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Sustainability signals: an analysis of labelling schemes for socially responsible investments

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Sustainability signals: an analysis of labelling schemes for socially responsible investments

Abstract

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Several labels for sustainable investment funds sponsored by government and nonprofit organisations (GNPOs) have emerged in Europe. This paper examines the coherence of the signals sent by these sustainable labels versus those from the private sector. While some GNPO-labelled funds are perceived as bearing high Environmental, Social and Governance (ESG) risks, we find that labelled funds are more likely to be assessed as top ESG funds by private rating providers. Furthermore, equity funds with governmental and multiple labels are more likely to show better ESG ratings. Additionally, GNPO-labelled funds show greater alignment with article 9 of the Sustainable Finance Disclosure Regulation and tend to exhibit ESG terminology in their name, consistently with internal signals of sustainability coherence with GNPO labels. However, our research draws attention to the existence of sustainable signals that are not always coherent, jeopardizing their role as efficient tools for promoting sustainability.

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1. Introduction

Sustainable investing is on the rise, due to growing societal awareness of sustainability issues and public pressure on organizations to behave responsibly. Consistent with this trend, sustainable mutual funds[2] have experienced one of the fastest growing rates within the finance industry, with Europe currently the largest market, both in terms of number of funds and assets under management (Morningstar, 2022a). The expansion of socially responsible investments has been accompanied by the emergence of sustainable labeling, ratings, and other sustainability certifications that aim to support investors in differentiating financial products with specific sustainable attributes. While sustainable labels can be self-declared (e.g., in-house labels) certification services are undertaken primarily by third parties, such as government bodies or non-profit organizations-NPOs (GNPOs hereafter) and private companies (i.e., those that are not state-owned or governed)[3]. Currently, there are several well-recognized GNPO-sponsored labels for funds that co-exist in Europe such as the Ecolabel in Austria (*Österreichisches Umweltzeichen*), Towards Sustainability in Belgium, *Investissement Socialment Responsible (ISR)*, and Greenfin in France, as well as *Forum Nachhaltige Geldanlagen* (FNG) in Germany, Austria, Liechtenstein, and Switzerland, LuxFLAG ESG/ Climate Finance/ Environment in Luxembourg, and Nordic Swan in Nordic countries[4].

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[2] We use the term sustainable funds to designate funds that market themselves as socially responsible investment (SRI) funds, such as ESG, thematic, or impact funds.

[3] Although sustainable labeling schemes in financial markets only emerged at the turn of the millennium, sustainability labels in other consumer products (e.g., the organic food sector), particularly those of an environmental nature (so-called eco-labels) date back to the 1970s. Since then, a multitude of eco-labels have proliferated (Iraldo et al., 2020) in response to an increasing appetite for green products worldwide.

[4] For an overview of the historical development of GNPOs labels, see Crifo et al. (2020).

Even though third-party certifications by independent entities enjoy greater legitimacy and trust than those from for-profit companies (Darnall et al., 2012), as SRI goes mainstream, sustainable labeling has attracted private-sector firms that develop proprietary sustainable ratings. Private ESG rating providers such as Morningstar and MSCI have become increasingly influential actors due to the number of investors that rely on their assessments when making investment decisions (Berg et al., 2022). Inspired by the credit market ratings, where investors also face informational asymmetries on investees' credit quality, these private rating agencies collect information from various sources to derive ESG fund ratings based on an assessment of ESG risks from a combination of sustainability metrics. For instance, in 2016, Morningstar launched an approach to classifying funds using a scale of globes (5 globes for maximum and 1 globe for minimum sustainability) to give investors information on funds' sustainability performance. Following this, Morningstar introduced the 'Low Carbon Designation' (LCD) eco-label in 2018 to signal funds that perform well based on carbon footprint metrics. In turn, MSCI, introduced ESG ratings at company level, extending them to investment funds in 2020.

Despite the informational role of labels, the proliferation of signals can complicate and increase noise in individuals' decision-making, especially when investors have difficulty understanding what the eco-labels are designed to communicate (Thøgersen et al., 2010). Uncertainty around labeling standards and how to recognize the differences between labels can reduce their informativeness (Harbaugh et al., 2011), prompt skepticism of social and green claims (Lyon and Montgomery, 2015), and weaken consumers' trust and confidence in labeled products. Moreover, competition in the ESG industry and a profusion of labels may lead to information overload (Crifo et al., 2020) and induce investor confusion (Brécard, 2014), which in turn could magnify information

asymmetry instead of reducing it, especially if the multitude of labels and certifications are not aligned in the signals they convey to individuals.

This paper examines the alignment of fund sustainability signals provided by different types of sponsors, namely GNPOs and private sector companies, and the signals transmitted by the funds themselves. Based on a dataset of labeled and non-labeled sustainable equity and fixed-income funds in Europe, we analyze the alignment of GNPO-labeled funds with Morningstar and MSCI ESG ratings. Despite the growing importance of labeling in sustainable finance, the literature on sustainability has largely overlooked their alignment. Crifo et al. (2020) and Megaeva et al. (2021) characterize labels in European financial products, but limit their focus to labels sponsored by GNPOs, thereby disregarding the fact that major industry players, such as Morningstar or MSCI, provide their own well-recognized sustainability labels. In addition, while a flourishing literature has revealed disagreement between the ESG ratings of different private sector data providers (e.g., Semenova and Hassel, 2015; Chatterji et al., 2016; Dimson et al., 2020; Berg et al., 2022; Gangi et al., 2022), no research to date has explored GNPO versus private ESG labels, particularly regarding the extent to which they convey aligned signals for individuals. The present study fills this gap by investigating the extent to which the signals of GNPO sustainable labels in mutual funds in Europe are aligned with private sector ones, thereby assessing whether they communicate coherent signals that simplify individuals' decision-making processes. Furthermore, our analysis of alignment is not restricted to signals issued by third-party entities, since we also assess the alignment of external signals with internal ones, i.e., those used by funds themselves to transmit sustainability cues to individuals.

This paper makes contributions in several areas. First, we provide an analysis of mutual funds featuring GNPO-sponsored sustainable labels in Europe. Compared with

non-labeled sustainable funds sold in Europe, labeled funds, on average, are older and present more Morningstar globes and higher MSCI ESG ratings. In particular, equity funds are larger and charge higher management fees. Furthermore, as they are less carbon intensive and have lower carbon scores, a larger percentage of labeled funds feature the Morningstar LCD eco-label compared to non-labeled sustainable funds. In turn, fixed-income labeled funds charge lower management fees and are similar in size compared to their unlabeled peers. Besides, the LCD is less common.

Second, we investigate the alignment of GNPO labels with ESG ratings provided by the private sector, thereby assuming the perspective of an investor who receives different types of sustainability signals. Are labels from the private sector consistent with official labels sponsored by GNPOs? Focusing on labeled funds, we observe some divergent signals from GNPO sustainable labels and ratings from the private sector, which assess some labeled funds as bearing high ESG risks. Nevertheless, drawing on probit models, we find that, overall, labeled funds are more likely to present higher ESG ratings compared to non-labeled funds. Furthermore, governmental and/or multiple equity labeled funds are more likely to have a better ESG assessment by private rating agencies. In the case of fixed-income funds, the nature of sponsorship is unrelated to top ESG ratings.

