

# The Importance of Sustainability Criteria in Assessing the Opportunities and Risks of Investing in Corporate Bonds



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## Foreword by Prof. Dr. Ortwin Renn

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This study examines the risks of corporate bonds and how these can be assessed using sustainability criteria. Such risks are always joint products of the analysis of objective corporate and economic data and subjective perceptions of potential influencing factors and emerging trends. Where do these subjective impressions and perceptions come from, and how do people select from the plethora of information sources those signals that are crucial to their risk assessment?

At first glance, the answer is blindingly simple: we select and store the information available according to how important we deem it to be to the current situation and to our lives as a whole. What is most important here is what helps us to make better sense of our environment and to make what seem to us to be better decisions<sup>1</sup>. Four general criteria can be identified for this selection process<sup>2</sup>:

- ◆ *Orientation*: In order to make sense of our world, we need information about the reality surrounding us and insights into meaningful processes which link past, present and future. In the case of corporate bonds, these are traditionally: balance sheet data from the past, market forecasts, etc.
- ◆ *Self-efficacy*: We require information that helps us to perform our own actions. Here, we are often more inclined to act according to what seems to us to be the easiest thing to do rather than what is actually necessary. For example, certain bonds might immediately come to mind, which we might then purchase without checking whether other bonds with which we are less familiar might yield significantly better returns.
- ◆ *Benefit*: Where information is concerned, it is always important for us to find out whether it could be useful for us or for others close to us. We are more likely to listen when someone claims that particular information could be beneficial to us than when someone wants to explain the facts of a situation to us.
- ◆ *Identity*: Ultimately, the information is significant if it helps us to define our own role in the social environment and to understand ourselves

as whole and integral beings. This includes moral guidelines such as the sustainability criteria described in this study, as well as personal preferences and inclinations.

All four factors are relevant to the assessment and evaluation of risks. Again and again we hear that this would result in increasingly irrational risk assessments. Not at all! To put it plainly: today, we know more about risk than ever before<sup>3</sup>. The scientific methods of stochastics enable us to describe risks better than any generation before us. These new methods give us important insights into potential opportunities and risks and provide a valuable understanding of the probabilities of their causation. Although this is less than we would like, it is far from being purely arbitrary.

At the same time, subjective elements of the evaluations come into play, which address our aspirations in terms of orientation, self-efficacy and identity. These “soft” aspects of the decision are in no way less significant than the “hard” facts. Rather, they are an integral component of a prudent and reflective judgement, as long as we are aware of the subjectivity of these judgements. Sound judgements on financial, environmental or social risks always comprise two parts: the best-available knowledge of the consequences and a well-considered decision about what we can expect and hope for from the future. This study therefore takes account of both these factors. Moreover, it reveals how important normative considerations are in assessing the overall benefit of corporate bonds.

**Prof. Dr. Ortwin Renn**

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## Foreword by our sponsors

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Responsible corporate governance focused on sustainable value creation is steadily growing in significance. Particularly in the institutional investor customer segment, we are seeing a discernible increase in the importance of compliance with sustainability criteria. This is now often used as a criterion for the award of mandates.

As the investment management company of an insurance group, we provide services for customers who tend to take a very long-term view. Especially in the bond segment, it is of paramount importance that institutional investors, in particular, should conduct a thorough analysis of issuers. In the past, too little attention was paid to the sustainability aspects of this investment class. Particularly in the case of corporate bonds, it is important to take account of all relevant factors that make it possible to draw conclusions as to whether the risk premium is appropriate and the outstanding securities can actually be serviced.

As a longstanding partner, we are familiar with oekom research's exceptional level of expertise and place a high value on it. We see it as a very important and reliable element of our collaboration on the terrAssisi funds. Particularly in the case of the terrAssisi Aktien I AMI equity fund, a peer-group comparison has shown the positive contribution to performance by the sustainability filter.

For our own fixed income research team, too, we therefore see the study presented here as an important contribution regarding the influence of sustainability factors on the risk assessment of corporate bonds.

Institutional investors and high-net-worth private clients are fostering significantly above-average growth in ethical and sustainable investments. They are increasingly recognising the economic value and benefits of sustainable strategies to their portfolios and are profiting from the fact that ethical and sustainable forms of investment are performing at least on a par with non-sustainable investments, as has been clearly documented in numerous long-term studies.

This is an important finding, which private investors should also take greater advantage of. Despite the fact that the range of products on offer is extremely attractive and that including at least a certain proportion of ethical and sustainable products in a portfolio is recommended purely from the point of risk mitigation, demand from private investors in Austria remains very limited.

This may also be due to the fact that, with the exception of Schelhammer & Schattera KAG, there are very few market participants routinely and proactively offering such products or centering their product range around them. Being the sustainability specialists of the Austrian investment fund industry, our bank is the driving force ensuring that an attractive product range based purely on ethical and sustainable considerations is available to all investors. Our strategic focus has been validated by the success of these products in recent years – fund volumes have increased by over 80 % since the onset of the financial and economic crisis.

Our long-term collaboration with oekom research in putting together the ethical and sustainable fund universe, together with its analyses and studies, have been vital to this success and are crucial to our future aim of channelling an even larger proportion of investment capital into verified ethical and sustainable investments.

**Manfred Köberlein**

Member of the Management  
Ampega Investment GmbH



**Mag. Ernst Krehan**

Managing Director  
Bankhaus  
Schelhammer & Schattera KAG



## Foreword by oekom research

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“Lower for longer” is the latest portent regarding anticipated interest trends in the years ahead. In other words: numerous, if not all, experts agree that there is as yet no sign of a trend reversal. Many investors are facing huge challenges due to continuing low interest rates, but they still have to meet their financial obligations, for example towards pensioners (pension schemes), policyholders (endowment policies) or projects (foundations). The yields from capital investments are often scarcely sufficient to keep pace with inflation and maintain the real value of the capital.

In the search for lucrative investments, the focus has in recent years increasingly shifted to corporate bonds, as well as equities. Rather than the interest-free risk we continue to see with numerous government bonds, these bonds still offer a comparatively attractive yield, despite the fact that the yield advantage over government bonds has fallen recently.

This increased demand from investors is certainly one of the key drivers behind the rising volume of corporate bonds issued in recent years. At the same time, something of a structural change in corporate financing has been seen in the wake of the financial crisis and the associated credit crunch. Instead of taking out bank loans, increasing numbers of companies are obtaining financing by issuing corporate bonds directly via the capital markets. Some of the companies active here – as a number of corporate bond defaults in recent years have shown – have risk structures which differ from those of “traditional” corporate bond issuers. Given this tension between rising supply, return requirements and readiness to take risks, there has been a noticeable increase in demand from investors for risk ratings of corporate bonds.

This study investigates the contribution sustainability ratings can offer, i.e. the analysis and evaluation of companies on the basis of social and environmental criteria. What conclusions about a company’s ability to meet its obligations resulting from the issue of bonds – i.e. to service interest payments and repay bonds – can be drawn from sustainability ratings? And do these provide a valuable addition to conventional financial ratings?

Without wanting to give too much away at this point, they do. The results of the studies based on

our sustainability ratings indicate firstly that they help to reduce the risk of investing in bonds issued by companies which present a higher insolvency risk. At the same time, they make it possible to identify which corporate bonds are most advantageous in terms of their risk-return structure.

Without an expert partner, the study would not have been possible. Our thanks therefore go to Prof. Dr. Timo Busch (University of Hamburg) and to Julian Kölbel (ETH Zurich). Taking our data as a basis, they focussed on examining the explanatory effect of sustainability ratings in the case of corporate spreads. We would also like to thank co-author Dr. Stefan Klotz (VIF), who played a substantial role in carrying out the literature review and analysing the correlation between sustainability ratings and equity ratios.

Finally, our thanks go to Prof. Dr. Ortwin Renn for his unique perspective on the issue of risk and to the sponsors of the study, Ampega Investment GmbH and Bankhaus Schelhammer & Schattera KAG together with HypoVereinsbank, Lampe Asset Management and Nord/LB Asset Management.

We hope that you will find the oekom Corporate Bonds Study an interesting read and above all that you will find insights and tips that are helpful for your capital investments. While compiling the study, we identified a number of other interesting issues which we believe would be worth pursuing further. In this regard, we see the study as the introduction to rather than the conclusion of our involvement with this issue.



**Robert Haßler**  
CEO oekom research AG



## Executive Summary

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The aim of the oekom Corporate Bonds Study is to analyse what significance sustainability ratings have for the assessment of opportunities and risks presented by corporate bonds. To do this, we firstly examined and analysed the available literature on this topic. Secondly, two studies were carried out based on oekom research's sustainability ratings, one of which was concerned with explaining and evaluating the risk premiums on corporate bonds, i.e. the credit spreads, while the other examined the accuracy with which such ratings can forecast companies' solvency. In addition, the market for corporate bonds was documented and analysed, as were conventional and sustainability-related approaches to the rating of companies.

### *Background of the analyses*

- ◆ For the majority of institutional investors, bonds continue to form the backbone of their capital investments. In European retirement pension schemes, for example, their share currently stands at 52 %. According to calculations by the European industry association, Eurosif, sustainable investors in Europe invest on average 40 % of their assets in bonds, of which 21.3 % is invested in corporate bonds. Due to the generally low interest rate, particularly in the case of investment-grade government bonds, investors have in recent years become increasingly keen on corporate bonds, which comparatively speaking pay a better rate of interest. ► [page 10](#)
- ◆ Overall, the range of corporate bonds on offer has also increased in recent years. Besides financing bottlenecks caused by the “credit crunch” in the wake of the financial and economic crisis, rising demand on the part of investors has also resulted in an increasing number of companies using the capital market to finance their investments. Less creditworthy companies have also become more active on the capital market. ► [page 11](#)
- ◆ The success of a portfolio featuring or dominated by bonds is essentially determined by the extent to which the portfolio manager succeeds in preventing the partial or complete default of indi-

dual bonds. In the event of such a default by individual issuers, it is hard to compensate for the loss through the yield from other bonds. For this reason, selecting issuers and securities based on risk is particularly important when it comes to bonds.

► [page 14](#)

- ◆ As well as conventional financial ratings by S&P, Moody's and Fitch, in recent years sustainability ratings have also become established on the market. These are used by a steadily growing number of institutional investors and asset managers in their capital investment or for designing sustainable investment products. According to calculations by the Global Sustainable Investment Alliance (GSIA), at the end of 2012 more than ten trillion euros worldwide were invested taking sustainability criteria into account and thereby often on the basis of sustainability ratings. This study examines the question of the significance of sustainability ratings in evaluating the risk of corporate bonds. ► [page 15](#)

### *Findings of the analyses*

- ◆ The overwhelming majority of the empirical studies which were looked at for the purposes of the oekom Corporate Bonds Study, which focus on the US market, provide evidence that sustainability criteria improve investment success. They show that factoring sustainability ratings into investment decisions not only helps to achieve social, environmental or ethical goals, but also delivers an information advantage which can translate into lower risks or higher financial returns for the investor. ► [page 18](#)
- ◆ These findings are backed up by recent analyses based on oekom's corporate ratings. For example, the analyses show firstly that an improved sustainability performance, and thus a better sustainability rating, goes hand in hand with a higher equity ratio. Companies with oekom Prime status have equity ratios around five percentage points higher than those of companies whose sustainability performance does not meet the requirements for Prime status. The portfolios of investors who use oekom

Prime status as a basis for their investment decisions will therefore contain securities from companies with an above-average equity ratio. The equity ratio can thus be interpreted as an index of the ability of companies to meet their obligations arising from the issue of corporate bonds.

