




Objectives of the ESG bonds issues

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Abstract

Motivation: In the face of a growing interest in social, environmental, and sustainable economic development in recent years, attention should be paid to debt instruments with an ESG label. Proceeds from the issue of these instruments are intended for purposes related to the financing of projects contributing to meeting the ESG criteria.

Aim: The aim of the article is to analyse the objectives of the ESG bond issues. The study is an attempt to answer the question which industries issue ESG bonds, contributing to the fulfilment of ESG criteria, and for what purposes the funds from the issue are allocated.

Results: Database collected from the Refinitiv Eikon for the period between 2012 and 2021 allows also to conclude that there is weak positive relationship between sectors and ESG bond issuance objectives. Whereas there is strong positive relationship between ESG bond issue objectives such as Clean Transport, Energy Efficiency, Eligible Green Projects, Green Construction Buildings and Alternative Energy. On the other hand, an inverse weak relationship has been observed between issue's targets such as Climate Change Adaptation and Renewable Energy Project as well as Climate Change Adaptation and Alternative Energy.

Keywords: ESG; bonds; sustainable development

JEL: G11; G15; H63

1. Introduction

Within the recent years, we have observed the growing interest in sustainable development of the economy, while simultaneously taking care of natural environment, society, and governance. ESG is an acronym that stands for

Environment, Society and Corporate Governance. When meeting ESG criteria, a company should identify environmental, social and governance risks. The growing popularity of responsible investment and sustainable finance is putting pressure on companies to be more transparent about meeting ESG criteria. Environmental aspects relate primarily to climate policy, energy consumption, waste, pollution, water use and natural resources. Moreover, following ESG rules means also taking action to reduce CO₂ emission. Social issues should include the entity's relationship with stakeholders, both internal and external. In contrast, governance standards should ensure that the entity applies transparent rules that promote equity and diversity in the governance of the individual. Therefore, meeting of the ESG criteria by issuers is an important factor for making investment decision worldwide.

In the face of growing interest in social, environmental, and sustainable economic development, attention has been paid to debt instruments with an ESG label. Proceeds from the issuance of these instruments are allocated to the goals related to financing of projects which contribute to meeting of the ESG criteria.

The presented considerations lead to the definition of the research problem of what are the objectives of ESG bond issues by sectors. On this basis, this article verifies the hypothesis that ESG bonds are more common in industries where the natural environment is important for the operations of enterprises (e.g., industry, energy, technology). Consequently, the analysis will be useful and helpful in the future research on goals of the ESG bond issues in specific sectors.

The aim of the article is to analyse the objectives of the ESG bond issue. The study is an attempt to answer the question of which industries issue ESG bonds, and for what purposes the funds from the issue are allocated.

The first part of the text presents an overview of the literature on the subject related to meeting by the issuers of the criteria related to environmental, social or governance relations. In the empirical part, an analysis of ESG instruments was performed. An emphasis was put on the objectives of ESG bonds by sectors and the relationships between them. The article ends with the conclusions regarding the objectives of the ESG debt instruments in acquisition of financing.

2. Literature review

In recent years, sustainability has been valued by financial investors, which is why funds have flowed into assets that have contributed to meeting Environmental, Social and Governance (ESG) criteria. ESG criteria are important for both equity and debt investors. Baldi and Pandimiglio (2022) examined the factors that most affect the yields of green bonds of the public sector and companies and found that investors are willing to accept lower returns on investment in exchange for financing projects with an impact on sustainable development.

Companies' commitment to sustainability, including investments that protect the quality of the environment, is promoted also by the Paris Agreement

on climate change in 2015 and the 2030 Agenda for the Sustainable Development Goals (Ying & Xin-gang, 2021).

The increase in investor interest in sustainability has contributed to issuers' focus on environmental care (Melinda & Wardhani, 2020, pp. 147–173; Tarquinio & Posadas, 2020, pp. 727–749). To achieve sustainable outcomes, issuers should integrate ESG aspects into their business strategy (Atan et al., 2016, pp. 355–375). Funds from the issue of ESG bonds should be allocated to projects that contribute to the achievement of social, governance and environmental objectives. As ESG considers environmental, social and governance factors, the issuer meets these criteria when issuing such debt instruments. The environmental factor concerns climate change, as well as the reduction of energy consumption, pollutant emissions and waste management. Social aspects include respect for human rights, as well as the promotion of diversity and equality, regardless of gender and origin. The governance criterion primarily covers issues related to respect for shareholders' rights.

