The relationship between ESG ratings and the yield spread of bonds on the European markets

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Giancarlo Giudici - Department of Management Engineering of Politecnico di Milano
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EXECUTIVE SUMMARY

In this paper, we analyse the market performance of 536 bonds listed on European exchanges between January 2014 and December 2018 (209 with investment grade rating and 327 speculative grade), based on the issuer’s ESG (Environmental, Social & Governance) rating constructed according to the Materiality Map™ approach proposed by the Sustainability Accounting Standards Board (SASB) Foundation. A simple comparison of the total returns generated in the period does not show significant differences for the investment grade bonds, and a good ESG score even seems to be penalising for high-yield bonds. In point of fact, by controlling for the duration and other factors that impact upon the yields, a propensity score matching method highlights an advantage of 110 bps in the total return for the period for the investment grade bonds placed by companies with a high ESG rating, and 466 bps for speculative grade, mainly with a maturity in more recent years. A second level analysis shows that the effect is determined exclusively by good practices in Governance, while the Environmental and Social factors seem rather to contribute in the opposing sense. The result is interpreted as the gradual allocation of a ‘negative spread’ to the bonds issued by companies with a good ESG score, where the market seems to recognise a lower risk premium and therefore to generate an appreciation of the securities. The result is confirmed by the analysis of the average Z-spread of the bonds. The assumption is that the cost of debt of the more responsible issuers in an ESG context (especially G) is lower thanks to the lower perceived insolvency risk.
INTRODUCTION

In the current world of asset management, on both a national and international scale, it is difficult to find a topic that attracts as much attention as sustainability. The integration of good practices in terms of Environmental, Social and Governance (ESG) factors continues to be a priority on the agendas of entrepreneurs and investors. If until very recently this translated as favouring managerial practices, not only oriented towards profit creation, but also to the focus on the environment, eco-efficiency, safety and the welfare of workers, transparency, ethics and the company’s general impact on all its stakeholders, today the ESG paradigm represents, for all intents and purposes, a compass capable of discriminating long-term sustainability, and therefore competitive advantage. According to a recent survey by KPMG (“ESG, risk, and return - A board’s-eye view”), 47% of the world’s corporate managers think companies that are mindful of ESG criteria obtain a competitive advantage over competitors. In this sense, 52% meet pressure from customers, employees and other stakeholders. Companies that are mindful of ESG factors manage their resources by respecting environmental sustainability criteria whilst investing in innovation for growth. They believe in corporate social responsibility whilst attracting and cultivating talent, and seek new strategies for reducing business risk whilst opening a communication channel with all stakeholders.

According to recent estimates by the Global Sustainable Investment Alliance¹, worldwide, financial assets managed according to sustainability criteria have exceeded the threshold of $30.7 trillion, or 38% of the total volumes. They have grown 34% in the past two years. Europe is at the top of the leader board with $14,000 billion, followed by the USA ($12,000 billion and growing fast) and Japan ($2,000 billion). The forecasts indicate sustained future growth. Morningstar has identified 2,800 funds that can

¹ See www.gsi-alliance.org.
be labelled as ‘socially responsible’ or ‘sustainable’. The latest European Asset Allocation Survey by Mercer\[^2\] reveals that 40% of managers integrate ESG criteria in portfolio strategies (a percentage which rises to 46% in Italy). The determining factors pushing in this direction are regulation (34% of cases), searching for better yields (25%), and managers’ reputations (18%). In Italy, research led by the Italian Sustainable Investment Forum\[^3\] indicates that 92% of savers want to invest whilst paying attention to sustainability.

There is no well-defined taxonomy for investment criteria that are compatible with the ESG paradigm. However, it is possible to identify some common strategies (Bernow et al., 2017; Sandrin, 2018):

**SCREENING**

Consists of the *tout court* exclusion of business areas that are considered unethical (weapons, tobacco, gambling) or not eco-compatible from the asset allocation. This ‘passive’ approach can be easily implemented but does not look at the differences between individual companies.