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- ◆ Analysis of the relation between sustainability ratings and equity ratios also disproves the thesis that companies “have to be able to afford to be sustainable”, i.e. that only economically successful companies have sufficient means to operate comprehensive and systematic sustainability management systems. No evidence of such a relation could be found in the analyses. This means that economic success is not a prerequisite for a good sustainability rating; conversely, however, such a rating is a strong indicator of an economically sound company.

► page 24

- ◆ Sustainability ratings also provide important information for the explanation and evaluation of credit spreads. It can be seen that companies with an above-averagely sustainability rating have a lower credit spread and are thus seen by investors as being less risky. Integrating sustainability into the pricing model makes price or risk premium assessment for a corporate bond significantly more accurate. For example, it becomes easier to distin-

guish between seemingly attractive bond prices and prices that are actually favourable. The oekom Corporate Ratings contribute to the explanation of such aspects in addition to all other influencing factors, including in particular conventional financial ratings. ► page 26

- ◆ Sustainability ratings thus impact positively on decisions about investments in corporate bonds in two ways. Firstly, they provide important pointers to the risks of a partial or total loss of a corporate bond which might arise if the issuing company gets into economic difficulties. Secondly, the systematic integration of ESG criteria into the selection of corporate bonds not only makes it possible to improve the sustainability quality of a portfolio, but also has a positive effect on the financial return of a portfolio invested in corporate bonds. ► page 28

- ◆ Taken to their logical conclusion, these findings mean no more and no less than that institutional investors and asset managers investing in corporate bonds would be well advised to take sustainability ratings systematically into account in their capital investments. Investors who have a fiduciary duty to their members or customers could, in the light of these positive effects, even be obliged to do so.

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# 1. Background and objectives of the study

## 1.1. Subject and aims of the study

Against a background of continuing low interest rates, particularly in the case of government bonds, (previously) seen as secure, many institutional investors have in recent years been searching for investment alternatives. Investors, especially those who are reliant on a particular investment outcome that is no longer achievable with government bonds but who are not allowed to make use of higher-risk investment classes such as equities (or only to a limited degree), have therefore been turning their attention increasingly to corporate bonds, as well as to property, infrastructure projects and renewable energy investments. These include, for example, foundations, which, due to their own medium- to long-term projects or funding commitments made, have to achieve a certain level of annual interest income. This form of capital investment is also becoming increasingly attractive to insurance companies, which have to offer policyholders fixed minimum interest returns on endowment policies, and to pension funds, which have to finance their members' annuities and pensions.

This increased demand is one of the factors that has led to an increase in the volume of corporate bonds issued in recent years. In Europe, for example, the volume of investment-grade (IG) rated

corporate bonds reached 350 billion euros in 2012. This method of financing has now also been discovered by companies which, from the risk point of view, need to be rated differently from the large companies which have traditionally dominated the market. This is shown, for example, by a study by the rating agency Scope.<sup>4</sup> According to the study, at the end of October 2013, one in eight securities on the German SME bond market were classified as "distressed". Scope makes this judgement when a bond is trading at less than 65 % of its nominal value. At the same time, a number of defaults had occurred in the market.

Given this tension between rising supply, return requirements and readiness to take risks, there has been a noticeable increase in demand from investors for risk ratings of corporate bonds. In the case of equities, sustainability ratings have for some time been used alongside conventional financial analysis of companies, in order to be able to make a better assessment of the opportunities and risks of such an investment. Studies show here that this approach can have clear advantages. For example, oekom research carried out jointly with Deutsche Performancemessungs-Gesellschaft für Wertpapierportfolios (DPG), a German company specialising in

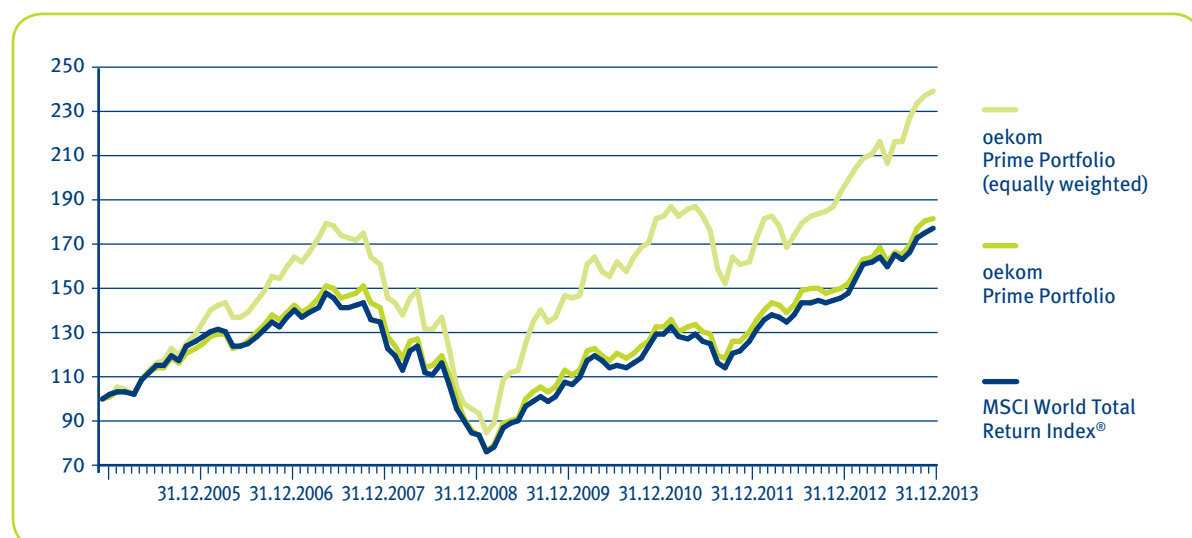
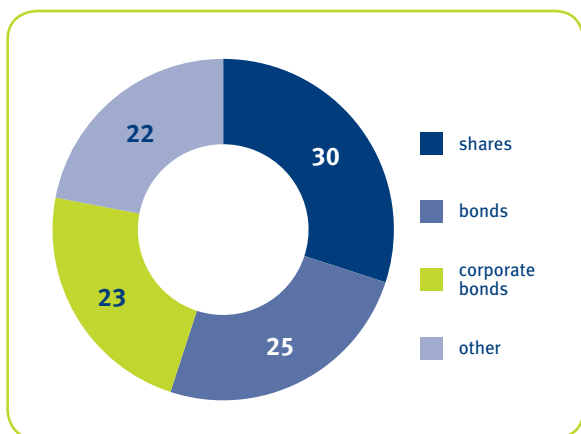
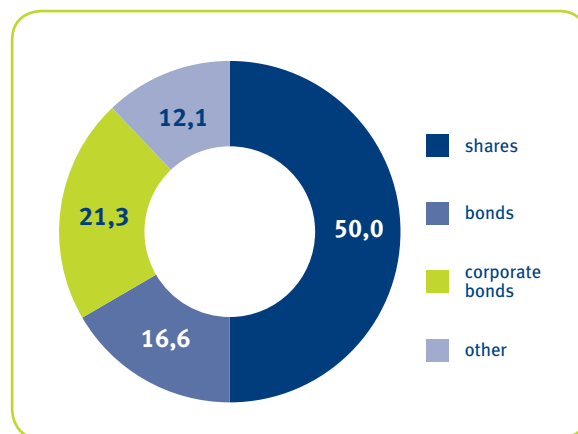


Fig. 1: Comparison of return on investment of oekom Prime Portfolio and MSCI World Total Return Index®; source: own research (2014)<sup>5</sup>



**Fig. 2:** Asset allocation of sustainable investments in Germany; as at: 31.12.13; in per cent; source: FNG (2014)<sup>7</sup>



**Fig. 3:** Asset allocation of sustainable investments in Europe; as at: 31.12.13; in per cent; source: Eurosif (2014)<sup>8</sup>

performance measurement for investment portfolios, a comparison of the performance of large companies from its universe which were rated best-in-class from a sustainability point of view, the oekom Prime Portfolio Large Caps (PPLC), with the performance of those in the MSCI World Total Return Index® (cf. Fig. 1).

The findings: during the period 1 January 2005 to 31 December 2013, the PPLC weighted by market capitalisation achieved cumulative returns of 81.90 %. During the same period, cumulative returns for the MSCI World Total Return Index® came to 77.32 %. During the period under consideration, the oekom PPLC thus achieved a return that was 4.58 percentage points or 5.92 % higher than that of the conventional benchmark index. A metastudy by Steinbeis University shows that of 55 studies it analysed which looked at the influence a focus on sustainability has on investment results in the equity sector, 21 had a positive, 20 a neutral and only one a negative impact.<sup>6</sup> In the rest of the studies, the results varied depending on the timeframe under consideration and the region analysed.

Whereas in the case of equities the question of performance is at the forefront, in the case of bonds the issue is primarily the risk that the capital invested will not be returned in full at maturity or that the guaranteed interest will not be paid. If just one bond in a portfolio defaults, it can seriously jeopardise the success of the whole investment. Here conventional financial analysis plays traditionally an important role. In contrast to equities, however, there has to date been only piecemeal analysis of the ability of sustainability ratings to predict the capacity of companies to meet their obligations arising from the issue of bonds. This is all the more remarkable as the equity portion of the portfolios of the specified insti-

tutional investors is generally smaller than the bond portion – and this is true of both conventional and sustainable investors.

For example, pension schemes in Europe invest 52 % of their assets in bonds, although unfortunately no distinction is made here between government and corporate bonds.<sup>9</sup> The corresponding proportion is highest in Germany (65 %) and France (62 %), and lowest in Sweden (39 %). In the case of sustainability-oriented investors, the corresponding proportion in Germany is 48 %, with 23 % being invested in corporate bonds (cf. Fig. 2). In Europe, bonds account for a total share of 40 % of the portfolios of sustainable investors, with corporate bonds making up 21.3 % of these (cf. Fig. 3).

This study is intended to close the knowledge gap regarding the significance of sustainability criteria for corporate bonds. To this end, we will look below at developments in corporate bonds on the European and US markets. Then, in section 1.3, we will first explain the basics of conventional financial analysis in respect of corporate bonds and then contrast with these the key elements of sustainability ratings.