The categories according to which projects are qualified, especially in the environmental aspect, include the following areas: renewable energy; energy efficiency; pollution prevention, clean transport (e.g., electric transport, and reduction of harmful emissions); eco-efficient products, production technologies and processes; green buildings that meet the standards and certification requirements.

The ESG score includes a company's performance on meeting environmental (E), social (S) and governance (G) criteria. Thus, a company can participate in individual activities E, S and G at different levels (Humphrey et al., 2012, pp. 135–151). Considering the environmental aspect of ESG activities, meeting environmental criteria can increase costs for the company, resulting in lower profitability and efficiency. Although many studies show that investing in environmental, social and governance activities mainly improves financial performance (Fatemi et al., 2015, pp. 182–192; Wang & Sarkis 2017, pp. 1607–1616) and the value of the company (Wong et al., 2021), the issuer's compliance with the environmental criteria also has a positive impact on the issuance of green debt instruments (Russo et al., 2021, pp. 38–59). Therefore, the issue of green bonds means that the company cares for environmental protection, which supports the low-emission economy and creates a positive image in the perception of the company. (Li et. al., 2021, pp. 2679–2692).

The effectiveness of issuers' involvement in environmental protection was examined by Fatica and Panzica (2021, pp. 2688–2701). They found that compared to conventional bond issuers with similar financial characteristics and environmental ratings, green issuers show a decrease in the intensity of their asset issuance after borrowing in the green segment. Furthermore, the growing importance of green bonds in the carbon market has been confirmed by Leitao et. al. (2021, pp. 2077–2090). Tan et. al., (2021, pp. 464–482) examined whether bond markets reflect companies' exposure to air pollution through the increased cost of debt financing. The results confirm the positive relationship between

air pollution and debt financing costs. Devine and McCollum (2022) indicate that loans on green bond-backed properties that promote energy efficiency have lower interest rates than others. Wang and Wang (2022) proved that meeting ESG criteria increases the propensity of listed companies to issue green bonds. Also, the results of a study conducted by Wang et. al. (2022, pp. 412–426) indicate that green finance is a foremost tool for financing sustainable development. The financial system plays an important role in making investments in the low-carbon economy. Banks issuing green bonds also limit lending to high-emission sectors and redirect financing towards low-carbon targets (Fatica et. al., 2021).

Meeting the ESG criteria may contribute to an increase in additional costs related to expenditure on the implementation of the sustainable finance policy. According to Gregory (2022), the ESG effect is primarily due to the company's expenditure on informing how it contributes to the implementation of the economic, social, and environmental factors with decision-making processes.

However, the additional costs incurred for social activities can bring benefits, including improving the company's reputation as well as contributing to improving the company's profits. Brammer and Millington (2008, pp. 1325–43) confirmed the positive relationship between the social performance of enterprises, such as activities related to meeting ESG criteria and financial performance in the long term. Nevertheless, achieving ESG-related social goals raises concerns about additional costs, as do activities that contribute to environmental protection (Xie et al., 2019, pp. 286–300).

In terms of corporate governance criteria for ESG activities, a company can achieve success by implementing good practices and maintaining relations with society (Foote et al., 2010, pp. 799–812). Management of company should therefore be interested not only in the economic aspects of their activities, but also in social and environmental issues (Maas & Reniers, 2014, pp. 104–114). According to Arango-Miranda et al. (2018, pp. 1–19) companies from the industrial sector, due to emissions of pollutants, are among the entities responsible for environmental pollution. Research on the objectives of green bond issuance was conducted by Frydrych (2021, pp. 239–255). The results of the analysis indicate that green bonds are issued by entities from sectors where the natural environment is important for the activities of companies. However, there is a lack of information in the literature on the verification of bond issuance targets contributing to the fulfilment of ESG criteria in individual sectors. Therefore, to fill this gap in the existing literature on the subject, this study analyses the determinants of ESG bond issuance based on available data.