**ESG INTEGRATION**

In the stock picking stage, consists of actively giving the individual companies an ESG rating based on parameters that can be observed or estimated. These factors are then considered alongside traditional ones adopted by economic and financial analysts, an approach that clearly requires the collection and analysis of large amounts of data, and therefore a significant investment in terms of time and expertise.

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\[^3\] See www.finanzasostenibile.it.
BEST-IN-CLASS
Consists of the selection, within all possible business sectors, of the companies that perform better with respect to ESG criteria.

FOCALIZATION
Centres on an individual investment issue, which could be eco-efficiency, sourcing, governance, or the exploitation of workers.

ENGAGEMENT
The market’s sensitivity to ESG subjects has led institutional investors to be more and more active, not only when analysing investment opportunities, but also ex post through moral suasion, including open criticism in appropriate forums, such as shareholders’ meetings, in order to convince the funded companies to improve.
The diffusion of ESG practices continues to be driven strongly by policymakers. An important step was the 2015 publication of the United Nations Sustainable Development Goals (SDGs), a list of 17 objectives and 169 specific targets to be reached by 2030. The goals are environmental, social and economic priorities on a worldwide scale, and may form a reference point, not only for policymakers, but for managers and investors in their decisions.

The European Commission appointed a committee (High-Level Expert Group on Sustainable Finance) in order to identify guidelines that might be applied to individual countries by supervisory banking authorities. In March 2018, a plan was distributed with 10 concrete actions referring to both the communication and standardisation of good practices and regulatory requirements. Only a few weeks ago, the EU Parliament, Council and Commission reached an agreement towards a reform that would require funds and managers to specify the environmental and social impacts of their chosen financial instruments.

In Italy, a law came into force in 2017 that made CONSOB responsible for monitoring the diffusion of non-financial information such as social reports and ESG information. The related regulation was published in January 2018 and requires that large listed companies publish a ‘non-financial declaration’ (NFD), including environmental and social aspects, those pertaining to personnel, human rights, and the active and passive fight against corruption. The IORP2 Directive on pension funds has been in force since 1 February 2019. As of then, funds must examine, in addition to the traditional risk factors, “Environmental, Social and Governance factors connected with the investment portfolio and related management”, informing customers adequately of the result of the analyses. Another surge will surely arise from the upcoming entry into force of the EU Directive SHRD II, which continues to encourage the investors’ conscious long-term commitment in the governance of listed companies.

In 2018, the School of Management at the Politecnico di Milano and Banor SIM presented unprecedented research on the relationship between ESG ratings and market performance for the most important equity securities listed on the European stock exchanges. Analysis of the market yields showed that the securities belonging to the quartile of companies with a higher ESG rating perform better and show a growth in increased revenues and improved margins. Additionally, it was shown how integrat-
ing ESG indicators and the economic/financial considerations traditionally used by analysts in a value-based approach was the best strategy for creating efficient portfolios.

This second study, on the other hand, seeks to focus on bonds, which still absorb a greater investment value than equities. Specifically, the bonds listed and placed on the European markets by large and medium companies, with listed and unlisted risk capital, are considered. By excluding convertible bonds and bonds placed by banks and real estate companies from the analysis, 536 bonds listed between January 2014 and December 2018 are analysed.

The approach adopted is the one used by Khan et al. (2016) for the US market, namely to define a series of relevant indicators for ESG purposes (materiality principle) for every economic macro-sector, achieving a standardised measurement of the ESG rating of every company. The issuing companies are then divided into two groups based on their high or low ESG ‘rating’. The market performance is measured in terms of total returns. By checking for the financial rating and the duration of the bonds using a matching algorithm, it is shown that the bonds of companies with a high ESG rating offered a ‘price premium’ compared to those of companies with a low ESG rating, in both investment grade and high-yield categories, with a lower funding cost. Disaggregating the various indicators shows how the relevant part of the premium is explained by the Governance factor. At present, the Environmental and Social factors seem somewhat neglected and are perhaps perceived as less relevant in the eyes of investors interested in reducing short-term insolvency risk rather than long-term sustainability and competitive advantage, factors which are more easily considered by equity investors.