Section 2 presents the results of a comprehensive analysis of available studies on the impact of the use of sustainability criteria on the success of investments in corporate bonds. One striking finding of this literature review is that the available studies relate almost exclusively to the US market and that each of them focuses on one of the three ESG dimensions. This section applies the same breakdown and closes with a classification of the available results to date and a look at open research questions.

Section 3 forms the core of this oekom Corporate Bonds Study. This section presents the results of two studies on the significance of oekom's corporate ra-

tings in the evaluation of investment performance where corporate bonds are concerned. The first study addresses the question of correlation between performance in the sustainability rating and companies' equity ratios. The second looks into the influence sustainability ratings have on credit spreads, i.e. the risk premium received by investors when they invest in bonds at risk of default. This analysis was carried out by a research team from Hamburg University and ETH Zurich and is based on oekom research's sustainability ratings. Finally, the overall findings of the litera-

### Keyword: ESG

*The abbreviation ESG stands for Environmental (E), Social (S) and Governance (G) and describes the three dimensions of sustainability that should be taken into account when looking at and evaluating sustainability management.*

ture review and our own studies will be summarised and categorised in section 4.

## 1.2. The market for corporate bonds

Corporates, or corporate bonds, are issued by companies, which are increasingly using these as an alternative to conventional bank loans, for example for financing investments. Corporate bonds, unlike e.g. Pfandbriefe, are generally not backed by addi-

tional collateral. The creditworthiness of the issuing companies is therefore very important from the point of view of investors. Section 1.3 looks at how this creditworthiness is evaluated.

### Europe

The European corporate bond market has grown in importance in recent years. In the wake of the financial and economic crisis which has been ongoing since 2007, companies have begun to finance themselves directly via the capital markets far more often than before, rather than doing this through loans. Following the issue of record volumes of investment-grade (IG) corporate bonds – i.e. bonds with a good to very good conventional credit rating – in

Europe in 2009, 2012 saw the second-highest level of issues so far, with a total volume of over 350 billion euros. Figure 4 shows the trend in the volume of outstanding corporate bonds ex-financials in the eurozone. From a business perspective, the main reasons behind this trend were two supply- and demand-side factors. On the supply side, companies have experienced the reality that numerous banks in Europe have significantly restricted their lending

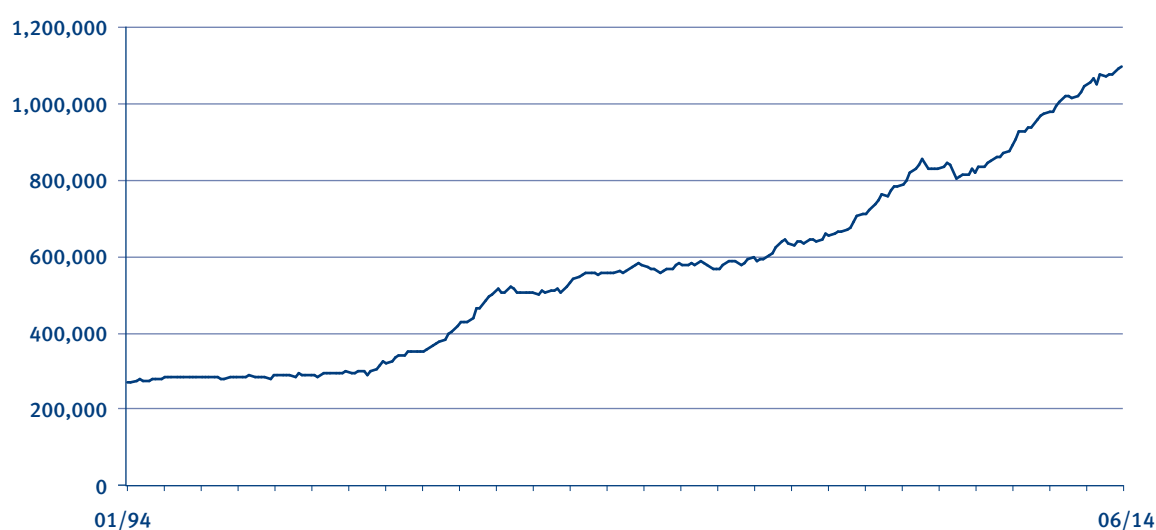


Fig. 4: Trend in the volume of outstanding corporate bonds ex-financials during the period January 1994 to June 2014 in millions of euros in the eurozone; source: ECB

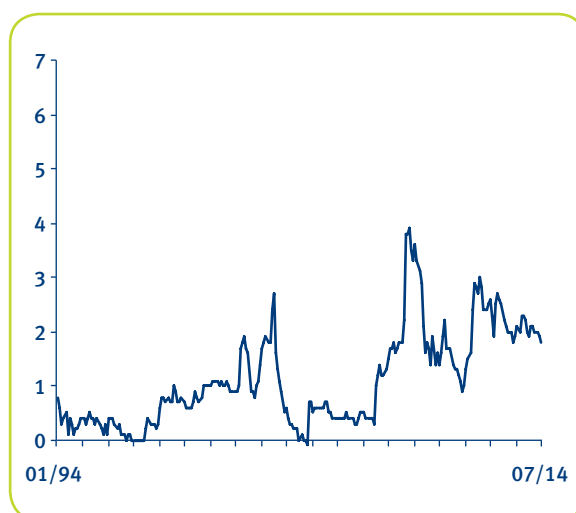
in recent years in the wake of higher equity capital requirements and other regulatory changes (“credit crunch”). From the companies’ point of view it was therefore necessary to look for alternative sources of finance. It was then that, as described above, they hit upon rising demand on the part of investors who were looking for higher returns in a low interest rate environment. At the same time, the experience of the financial crisis has meanwhile led to a broad cross-section of investors favouring bonds from the “real economy” over financial bonds.

In the European market, slight differences can be seen between the core states, such as Germany and the Netherlands, on the one hand and the peripheral states, such as Italy and Spain, on the other. In the core states, the issuance of corporate bonds initially declined following its peak in 2009, then recovered in 2012. In the peripheral states, issuance volumes were subject to higher levels of volatility overall. Since 2009, they have been at a generally higher level than in the core states, reaching their peak in 2012. The differences in the issuance of corporate bonds in the core and peripheral states are closely linked to the availability of bank loans in the respective countries.

## USA

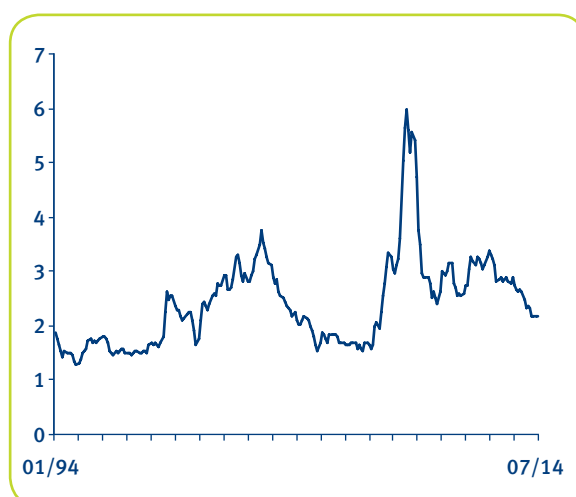
Despite its growing importance in recent years, the European corporate bond market is relatively insignificant in global terms. It accounts for only around one-fifth of corporate bonds issued worldwide, which is roughly equal to the share of all the emerging economies put together. The USA accounts for the lion’s share, with around 60 %. The huge difference in scale between the markets in the US and European economies, which are roughly equal in size, reflects differing traditions in corporate financing. In Europe, as mentioned previously, financing by banks plays a central role in this area. At least prior to the financial crisis, smaller companies, in particular, ventured onto the capital market only infrequently, while in the USA the capital market is considerably more important for all companies.

In recent years, trends on both sides of the Atlantic have, however, followed a similar path. In the USA, too, companies saw in their own bonds a source of finance which, relative to equities, was becoming cheaper and cheaper. It has even become fashionable for companies to issue bonds in order to use the proceeds to buy back their own shares. The capital is coming increasingly from investors who



**Fig. 5:** Change in the credit spread between corporate and Federal bonds in the period from 01.01.94 to 31.07.14; in percentage points; source: German Federal Bank

Since 2012, in the wake of investor demand, the credit spread of European corporate bonds with a high credit rating has fallen again. To illustrate this, Figure 5 shows the credit spread of German corporate bonds compared with Federal government bonds.



**Fig. 6:** Change in the credit spread of corporate bonds with a residual maturity of ten years and a Moody’s rating of Baa, compared with US Treasury bonds with the same maturity in the period from 01.01.94 to 31.07.14; in percentage points; source: Federal Reserve Bank of St. Louis

would actually prefer to invest in government bonds or other safer bonds, but because of the low interest rate are prepared to accept a higher risk.

As a consequence, even US corporate bonds are now anything but cheap. The credit spread for the “high yield” segment of relatively risky bonds is currently not even half the long-term average. The spreads for bonds of more reliable companies are close to their historic lows, but not as extremely low as in Europe. Figure 6 shows, by way of example, the credit spread of corporate bonds with a residual maturity of ten years and a Moody’s rating of Baa, compared with US Treasury bonds with the same maturity.

With corporate bonds, too, higher returns are now only obtainable from issuers with a lower credit stan-

ding. However, it is precisely these companies that are most vulnerable to fluctuations in demand. Should the strong demand for corporate bonds slacken due to a marked shift toward equities or due to increasing returns for government bonds, then the more high-risk companies, in particular, might once again have to struggle with limited access to funds to refinance their bonds, which would increase the likelihood of default. These potential developments underline once again the necessity for a comprehensive assessment of the risks of corporate bonds.

### 1.3. Approaches to the rating of issuers and bonds

In order to be able to estimate the risks associated with the purchase of bonds from particular companies, ratings of the issuers or of individual issuances are used. Here, the sustainability rating has established itself in recent years alongside conventional

corporate analysis as an approach which, unlike conventional ratings, focuses not directly on financial aspects, but rather on the environmental, social and governance (ESG) performance of the issuers. These two rating approaches are outlined below.

#### 1.3.1. Basic principles of the conventional rating of corporate bonds

At first glance, it seems easy to estimate the return that can be expected from a bond: you get the money paid for the purchase of the bond back when the bond matures, and you also receive the agreed interest, which as nominal interest or “coupon” represents a key characteristic of the respective bond. However, the coupon is not necessarily exactly the same as the return on the purchase of a bond. For although bonds are typically repaid at 100 % of their face value, even at issuance, i.e. the initial issue of a particular bond, the selling price is not usually exactly 100 %. An example: if investors purchase a bond with a five-year maturity and an annual coupon of 6 % at an issue price of 101 %, they cannot

expect an annual return of 6 %. Although they will receive 6 % interest on the nominal value of 100 %, they will have paid 101 % and will therefore have to relate the interest to their capital investment. In addition, they will have to post the 1 % difference between the issue price and the redemption price as a loss.