Third, in addition to the alignment of signals from external providers, we analyze a second level of signals represented by the voluntary information provided by the funds themselves, namely their self-assignment to the European Sustainable Finance Disclosure Regulation (SFDR) classification and the inclusion of ESG-related terms in their names. The SFDR has been a landmark in the field of sustainability, as funds are required to integrate sustainability risks more transparently in the investment process and to self-declare their commitment to sustainability. Thus, this classification can represent an

important indication of funds' sustainability levels. Our results show that GNPO-labeled funds exhibit a higher probability of being classified as article 9 funds, in other words, the so-called dark green funds. Regarding whether funds signal their sustainable features through their names, we find that GNPO-labeled funds are more likely to feature ESG terminology in their name.

Our research relates to several streams of the literature, such as the heterogeneity of approaches to measure sustainability standards (Delmas and Blass, 2010;Capelle-Blancard and Petit, 2017), and the literature that draws on signaling theory, according to which sustainability labels serve as signals of products' unobservable attributes that are designed to mitigate information asymmetries associated with credence goods markets (Kirmani and Rao, 2000). Our analysis of external sustainability labels (sponsored by GNPOs and private ESG rating agencies) versus internal sustainable signals (the SFDR classification and ESG jargon in the name) is also linked to a nascent literature that discusses another level of signals, namely self-assigned sustainability tags (Sigurdsson et al., 2022) and how they compete with conventional sustainability labels.

By addressing the multiplicity of signals in the sustainable labeling market for financial products, our research also relates to the literature on whether markets with fragmented standard setters act as sustainability catalysts or whether label proliferation is associated with a higher likelihood of failure in enhancing these goals (e.g., Fransen, 2011; Reinecke et al., 2012). In this regard, our study sheds light on the multiplicity of sustainability labels and certifications in the finance industry, and the extent to which they are aligned. It also expands on the stream of literature that documents the divergence of ESG ratings from various private agencies (e.g., Chatterji et al., 2016; Berg et al., 2022; Christensen et al., 2022) and discusses the potential adverse effects of such assessment divergences.

Finally, our paper contributes to the literature on the role of third-party certifications in sustainability labeling (e.g., Rao, 1994; Graffin and Ward, 2010; Polidoro, 2013; Desai, 2018; Darnall et al., 2018; Gorton et al., 2021), extending it to financial markets and the discussion of their governance (e.g., Jahn et al., 2005; Castka and Corbett, 2016; Darnall et al., 2017).

To our knowledge, this study is the first to analyze the alignment between European sustainable finance labels sponsored by GNPOs and private ESG rating agencies. Notably, it does not seek to compare the assessment methodologies of label providers, but rather to inspect the signals regarding sustainability that are conveyed from an investor's perspective. Although sustainable labels were created to simplify the investment decision-making process, the issue of whether they fulfil their information role is highly relevant, given the EU strategy of empowering investors to make sustainable decisions, a goal that could be hampered by the existence of multiple and seemingly divergent signals.

The remainder of this paper is organized as follows: Section 2 presents an overview of sustainable labels and certifications for investment funds and develops the research hypotheses, Section 3 describes the methods and data, Section 4 presents the empirical analysis, and Section 5 concludes.

Sustainable Labels for Investment Funds: Background and Hypotheses

Informational Asymmetries and the Role of Third-Party Certifications

Sustainable labels play an important informational role in financial markets (Crifo et al., 2020). Sustainable mutual funds are a typical example of credence goods markets, in which informed sellers provide products whose quality is unobservable to less-informed buyers (Darby and Karni, 1973), a situation that generates information asymmetry

between the seller and the buyer (Balafoutas and Kerschbamer, 2020). Labels aim to mitigate information asymmetries by communicating the financial products' sustainability characteristics (Crifo et al., 2020), thereby narrowing the information gap (van Amstel et al., 2008) and creating an easily recognized and reliable mark of credibility (Gallastegui, 2002). Thus, sustainability labels can help individuals to overcome some of the barriers associated with investing in SRI funds, such as information and search costs (Gutsche and Zwergel, 2020). This is particularly relevant for retail investors, who are typically less sophisticated (Evans and Sun, 2021) and who face the task of distinguishing the sustainability attributes of a growing number of seemingly comparable funds. For instance, the different types of jargon used in the industry to communicate sustainability strategies, including appealing terms such as 'ESG', 'green', 'impact', and 'responsible', may exacerbate uncertainty surrounding the sustainable attributes of investment products instead of simplifying the decision-making process[5]. In all, individuals looking for sustainable funds face additional complexity and significant information asymmetry (Rhodes, 2010). The introduction of salient signals of sustainability such as labels aimed to transform overly complex information into condensed figures and, as Ammann et al. (2019, p. 522) note, "has transformed sustainability from a difficult-to-grasp characteristic into an easy-to-understand figure".

In credence goods markets, where quality is difficult to ascertain even after purchase, third-party certifications have emerged. These certifications refer to accreditations, assurances, or endorsements from third parties stating that a business conforms to certain quality standards or follows specific socially acceptable practices or

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[5] Sustainable funds can combine different screening strategies (e.g., positive, negative, or best-in-class) with different types of screens (e.g., of the environmental or social type) to identify companies that conform to various ESG standards, leading to substantial heterogeneity in the screening processes used by different funds (Sandberg et al., 2009).

guidelines (Rao, 1994; Graffin and Ward, 2010; Polidoro, 2013; Desai, 2018). By representing relevant product attributes, certifications can serve as signals, reducing information asymmetry and search costs, facilitating decision-making, and improving the functioning of markets (Erdem and Swait, 1998). As such, they act as important mechanisms to assure consumers that the products meet their sustainable claims (Gorton et al., 2021). Sustainability certifications have flourished in many sectors, such as organic food (van Amstel et al., 2008), wine (Delmas, 2017), education (Alajoutsijärvi et al., 2018), and health (Shaw et al., 2010)[6].

Despite third-party certification being valued by consumers, trust in the certifying body is a crucial element in the decision-making process (Nuttavuthisit and Thøgersen, 2017; Gorton et al., 2021). In particular, there is evidence that consumers' trust depends on who sponsors the certification, with independent certifications being perceived as more trustworthy than certifications by private businesses (Darnall et al., 2012, 2018). The case of the financial sector offers a good illustration, as it has attracted strong public mistrust, particularly since the global financial crisis. In addition, society largely disapproves of placing profit ahead of all else, which can lead to excessive risk-taking, speculative behavior, and disregard towards the environmental and social impact of investments. Thus, certification from governmental and non-profit entities tends to provide more credible signals that reduce the asymmetrical information gap and individuals' search costs.

Another argument in favor of government labeling is that this type of certification can be an instrument of public policy. For instance, the EU Action Plan on Sustainable Finance proposes the creation of standards and labels for sustainable financial products

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[6] As of mid-2022, the Ecolabel Index website (www.ecolabelindex.com) reported 456 eco-labeling schemes in 199 countries and across 25 industries.

to reorient capital flows toward sustainable investment[7]. Labels *per se* do not directly promote sustainability or the reduction of greenhouse gas emissions, but they do provide information about whether investment funds meet certain standards, thereby fostering transparency and empowering individuals to make informed investment choices. Thus, by separating the wheat from the chaff, sustainable labels offer a key instrument to prevent greenwashing, a main concern of regulators.

Sustainable Labels in Europe

Labels sponsored by government bodies and non-profit organizations. Since 1997, when the first sustainability label appeared in France, one of the most developed SRI markets in Europe (Crifo et al., 2020), GNPO labels have become popular instruments for certifying and promoting sustainable investments. Table 1 presents nine major labels in Europe. Labels can be sponsored by entities such as non-profit associations (such as professional responsible investment associations) and governments as part of their public policy goals for promoting sustainable investments, as in the case of France, Austria, and the Nordic countries. Labels can be segmented by whether they have a broad ESG scope (ESG labels) or if they specifically target environmental issues (Green labels). Six of these labels are categorized as ESG, and three have a specific green focus.