One possible interpretation of the results, corroborated by the Z-spread analysis, is to imagine that the market in recent years has begun to offer a ‘discount’ on the cost of capital required of companies that follow ESG good practices, thus determining a greater appreciation of their bonds.
The adoption of behaviours in line with corporate social responsibility has become a fundamental factor not only for defining a company’s end goals (the maximisation of value for all stakeholders and not only for shareholders (Clarkson, 1995), but also for the long-term sustainability of competitive advantage. This constitutes, therefore, a key element for generating value for shareholders (Porter, 1985; Barney, 1991). Introducing projects in business management with a positive impact on the environment or social relationships simply for the sake of it cannot be considered the objective, but rather the strategic tool for identifying the relationship between profitability and ESG practices in order to provide the information necessary to optimise the business model (Eccles and Serafeim, 2013).

An important thread in the literature, to which this paper intends to contribute, analyses the relationship between ESG ratings and access to the capital market, examining the impact of corporate strategies on the pricing of bonds placed on the market. More transparency in corporate management, aimed at highlighting the ‘social’ results, and commitment to reducing opportunistic behaviours towards all stakeholders could reduce the cost of equity capital (El Ghoul et al., 2011; Sassen et al., 2016), the cost of debt capital (Goss and Roberts, 2011; Jiraporn et al., 2014) and therefore capital rationing (Cheng et al., 2014), in addition to more effectively attracting the attention of the market and financial analysts (Dhaliwal et al., 2011; Ioannou and Serafeim, 2015). Amel-Zadeh and Serafeim (2018) report the results of a survey carried out on investment fund managers, which shows that the ESG parameters are used to consider the risk of different bonds depending on any ‘negative’ behaviours that could generate unexpected liabilities.

A considerable amount of academic research and sector reports concentrate on the relationship between ESG investing and the market performances of equity (see for example Waddock and Graves, 1997; Eccles et al., 2014; Dimson et al., 2015; Auer and Schuhmacher, 2016; Khan et al., 2016), but much less material is available with regard to the effects
on the bond markets. Arjaliès and Bansal (2018) suggest that one of the reasons behind this situation is analysts’ difficulty in integrating ESG factors quantitatively into the bond valuation models, as opposed to equity analysts who have the opportunity of integrating them more “creatively” into the scenario and prospective valuation analyses.

Despite this, fixed income constitutes a significant part of the portfolios managed by institutional investors, and in recent years, this has provided a positive driver for the growth of research activities also in this area. In the recent quarterly report by the Bank for International Settlements at the end of 2018, bonds were in circulation in the world for $110,000 billion (of which around half issued by sovereign states), while the capitalisation of international stock markets amounted to $70,000 billion.

In the bond market, investors are particularly interested in the relationship between ESG and credit risk, or how Environmental, Social and Governance factors can influence creditworthiness (Inderst and Stewart, 2018). Furthermore, investors’ interests and related research drivers vary based on the type of instrument and issuer, distinguishing between corporate and sovereign bonds. As regards corporate bonds, various studies show how a high ESG rating can reduce the cost of debt. In fact, high ratings for the Environmental category lead to a rating improvement (Bauer and Hann, 2010), and the companies that are more mindful of corporate and social responsibility issues are rewarded with lower yield spreads on their bonds (Oikonomou et al., 2014). Additionally, positive ESG ratings are associated with a reduction in risk with opposite effects in the case of ESG ratings with a negative outlook (Feng and Chen, 2015). Similar results have been identified in the market during periods of financial crisis, when the bonds issued by companies strongly committed to corporate social responsibility benefited from lower spreads than the bonds issued by companies not so active in that sense (Amiraslani et al., 2017).

Lastly, some studies analyse the application of sustainable investment principles and ESG issues on the performance of bond portfolios. In particular, Hoepner and Nilsson (2017) show how it was possible to

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4 Source: World Federation of Exchanges.
construct a portfolio with US corporate bonds without Environmental, Social or Governance controversies, achieving better performances than the market benchmark. Similarly, a study by Barclays (2016) shows how the financial performances of bond portfolios improve as the G category rating increases and that very positive ratings in Environmental and Social (E and S) terms are not harmful to yields. Finally, the research shows how good Governance ratings reduce downgrades by ratings agencies.