3. Methods

The analysis of the structure of ESG bonds was conducted based on the data included in Refinitiv Eikon (2022) information database. To facilitate compari-

sons, all amounts are in US dollars. By the end of 2021, 6489 ESG bond issues, with a total value of USD 2 432 518 bn, had been carried out.

The dataset provides information on all types of ESG debt issuers from all regions of the world. The study includes only the instruments which were in the circulation on 31st of December 2021. During the examination process, the author used the method of observation and method of deduction analysis of source material.

4. Results

The ESG bond market is growing rapidly, especially in the years 2019–2021. Chart 1 presents the development of ESG bonds in the years 2012–2021. Over the years there have been a growth of both the value and number of issues of ESG bonds. While analysing an average value of issues — the highest value was recorded in 2016 (USD 485.42 bn), whereas in 2021 the value of issued ESG debt is almost twice as high in a previous year and amounts to USD 1 144 453 bn, however an average value of issue is slightly lower as compared to 2020.

Table 1 indicates that debt securities with the following objectives have the highest average value of ESG bonds: Clean Transport (USD 441,46 bn) and Adaptation to Climate Change (USD 380,33 bn). The issues' targets include also, in order of number of observations, Energy Efficiency, Eligible Green Projects, Green Buildings, Renewable Energy Projects and Alternative Energy. The maximum number of issues was observed in case of the Clean Transport. Most of the issues are also related to Energy Efficiency. While the smallest number of bonds were issued for the purpose of Alternative Energy, i.e., 140.

Taking into consideration the objectives of ESG bond issues in particular sectors by number of issues (Table 2) 40.11% of bonds were issued by Financial sector, whereas in this sector main objectives of issue of ESG debt instruments are: Clean Transport, Energy Efficiency and Eligible Green Projects. Main objectives of green bond issue in Electric Power sector are Energy Efficiency and Eligible Green Projects. Whereas in the Supernational, main objectives of issue of ESG debt instruments are Climate Change Adaptation.

While analysing the objectives of ESG bond issues, one may notice that the Clean Transport constitute 20.65% of the total number of issued instruments. Financing for this purpose is acquired by issuers from Financial, Agency, Transportation and Manufacturing sectors. Energy Efficiency is the objective of 17.95% of ESG bond issues. Financial and Electric Power sectors dominate in this area. In the case of the issue's objective of Eligible Green Projects, 21.69% issuances were carried out by issues from Manufacturing sector. While the issue's objective of Climate Change Adaptation is observed in Supernational and Banks sectors. The objectives of Green Construction/Buildings, Renewable Energy Projects and Alternative Energy have a total share of 12.25% in the total issued ESG bonds, with Electric Power and Financial as the leading sectors in this area.

Next, the relationship between sectors and ESG bond issuance targets was examined. The hypothesis of independence in the chi square test was rejected at significance level 0. Therefore, the variables represented by the ESG debt issuer sectors and the objectives of the bond issue are dependent. However, the strength of dependence is weak. Cramer's V value is 0.216 (Table 3).

Analysing the number of ESG debt instrument issues, Pearson correlation coefficients between the number of issues for each target were also calculated. The results are given in Table 4. An inverse weak relationship was recorded between the following issues' targets: Climate Change Adaptation and Eligible Green Project (-0.155); Climate Change Adaptation and Renewable Energy Project (-0.129) and between Climate Change Adaptation and Alternative Energy (-0.063). The relationship between the ESG bond issue's objective such as Climate Change Adaptation and other objectives is positive but very weak. Similarly, a weak positive relationship can be observed between the Renewable Energy Project and other targets. In contrast, objectives such as Clean Transport, Energy Efficiency, Eligible Green Projects, Green Construction Building and Alternative Energy show a strong positive relationship with each other.

Yield to maturity (YTM), i.e., the estimated rate of return on maturity, and the coupon rate, i.e., the annual amount of interest that the bondholder will receive, depending on the purpose of the ESG bond issue, were also examined. Chart 2 presents the distribution of the estimated rate of return (YTM) while Chart 3 presents the distribution of the coupon depending on the purpose of issuing ESG bonds in EUR, USD, and other currencies.

The median varies depending on the purpose of the ESG debt instrument issue and the currency of issue. The lowest median estimated rate of return (YTM) for ESG bond issues in EUR was recorded for instruments for which the issue target was Renewable Energy Projects while the highest for Eligible Green Projects. By contrast, for ESG bond emissions in USD, the highest median YTM for the Alternative Energy emission target was recorded and the lowest for Climate Change Adaptation.