Basically, the new-issue yield can be calculated precisely. However, where the coupon is not agreed as a fixed figure but its level depends on conditions – even where these are clearly defined – this is no longer the case. Prominent examples of this are

- ◆ floaters, whose coupons are determined by the trend in money-market interest rates,
- ◆ inflation-linked bonds, where the coupon rises or falls with the measured inflation rate,
- ◆ corporate bonds where the coupon payment is dependent on the company’s profits, and
- ◆ bonds with step-up (or step-down) coupons; here the coupon rises (or falls) when the issuer’s rating deteriorates (or improves).

#### **Keyword: new-issue yield**

*New-issue yield is the name given to the yield promised by the issuer, i.e. the obligor of the bond, on issuance of the security. It differs from the agreed coupon primarily where the issue price does not stand at 100 % of the face value of the bond. Further, although not overly serious, influencing factors include non-annual (e.g. quarterly) interest payment or, as is common practice, a maturity which does not total an exact number of years.*

These special types of bond are excluded from the analyses presented within the framework of this study, as is the aspect that a foreign currency bond can bring additional exchange-rate gains or losses. Rather, one of the key issues looked at in this study concerns the considerations that determine the level

of (new-issue) yields (cf. section 3.2.). This level is essentially dependent on two factors. Firstly, the interest is the price for the surrender of money: anyone who gives up the use of their money for a certain length of time will want to be remunerated for this. Investors normally expect to receive interest at a rate that is at least as high as the rate of inflation, as otherwise the money that they get back is worth less in real terms than what they originally invested. On the financial markets, this is referred to as a “risk-free interest rate”, which represents the price for the surrender of the money. Particularly reliable issuers, such as the Federal Republic of Germany, can issue bonds at this risk-free interest rate.

On the other hand, the interest is also compensation for the risk taken, i.e. the risk that you might not get your money back. An example: an investor purchases a one-year bond from an issuer and fears that there is a four per cent probability of total loss due to possible bankruptcy in the coming twelve months for this issuer. This investor will demand an interest mark-up of at least 4 % as compensation for the risk of total loss. As a general rule, the more vulnerable an issuer seems to be, the higher the risk mark-up, the credit spread, on the risk-free interest rate will be. Both for the risk-free interest rate and for the risk mark-up, the level will, moreover, also depend on when the bond concerned matures.

The most important success factor for a bond investor lies in avoiding bonds which become partially or wholly worthless due to the insolvency of the issuer. The default of a bond means a loss that is so huge that it is very hard to compensate for it through other bonds. Where just one of 50 bonds in a portfolio defaults, it is almost impossible for the loss incurred to be offset by the other bonds. For this reason, selecting issuers and securities based on risk is particularly important when it comes to bonds.

Guidance is provided here by ratings, which use a scoring system to signal to the investor the level of a company's default risk. Due to differing liability regulations, different bonds from the same company may be given different rating scores. Bonds with a

### **Keyword: credit spread**

*The credit spread is a mark-up on the return on the risk-free interest rate, which investors receive for investments in bonds that carry a default risk. The credit spread compensates investors for the risks associated with the investment. The higher the insolvency risk of the issuer is deemed to be by market participants, the higher the credit spread of a bond will be. The credit spread is often given in basis points, where one basis point is defined as one-hundredth of a percentage point (i.e. 0.01 %).*

low default risk are labelled “investment grade” (= worthy of investment), with riskier bonds being labelled “non-investment grade” (= not suitable as an investment) or “junk”. Many institutional investors are required by their investment guidelines, and sometimes also by the regulatory authorities, to pay heed to the rating scores. The rating agencies are therefore extremely important to the bond market. As the ratings are generally paid for by the issuers, the criticism has frequently been voiced that rating agencies will not always make independent and objective appraisals. By far the most important rating agencies are Moody's and Standard & Poor's (S&P), followed by Fitch. All these agencies are based in the USA; no rating agency has yet succeeded in establishing itself in Europe.

A change in the rating, in particular a downgrading, can have drastic consequences for investors. Some institutional investors are restricted by their investment rules to investment-grade bonds. If a bond held in their portfolio is then downgraded to “junk”, the bond must be disposed of – even if the investor does not share the rating agencies' scepticism. As a precaution, institutional investors often sell bonds even when they are still one or two grades away from “junk” level. A deteriorating credit rating often goes hand in hand with a falling bond price. As a result, a payment default does not necessarily have to occur in order for an investor to suffer significant losses – a deteriorating financial situation culminating in a downgrading in the rating can be all that is needed.

The rating agencies are not transparent about the methods they use to determine their ratings, citing commercial secrecy. However, as far as can be seen, ESG criteria play no part in these methods. These ratings will be referred to below as “conventional ratings”, in order to distinguish them from sustainabi-

### **Keyword: capital market rating**

*Rating agencies, as private, profit-oriented companies, evaluate the financial standing (credit-worthiness) of companies, states and other issuers of bonds. They summarise this evaluation in a rating score. Typically, the worse a bond's capital market rating, the higher its credit spread.*



lity ratings (see the Annex for the rating scale of the conventional rating agencies).

Besides the aspects relating to yields and capital market ratings outlined above, there is another topic that is relevant for bond investors: not every investor holds a purchased bond until maturity or is allowed to do so e.g. due to internal investment guidelines or purchases a bond on the issue date. Rather, most bonds are traded on stock exchanges during their term. In this period, the return which investors on average deem appropriate for each bond will change constantly. This yield to maturity, as it is known, is determined by changes in the bond price: if the price of the bond falls, the yield to maturity rises, and vice versa.

As with the new-issue yield, the yield to maturity is made up of the compensation for temporarily foregoing use of the invested capital on the one hand and of the risk-related credit spread on the other hand. The interest rate stemming from the com-

pensation element does change over time, but this change affects all bonds equally. It therefore does not form part of the following analyses, but has to be taken into account to achieve precise results. The credit spread, by contrast, is configured separately for each bond; movements in it reflect how the investor community's assessment of the bond concerned changes over time. These movements in the credit spread are particularly suitable for use in analysing the question of whether and how ESG criteria can influence the rating of bonds.

In order to express in an indicator the tendency of a bond price to fluctuate, the volatility is calculated from the price movements. The volatility is generally interpreted as a risk indicator. For investors, higher price fluctuations mean increased uncertainty as to what price is likely to be attainable in the case of a sale. A portfolio manager therefore strives for the lowest possible volatility at a given target return.

### **1.3.2. Evaluating corporate bonds on the basis of sustainability ratings**

The market for sustainable capital investments has grown significantly in recent years. According to calculations by the Global Sustainable Investment Alliance (GSIA), at the end of 2012 more than ten trillion euros worldwide were invested taking ESG criteria into account.<sup>10</sup> Private and institutional investors have two principal motives for taking such criteria into account in their capital investment:

#### **Values & responsibility**

These investors, sometimes described as “principle-led”, wish to take into account in their capital investments the goals and values for which they, as private individuals, stand or to which their organisation is committed. These include, for example, churches and foundations.

#### **Return & risk**

Return- and risk-oriented sustainable investors are convinced that the additional criteria on the ESG performance of issuers help them to understand the opportunities and risks of an issuer better and are thus also relevant financially. On the SRI market, this issue is discussed under the heading “materiality”.

Two levels can be distinguished here. Firstly, these investors start from the premise that the quality of sustainability management provides an indicator of how well a company is managed overall. For example, if a company has its energy and raw-mate-

rial consumption well under control, deals fairly with its employees, suppliers and customers and is vigilant about the environmental and social quality of its products, you can be confident that the company as a whole is well run. Secondly, taking ESG criteria into account makes it possible to identify management shortcomings in important key areas. For example, if glaring shortcomings are identified in the area of “plant safety”, as was the case at Tepco, the Japanese operator of the damaged nuclear power plants in Fukushima, and at BP before the sinking of the “Deepwater Horizon” rig, these are not only highly problematic from an environmental point of view but at the same time also indicate major risks in terms of the company's financial success (see also section 3.1.1.).

Especially in the case of the industry-specific key sustainability issues identified by oekom research, i.e. aspects which are particularly important in terms of making the industry more sustainable, opportunities and risks often have a direct financial dimension. Table 1 shows an example of this for two of the four key issues identified by oekom research for the telecommunications industry.

The basis for factoring ESG criteria into capital investment is normally provided by relevant sustainability ratings of specialist rating agencies like oekom research. In total, oekom research analyses and evaluates more than 3,400 companies. The oekom Universe covers all companies listed in major internati-



onal stock indexes as well as in numerous national indexes, and can be divided into three groups:

1. large listed companies from conventional sectors;
2. listed, often small and medium-sized, companies from sectors closely linked to sustainability, e.g. renewable energies and energy efficiency, recycling technologies or water treatment;
3. non-listed issuers of bonds, e.g. regional banks, supranational organisations, such as the World Bank, or railway companies.

Under the best-in-class approach, all companies are analysed using a standard procedure and based on comprehensive lists of criteria. The aims of the best-in-class rating are to evaluate companies' sustainability performance comprehensively and to identify within individual industries those companies which are particularly committed to sustainable development. At the same time, it aims to document, analyse and evaluate important aspects which are of significance for other investment strategies used in sustainable investment, in particular for the integration of ESG aspects into conventional financial analysis. To this end, companies are rated against a large number of criteria and data points relating to all areas of corporate responsibility.

A distinction needs to be drawn here between the relative and absolute best-in-class approaches. Under the relative approach, a certain percentage of companies in an industry is defined as "best in class", e.g. the top 20 % or 30 %. The disadvantage here is that the lowest-scoring companies which make it into the leading group under this approach do not necessarily have to satisfy high sustainability standards. In the case of the absolute best-in-class approach, an attempt is made to avoid this by defining (ideally industry-specific) minimum standards which companies have to meet in order to be awarded best-in-class status.

oekom research employs the absolute best-in-class approach. Under this approach, the only companies to receive best-in-class status – for which oekom research has introduced the term "Prime" – are those which have achieved a minimum grade specified by oekom research on its rating scale, which ranges from A+ (highest score) to D- (cf. Annex). In this context, oekom research uses the term "Prime threshold", which is determined separately for each industry. These company ratings – the oekom Corporate Ratings – for the three sub-universes form the basis for the analyses described in section 3.