[Insert Table 1 here]

Most ESG labels require a certain level of ESG or other sustainability screening criteria, expressed as a percentage of the portfolio that must be subject to ESG analysis or as compulsory screening of a certain percentage of the direct holdings or items in the portfolio. The different ESG labels offer varying degrees of ESG coverage, ranging from

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[7]https://finance.ec.europa.eu/publications/renewed-sustainable-finance-strategy-and-implementation-action-plan-financing-sustainable-growth_en

90% to 100%. Green labels focus more on the environmental dimension of ESG; as such, they have stringent criteria for activities that could harm the environment in addition to social and governance criteria. They usually demand a minimum proportion of 'green' activities in the portfolio, strict exclusion of fossil fuels, and a definition of what constitutes a 'green' asset (Megaeva et al., 2021).

Sustainability ratings from the private sector. Private financial data providers have become important actors in the ESG rating industry. For instance, Morningstar is well known for its star ratings (which rank investment funds according to their financial risk-adjusted performance[8]). In August 2016, it introduced its sustainability ratings, which use a five-globe system to communicate the ESG level of funds based on companies' ESG performance. At the end of 2019, this rating scheme evolved to measure company-level ESG material risks, aiming to assess how well companies manage the material ESG issues they face within their own industry and across industries. The methodology was further updated in late 2021 to also incorporate country-level ESG risk ratings[9]. A fund with high ESG risks relative to its Morningstar global category will receive one globe, meaning that it is exposed to significant ESG risks, while a fund facing negligible financial risks in terms of ESG issues will receive a five-globe rating (see Figure 1). In addition to its generic sustainability ratings, Morningstar introduced its LCD eco-label in 2018, which signals funds that have low overall carbon risk and lower-than-average exposure to companies with fossil-fuel involvement[10]. This label is represented by a green leaf icon

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[8] The star ratings are simple cues that investors can easily interpret and relate to, similar to hotel ratings. Several studies show that star ratings are well recognized by investors (e.g., Del Guercio and Tkac, 2008; Evans and Sun, 2021; Ben-David et al., 2022). Star ratings only reflect financial factors, such as risk and past performance.

[9] See Morningstar (2021) for details on the computation of the ratings. The ESG data source is Sustainalytics, a company recently acquired by Morningstar that focuses on material risks.

[10] The LCD is awarded to funds with a Portfolio Carbon Risk Score below 10 for the trailing 12 months, and exposure to companies with fossil-fuel involvement below 7% over the same trailing 12 months. Details on the computation of these ratings can be found in Morningstar (2018).

(see Figure 1), an eye-catching signal that investors can associate with low-carbon investments aligned with the transition to a low carbon economy.

Another well-known ESG rating provider is MSCI. In 2020, MSCI launched its ESG fund ratings, which reflect the ESG characteristics of each fund's underlying holdings[11]. According to MSCI, the ESG fund ratings are designed to assess the resilience of a fund's aggregate holdings to long-term ESG risks and opportunities. Highly rated funds consist of issuers with leading or improved management of key ESG risks. The MSCI ESG ratings scale is similar to that used for credit ratings, encompassing seven categories ranging from CCC (worst) to AAA (best). Thus, a fund is rated from CCC to AAA according to the weighted average score of its holdings and its ability to manage risks relative to its peers. The rating scale is represented visually with the colors of a traffic light (see Figure 1), making it easy for investors to interpret the scale as there is a direct correspondence between the colors and the funds' ESG risk assessment.

[Insert Figure 1 here]

Sustainable Finance Disclosure Regulation (SFDR). In 2018, the EU established an ambitious sustainable finance policy agenda aimed at reorienting capital flows towards a more sustainable economy, in line with the objectives of the Paris Agreement on climate change and the United Nations 2030 agenda for sustainable development goals (SDGs)[12]. A key pillar of the European Action Plan for sustainable growth is the SFDR[13], in force since March 2021. The SFDR was designed to enhance transparency regarding the sustainability features of financial products and to avoid greenwashing in the financial services sector of the European market by setting new requirements for sustainability-

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[11] https://www.msci.com/our-solutions/esg-investing/esg-fund-ratings
[12] https://ec.europa.eu/info/publications/sustainable-finance-renewed-strategy_en
[13] Regulation (EU) 2019/2088 of the European Parliament and of the Council of November 27, 2019, on sustainability-related disclosures in the financial services sector.

related disclosures—namely, how fund managers should disclose ESG risks. According to the SFDR, funds can be classified as article 9 or article 8 funds. Article 9 (dark-green funds) specifically have sustainable goals as their objective (e.g., investing in companies whose goal is to reduce carbon emissions); whereas article 8 (light-green funds) promotes environmental or social characteristics but does not have them as the overarching objective. Since the categorization of funds into article 8 or 9 is self-assigned by fund managers, the SFDR classifications can be viewed as internal sustainability signals. In practice, the classification of funds under articles 8 or 9 is understood in the market as an unofficial label of sustainability (EFAMA, 2021).

Research Hypotheses: Alignment or Divergence of Signals?

Investors' preference for sustainable financial products has been widely acknowledged in the literature (e.g., Bauer et al., 2021), inciting funds to market themselves as socially responsible. However, publicizing sustainability characteristics alone may not be sufficient to trigger an individual's purchasing decision, given the extensive offer of comparable options and the search costs involved in making an informed decision (Gutsche and Zwergel, 2020). Sustainability labels are easy cues that can help to mitigate these informational asymmetries and, consequently, strengthen confidence in purchasing social and environmental mutual funds. To stand out, truly sustainable funds may resort to labeling by GNPOs, perceived by individuals as more trustworthy (Darnall et al., 2012, 2018). Certification by these sponsors involves a thorough, detailed, and rigorous certification process, accompanied by regular monitoring and controls in order to ensure that labeled funds indeed meet the high sustainable quality standards. Thus, our first hypothesis posits that:

Hypothesis 1: GNPO-labeled funds show better alignment with private ESG ratings than non-labeled sustainable funds

Given the multiplicity of labels, the alignment of fund sustainability signals provided by labels from different types of certifiers, namely GNPOs and private ESG rating companies, is a key issue. Several arguments can be made that standards of labels promoted by independent third parties and those of the private sector diverge. Indeed, clients of private-sector ratings are primarily professional investors whose interests and needs may differ from those offered by official labels sponsored by government bodies and other organizations, which reach out to more unsophisticated investors, like retail investors. Moreover, the motivations of different segments of sustainable investors also differ: some aim to integrate ESG risks primarily for financial reasons, while others are socially or environmentally conscious investors who put less weight on the financial impact of ESG risks and more on the social and environmental contributions of their investments[14]. Furthermore, different stakeholders can adopt different perspectives when establishing their evaluation of sustainability attributes, so labeling assessments can also differ in their goals, definitions, methodologies, and sources of data. In addition, as ESG data is often drawn from qualitative information, its analysis is inherently subjective (e.g., Chatterji et al., 2016; Berg et al., 2022; Christensen et al., 2022). The discussion is further fueled by recent studies that identify potential conflicts of interest in private ESG rating firms that may arise from common ownership (Tang et al., 2022) or commercial ties (Li et al., 2022) with rated companies. As a result, private-sector certifications might communicate different standards from those provided by independent organizations, and conflicting information might be communicated to individuals, leading to divergent

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[14] Pedersen et al. (2021) designate these two types of investors as ESG aware and ESG motivated , respectively.

conceptions regarding their objectives and requirements and, consequently, increasing investor confusion (Brécard, 2014). Drawing on these premises, we formulate two additional hypotheses concerning the alignment between GNPO labels and private ESG ratings.