Analysis of the ESG debt coupon depending on the purpose of issuance in EUR shows that the lowest median refers to the purpose of the issue Climate Change Adaptation while the highest Eligible Green Projects and Alternative Energy. ESG debt instruments issued in USD with an issuance objective Alternative Energy have the highest median coupon, while Climate Change Adaptation has the lowest. In addition, ESG debt instruments in USD the purpose of which includes Energy Efficiency, Eligible Green Projects, Green Construction/Buildings and Renewable Energy Projects have a similar median coupon.

5. Conclusion

The aim of the article was to analyse the objectives of ESG bond issuance. The study was an attempt to answer the question whether there are relationships between ESG bond issues and the sectors in which they are issued. In addition,

it was checked whether there is a relationship between the individual objectives of issuing debt instruments with the ESG label. This means whether the issuance of ESG debt instruments for the selected target is linked to the number of issues for another purpose.

In the analysed period, 40.11% of bonds were issued by the financial sector (Banks and other Financial entities). In addition, sectors such as Manufacturing, Electric Power and Transportation have a significant share in the issue of ESG bonds. Debt instruments of issuers from the Agency, Supranational and Sovereign sectors also meet the ESG criteria. Considering ESG bond issues, the Clean Transport target represents 20.65% of all issued instruments.

There is the relationship between sectors and ESG bond issuance objectives. However, the strength of dependence is weak. In addition, there was a strong positive relationship regarding the relationship between ESG bond issuance objectives such as Clean Transport, Energy Efficiency, Eligible Green Projects, Green Construction Buildings and Alternative Energy. While the inverse weak relationship was observed between issue's targets such as Climate Change Adaptation and Renewable Energy Project as well as Climate Change Adaptation and Alternative Energy.

The analysis of the distribution of the estimated rate of return (YTM) and coupon depending on the purpose of issuing ESG bonds shows that the highest median applies to Alternative Energy in both EUR and USD.

On the grounds that there are also considerations other than the average value and number of ESG debt instruments issued, this study has numerous limitations, which makes it difficult to decide on the rationale of ESG bond issuance in individual sectors and the relations between them. The source literature does not contain many studies regarding the issuance of ESG bonds. The similar analyses concerning the objectives of the issue may also be carried out for issuers of other debt instruments.

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Appendix

Table 1.
Descriptive statistics (bn USD)

Objectives	No. of observations	Minimum	Maximum	Mean	Standard deviation
clean transport	1340	0,01	35034,42	441,46	1265,45
energy efficiency	1165	0,25	6793,79	315,99	517,94
eligible green projects	785	1,00	4250,00	213,83	298,19
climate change adaptation	666	0,15	13587,57	380,33	1123,32
green construction/buildings	334	0,06	2551,02	285,82	345,58
renewable energy projects	321	0,01	2264,6	270,41	340,73
alternative energy	140	0,00	1471,99	116,25	217,09
others	1738	0,02	11322,98	493,11	1018,87

Source: Own preparation based on Refinitiv Eikon (2022).

Table 2.
Objectives of ESG bond issues in sectors by number of issues

Goals/sectors	Clean transport	Energy efficiency	Eligible green projects	Climate change adaptation	Green construction buildings	Renewable energy projects	Alternative energy	Others
other financial	326	287	267	45	121	71	48	409
banks	257	196	76	183	78	47	12	180
electric power	66	253	102	22	6	133	48	114
manufacturing	166	83	146	37	54	29	2	156
agency	146	120	20	50	10	15	9	283
supernational	92	72	27	216	3	1	9	134
service company	67	68	71	25	48	9	3	119
transportation	107	19	51	8	11	4	–	73
sovereign	31	4	1	12	–	–	–	157
others	82	63	24	68	3	12	9	113

Source: Own preparation based on Refinitiv Eikon (2022).

Table 3.
Relationship between sectors and issuance objectives

Symmetrical measures	Value	Approximate significance
V Cramer	.216	.000
N important observations	6489	–

Source: Own preparation based on Refinitiv Eikon (2022).