The lists of criteria each comprise around 100 individual criteria, a large proportion of which are industry-specific. They relate, for example, to the way

Key issue	Opportunities	Risks
Climate protection	<ul style="list-style-type: none"> <li>♦ Cost-saving through energy-efficient design of networks and data centres</li> <li>♦ Reduction of customers' carbon footprints resulting in benefits particularly in the B2B sector</li> <li>♦ Opening up new areas of business, e.g. Smart Grids, Smart Home and Smart Meters</li> </ul>	<ul style="list-style-type: none"> <li>♦ Damage to communications infrastructure by extreme weather events due to climate change</li> <li>♦ Energy reduction requirements of equipment received by customers as part of their contract (e.g. modems)</li> <li>♦ Rising energy costs</li> <li>♦ Increasing awareness of customers regarding CO<sub>2</sub> efficiency of the company and its products</li> <li>♦ Technology race to reduce GHG emissions within telecommunications networks, despite rising data volumes</li> </ul>
Customer orientation	<ul style="list-style-type: none"> <li>♦ High level of awareness among customers of data security, particularly in the light of the NSA's eavesdropping practices, provides companies with an opportunity to position themselves as particularly "secure" providers</li> <li>♦ Long-term customer retention through professionally managed complaint system</li> </ul>	<ul style="list-style-type: none"> <li>♦ Liability risks from misuse of stolen customer data</li> <li>♦ Reputational risks from improper handling of confidential customer data</li> </ul>

**Tab. 1: Opportunities and risks presented by selected industry-specific key sustainability issues in the telecommunications industry; source: own research (2014)<sup>21</sup>**

in which the company treats its employees and suppliers, the ecodesign of products and the scope and quality of environmental management systems. (cf. Fig. 7). In total, oekom research's database comprises around 700 indicators, of which approximately 90 per cent relate to sector-specific aspects. In addition, key sustainability issues are identified and evaluated for each industry (cf. Table 1). These generally have a weighting in the rating of over 50 %.

The criteria are regularly updated in order to take account of e.g. new technical, social or legal developments.

In addition, for all the companies in the oekom Universe, oekom research carries out analyses in respect of possible breaches of a total of 17 exclusion criteria. These distinguish between controversial areas of business, such as alcohol, nuclear power and armaments, and controversial business practices, such as violations of human rights or labour rights. The exclusion criteria are not taken into account in this analysis.

In oekom research's case, the sustainability ratings always relate to the issuer as an entity and not just to individual securities. If an issuer is classified

### Keyword: best-in-class

*The aims of the best-in-class rating are to evaluate companies' sustainability performance comprehensively and to identify within individual industries those companies which are particularly committed to sustainable development. To this end, companies are rated against a large number of criteria relating to all areas of corporate responsibility. Companies which meet the industry-specific requirements in terms of sustainability are rated by oekom research as best-in-class. oekom research has introduced the term "Prime" for these.*

as best-in-class, this assessment relates to all securities issued by it, that is e.g. to its equities and bonds. The sustainability ratings are as a general rule commissioned not by the issuers being evaluated, i.e. in this case companies, but by the asset managers and investors using them for their capital investment. This constitutes a fundamental difference between sustainability ratings and the credit ratings of conventional rating agencies.

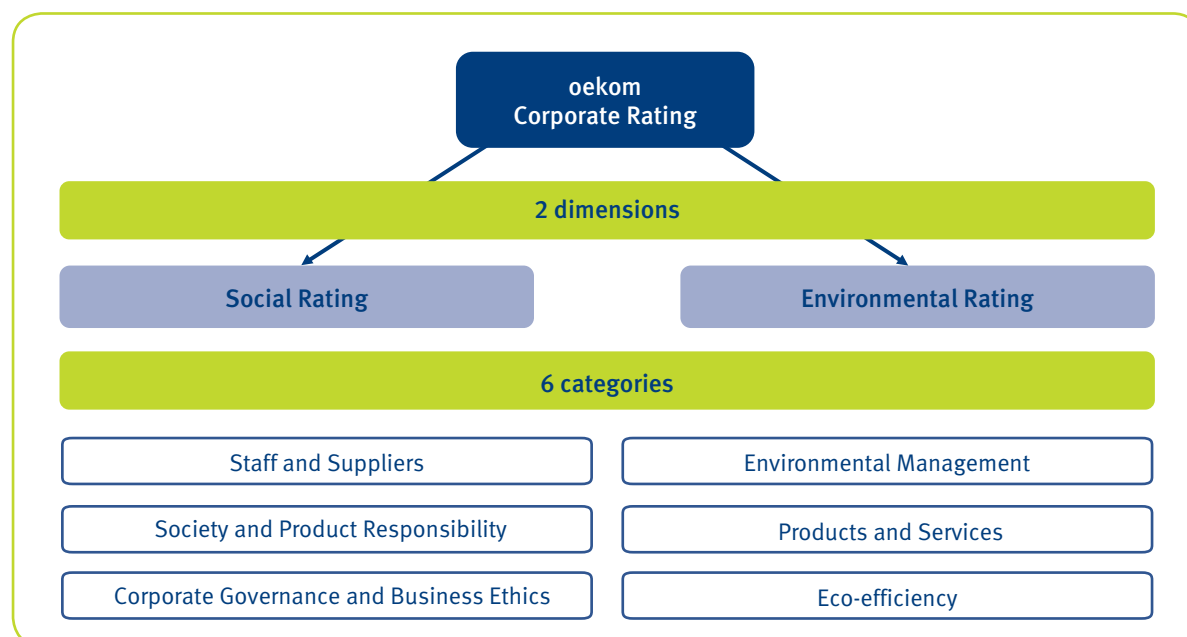


Fig. 7: Rating dimensions and categories in the oekom Corporate Rating; source: own research (2014)

## 2. Studies on the impact of the use of sustainability criteria on the success of investments in corporate bonds – a review

In the last ten years, there has been a sizeable number of scientific analyses examining the issue of whether ESG criteria provide the bond investor with valuable information for improving “conventional” investment success measured in terms of risk and return. Most of the studies concentrate on *one* ESG aspect, i.e. either on environmental or on social or on governance issues. Obviously, each of the three aspects helps in achieving “conventional” investment success. Until now, however, only analyses using data from US companies have been available. The most important of these are described below.

Most of the studies presented in this section use results from sustainability research conducted by Kinder, Lydenberg, and Domini Research & Analytics, better known as KLD. KLD Research & Ana-

lytics, which was founded in 1988 in Boston, looked only at US companies. In addition to information on controversial business practices, the data chiefly comprises assessments of strengths and weaknesses in six thematic areas. Possible strengths and weaknesses are predefined, and the existence or non-existence of each strength or weakness is determined and recorded in a binary fashion. Typically, the way in which the KLD research results are used in the studies documented below is by citing the respective number of strengths and/or weaknesses in each thematic area. The emphasis here is on social aspects, with only one of the six thematic areas relating exclusively to environmental aspects. KLD has meanwhile been taken over and is no longer active on the market as an independent operator.

### 2.1. Studies on environmental criteria

*Chava (2011/2014)*<sup>12</sup> uses KLD sustainability data not to investigate bonds in particular, but more generally to investigate the costs of equity and loan capital, where the latter is provided by banks. His finding that companies are being penalised with higher capital costs for weaknesses in environmental areas nonetheless also contains a valuable message for investors in bonds, who are doing nothing more than simply making loan capital available. Lenders of capital are in fact mindful of environmental risks. A company that has none of the environmental risks listed by KLD under control will, according to Chava’s findings, pay approximately 20 % higher interest rates than an otherwise identical company with an average environmental performance. It should, however, also be noted that in this study, strengths in environmental management receive very little reward from the lending banks. Chava gathers only very weak evidence that companies which are particularly strong environmentally are likely to be able to rely on cheaper credit. The study is based on loans to over 1,300 companies which were granted in the period from 1992 to 2007.

*Bauer/Hann (2011)*<sup>13</sup> also base their analysis on KLD data relating to the number of a company’s strengths and weaknesses in the environmental sphere. The period they chose, 1995 to 2006, was

similar to that chosen by Chava. Bauer and Hann, however, work with data on corporate bonds. They are able to show not only that conventional ratings to a large extent reflect a company’s environmental strengths and weaknesses but also that the spread increases with the number of environmental weaknesses and decreases with the number of strengths. This is an important difference from Chava’s findings with regard to bank loans, which identified a significant influence only in the case of the weaknesses. Bauer and Hann show that, before the turn of the millennium, companies with good environmental management systems had tended to benefit, but that this effect diminished in the years that followed, while the significance of environment-related weaknesses grew. The authors also calculate that for a company with a medium credit rating, which on average can expect a spread of 150 basis points, its environmental performance can give rise to a spread difference of up to 80 basis points.

Bauer and Hann thus build on the findings of *Graham/Maher (2006)*<sup>14</sup>. The latter had measured the quality of environmental management using data from the US Environmental Protection Agency (EPA). Based on this data, they also found that ESG criteria influence both conventional ratings and the yields of newly issued corporate bonds. However, they produ-

ced no conclusive evidence of any additional influence over and above this.

*Schneider (2011)*<sup>15</sup> focuses on two industries. For both the chemicals industry and the pulp and paper industry, the author uses data on the extent of toxic substance emissions taken from the EPA's Toxic Release Inventory. He finds a significant correlation between the scale of the emission of toxic substances and the credit spread of bonds. Of particular

note here is the finding that this correlation exists in addition to the influence of the conventional financial rating. Schneider's study offers a further interesting detail: the significance of the emission of pollutants to the spread increases as the financial rating deteriorates. A sound enterprise could therefore cope better with the risk generated by poor environmental management than could a company that is already deemed not too reliable.

## 2.2. Studies on social criteria

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KLD data, drawn from the two thematic areas of "Diversity management" and "Employee relations", is once again used by *Bauer/Derwall/Hann (2010)*<sup>16</sup> to construct an "Employee Relations Index" (ERI) for over 2,000 corporate bonds. The aim of the study is to determine the accuracy of this ERI in predicting ratings and spreads in the period 1995 to 2006. Its findings: a higher index standing, i.e. a better performance in the area of human resources management, goes hand in hand with a better rating. The expected relation with a lower spread was also confirmed. This ERI information remains useful where, in addition to other potential influencing factors, conventional ratings are taken into account. It must, however, be added as a qualifier that the authors distinguish merely between investment grade and non-investment grade.

These results supplement and confirm an earlier study by *Kane/Velury/Ruf (2005)*<sup>17</sup>, who had worked with the same pool of data. However, the authors had not constructed an index like the ERI, but only distinguished companies with good employee rela-

tions from those with poor employee relations. They found that those companies with poor employee relations have a higher risk of getting into financial difficulty, the latter being defined using the established business ratio, the "Altman Z-score".

The approach taken by *Oikonomou/Brooks/Pavelin (2011)*<sup>18</sup> by contrast, is reminiscent of the study by *Bauer/Hann (2011)* on the environmental criteria. Whereas the latter took companies' environmental strengths and weaknesses as their starting point, this research team bases its study on the social criteria of the KLD data. They, too, find that – in the period from 1991 to 2008 and for the bonds of 742 companies – the level of the credit spread depends significantly of this measure of the social dimension, and also that this occurs on a scale that is relevant. According to their calculations, a company that previously had no social strengths can cut its spread by over 40 % if it meets all the relevant social criteria. Conversely, growing dissatisfaction in the workforce can, in extreme cases, almost double the spread.