Also in terms of the relationship with risk factors, another study published by Hermes Investment Management (2017) uses the QESG score, the firm’s own reference system, to measure the risks from an ESG point of view in order to price credit default swaps referring to a diversified basket of companies. The study shows that the companies with the lowest QESG score tend to have a higher spread on the CDS and a wider distribution of the average annual spread on the CDS. In addition to this, the research shows how the credit ratings do not accurately reflect the risks in Environmental, Social and Governance terms, thus not constituting a valid approximation.

On the other hand, considering the bonds issued by sovereign states, the nations with better ESG ratings tend to have a lower default risk (Gunther et al., 2017). Specifically, the robustness of institutions, political stability and low corruption, or the respective transpositions of Governance factors to government bodies, seem to be the most significant dimensions in terms of the financial performance of the bonds, as opposed to the Environmental dimension, which, in this sense, is not particularly relevant.
METHODOLOGY AND ANALYSIS SAMPLE

The study focuses on the bonds listed in Europe, placed by companies with listed and unlisted equity capital. In particular, the selection was centred around bonds included in two ETFs by State Street Global Advisors® between 2014 and 2018. This is a period of time in which attention towards ESG criteria during the selection of financial portfolios became progressively common, and –as shown by research conducted one year ago– has generated positive differential yields.

When selecting the bonds to include in the analysis sample, financial, real estate and SPV (Special Purpose Vehicle) companies were excluded, as well as companies for which it was not possible to recover data in order to obtain an ESG rating. Convertible bonds were also excluded.

The final sample is composed of 536 bonds issued by 146 companies, of which 209 with an investment grade rating, i.e. with a Standard & Poor’s rating greater than or equal to BBB- (or equivalent) and 327 with a speculative grade rating (high yield), for which the market prices (source: Datastream), financial statements relating to the issuer (source: Worldscope) and the relevant ESG parameters (source: Thomson Eikon ESG and manual collection through research in the placement prospectuses and sustainability reports of the issuers) were collected.

The first step consists of calculating the ESG rating. The approach followed is the one used by Khan et al. (2016). The weighting attributed to each ESG indicator varies from industry to industry, in order to account for the specificity of each business area (materiality principle). By way of example, factors such as data security and the privacy of customers are much more important in IT and telecommunications activities than in manufacturing, an area where aspects linked to pollution and impact on the environment count for much more than in the world of services and finance. The relative importance of the indicators is obtained from the Materiality Map™ built by the Sustainability Accounting Standards

5 SPDR Bloomberg Barclays Euro High Yield Bd UCITS ETF and SPDR Bloomberg Barclays Euro Corporate Bond UCITS ETF.
Board (SASB) Foundation. This matrix contains ten business areas in the columns, and in the rows, thirty groups of indicators classified in the Environmental, Social Capital, Human Capital, Business Model & Innovation, and Leadership & Governance categories. By crossing these two axes, the map identifies if a certain indicator is very, averagely or not important in that industry. Each of the 424 indicators available were associated with one of the 30 classes of the SASB matrix variables in order to obtain the weighting of each one on the basis of the different business areas. In some cases, it was possible to attribute a two-way correspondence between the SASB indices and the Thomson Eikon ESG indices. In others, it was sufficient to associate the indices with one of the 30 macro-areas. This stage was conducted alongside Banor SIM analysts.

Then, the ratings were standardised and aggregated into ratings per cornerstone (namely E, S and G); lastly, for every year from 2014 to 2018, a final ESG rating was calculated for every issuing company as the weighted average of E, S and G (according to weightings recommended by SASB). The methodology is summarised in Figure 1.

The issuers were divided into two groups of equal numbers, one formed of those with an ESG rating above the median, one of those with an ESG rating below the median.

The yield was then calculated for bonds placed by issuers with a high ESG rating and for bonds placed by issuers with a low ESG rating. In particular, the monthly Total Return Index (TRI) was calculated, which takes into account the yield generated by both the coupons paid and any capital losses or gains. The median value for each group was used as a reference.

It was considered necessary to conduct two separate analyses, for investment grade bonds and for high-yield bonds.