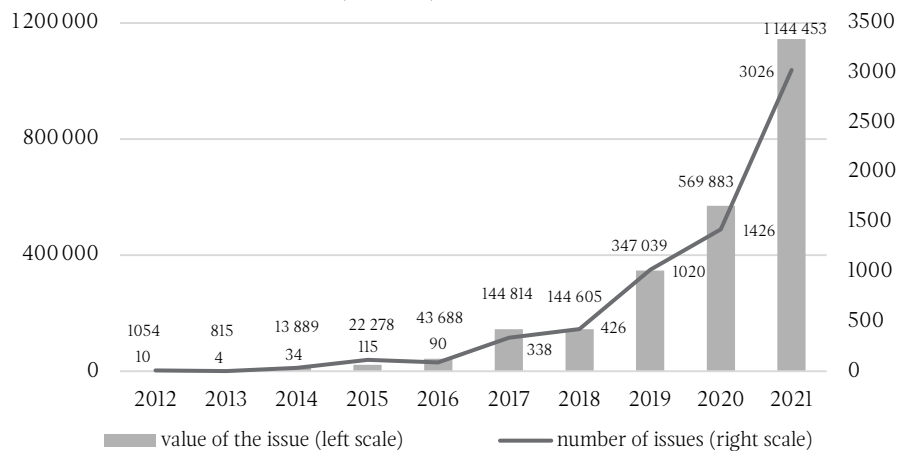


Table 4.
Relationship between ESG bond issuance objectives

Objectives	clean transport	energy efficiency	eligible green projects	climate change adaptation	green construction buildings	renewable energy projects	alternative energy	others
clean transport	1	.669	.752	0.257	.888	0.286	0.425	.760
energy efficiency	.669	1	.718	0.119	0.622	.860	.911	0.606
eligible green projects	.752	.718	1	-0.155	.851	0.553	.669	.634
climate change adaptation	0.257	0.119	-0.155	1	0.084	-0.129	-0.063	0.001
green construction buildings	.888	0.622	.851	0.084	1	0.295	0.406	.670
renewable energy projects	0.286	.860	0.553	-0.129	0.295	1	.889	0.224
alternative energy	0.425	.911	.669	-0.063	0.406	.889	1	0.506
others	.760	0.606	.634	0.001	.670	0.224	0.506	1

Source: Own preparation based on Refinitiv Eikon (2022).

Chart 1.
ESG bond issues in 2012–2021 (bn USD)

