, actively managed funds can, on average, comfortably beat their benchmark indices.

The challenge that remains for institutional investors is to identify successful active managers ex ante. Breaking down the active return into alpha and static factor contributions adds substantial value in this context. According to the study's findings, managers who have delivered a superior performance with high alpha in the past are significantly more likely to generate an additional return in future as well. An impressive 70 per cent of the group of active managers with the highest alpha beat their benchmarks in the following year. To put that into context, 85 per cent of the measured calendar-year returns on ETFs lag behind their benchmark.

According to the study's findings, managers who have delivered a superior performance with high alpha in the past are much more likely to generate an additional return in future as well.

The full version of the study can be downloaded at www.die-risikomanager.de.

Published by:

Union Investment Institutional GmbH
Weissfrauenstrasse 7
60311 Frankfurt am Main
Germany

Tel: +49 (0)69 2567 7652
Fax: +49 (0)69 2567 1616

www.die-risikomanager.de

Whilst every effort has been made to ensure the accuracy of the information in this study, liability cannot be accepted other than in cases of gross negligence. Subject to change without notice.

October 2018