## 2.3. Studies on governance criteria

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The available analyses relating to governance criteria restrict themselves to aspects of form. The influence of external control, such as can be exercised by institutional investors in particular, on conventional ratings and on spreads was analysed very early on by *Bhojraj/Sengupta (2003)*<sup>19</sup>, with unequivocal results: as the proportion of institutional investors rises, the rating improves, while the spreads fall. This effect is all the more pronounced, the smaller the number of investors involved. The importance of external control also increases as the company's inherent insolvency risk rises. The importance of anti-takeover mechanisms, i.e. arrangements which are intended to prevent an unwanted

takeover of the company, was discussed by *Bradley et al. (2008/2010)*<sup>20</sup>. They found that bonds of companies that are not very successful have a higher spread where the company concerned has strong anti-takeover mechanisms in place. In this case, the mechanisms prevent a takeover that might possibly be helpful. Where soundly managed companies are concerned, the relation is reversed. It must, however, be assumed that the existence of strong mechanisms in successful companies should probably be seen more as evidence of sound structures and that it is this that provides the basis for lower spreads.

## 2.4. Summary

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These analyses, which focus on the US market, provide evidence that ESG criteria actually improve “conventional” investment success. The effects of ESG criteria on the valuation of corporate bonds are obviously subject to certain structures. Firstly, ESG *risks* seem to play a greater role than positive performance in this field. This seems plausible, as there is an asymmetry in the strategic situation of bond investors: besides the agreed interest and redemption payments, they can expect only limited capital gains; the risk of loss, on the other hand, extends to the full amount of capital invested. Secondly, the strength of the influence of ESG criteria changes with the credit standing of the company: In the case of companies with a poor credit standing, the positive influence of good governance grows, while the significance of environmental risks falls, as the company is in any case considered risky. Thirdly, there are in-

dications that at least for some ESG aspects, including probably first and foremost the environmental aspect, the influence will also depend on the industry in which the company operates.

For the “conventional” investor, the most interesting question is not whether ESG criteria constitute useful information in themselves but whether they deliver findings that will supplement the established conventional information base. Some of the analyses looked at actually find positive evidence that they do.<sup>21</sup> From the investors’ point of view, this is probably the most important finding of the literature survey. Factoring sustainability ratings into investment decisions provides not only sustainability-related or ethical benefits but also an information advantage which can translate into higher financial returns.

### 3. Importance of oekom's sustainability ratings for assessing opportunities and risks of investing in corporate bonds

The sections below document the results of two new analyses which examine the relation between sustainability ratings and the opportunities and risks involved in investing in corporate bonds. The first study explores the question of whether conclusions can be drawn about companies' balance sheet structures, and thus about their solvency, from their performance in the sustainability rating. Their solvency is in turn a prerequisite for the servicing of obligations arising out of the issuing of corporate bonds, in

other words, the payment of interest and the repayment of the capital raised. The equity ratio of companies is examined here. The second analysis deals with the importance of sustainability ratings in explaining the pricing structure of bonds. Both analyses use oekom research's corporate ratings for evaluating companies' sustainability performance. They also include European companies and thus supplement the earlier studies introduced in section 2, which relate exclusively to US companies.

#### 3.1. Relation between sustainability rating and equity ratio

##### 3.1.1. The question under discussion

“British Pinocchio” is how the inhabitants of the south coast of the USA, who are still suffering from the impact of the accident on the Deepwater Horizon drilling rig in the Gulf of Mexico in 2010, refer to the British oil company BP. The accident has not only damaged the company's reputation but has also had massive financial consequences that impact on the investors who hold the company's shares and bonds. For example, in November 2012 BP reached an agreement in an initial lawsuit with the US authorities that it would pay a record fine of around 3.5 billion euros. However, the total losses for BP – and its investors – have not yet been determined. By the end of February 2013, the group had already sold a fifth of its business, whose total value had been estimated at USD 300 billion, in order to meet the costs of the environmental disaster. By that date, it had paid at least USD 38 billion under an out-of-court settlement to fishermen, hotel and restaurant operators and other victims of the oil spill. Observers estimated at the time that the compensation payments could rise to USD 50 billion, just under 40 % of the company's market value at that juncture.

Long before the accident, BP had already been scoring poorly in the oekom Corporate Rating precisely because of shortcomings relating to plant safety. The same is true of the Japanese company Tepco, the operator of the damaged nuclear power plants in Fukushima. Hypo Real Estate, which has now been nationalised, also achieved a poor sus-

tainability rating, due in particular to a lack of transparency, suggesting that there were overall shortcomings in the way it was being managed. Investors who based their investment decisions regarding these three companies on oekom research's sustainability ratings were spared sizeable financial losses. These are just three of numerous individual examples which show what benefits the use of sustainability ratings in capital investment can have. But are these just isolated anecdotal cases, or do they conceal a systematic approach which can be checked using a structured empirical analysis?

It has proven to be extremely difficult to answer this question based on individual negative results. Major disasters such as those in Seveso, Bhopal, the Gulf of Mexico or Fukushima – fortunately – happen too rarely to be able to base a reliable statistical analysis on them. Alternatively, smaller accidents can only be collated, clearly defined and weighted using an unavoidably arbitrary assessment. In the end, the problem with all event studies is that, in order to be able to explain the observed effect, e.g. the collapse in the share price, you have to determine and work out all other possible influencing factors which featured alongside the event in the period observed.

As a clearly definable alternative to single events, the insolvency of a company is another option available for resolving the “system question”. The obvious way of approaching the question of whether a poorer sustainability rating tends to go hand



in hand with a higher insolvency risk for the company concerned is to look at those companies which have actually been declared insolvent. However, this number of cases is too small for a statistical analysis as well. While the total number of insolvency cases is large, not very many of these fall within the universe of companies examined against ESG criteria. Added to this is the fact that companies at risk of insolvency are often purchased or merged before the threat of insolvency materialises.

Insolvency does not, however, strike a company overnight; rather, there are combinations of circumstances which may be associated with the risk of insolvency. One key criterion here is a high level of debt, which is synonymous with a low equity base. You would expect company CEOs with a long-term view to forego short-term profit maximisation through financial “leveraging” – the use of high levels of debt – in order to protect the company against avoidable threats to its survival. At the same

time, the emphasis on securing long-term success is likely to mean that greater-than-average efforts to achieve sustainability will be observed in such companies.

The equity ratio of companies forms the basis of the analyses below. It will be looked at firstly in relation to the overall score in the oekom Corporate Rating. As shown in Figure 7, this rating is subdivided at an initial level into two sections, the environmental rating and the social rating. The extent to which these are of differing empirical significance with regard to the question of the equity ratio will also be analysed below.

To sum up, the following thesis can be put forward in respect of an empirical study in this area: “The better the ESG performance and thus the sustainability rating of a company, the higher its equity ratio is likely to be.” This thesis can be applied not just to ESG performance overall but equally well to performance in the social and/or environmental section.

### **3.1.2. Survey design and statistical population**

For this analysis of the relation between equity and sustainability rating, the balance-sheet data of companies was linked to their sustainability ratings. The oekom research data described in section 1.3.2 was drawn on for the sustainability ratings. Balance-sheet data was available for major listed companies from across the globe. The equity ratio, which was calculated as shareholders’ equity expressed as a proportion of total assets, was of key importance here. Companies which had a negative equity ratio due to tax-saving schemes were removed from the database. Profitability was determined from operating profit expressed as a proportion of total assets. The size of a company was operationalised based on total assets, and we performed the country allocation ourselves. Countries and industries were included in the models by employing the device of so-called dummy variables, often used in regression models. For a German company, for example, the dummy variable “Germany” is set to one, and all other country dummies are set to zero. Special factors, such as e.g. tax legislation, which affect the companies of a particular country are accommodated in this way. oekom

Prime status is also included by means of a dummy variable: for a “Prime” company, the variable will be one, while for a “Not Prime” company, it will be zero.

The econometric estimates were created as a cross-sectional analysis with 2012 as the reference year. As balance-sheet data for 2013 is not yet fully available, 2012 is the most recent year for which there is complete data.

In order to allow for the fact that management needs time to manage the balance-sheet structure, the sustainability ratings from the previous year, i.e. from 2011, were used. At the same time, this helped to avoid technical statistical problems, which always have to be taken into account when reciprocal interference cannot be ruled out where factors occur concurrently. The other determining factors, such as e.g. the size of the company, were also taken from the previous year, for the same reason.

Complete data was available for 636 international companies in total. For the analysis in the European context, we were able to draw on data from 310 companies.

### **3.1.3. Results of the analysis**

#### ***Relation between oekom Prime status and equity ratio***

When you first take a direct look at the data, the initial impression that emerges is that those com-

panies which had been given a better rating score by oekom research do actually seem to differ from the other companies in terms of their equity ratio. However, while such a comparison provides initial



pointers, it clearly does not suffice in terms of the analysis of such a relation. The difference identified will not necessarily depend on sustainability performance and thus on the sustainability rating, but might also be caused by other factors which are noticeable only indirectly in sustainability characteristics.

In order to check this, econometric estimates are carried out. These have the advantage of being able to estimate the possible influence of various factors simultaneously. The results of the various econometric models unanimously point in the following direction: they support the thesis that a better sustainability performance by a company, and thus a better sustainability rating for that company, tends to go hand in hand with healthier balance-sheet structures, especially with a higher equity ratio.

The difference in the equity ratio between the companies rated “Prime” by oekom research and the other companies stands at 1.9 percentage points. This difference increases significantly when other influencing factors are taken into account. This is evident even in the econometric estimate of a very simple model. In this model, the equity ratio for 2012 is modelled by a specification that centres around whether a company holds or does not hold oekom Prime status. This is supplemented by the dummy variables for the country assignment. In this model, a significant advantage can be seen for Prime companies: on average, they have an equity ratio that is a good 4.6 percentage points higher. The error probability here is only 0.3 %. This is defined as the probability which can be calculated as being implicit within the model that a highly random constellation of data would simulate the effect found even though it did not exist in reality. According to this result, investors who concentrate on sustainable companies, while ignoring other investment criteria, will hold securities of companies with an above-average equity ratio in their portfolio.

The significance, as well as the magnitude, of this effect is retained when other parameters determining the equity ratio are taken into account. Both the size and the profitability of companies prove not to be relevant influencing factors in this regression. The estimated effect of the Prime status on the equity ratio now rises slightly to just under 5 % and the level of significance remains well above the 99 % threshold, i.e. the probability of error is just 0.1 %.

A correlation of a similar magnitude is also found if the database is restricted to European companies. Here, the model gives a Prime premium of 4.5 percentage points, with a probability of error of 2.7 %.

The greater homogeneity within Europe is reflected in the variables “company size” and “profitability”, which now both have a positive effect on the equity ratio.

#### ***Relation between rating score and equity ratio***

In the next stage of the analysis, Prime status was replaced as a sustainability criterion by the numerical rating score awarded by oekom research at the end of 2011. Due to the different evaluation criteria for the various sectors of the economy, this specification was modelled using dummy variables for sector affiliation. Again, it can be seen that by and large those companies with a better ESG performance tend to have a higher equity ratio. On average, one numerical grade goes hand in hand with a 5.8 % higher equity ratio; the probability of error stands at 0.1 %. Profitability also continues to have a significant positive effect, while company size is probably already represented in the model by means of the sector assignment and is no longer significant.