Previous research recognizes that sponsorship plays a specific role in sustainability labeling, noting that the participation of independent organizations is expected to give labels greater legitimacy and trust (Darnall et al., 2012, 2018). However, should we expect any differences between government sponsored labels and those sponsored by non-profit organizations in terms of alignment with sustainability signals from the private sector? Darnall et al. (2017) argue that the incentives associated with each type of certifier shape the way their rule structures are designed. Hence, the strength of sustainability labels' institutional design will vary according to the nature of the third-party certifier (government versus other NPOs). According to Darnall et al. (2017), labels with stronger institutional designs incorporate formal rules that are more stringent in terms of environmental standards, monitoring criteria, and conformity requirements, thereby encouraging firms to develop products with superior environmental attributes. There is considerable debate regarding the greater strength of government versus other NPO labels' institutional design. While, on the one hand, the aim to achieve the best environmental impact provides an incentive to set stricter rule standards, on the other hand, relaxing these rules may attract more players to the labeling scheme (Darnall et al., 2017). However, considering the policy goal of governments (especially EU governments) to achieve low-carbon and climate-resilient development, we assume it unlikely that government labels will set the bar lower than other types of certifiers. As such, we test the hypothesis that:

Hypothesis 2: Government sponsored labels show better alignment with private ESG ratings than labels sponsored by NPOs.

Funds can also be certified by multiple labeling agencies. A natural question is whether alignment is related to the number of labels a fund holds. One can argue that if investors perceive multiple labeled funds as having higher sustainable qualities, fund managers have an incentive to comply with the standards of the different labeling schemes. However, if we assume that investors' preferences for a labeled product are not affected by the appearance of more than one label on the same product (Fonner and Sylvia, 2015) and, particularly, if the co-existence of multiple labels impairs their willingness to buy certified products (Zhang et al., 2021), the incentive to attach multiple labels is low. We thus put forward the hypothesis that:

Hypothesis 3: Multiple GNPO-labeled funds show better alignment with private ESG ratings than single labeled funds

The next set of hypotheses are put forward to explain how funds' internal sustainability signals, namely, fund self-classification under SFDR and fund names, might reflect alignment with external sustainability signals. Given that article 9 dark-green funds present more demanding obligations, we might expect labeled funds to be classified as article 9. However, the vague definition of SFDR fund categories gives fund managers some flexibility in their approach to self-assigning financial products[15], leaving room for a degree of misalignment. In this regard, a recent study by Rannou et al. (2022) crossed the SFDR classification of French ISR labeled funds with their holdings,

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[15] As Morningstar (2022b) notes, mutual fund companies take different approaches to classifying funds into articles 8 and 9, based on their own interpretation of SFDR.

documenting discrepancies on the environmental levels of article 8 funds. In view of these arguments, we formulate the following hypothesis:

Hypothesis 4: Labeled funds are more likely to be classified as article 9 SFDR funds

A fund's name is an important signal to communicate the fund's strategies and attract investors' attention. Some research shows that the use of specific terms in a fund's name can play a key role in individuals' decision-making processes, and that changing the name to more appealing designations can be an effective marketing tool (e.g., Cooper et al., 2005; Arbaa and Varon, 2019). Accordingly, including ESG-related terms in a fund's name is designed to signal its commitment to sustainability issues, thereby impacting investors' capital allocation, as documented by El Ghoul and Karoui (2021). This evidence highlights the influential nature of names in signaling a fund's sustainability features. Consequently, our next hypothesis is formulated as follows:

Hypothesis 5: Labeled funds are more likely to have ESG related appellations in the name.

Data and Variables

Overview of Labeled Funds in Europe

We start by identifying equity and fixed-income open-end funds awarded one of the following ESG labels sponsored by government entities or NPOs: Ecolabel (Austria), Towards Sustainability (Belgium), ISR for *Investissement Socialment Responsible* (France), FNG for *Forum Nachhaltige Geldanlagen* (Germany, Austria, Liechtenstein, and Switzerland) Forum for Sustainable Investments in English; LuxFLAG ESG (Luxembourg), Nordic Swan (Nordic countries), and the Green labels, LuxFLAG Climate Finance (Luxembourg), LuxFLAG Environment (Luxembourg), and Greenfin (France).

We collected information on these GNPO labels from September to December 2021, drawing on two sources of information: Morningstar Direct and labeling agency websites. All fund data comes from Morningstar Direct.

As labels and ESG ratings are awarded at fund level, the different share classes have the same label. Thus, we conducted our analysis at fund level rather than share class level. Considering the primary share class, the dataset of labeled funds is composed of 746 equity funds and 244 fixed-income funds. Although the majority of funds (around 76%) have only one label (565 equity and 185 fixed-income funds), about 22% of the funds have two labels (163 equity and 54 fixed-income funds), and a few funds have three or more labels (18 equity and 6 fixed-income funds).

As shown in Table 2, the majority of labeled funds are domiciled in Luxembourg and France. The Belgian Towards Sustainability and French ISR labels are the most common ones. Funds tend to have the label of their domicile country, although some labels, such as the Towards Sustainability and the LuxFLAG labels, do not require the fund to be domiciled in the country of the label. The broader ESG-labeled funds predominate, while green-labeled funds remain a minority.

[Insert Table 2 here]

Dataset Description

To assess the alignment of GNPO labels with those of private companies, we used the sustainability ratings of Morningstar and MSCI[16]. We considered the most recent version of Morningstar sustainability ratings (MSR hereafter), which includes both company-

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[16] As several recent studies document disagreement on ESG ratings from different rating agencies (e.g., Semenova and Hassel, 2015; Chatterji et al., 2016; Berg et al., 2022; Dimson et al., 2020; Gangi et al., 2022), considering two data sources offers a more complete picture with regard to the alignment or divergence of signals.

level and country-level ratings introduced in November 2021 (relative to September 2021). MSCI fund ratings are also relative to September 2021. As is frequently noted, one shortcoming of ESG ratings is their limited coverage (OECD, 2020), due to the limited disclosure of firms. This is also observed in the fund data as ESG scores are not available for all funds[17]. Table 3 shows the number of labeled funds with MSR and MSCI ratings. Since Morningstar has a larger coverage of funds than MSCI, we kept Morningstar data as our reference dataset.

To test our hypotheses of labels' informativeness, we also collected information on non-labeled sustainable funds sold in the EU. We used the Morningstar 'Sustainable Intentions' field to flag funds with sustainable attributes[18]. The number of non-labeled sustainable funds with MSR and MSCI ratings is also reported in Table 3. The final dataset of labeled (non-labeled) funds consists of 628 (1809) equity funds and 196 (471) fixed-income funds with Morningstar ratings, and 528 (1559) equity funds and 167 (461) fixed-income funds with MSCI ratings.