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6 See: https://www.sasb.org/materiality/sasb-materiality-map/.
Research methodology

**SELECTION OF THE LISTED BONDS**

1. **Period:** 2014-2018
2. **Bonds included in the State Street Global Advisors European corporate ETF bonds**
3. **Exclusion of financial, real estate and SPV companies and convertible bonds**
4. **Final sample:** 536 bonds
5. **Collection of the issuer’s accounting data and the bond prices**
   (Source: Datastream)

**CALCULATION OF THE ESG RATING FOR THE ISSUER**

1. **Selection of the ESG indicators** (Source: Thomson Eikon ESG)
2. **Application of the SASB Materiality Map™ matrix**
3. **Standardisation of the ratings and aggregation in the three E, S and G “pillars”**
4. **Definition of the ESG final weighted average, year-on-year**
5. **Panel with the Banor SIM analysts**

**CALCULATION OF THE YIELDS**

1. **Division of the investment grade and speculative grade samples into two portfolios: bonds from issuers with high ESG rating and issuers with low ESG rating**
2. **Calculation of the performance of the high ESG vs. low ESG portfolios**
   (Total Return Index)
3. **Application of the Propensity Score Matching model and calculation of the related performance**
RESULTS OF THE ANALYSIS: INVESTMENT GRADE BONDS

Table 1 describes the cumulative performance of the two portfolios (high ESG rating vs. low ESG rating) for investment grade bonds. It can be noted that the cumulative yield in the period is very similar (+8.2% compared to +7.8%). As Figure 2 shows, the bonds issued by companies with a high ESG rating seem to perform better in 2015 and worse in 2014 and 2017, whereas the difference is insignificant in other years.

<table>
<thead>
<tr>
<th>ESG RATING</th>
<th>CUMULATIVE PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>High vs. Low (bps)</td>
</tr>
</tbody>
</table>

Table 1. Market performance of the investment grade bonds from the overall sample, based on issuer ESG rating. Sample: 209 bonds.

Figure 2. Cumulative yield of the investment grade bonds from the overall sample, based on ESG rating (1/1/2014=100).
The simple comparison between the two samples does not, however, consider other fundamental factors that impact the bonds’ yields. We make particular reference to maturity (generally bonds with long maturities should offer greater yields), the presence of any guarantees (which, on the other hand, make it possible to reduce the cost of capital), and the different insolvency risk (though these are bonds with investment grade ratings, we have different risk levels).

It was therefore essential to use a propensity score matching method to identify two comparable samples. In practice, for each of the bonds belonging to the ‘high ESG’ group, a bond was identified that was comparable in duration, rating and other contractual clauses (presence of guarantees, call/put options, seniority). For some bonds, it was impossible to find a sufficiently ‘similar’ bond with an opposite ESG rating. For the purposes of the matching analysis, the sample is then reduced to 372 bonds issued by 107 companies, of which 146 investment grade and 226 high yield (naturally, half with a high ESG rating and the other half with a low rating).

Table 2 and Figure 3 describe the results of this second analysis.

<table>
<thead>
<tr>
<th>ESG RATING</th>
<th>CUMULATIVE PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>+7.7%</td>
</tr>
<tr>
<td>High</td>
<td>+8.8%</td>
</tr>
<tr>
<td>Difference High vs. Low (bps)</td>
<td>+110</td>
</tr>
</tbody>
</table>

Table 2. Market performance of the investment grade bonds from the sample chosen by matching, based on issuer ESG rating.
Sample: 146 bonds.
The matching process makes it possible to highlight the advantage of the bonds issued by companies with a high ESG rating. Throughout the period identified, their bonds record a cumulative yield of +8.8% compared to +7.7% for the control sample, with an advantage of 110 basis points. The difference seems to start from 2016.