Where the model is based on European data only, sustainability performance plays an even greater role: the effect now comes out at approx. 8.1 % per numerical grade, with the level of significance remaining very high. In order to check the robustness of these results, further specifications were estimated. The effect is also found for earlier years and using different econometric estimation techniques. It can thus be stated that the original assumption has clearly been supported by the analyses: companies with an above-average sustainability performance do actually often have a healthier balance-sheet structure than the other companies.

#### ***Relation between environmental/ social rating and equity ratio***

Finally, an analysis was undertaken to find out whether the environmental or the social section of the oekom Corporate Rating are of greater significance (cf. Fig. 7). To this end, the above-mentioned specification for European companies was repeated, the sole difference being that the overall score was replaced once by its social component and once by its environmental component. In both cases, the same effect was produced, but it was much more pronounced for the environmental component. Here, the effect of a grade increase amounted to 6.4 %, and this at a level of significance of over 99 %. In the social section, by contrast, the effect was only 4.1 %. Of greater relevance here is the fact that the probability of error, at 12.7 %, casts doubt on the significance of the result. The question of the importance

of individual aspects of sustainability certainly merits more detailed consideration in further research. The results presented here, however, point to two things: firstly, the importance of environmental factors to the financial risk taken by an investor should not be ignored and secondly, the best results overall are produced using the comprehensive sustainability assessment, i.e. the total score in the oekom Corporate Rating.

#### ***Do you have to be able to afford being sustainable?***

The analyses documented in the preceding paragraphs have shown that a stable relation exists between the assessments of the sustainability rating and the equity ratio. In the discussion about this relation, the thesis is regularly advanced by sceptics that there would of course have to be a link here, since only companies that are economically successful can afford a comprehensive sustainability management system. In this way, a causality is defined which sees economic success as a precondition of good performance in the sustainability rating.

If the equity ratio and profitability analysed here are viewed as reliable indications of the economic success of companies, the sustainability management systems of the companies which are well placed in this respect should according to this thesis tend to be rated better than those of economically less successful companies. However, relevant econometric estimates provide no evidence for this assumption. A regression which models the change in the oekom rating score between 2011 and 2013 reveals an extremely low level of influence for the

equity ratio achieved in 2011: an improvement of ten percentage points would improve the rating score by one hundredth of a grade only. With a probability of error of 19 %, this correlation must in any case be seen as insignificant. The profitability for 2011 even exhibits the opposite effect, but with a probability of error of 25 %, it may also be assumed that the effect in reality is zero. Variants of this regression in which rates of change are employed, different points in time chosen or Prime status used instead of the rating also provide no indication that it is only economically more successful companies that are making greater efforts where sustainability management is concerned.

This is particularly remarkable, as the results outlined earlier demonstrate the converse effect – i.e. a link between sustainability rating and equity ratio. The results found contradict the thesis that sustainability is a “luxury” which only economically successful companies can afford. Conversely, they support the argument that it is more likely that systematic sustainability management that is geared to the challenges of the particular industry is the basis of this economic success.

#### ***Summary***

Overall, the conclusions that can be drawn from these studies are: investors who invest in corporate bonds on the basis of the oekom Prime status or an above-average sustainability rating will be selecting companies with balance-sheet structures that are on average healthier.

## **3.2. Influence of sustainability ratings on credit spreads**

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### ***3.2.1. The question under discussion***

The research group of Prof. Dr. Timo Busch (University of Hamburg) and Julian Kölbel (ETH Zurich) also studied the relevance of the oekom rating score for the evaluation of corporate bonds. They did not, however, start from the question of whether the probability of an insolvency can be better assessed with the aid of sustainability ratings, but focussed in their analyses on the credit spread.<sup>22</sup> In doing so, they put forward a two-stage hypothesis. Firstly, they wanted to find out whether a better sustainability rating is associated with lower borrowing costs, which is synonymous with a lower credit spread.

In the second stage, they explored the question of whether the intensity of the effect differs interna-

tionally due to cultural differences. The latter question goes beyond the subject matter of this study, which is why the comments below concentrate on the findings in relation to the question of whether and how strongly oekom research's sustainability rating can provide additional precision in assessing the appropriate credit spread compared with conventional financial analysis.

### 3.2.2. Survey design and statistical population

For their analysis, the researchers concentrated, as mentioned above, on the credit spread, which is of particular interest to actively trading investors, and drew on data on corporate bonds from across the globe. They examined bonds issued by companies which firstly have been awarded a rating score by oekom research and secondly have their shares listed on a stock exchange. Last but not least, sufficient information about the particular bond had to be available. Only investment-grade bonds were considered, i.e. bonds issued by particularly trustworthy companies and by issuers with a moderate to very good sustainability rating.

We have documented below their results for the bonds issued by a total of 156 *European* companies, so that, to contrast this study with the US-focussed studies documented in section 2, we can also make statements about this market. For their econometric estimates, Busch and Kölbel used quarterly data from the period from 2007 to 2012. Since the study covers both several companies and several points in time, the data involved is what is known as “panel data”. Panel data makes it possible to make particularly valid estimates of economic correlations.

The credit spreads are basically distributed asymmetrically. While the credit spread for one half of the companies lies between 0 and 100 basis points, for the other half the credit spread is not restricted to the same size of interval, i.e. from 100 to 200 basis points. In fact, 400 basis points are not unusual for a “BBB” bond; it is even known for credit spreads of more than 1,000 basis points to occur. Therefore, in place of the credit spread itself, its natural logarithm was calculated. This converts absolute differences into relative differences. This is useful in the case of asymmetrically distributed credit spreads, as for companies with very good credit ratings (with a spread of around 50 basis points) an absolute increase of e.g.

20 basis points means a relative increase of 40 %, whereas for “BBB” bonds with a spread of e.g. 400 basis points, on the other hand, it means a relative increase of just 5 %. The conversion to relative differences which is achieved using the logarithm improves the statistical characteristics of the regression.

To model the credit spread, Busch and Kölbel initially resorted to a structure comprising conventional influencing variables: An initial data packet of business performance indicators was designed to help gauge the creditworthiness of the issuing company. It consists of the size of the company (measured by market capitalisation), its debt-equity ratio, capital intensity and return on total assets. A second packet is composed of characteristics of the particular bond involved. These are the notional volume, the residual maturity and the conventional rating as provided by Standard & Poor’s. Here, the highest score of “AAA” is equated to a “1”, “AA” to a “2”, “A” to a “3” and “BBB” to a “4”. The investment-grade segment, to which the study restricts itself, ends at “BBB”. Most companies are to be found in the “BBB” category, followed by “A”. Thirdly, as is customary with panel data, “fixed effects” were used for each quarter, for each industry and for each country. This prevents the risk that influencing factors exist for a portion of the dataset, which without “fixed effects” could lead to skewed results. Examples of this would include sudden jolts to the economy or changes in the law.

In a first step, Busch and Kölbel subjected this explanatory structure for the credit spread to a panel regression *excluding* the oekom rating. In this way, they first made certain that the influencing variables they were using were each actually exerting the influence that they had theoretically been expected to exert (cf. Table 2).

Characteristics of the bonds		Characteristics of the issuings companies	
credit rating	+	market capitalisation	–
notional volume	–	debt-equity ratio	(+)
residual maturity	+	capital intensity	+
		return on total assets	–

**Tab. 2:** Direction of influencing factors on credit spreads; all influencing factors, with the exception of the factor in brackets, are highly significant; “+” = positive correlation; “–” = negative correlation; source: own research (2014)

To illustrate how these results should be understood, let us take return on total assets as an example. The higher this ratio, the more profitably a company is operating and the more unlikely an insolvency or payment default may be deemed. The negative influence is therefore convincing: a company's borrowing costs, measured as credit spread, fall as profitability rises. The correlation for the "credit rating" indicator turns out to be similarly in line with expectations. Since in this case the most creditworthy companies have been given a "1" and the most at-risk a "4",

### **3.2.3. Results of the analysis**

It can firstly be stated that adding the sustainability rating score to the model does not alter the previous results substantially. The estimated parameters retain not only their direction but even their magnitude and their significance. The same applies in particular to the credit rating. Here, it now transpires that with each grade by which the credit rating deteriorates, the credit spread rises by 51 %. In this stable context, the oekom rating attains a statistically verifiable influence that is significant even at the 99 % confidence level: companies with an above-average sustainability performance have a lower credit spread. In the pricing process on the bond markets, the players evidently proceed on the assumption that a particularly sustainable business strategy goes hand in hand with a lower insolvency risk (cf. also section 3.1.). Neglect of sustainability aspects is evidently interpreted as aggravating risk.

The result identified can be illustrated as follows: For two otherwise completely identical corporate bonds from different issuers who differ only in terms of their oekom rating, it can be expected that the issuer with the better oekom score will have a lower credit spread. As a general rule, for an improvement of one grade, the spread decreases by at least 10 %. In the 300-basis-point range, this means a reduction of a good 30 basis points. Particularly in the current low-interest phase, this is a remarkable figure, especially since – depending above all on the length of the remaining time to maturity – the credit spread is reflected many times over in the price of the bond.

To optimise their risk position, investors can thus choose whether, rather than bond A, they prefer an alternative bond B which though having a better sustainability rating has a somewhat poorer credit rating – both should yield approximately the same return. An aspect that must be regarded as even more important to investors, however, is that if they take the sustainability rating into account, they can iden-

tify temporary incorrect valuations of a bond more accurately and can in this way achieve a better investment performance.

In a second step, the rating score awarded by oekom research was added to the model. In each case, the score awarded at the end of the preceding quarter was used. This approach prevents the distortions which can arise if e.g. an environmental disaster triggered by the company concerned influences the rating and the credit spread simultaneously.

tify temporary incorrect valuations of a bond more accurately and can in this way achieve a better investment performance.

In order to check the robustness of the results, Busch and Kölbel carried out a number of similar regressions for different time periods and geographic regions. For example, annual data was used in place of quarterly data. As well as bonds from Europe, bonds from other parts of the world were also examined, separately and jointly. The basic finding, i.e. the validity of the relation between sustainability rating and credit spread, was retained in all specifications. The relation did, however, show itself to be most pronounced for European bonds.

What conclusions can now be drawn from these results? Firstly, sustainability ratings provide not only – as described in the studies documented in section 2 – data for the evaluation of corporate bonds relevant to the US market, but also data for the evaluation of European corporate bonds. The explanatory contribution of the oekom Corporate Rating cannot be replaced by other factors; it has an effect in addition to all other influencing factors, including in particular conventional financial ratings. It thus not only makes it possible to improve the sustainability quality of a portfolio, but also improves the financial return of a portfolio of corporate bonds.