[Insert Table 3 here]

Table 4 reports the main descriptive statistics of the labeled funds regarding their sustainability risks, based on MSR (Panel A) and MSCI ratings (Panel B). For comparative purposes, we converted the MSCI alphanumerical classification to a cardinal scale, starting with 1 as CCC and culminating with 7 as AAA. The mean values range from 3 to 5 globes for equity funds, and from 3.46 to 4.25 globes for fixed-income funds. Regarding ESG labels and equity funds, the Austrian and German FNG labels present the

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[17] This is explained not only by the fact that not all securities are rated by Sustainalytics and MSCI, but also by the fact that they impose different thresholds to display the rating (percentage of eligible portfolio covered). Nevertheless, the ESG ratings' coverage has been growing.

[18] We note that Morningstar removed the data points 'Socially Responsible Fund/Socially Conscious' (used in Ceccarelli et al., 2021) in 2020, replacing them with the Sustainable Attributes framework.

highest average number of globes (above 4). For fixed-income funds, those with the German FNG and the Nordic Swan labels present the highest average number of globes (4 globes and above). Several funds holding the Belgian Towards Sustainability, the French ISR, the Nordic Swan, and the Austrian labels, which represent the majority of funds, have just one globe. Thus, several GNPO-labeled funds are assessed as having high ESG risks, implying that signals from GNPO labels and Morningstar sustainability globes might not be aligned[19].

The average MSCI ratings range from 5 to 6.02 for equity funds and from 4 to 6.5 for fixed-income funds. In the equity segment, the ESG labels with the highest MSCI ratings (above 6) coincide with those with the highest number of Morningstar globes: i.e., the Austrian Ecolabel and the FNG label. With respect to fixed-income funds, one label has an average MSCI rating of over 6 (Nordic Swan label). The minimum MSCI ratings are higher than those of MSR, even taking their different rating scales into consideration. For instance, the Nordic Swan label and the Austrian Ecolabel are awarded to funds with the lowest MSR (one globe), but the minimum MSCI rating of funds with these labels is five (corresponding to an A rating). Several labeled funds have a low minimum rating of 3 (corresponding to a BB rating).

Due to the small number of ESG-rated funds with Green labels, their analysis is more limited. Equity funds with the Greenfin label (the one awarded to the most funds) show more divergence with MSR than with MSCI ratings.

[Insert Table 4 here]

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[19] Although the average historical risk scores of the two components of the MSR, Corporate Sustainability and Sovereign Sustainability, are mostly in the range of low (values between 10-19.99) or medium (values between 20-29.99) ESG risk, some funds present high ESG risks, with risk scores above 30. These statistics are available upon request.

Sustainability Features of Labeled Funds vs. Non-Labeled Sustainable Funds

To better understand the features of GNPO labeled funds, we compare their main characteristics with those of non-labeled sustainable funds. Table 5 shows that labeled equity funds are larger, older, and charge higher management fees. On average, they also present higher MSR and MSCI ESG ratings. Furthermore, as they have lower carbon intensity and lower carbon scores, there is a larger percentage of labeled funds with the LCD compared to non-labeled sustainable funds. Regarding SFDR classifications, fewer labeled equity funds are classified under article 8 and more are classified under article 9 when compared to their non-labeled sustainable peers. In contrast to equity funds, we should note that fixed-income labeled funds appear to charge lower management fees and do not show significant size differences relative to their non-labeled counterparts. In addition, the LCD is less common, as only a small percentage of fixed-income funds holds this label. Even so, the percentage of fixed-income funds holding the LCD is higher for labeled than for non-labeled funds. As in the case of equity funds, labeled fixed-income funds exhibit higher ESG ratings in comparison to non-labeled funds.

[Insert Table 5 here]

Variables and Methods

To test our hypotheses, we run probit models where the dependent variables are dummy variables capturing alignment, in other words, if the fund is awarded the top globes from Morningstar, the top grades from MSCI, and if the fund holds the Morningstar LCD. Thus, we consider the following dummy variables: a dummy variable *(TOP MSR)* taking the value of 1 for funds awarded 4 or 5 globes, a dummy variable (*MSCI LEADER*) taking the value of 1 for funds awarded MSCI ESG ratings of AA or AAA, and a dummy variable

(*LCD*) taking the value of 1 for funds holding the LCD eco-label. To test our first hypothesis, the independent variable LABELED is a dummy variable that assumes the value of 1 if the fund has a GNPO label. To test our hypotheses on the relevance of sponsorship for alignment and of multiple GNPO labels, we distinguish labels sponsored by government agencies from other NPOs and funds that have multiple labels from those that are single labeled. Thus, the independent variables are dummy variables that identify government sponsored labeled funds (*GOVERNMENT*) and multiple labeled funds (*MULTIPLE*).

The first control variable captures funds' sustainability scores which, ultimately, are the main drivers of ESG ratings. Moreover, the methodology used by Morningstar ranks funds' sustainability levels within the fund category. Thus, if the investment category is quite competitive, the likelihood of having a lower number of globes increases, potentially producing the appearance of divergence even if there is none. To deal with this issue, we also include the log of the number of funds in the Morningstar global category as a control variable in the estimation using the Morningstar globes as the dependent variable. Given the evidence that firm features like market capitalization (Drempetic et al., 2020) drive ESG ratings at firm level, with large firms being more likely to have higher ESG ratings, we further control for the style of equity funds by adding a large cap style dummy variable. In the case of fixed-income funds, considering that ESG ratings are more widespread for corporate than for government bonds, we control for the type of fund by adding a dummy variable for corporate bond funds. Appendix 1 summarizes the variable definitions and data sources.

To analyze alignment with the SFDR and the inclusion of ESG-related appellations in the name of the funds, we consider an article 9 dummy variable (*article 9*

SFDR) and a dummy variable identifying funds with ESG terminology (*ESG NAME*) in their names.

Empirical Analysis

Alignment Between GNPO Labels and ESG Ratings

Our first inspection of the data shows that GNPO-labeled funds might be awarded low ESG ratings by private firms, but on average, compared to their non-labeled peer funds with sustainable features, they present better sustainability metrics. In this section we explore the statistical magnitude of alignment between GNPO labels and the ESG ratings provided by the private sector. Using probit models, we test whether alignment is higher in labeled funds than in non-labeled sustainable funds (H1), whether governmental labels show better alignment with the top ESG ratings (H2), and whether multiple labeled funds are also better aligned with private top ESG ratings (H3). Table 6 reports both the estimated coefficients and the average marginal effects for the different models.

Columns (1), (3) and (5) present the results of the probit models with the LABELED dummy as the independent variable of interest and the control variables described in the previous section, namely a variable capturing fund sustainability risks, the fund's investment style (large-cap or corporate bond), and the number of funds in the category in the case of Morningstar ratings. Considering the high correlations between the individual E, S, and G dimensions, we proxy for sustainability risks using the Environmental (risk) score variable[20].

For equity funds, the results show that those holding GNPO labels have a greater probability of getting higher ESG ratings, as the coefficients of the LABELED dummy

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[20] The table with the correlations between variables follows in the supplementary appendix.

variable are statistically significant at the 1% level in all the models. Holding a GNPO label increases the probability of presenting top Morningstar globes, top MSCI ESG ratings, and the LCD by 11.4, 7.3, and 8 percentage points, respectively. For fixed-income funds, the results show some alignment, but only with Morningstar globes. Holding a GNPO label increases the probability of a fixed-income fund getting top Morningstar globes by 13.3 percentage points. The results are thus supportive of H1 in the case of equity funds. Conversely, we find less support for H1 for fixed-income funds.