The two samples were also compared by looking at the contribution of the ratings obtained in the three different areas (E = Environmental, S = Social, G = Governance). Table 3 highlights that there are no significant differences in the yields when considering only the ratings of the Environmental and Social categories, whereas the Governance component makes a difference and is responsible for the significant part of the differential yield identified in Table 2 (the difference in the period is 266 bps). The result is shown in Figure 3.
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low E</td>
<td></td>
<td>+8.4%</td>
<td>+8.9%</td>
<td>-1.3%</td>
<td>+0.1%</td>
<td>+2.4%</td>
<td>-1.6%</td>
</tr>
<tr>
<td>High E</td>
<td></td>
<td>+7.2%</td>
<td>+6.4%</td>
<td>-0.7%</td>
<td>+0.3%</td>
<td>+2.3%</td>
<td>-1.0%</td>
</tr>
<tr>
<td>Low S</td>
<td></td>
<td>+7.9%</td>
<td>+8.3%</td>
<td>-1.3%</td>
<td>+0.0%</td>
<td>+2.4%</td>
<td>-1.5%</td>
</tr>
<tr>
<td>High S</td>
<td></td>
<td>+7.3%</td>
<td>+6.8%</td>
<td>-0.6%</td>
<td>+0.6%</td>
<td>+2.0%</td>
<td>-1.6%</td>
</tr>
<tr>
<td>Low G</td>
<td></td>
<td>+6.3%</td>
<td>+7.3%</td>
<td>-1.1%</td>
<td>-0.5%</td>
<td>+2.1%</td>
<td>-1.4%</td>
</tr>
<tr>
<td>High G</td>
<td></td>
<td>+9.0%</td>
<td>+8.7%</td>
<td>-1.2%</td>
<td>+0.5%</td>
<td>+2.5%</td>
<td>-1.5%</td>
</tr>
</tbody>
</table>

Table 3. Market performance of the investment grade bonds from the sample chosen by matching, based on their E, S and G ratings. Sample: 146 bonds.
Figure 4. Cumulative yield of the investment grade bonds from the sample chosen by matching, based on their E (graph A), S (graph B) and G (graph C) rating (1/1/2014=100).
It is interesting to compare the results achieved for the bonds with the results achieved in the research one year ago on the equity securities of the Stoxx® Europe 600 index, where no clear majority was identified for one of the three categories. For bonds, on the other hand, the ‘Governance’ component seems to be the one that makes a difference. This could be explained by the different reference horizon of debt investors compared to those who choose equities. In the first case, the concern is to avoid company default, and therefore considerations linked to the environment and social responsibility do not appear to be central. Good governance is instead perceived as a fundamental factor in order to generate higher yields and reduce insolvency risk. Applying best practices makes it possible to reduce the danger of opportunistic behaviours (moral hazards) and reduce information asymmetry. On the other hand, in the case of equity investment, which has a long-term perspective, all three of the aspects emphasised by the ESG paradigm become important for generating alpha through a competitive advantage of sustainability in the future.
RESULTS OF THE ANALYSIS: HIGH-YIELD BONDS

Moving on to analyse the high-yield bonds, Table 4 describes the cumulative performance of the portfolios with a high ESG rating compared to the low ESG rating. In this case, the cumulative yield in the period is also quite similar, though with a slight advantage for the second group (+16.7% compared to +13.2%). As shown in Figure 5, the bonds issued by companies with a low ESG rating seem to perform better, especially in the first period, whereas they lose ground in 2018.

<table>
<thead>
<tr>
<th>ESG RATING</th>
<th>CUMULATIVE PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>+16.7%</td>
</tr>
<tr>
<td>High</td>
<td>+13.2%</td>
</tr>
<tr>
<td>Difference High vs. Low (bps)</td>
<td>-348</td>
</tr>
</tbody>
</table>

Table 4. Market performance of the high-yield bonds from the overall sample, based on issuer ESG rating. Sample: 327 bonds.
Again, we apply the matching process, obtaining a sample limited to 226 bonds (of which half have a high ESG rating and the other a low rating). Table 5 and Figure 6 describe the results.

<table>
<thead>
<tr>
<th>ESG RATING</th>
<th>CUMULATIVE PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Difference High vs. Low (bps)</td>
<td>+466</td>
</tr>
</tbody>
</table>

Table 5. Market performance of the high-yield bonds from the sample chosen by matching, based on issuer ESG rating. Sample: 226 bonds.
The result is interesting; the high-yield bonds issued by companies with a high ESG rating generate a greater increase in value, especially in 2018, overturning the first impressions encountered in Table 5. The overall advantage is 466 basis points, with over 2 per cent in both 2017 and 2018.