It seems remarkable that this effect has not only significance but also a relevant order of magnitude, even though the analysis was conducted solely on the sounder portion of the corporate bond universe. Neither non-investment-grade bonds nor those from issuers whose sustainability performance was so weak that they were given only a very poor rating were included. It can be assumed that, if the entire universe had been included, the results would have been even clearer. Finally, it should also be noted that this explanatory contribution is based on a more fundamental approach than the US studies

which were presented in section 2, as in this case the result was achieved with an overall rating score and not with an individual parameter such as e.g. pollutant emissions.

From the investors' point of view, the key finding is that when investing in European corporate bonds, it is definitely worth taking sustainability ratings systematically into account. The assessment of what price might be appropriate for a specific

bond increases significantly in precision if ESG criteria are integrated into the pricing model. In this way, bond prices that are seemingly attractive can be better differentiated from prices that are actually favourable, while bonds that are too expensive can be avoided or sold. The question of whether individual ESG criteria or the overall score should be integrated into the pricing model is a question of further optimisation of the pricing model.

## 4. Summary: Are sustainability ratings useful in the selection of corporate bonds?

On the basis of these results, the opening question of the study as to whether sustainability ratings are useful in the selection of corporate bonds can be answered with a resounding “Yes!”. Sustainability ratings impact positively on decisions about investing in corporate bonds in two ways. Firstly, they provide important pointers to the risks of a partial or total loss of a corporate bond which might arise if the issuing company gets into economic difficulties. Secondly, the systematic integration of ESG criteria into the selection of corporate bonds makes it possible to make a more comprehensive assessment of the risk and thus to improve the financial return of a portfolio invested in corporate bonds.

The analyses show clearly that a better sustainability performance and thus a better sustainability rating go hand in hand with a higher equity ratio. Companies with oekom Prime status have a higher equity ratio than companies whose sustainability performance fails to meet the requirements for Prime status. The portfolios of investors who use oekom Prime status as a basis for their investment decisions will therefore contain securities from companies with an above-average equity ratio. A high equity ratio can be interpreted here as an indicator of the ability of companies to meet their obligations arising out of the issuance of corporate bonds.

Among companies and investors, some still share the view that one “has to be able to afford being sustainable”, that good sustainability management is therefore possible only when a company is economically successful. This view is countered by the empirical findings, which give a clear indication that the actual sequence is “first sustainable, then successful” and not vice versa. Plausibility checks also underpin these results. Only those who manage energy and raw materials efficiently, treat their own employees and those of their suppliers fairly and offer products and services that are tailored to changing consumer needs in the market can also be economically successful. Environmental and social commitment are thus not the product of economic success, but rather its root cause.

At the same time, sustainability ratings provide important information for explaining and evaluating credit spreads. Here, one can see that companies with an above-average sustainability rating

have a lower credit spread and are therefore considered by investors to be less risky. The assessment of an appropriate price and/or risk premium for a corporate bond will increase significantly in precision if sustainability aspects are integrated into the pricing model. The oekom Corporate Ratings contribute to the explanation of such aspects in addition to all other influencing factors, including in particular conventional financial ratings. For the investor, this means that when investing in corporate bonds, taking sustainability ratings systematically into account is worthwhile.

These are on the whole very positive findings as regards the benefits of sustainability ratings for investors. Taken to their logical conclusion, they mean no more and no less than that institutional investors and asset managers who invest in corporate bonds would be well advised to take sustainability ratings systematically into account in their capital investments. Investors who have a fiduciary duty to their members or customers could, in the light of these positive effects, even be obliged to do so.

Specifically, investors can rely on two mechanisms which enable the information advantage from the sustainability ratings to improve the risk-return profile. The first mechanism derives from the fact that companies with a better sustainability performance have a lower insolvency risk. It can therefore be expected that a portfolio structured on the basis of sustainability criteria will in the long term be less affected by insolvencies than a conventional portfolio and will therefore, by avoiding loss events, achieve a better performance. The other mechanism exploits the dependence of the credit spread on the sustainability rating. An example: a bond issued by a company with a very good sustainability performance may have a credit spread seen as appropriate by a conventional investor, while the sustainable investor will recognise that this credit spread does not factor in the sustainability performance and is therefore too high. Sooner or later, the market should correct this and the credit spread will fall, which equates to a rising price. Sustainable investors can achieve such price gains and prevent corresponding price losses.



## ***Need for further research***

At the same time, a number of questions remain unanswered. For example, further research is needed in order to better understand which of the mechanisms will ensure, and to what extent, that companies' sustainability successes will pay off for the investor. This can be seen clearly from the unclarified connection between two research aspects examined repeatedly in this study: Companies which are managed particularly sustainably exhibit a lower insolvency risk and at the same time receive a "bonus" on the bond market in the shape of a lower credit spread. But is this bonus at the appropriate level, i.e. does it reflect correctly the lower risk for the investor which is due to the above-average ESG performance of the company? On the one hand, in view of the minority position in which sustainable investors still find themselves on the capital market, the appropriate margin may be far from being fully exploited. On the other hand, it can also not be ruled out that the sustainability-related gain has already caused investors to drive credit spreads lower than would be appropriate from a purely financial-theory-based viewpoint.

Such questions as these are in no way of a "merely" epistemological nature, but also have operational management implications: Are investors best advised to use specific sustainability aspects, yet to be identified, depending on which mechanisms play the key role with respect to the risk-reducing function of sustainability – for example, social or environmental aspects might, from the point of view of investment risk, outshine all other aspects – or does the overall sustainability picture lose focus

with each missing element, i.e. indicator, so that it is actually investors using the comprehensive overall rating who will achieve the best investment results? The study provides initial pointers toward answering this question.

At the same time, it must not be forgotten that any additional finding in this field will only ever be a snapshot, as the competitive situation in which companies in a market economy find themselves and the conditions on the financial markets mean that today's competitive advantage may tomorrow be simply taken for granted as a prerequisite for survival. The sustainability rating, too, is not a static system, rather it is constantly developing in terms of themes and indicators, as well as rating methodologies. This means that nowadays, corporate bonds issued by companies with an above-average ESG performance reduce investment risk and make trading gains possible. The more the idea of sustainability penetrates the mainstream of investors, the more clearly ESG performance will be reflected in pricing and conditions will be reversed: investors would then have to take sustainability aspects into account, if only in order to avoid systematic investment errors. For research this means that any relation found will regularly have to be reviewed to ascertain whether, and if so to what extent, it (still) exists. At the same time, it will be important to look carefully for possible new relations. In this respect, oekom research sees its corporate bonds study as the introduction to rather than the conclusion of its involvement with this issue.



## Annex: Overview of rating scores

### Rating scores of conventional rating agencies

Moody's	Standard & Poor's	Fitch	Credit rating
Very good bonds			
Aaa	AAA	AAA	Top quality, lowest default risk
Aa1 Aa2 Aa3	AA+ AA AA–	AA+ AA AA–	High quality, but somewhat greater risk than the leading group
Good bonds			
A1 A2 A3	A+ A A–	A+ A A–	Good quality, many good investment attributes, but also elements which may impact negatively if there are changes in economic development
Baa1 Baa2 Baa3	BBB+ BBB BBB–	BBB+ BBB BBB–	Medium quality, but lack protection against the effects of changes in economic development
Speculative bonds			
Ba1 Ba2 Ba3	BB+ BB BB–	BB+ BB BB–	Speculative investment, only moderate cover for interest payments and capital repayments
B1 B2 B3	B+ B B–	B+ B B–	Very speculative, generally lacking the characteristics of a desirable investment, long-term interest payment prospects low
Junk bonds (high-interest-bearing, highly speculative)			
Caa1 Caa2 Caa3 Ca	CCC+ CCC CCC– CC C	CCC	Very speculative, generally lacking the characteristics of a desirable investment, long-term interest payment prospects low
C	D	DDD DD D	Certain loan default, (almost) bankrupt

Tab. 3: Rating scores of conventional rating agencies; source: Wikipedia (2014)<sup>23</sup>

### oekom research's rating scores

oekom research evaluates the sustainability performance of companies on a twelve-tier rating scale from D– to A+. For individual analyses, the underlying

numerical score is used. Here, the scale ranges from 1 to 4 (highest score).

A+	The company shows very good to excellent performance.	C+	The company shows medium performance.
A		C	
A–		C–	
B+	The company shows good performance.	D+	The company shows poor to very poor performance
B		D	
B–		D–	

Tab. 4: oekom research's rating scores; source: own research (2014)

## Authors

### ***oekom research***

oekom research AG is one of the world's leading rating agencies. Since 1993, oekom research has actively helped to shape the market for sustainable investments. Our research universe comprises the world's major companies and countries. On this basis we offer a comprehensive package of research services for the integration of ethical, social and environmental aspects in the investment management of our clients. Our client base comprises more than 100 asset managers and institutional clients from a total of ten countries. We provide research for assets totalling more than 600 billion euros.

Key to the success of oekom research AG is the credibility of our analyses. In order to guarantee this, there are in our view two particular aspects that are of crucial importance: independence — both at agency and at analyst level — and a sophisticated quality management system. In both these areas, oekom research has followed a consistent path since its founding in 1993 and has put appropriate standards in place on various levels. For example, we do not permit any companies which we evaluate, nor any financial market players, to be shareholders in oekom research. We also con-

sciously refrain from providing any form of consultancy to the companies which we evaluate.

With regard to the quality of our rating processes, the market has for years acknowledged our leading position. Nonetheless, over the last year our rating system has undergone a detailed audit by external auditors of its compliance with the internationally recognised ARISTA® quality standard of the Association for Responsible Investment Services (ARISE) ([www.aristastandard.org](http://www.aristastandard.org)).



Our interdisciplinary team currently numbers 64 persons, of whom 49 are analysts, including six analysts at GES, our strategic marketing and research partner. The continuous training and professional development of our analysts is very important to us, as it enables us to meet the various demands of our clients and other stakeholders and to provide a high-quality service. Besides this subject-matter expertise, the global market increasingly requires a high degree of internationality: between them, our staff currently speak approximately 20 languages.

### ***VIF – Investing responsibly in the financial markets / Dr. Stefan Klotz***

Dr. Stefan Klotz, through the company he founded, “VIF – Verantwortlich Investieren an den Finanzmärkten [Investing responsibly in the financial markets]”, offers solutions and services relating to investment strategy and portfolio management, with a focus on sustainability in capital investment. His expertise extends to the operational integration of sustainability criteria into investment processes and the development of transparent methods for simplifying and improving, on a quantitative basis, the selection of equities and bonds, as well as portfolio structuring.

After completing a banking traineeship and studying economics, Dr. Stefan Klotz carried out research

at the University of Constance, the Centre for European Economic Research and the Centre of Finance and Econometrics (CoFE). Following the award of his doctorate, in 2001 he took up the post of chief economist and investment strategist with Bankhaus Maffei in Munich (later DelbrückBethmannMaffei, Frankfurt). In 2006 he moved to Bankhaus von der Heydt, where he was involved in expanding the areas of investment strategy, portfolio management and asset management, including a range of sustainable investment products. He is a member of “Forum Nachhaltige Geldanlage [Sustainable Investment Forum]”.

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