Columns (2), (4) and (6) report the results of the probit models with the GOVERNMENT and MULTIPLE dummy variables. The results indicate that equity funds with governmental labels show a higher probability of receiving higher ratings from both Morningstar and MSCI (9.4 and 6.2 percentage points, respectively). However, bearing a government label is not related to the probability of the fund being awarded the LCD. Having multiple GNPO labels also increases the probability of equity funds presenting higher ESG ratings, namely higher MSCI grades and the LCD (by 13.9 and 15.7 percentage points, respectively). Fixed-income funds show less alignment, as holding government labels does not impact the probability of receiving higher ratings from private entities. However, holding multiple GNPO labels increases the probability of fixed-income funds presenting top Morningstar globes (by 24.5 percentage points) or being awarded the LCD (by 10.5 percentage points). Overall, our results support H2 and H3 in the equity segment, at least as far as the MSR and MSCI ratings are concerned. In the case of fixed-income funds, the results only support H3[21].

[Insert Table 6 here]

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[21] For robustness, we also tested these three hypotheses using a different estimation method, a multilogit model where the dependent variables are the MSR and MSCI ESG ratings. The results are available on the supplementary appendix of the submission and are supportive of our findings from the probit models overall.

Alignment of Third-Party vs. Fund Sustainability Signals

While signals of labels from third-party entities are widely used by fund managers to attract socially conscious investors, funds themselves can also send signals to enhance their commitment to ESG issues. Thus, having assessed the level of alignment between GNPO labels and private company ESG ratings, we further complement the analysis by exploring the alignment of funds' internal sustainability signals, such as the SFDR category into which they self-classify, as well as fund names, with signals from external labels.

Alignment with the SFDR classification. To test the hypothesis that funds holding third-party labels are aligned with the article 9 classification of SFDR, we run a probit model using as dependent variable a dummy taking a value of 1 for funds classified as article 9 funds. Table 7 reports the estimates of the models.

[Insert Table 7 here]

The results show that funds with GNPO labels (whether equity or fixed-income funds) have a higher probability of being classified as article 9, consistent with H4. However, while the results for equity funds support the alignment between the other external sustainability signals (MSR and MSCI ratings) and the classification as article 9, with top ESG rated funds showing a higher probability of being classified as article 9 funds, the results are less clear for fixed-income funds. For the latter, those with top Morningstar globes have a higher probability of being article 9 funds. This is not the case, though, with MSCI ratings. Furthermore, funds bearing a government label are more likely to fall into article 9 classification, although only in the case of equity funds. Moreover, being awarded multiple labels increases the probability of equity and fixed-income funds being classified as dark-green funds by more than 20 percentage points.

Are fund names a good cue? A popular way for funds to signal sustainability attributes is to include ESG terminology in the name. For each fund, we manually examine whether the name features sustainable terms. We find a wide variety of such expressions in the fund names, the most common being ESG, Sustainable, Social, Environment, ISR, Responsible, Climate, Impact, and Green. We then analyze whether funds with third-party labels are more likely to have an ESG-related name. Table 8 reports the estimates of the probit models.

[Insert Table 8 here]

The results show that funds holding GNPO labels have a higher probability of including ESG jargon in their name compared to non-labeled sustainable funds, as predicted by H5. Moreover, holding government and multiple labels increases the probability of the fund name including ESG-related terms, with evidence stronger for equity funds. A robust result is that funds with top Morningstar globes and MSCI ratings also show a higher probability of having an ESG-related name. This is observed in both equity and fixed-income funds.

Discussion and Conclusion

As socially responsible investing has moved into the mainstream of financial markets, the sustainable labeling and certification of mutual funds has become popular in Europe. In addition to addressing information asymmetries, labels act as mechanisms to reduce individuals' search costs and increase transparency in the market. Yet, the proliferation of different labeling and certification schemes is accompanied by concerns about their effectiveness in providing credible information and establishing trust in the investment products' sustainable features. Thus, analyzing whether the signals from labels sponsored by different entities are aligned is an important issue.

As far as we know, our research is the first to examine the alignment of sustainability certification and labels sponsored by GNPOs and the private sector in the mutual fund industry. A preliminary analysis of GNPO-labeled equity and fixed-income funds in Europe shows divergent signals between labels sponsored by the former and those of the private sector, with the private sector perceiving some government and non-profit labeled funds as bearing high ESG risks.

We test several hypotheses on the alignment of GNPO-labeled funds with private ESG ratings. Overall, the results of the different probit models are consistent with labeled equity funds being more likely to have top ESG ratings from the private sector compared to their non-labeled sustainable counterparts. The results are also consistent with the hypothesis of greater alignment of equity government-labeled funds with top Morningstar globes and MSCI grades, but not with the LCD. Additionally, our results are supportive of multiple labeled equity funds having higher alignment with sustainability signals from the private sector, although to a lower extent in the case of Morningstar ratings. For fixed-income funds, those holding a GNPO label are more likely to be rated as a top ESG performer, but only in terms of Morningstar globes. We do not find evidence of alignment between government fixed-income funds and private ESG ratings, although holding multiple labels increases the probability of a fixed-income fund being awarded a top Morningstar globe and the LCD. Although our findings are somewhat supportive of alignment between GNPO labels and private ESG ratings, we should note that alignment is sensitive to the private ESG label used, consistent with the evidence of ESG rating divergence documented.

We complement the analysis by assessing the alignment of signals from external labels with funds' internal sustainability signals, namely the article 9 SFDR category into which they self-classify, as well as their names. The results support our hypotheses that

funds with a GNPO label are more likely to fall into the article 9 category of SFDR and to have an ESG-related name. Equity funds bearing a government label and multiple labels are also more likely to be classified as article 9 funds and to have ESG jargon in their name. In the fixed-income segment, multiple labeled funds have a higher likelihood of being classified as dark-green, whereas government labeled ones are more likely to have ESG terminology in their name.

Overall, our findings indicate that GNPO-labeled funds are more likely to be better assessed by the private sector, particularly in the case of equity funds, and also to be more aligned with internal sustainability signals by way of article 9 of SFDR and fund names. These findings have important implications for the organization of sustainable investment markets. Sustainability labels were designed to inform individuals about the way funds manage ESG risks, and the existence of nonaligned signals might lead to skepticism, mistrust, and confusion, potentially interfering with the capacity of sustainability labeling to efficiently fulfill its role. As new ecolabels come onto the scene, such as the EU Ecolabel for investment funds (European Commission, 2020) and a proposed UK label (FCA, 2021), potentially adding to existing ones, our research findings are relevant to both regulators and policymakers who need to consider the effectiveness of labeling schemes in promoting the allocation of capital resources toward a sustainable economy. Over and above the proliferation of labels, it is disagreement between signals that can hamper their effectiveness. Thus, regulators need to pay attention to the alignment of signals. The role of labels as a public policy tool for reducing greenwashing risk and prompting a race to the top in terms of sustainability features should not be ignored. In the spirit of Akerlof (1970), a market without reliable signals of investments' sustainable features is unlikely to prevail, as individuals will not know how to distinguish

socially and environmentally responsible funds from conventional funds, consequently jeopardizing the goal of redirecting capital to a greener economy.

This paper offers avenues for further research, such as assessing how investors react to extant labels and certifications, and which sustainability signals have the greatest impact on investors' responses. This issue can be explored by investigating the impact of sustainable labels and certifications sponsored by different types of entities (GNPOs versus private companies) on investors' choices, as measured by the magnitude and direction of flows to mutual funds awarded with these signals. Whether these flows are channeled toward investments with a positive sustainability impact is yet another issue that deserves further exploration.