Lastly, we look at the behaviour by separating the ratings into the 3 different areas (E = Environmental, S = Social, G = Governance). Table 6 highlights that the results achieved for the investment grade bonds seem even more accentuated for the speculative grade bonds. High ratings in ‘Environmental’ and ‘Social’ are even associated with lower yields, whilst the ‘Governance’ factor proves to be decisive, with a difference of 371 bps (see Figure 7).
<table>
<thead>
<tr>
<th><strong>ESG RATING</strong></th>
<th><strong>CUMULATIVE PERFORMANCE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low E</td>
<td>+15.9%</td>
</tr>
<tr>
<td>High E</td>
<td>+10.9%</td>
</tr>
<tr>
<td>Low S</td>
<td>+16.4%</td>
</tr>
<tr>
<td>High S</td>
<td>+8.2%</td>
</tr>
<tr>
<td>Low G</td>
<td>+14.7%</td>
</tr>
<tr>
<td>High G</td>
<td>+18.5%</td>
</tr>
</tbody>
</table>

Table 6. Market performance of the high-yield bonds from the sample chosen by matching, based on their E, S and G ratings. Sample: 226 bonds.

The assumption that investors in bonds are especially mindful of instances of ‘good governance’ as an antidote to worsening insolvency risk, therefore, seems reinforced. This focus seems particularly accentuated for the bonds with a lower rating (speculative grade), and, even in this case, the efforts made to improve performance in the Social and Environmental areas seem to be penalising from the perspective of short-term default risk.
Figure 7. Cumulative yield of the high-yield bonds from the sample chosen by matching, based on their E (graph A), S (graph B) and G (graph C) rating, (1/1/2014=100).
A positive differential yield for the bonds with a higher ESG rating, in efficient market conditions and when the other parameters, such as rating and maturity are the same, could be explained - during the period considered - by a ‘discount’ that investors were inclined to accept on the yield required by the bonds issued by companies with a better ESG rating, as though it were a negative ‘spread’ (see Figure 8).

In order to seek support for our assumption, we considered the monthly values of the Z-spread for the bonds from the sample, namely the yield premium of the bonds compared to the yield of bonds with no risk (or with a AAA rating). Table 7 contains the median values found during the period considered, in basis points. The advantage accumulated over time by the bonds with a high ESG rating in term of reduction in the cost of capital appears to be confirmed (see also Figure 8). When controlling for other factors, the companies with better ESG performances can attain a better funding cost.
<table>
<thead>
<tr>
<th>SAMPLE</th>
<th>ESG RATING</th>
<th>Z-SPREAD (BPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment grade</td>
<td>Low</td>
<td>+114</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>+94</td>
</tr>
<tr>
<td>High yield</td>
<td>Low</td>
<td>+398</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>+244</td>
</tr>
</tbody>
</table>

Table 7. Median value of the Z-spread for the sample bonds.
Figure 8. Monthly median value of the Z-spread for the bonds from the sample: investment grade (A) and high yield (B).
Banor SIM’s “Value-Based” Approach in the Analysis of ESG Factors

Banor SIM is one of Italy’s leading independent companies for value investing. Thanks to its twenty years of experience, BANOR boasts a thorough knowledge of the European equity and bond markets. Every day, the analyst team invests energy in collecting and processing information, with the aim of understanding the fundamentals and identifying drivers of the competitive advantage of companies to invest in.

In an ESG context, BANOR’s added value resides in its analysis capacity. Not only does it consider ratings provided by third-party analysts, it searches for detailed information in public documents and interprets their relevance by incorporating them into the value-based models.

The asset allocation process, starting from the strategic objectives, takes place through a scrupulous selection of the bonds and an in-depth comparison by the analyst teams. The criteria, inspired by sustainability, are fundamental valuation elements, and BANOR strongly believes in the importance of supporting qualitative issues referring to Governance and Environmental and Social impact alongside classic quantitative information about accounting data.