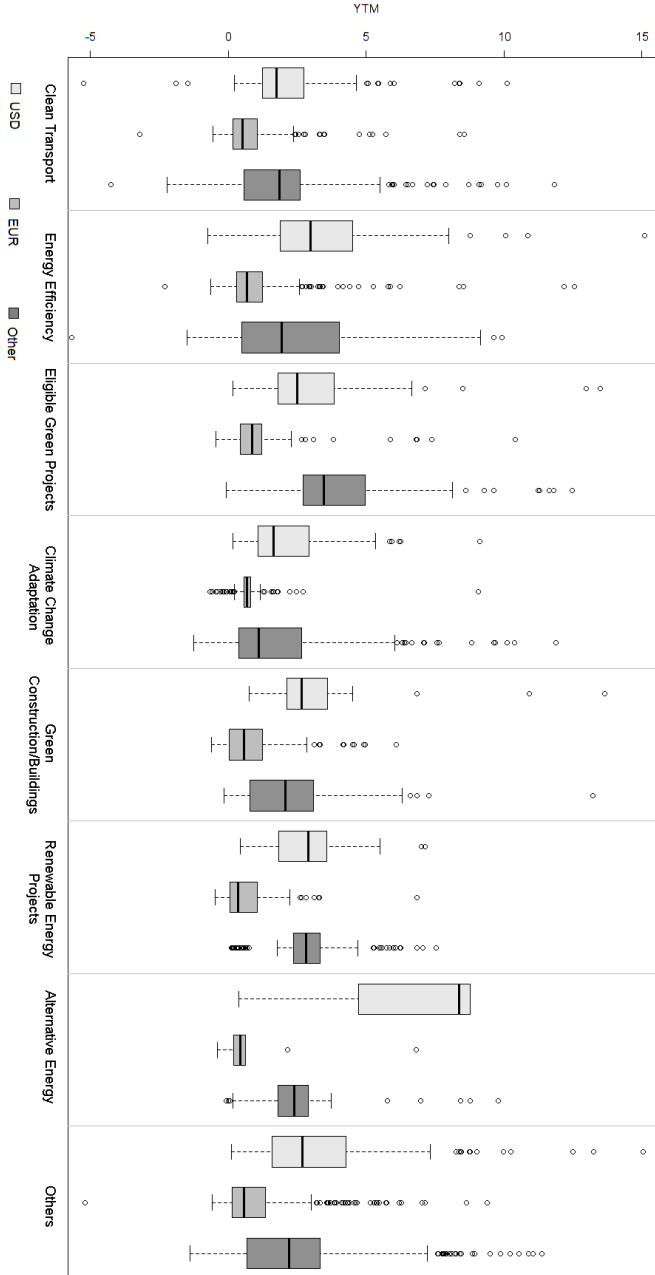


Source: Own preparation based on Refinitiv Eikon (2022).



Chart 2.

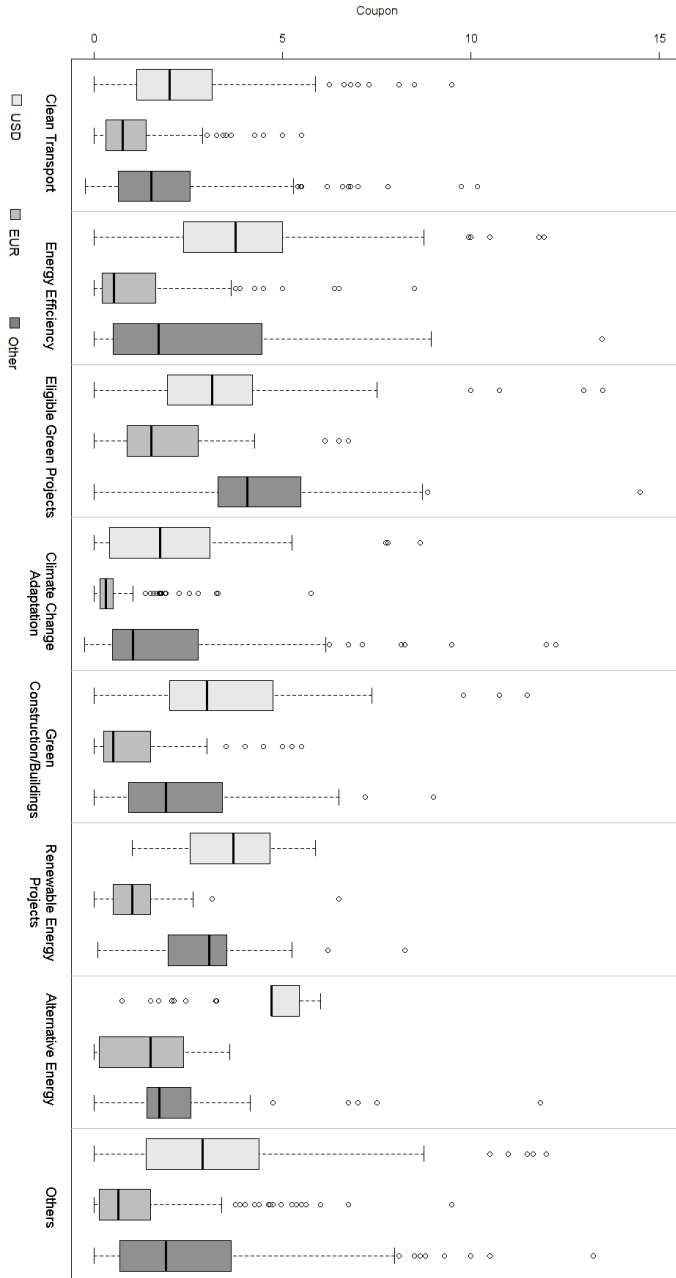
Distribution of the rate of yield to maturity depending on the purpose of issuing ESG bonds in EUR, USD, and other currencies (%)



Source: Own preparation based on Refinitiv Eikon (2022).



Chart 3.
Distribution of the coupon depending on the purpose of issuing ESG bonds in EUR,
USD, and other currencies (%)



Source: Own preparation based on Refinitiv Eikon (2022).