References

Akerlof, G. A. (1970). The market for "lemons": Quality uncertainty and the market mechanism. *The Quarterly Journal of Economics*, *84*(3), 488–500.

Alajoutsijärvi, K., Kettunen, K., & Sohlo, S. (2018). Shaking the status quo: Business accreditation and positional competition. *Academy of Management Learning & Education*, *17*(2), 203-225.

Ammann, M., Bauer, C., Fischer, S., & Müller, P. (2019). The impact of the Morningstar Sustainability Rating on mutual fund flows. *European Financial Management*, *25*(3), 520-553.

Arbaa, O., & Varon, E. (2019). The performance and fund flows of name-change funds. *Journal of Behavioral and Experimental Finance*, *22*, 7-13.

Balafoutas, L., & Kerschbamer, R. (2020). Credence goods in the literature: What the past fifteen years have taught us about fraud, incentives, and the role of institutions. *Journal of Behavioral and Experimental Finance*, *26*, 100285.

Bauer, R., Ruof, T., & Smeets, P. (2021). Get real! Individuals prefer more sustainable investments. *The Review of Financial Studies*, *34*(8), 3976-4043.

Ben-David, I., Li, J., Rossi, A., & Song, Y. (2022). What do mutual fund investors really care about? *The Review of Financial Studies*, *35*(4), 1723–1774.

Berg, F., Kölbel, J., & Rigobon, R. (2022). *Aggregate confusion: The divergence of ESG ratings. Review of Finance*. https://doi.org/10.1093/rof/rfac033

Brécard, D. (2014). Consumer confusion over the profusion of eco-labels: Lessons from a double differentiation model. *Resource and Energy Economics*, *37*, 64-84.

Capelle-Blancard, G., & Petit, A. (2017). The weighting of CSR dimensions: One size does not fit all. *Business & Society*, *56*(6), 919-943.

Castka, P., & Corbett, C. J. (2016). Governance of eco-labels: Expert opinion and media coverage. *Journal of Business Ethics*, *135*(2), 309-326.

Chatterji, A. K., Durand, R., Levine, D. I., & Touboul, S. (2016). Do ratings of firms converge? Implications for managers, investors and strategy researchers. *Strategic Management Journal*, *37*(8), 1597-1614.

2Christensen, D. M., Serafeim, G., & Sikochi, S. (2022). Why is corporate virtue in the eye of the beholder? The case of ESG ratings. *The Accounting Review, 97*(1), 147-175.

Cooper, M. J., Gulen, H., & Rau, P. R. (2005). Changing names with style: Mutual fund name changes and their effects on fund flows. *The Journal of Finance*, *60*(6), 2825-2858.

Crifo, P., Durand, R., & Gond, J. P. (2020). Le rôle des labels dans la finance verte: Construction et régulation d'un marché des labels en France. *Revue d'Economie Financière*, *138*(2), 209-223.

Darby, M., & Karni, E. (1973). Free competition and the optimal amount of fraud. *Journal of Law and Economics*, *16*(1), 67-88.

Darnall, N., Ponting, C., & Vazquez-Brust, D. A. (2012). Why consumers buy green. In D. Vazquez-Brust & J. Sarkis (Eds.), *Green growth: Managing the transition to a sustainable economy* (pp. 287-308). Springer.

Darnall, N., Ji, H., & Potoski, M. (2017). Institutional design of ecolabels: Sponsorship signals rule strength. *Regulation & Governance*, *11*(4), 438-450.

Darnall, N., Ji, H., & Vázquez-Brust, D. A. (2018). Third-party certification, sponsorship, and consumers' ecolabel use. *Journal of Business Ethics*, *150*(4), 953-969.

Del Guercio, D., & Tkac, P. A. (2008). Star power: The effect of Morningstar ratings on mutual fund flow. *Journal of Financial and Quantitative Analysis*, *43*(4), 907-936.

Delmas, M. A., & Lessem, N. (2017). Eco-premium or eco-penalty? Eco-labels and quality in the organic wine market. *Business & Society*, *56*(2), 318-356.

Delmas, M., & Blass, V. D. (2010). Measuring corporate environmental performance: the trade-offs of sustainability ratings. *Business Strategy and the Environment*, *19*(4), 245-260.

Derwall, J., Koedijk, K., & Ter Horst, J. (2011). A tale of values-driven and profit-seeking social investors. *Journal of Banking & Finance*, *35*(8), 2137-2147.

Desai, V. M. (2018). Third-party certifications as an organizational performance liability. *Journal of Management*, *44*(8), 3096-3123.

Dimson, E., Marsh, P., & Staunton, M. (2020). Divergent ESG ratings. *The Journal of Portfolio Management*, *47*(1), 75-87.

Drempetic, S., Klein, C., & Zwergel, B. (2020). The influence of firm size on the ESG score: Corporate sustainability ratings under review. *Journal of Business Ethics*, *167*(2), 333-360.

EFAMA (2021, November). *The European ESG market at the end Q1 2021 – Introducing the SFDR.*

https://www.efama.org/sites/default/files/files/Market%20Insights%20Issue7%20ESG%20SFDR_0.pdf

El Ghoul, S., & Karoui, A. (2021). What's in a (green) name? The consequences of greening fund names on fund flows, turnover, and performance. *Finance Research Letters*, *39*, 101620.

Erdem, T., & Swait, J. (1998). Brand equity as a signaling phenomenon. *Journal of Consumer Psychology*, *7*(2), 131-157.

European Commission (2020). *Testing draft EU ecolabel criteria on UCITS equity funds*. Technical Report. https://op.europa.eu/en/publication-detail/-/publication/c254aeb3-ba79-11ea-811c-01aa75ed71a1/language-en

Evans, R. B., & Sun, Y. (2021). Models or stars: The role of asset pricing models and heuristics in investor risk adjustment. *The Review of Financial Studies*, *34*(1), 67-107.

Financial Conduct Authority – FCA (2021). Sustainability Disclosure Requirements (SDR) and investment labels, Discussion paper 21/4, November 2021.

https://www.fca.org.uk/publication/discussion/dp21-4.pdf

Fonner, R., & Sylvia, G. (2015). Willingness to pay for multiple seafood labels in a niche market. *Marine Resource Economics*, 30(1), 51-70.

Fransen, L. (2011). Why do private governance organizations not converge? A political–institutional analysis of transnational labor standards regulation. *Governance*, *24*(2), 359-387.

Gallastegui, I. G. (2002). The use of eco-labels: a review of the literature. *European Environment*, *12*(6), 316-331.

Gangi, F., Varrone, N., Daniele, L. M., & Coscia, M. (2022). Mainstreaming socially responsible investment: Do environmental, social and governance ratings of investment funds converge? *Journal of Cleaner Production*, *135*, 131684.

Gorton, M., Tocco, B., Yeh, C. H., & Hartmann, M. (2021). What determines consumers' use of eco-labels? Taking a close look at label trust. *Ecological Economics*, *189*, 107173.

Graffin, S. D., & Ward, A. J. (2010). Certifications and reputation: Determining the standard of desirability amidst uncertainty. *Organization Science*, *21*(2), 331-346.

Gutsche, G., & Zwergel, B. (2020). Investment barriers and labeling schemes for socially responsible investments. *Schmalenbach Business Review*, *72*, 111–157.

Harbaugh, R., Maxwell, J. W., & Roussillon, B. (2011). Label confusion: The Groucho effect of uncertain standards. *Management Science*, *57*(9), 1512-1527.