The research project initiated with the Politecnico di Milano School of Management has the precise aim of formalising a reference framework consistent with the best practices indicated by the market and sought after by regulators. This framework would make it possible to fully integrate the analysis of ESG indicators into the investment process and transparently share it with customers.
CONCLUSIONS

The incorporation of ESG valuations in asset allocation may potentially improve the quality of value-based analyses. Understanding the link between competitive advantage, profitability and good practices in the Environmental, Social and Governance fields is therefore useful for companies, which will be able to better communicate with all their stakeholders and increase the value of investments in ESG good practices, as well as for investors, who are increasingly more selective in asset picking. This research has demonstrated that the European bond market, especially in more recent years, also considers the ESG rating of an issuer as a parameter that impacts the expected yield. By comparing a panel of listed bonds, including the most liquid ones, it was seen - by checking for the effect of duration and insolvency rating - that between 2014 and 2018, the performance of bonds associated with ESG best practices was better, especially in the most recent period, and especially for high-yield bonds. In fact, we also showed that the determining parameter, by a long shot, is linked to good Governance. By comparison, the Environmental and Social factors seem to push in the opposite direction.

The result is consistent with the assumption that the market, with the passage of time, has attributed a negative ‘spread’ to the issuers with a better ESG rating, judging them to be less risky in the short-to mid-term. The effect, however, seems to be limited to the advantage of adopting good practices for corporate Governance, which for investors may be a sign of lower agency costs, less risk of opportunistic behaviours and better monitoring. The efforts on the Environmental and Social side, on the other hand, do not yet seem to be perceived as a sign of greater solvency. Amidst all of this, the advantage of a good ESG performance seems to be greater for high-yield bonds, for which the probability of insolvency is not insignificant and, therefore, risk analysis is even more important.
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BANOR has been present on the market since 1989 as a private banking vehicle for a group of banks in northern Italy. It was bought out in 2000 by a group of private investors and managers led by Massimiliano Caglieri, Banor’s current Chief Executive Officer. The goal of Massimiliano Caglieri and his partners was to create an independent private banking hub in Italy that would put value investing principles into practice.

With offices in the heart of Milan, Turin and Bolzano, Banor SIM is now one of the leading Italian securities firms. It specialises in capital management and advisory services for high net worth clients.

Over time, the experience and independent views of Banor SIM’s managers have helped build unique relationships in the international capital markets. These relationships have made BANOR a beacon for many foreign investors who intend to invest in Italy or who are simply seeking an independent view of the Italian market.

BANOR applies a model developed in-house to evaluate ESG sustainability during the stock-picking phase. Its hallmark is the transparency and quality of its investment process. Banor SIM is one of the few Italian investment firms to have obtained the “Global Investment Performance Standards” (GIPS) certification issued by PricewaterhouseCoopers.

BANOR is a member of the Sustainable Investment Forum (Forum della Finanza Sostenibile, or FFS), through which it aims to generate a widespread sustainability culture.
The School of Management of Politecnico di Milano was established in 2003. It hosts a broad range of research, educational and high-level services in the economics, management and industrial engineering fields, which Politecnico takes forward through its internal and associated structures.

In 2007 the School achieved the prestigious European Quality Improvement System (EQUIS) accreditation.

Two years later it entered the Financial Times ranking of the best European Business Schools for the first time. And today it is still in the ranking with its Executive MBA, Full-Time MBA, Master of Science in Management Engineering, Customised Executive programmes for business and Open Executive programmes for managers and professionals. In March 2013 the School received the prestigious international accreditation awarded by the Association of MBAs (AMBA) for its MBA and Executive MBA programmes.

In 2017 the School of Management was the first in Italy to have the quality of the digital learning courses in its Executive MBA Masters recognised, through the EFMD Online Course Certification System (EOCCS).

The School has over 200 faculty members: professors, lecturers, researchers, tutors and staff. Each year it sees more than 600 new students join its undergraduate programme.

The School is a member of Principles for Responsible Management Education (PRME), Consejo Latinoamericano de Escuelas de Administración (CLADEA), and the Quantitative Techniques for Economics & Management Masters Network (QTEM).

The School includes the Department of Management Engineering and the MIP Graduate School of Business, which focuses on executive education and Masters programmes.
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