Iraldo, F., Griesshammer, R., & Kahlenborn, W. (2020). The future of ecolabels. *The International Journal of Life Cycle Assessment*, *25*, 833-839.

Jahn, G., Schramm, M., & Spiller, A. (2005). The reliability of certification: Quality labels as a consumer policy tool. *Journal of Consumer Policy*, *28*(1), 53-73.

Kirmani, A., & Rao, A. R. (2000). No pain, no gain: A critical review of the literature on signaling unobservable product quality. *Journal of Marketing*, *64*(2), 66-79.

Li, X., Lou, Y., & Zhang, L. (2022). *Do Commercial Ties Influence ESG Ratings? Evidence from Moody's and S&P*. SSRN Working Paper. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4190204

Lyon, T. P., & Montgomery, A. W. (2015). The means and end of greenwash. *Organization & Environment*, *28*(2), 223–249.

Megaeva, K., Engelen, P. J., & Van Liedekerke, L. (2021). *A Comparative Study of European Sustainable Finance Labels*. SSRN Working Paper. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3790435

Morningstar (2018, May). *Morningstar® Low Carbon Designation*[TM]. https://s21.q4cdn.com/198919461/files/doc_news/2018/Morningstar-Low-Carbon-Designation-Methodology-Final.pdf

Morningstar (2021, November). *Morningstar sustainability rating methodology*. https://www.morningstar.com/content/dam/marketing/shared/research/methodology/SustainabilityRatingMethodology_2021.pdf

Morningstar (2022a, January). *Global Sustainable Fund Flows: Q4 2021 in Review.* https://www.morningstar.com/lp/global-esg-flows

Morningstar (2022b, February). *SFDR Article 8 and Article 9 Funds: 2021 in Review.* *https://www.morningstar.com/en-uk/lp/sfdr-article8-article9?utm_medium=native&utm_campaign=emea_investors_sites*

Nuttavuthisit, K., & Thøgersen, J. (2017). The importance of consumer trust for the emergence of a market for green products: The case of organic food. *Journal of Business Ethics*, *140*(2), 323-337.

OECD (2020). *Sustainable and Resilient Finance — OECD Business and Finance Outlook 2020*. OECD Publishing.

Pedersen, L. H., Fitzgibbons, S., & Pomorski, L. (2021). Responsible investing: The ESG-efficient frontier. *Journal of Financial Economics*, *142*(2), 572-597.

Polidoro, F. (2013). The competitive implications of certifications: The effects of scientific and regulatory certifications on entries into new technical fields. *The Academy of Management Journal*, *56*(2), 597–627.

Rannou, Y., Boutabba, M. A., & Mercadier, M. (2022). *How Can Sri Labels Be Reinvented in Europe? Evidence from the French Sri Label*. SSRN Working Paper. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4266347

Rao, H. (1994). The social construction of reputation: Certification contests, legitimation, and the survival of organizations in the American automobile industry: 1895–1912. *Strategic Management Journal*, *15*(1 S), 29–44.

Reinecke, J., Manning, S., & Von Hagen, O. (2012). The emergence of a standards market: Multiplicity of sustainability standards in the global coffee industry. *Organization Studies*, *33*(5-6), 791-814.

Rhodes, M. J. (2010). Information asymmetry and socially responsible investment. *Journal of Business Ethics*, *95*(1), 145-150.

Sandberg, J., Juravle, C., Hedesström, T. M., & Hamilton, I. (2009). The heterogeneity of socially responsible investment. *Journal of Business Ethics*, *87*(4), 519-533.

Semenova, N., & Hassel, L. G. (2015). On the validity of environmental performance metrics. *Journal of Business Ethics*, *132*(2), 249-258.

Shaw, C., Groene, O., Mora, N., & Sunol, R. (2010). Accreditation and ISO certification: do they explain differences in quality management in European hospitals? *International Journal for Quality in Health Care*, *22*(6), 445-451.

Sigurdsson, V., Larsen, N. M., Pálsdóttir, R. G., Folwarczny, M., Menon, R. V., & Fagerstrøm, A. (2022). Increasing the effectiveness of ecological food signaling: Comparing sustainability tags with eco-labels. *Journal of Business Research*, *139*, 1099-1110.

Tang, D. Y., Yan, J., & Yao, C. Y. (2022). *The determinants of ESG ratings: Rater ownership matters*. Proceedings of Paris December 2021 Finance Meeting EUROFIDAI-ESSEC.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3889395#

Thøgersen, J., Haugaard, P., & Olesen, A. (2010). Consumer responses to ecolabels. *European Journal of Marketing, 14*(11-12), 1787-1810.

van Amstel, M., Driessen, P., & Glasbergen, P. (2008). Ecolabeling and information asymmetry: a comparison of five ecolabels in the Netherlands. *Journal of Cleaner Production*, *16*(3), 263-276.

Zhang, X., Yin, H., & Zhao, R. (2021). Consumer willingness to pay for eco-labels in China: A choice experiment approach. *Journal of Management Analytics*, *8(*4), 673-692.

Figures and Tables

Figure 1. Sustainability ratings symbols

Source: Morningstar

Source: MSCI

Table 1. Labels included in this study

Label (country)		Sponsor	Scope	Introduction date	ESG coverage
Umweltzeichen - Ecolabel in English (Austria)		Government	ESG	1990/**2004** for financial products	100%
Towards Sustainability (Belgium)		Not-for-profit organization*	ESG	February 2019	100%
Nordic Swan (Nordic countries)		Government	ESG	1989/ **June 2017** for financial products	90%
ISR (France)		Government	ESG	January 2016	90%
LuxFLAG ESG (Luxembourg)		Non-profit organization	ESG	May 2014	100%
FNG (Germany, Austria, Liechtenstein, and Switzerland)		Non-profit organization	ESG	2015	100%
LuxFLAG Climate Finance (Luxembourg)		Non-profit organization	Green	September 2016	100%
LuxFLAG Environment (Luxembourg)		Non-profit organization	Green	June 2011	100%
Greenfin (France)		Government	Green	December 2015	100%

* Although there are differences between a non-profit organization and a not-for-profit organization, we use the expression non-profit as an umbrella term for these types of organizations.

Table 2. Equity and fixed-income labeled funds by domicile

Domicile Country	ESG Labels						Green Labels		
	Ecolabel	Towards Sust.	Nordic SWAN	ISR	LuxFLAG ESG	FNG	LuxFLAG Climate Finance	LuxFLAG Environment	Greenfin
Panel A: Equity funds (746)									
Australia	0	1	0	0	0	0	0	0	0
Austria	29	0	0	0	0	17	0	0	0
Belgium	0	42	0	0	10	0	0	1	0
Denmark	0	17	17	0	0	0	0	0	0
Finland	2	0	2	0	0	0	0	0	0
France	3	15	0	264	8	5	0	0	4
Germany	5	0	0	1	0	14	0	0	0
Ireland	1	19	0	6	0	3	0	0	0
Luxembourg	11	166	5	161	30	39	1	4	3
Netherlands	0	3	0	0	0	0	0	0	0
Norway	0	3	3	0	0	0	0	0	0
Sweden	0	10	15	0	0	0	0	0	0
Taiwan	0	1	0	0	0	0	0	0	0
United Kingdom	0	4	0	6	0	0	0	0	0
Total	51	281	42	438	48	78	1	5	7
Panel B: Fixed-income funds (244)									
Austria	39	0	0	0	0	15	0	0	0
Belgium	0	5	0	0	0	0	0	0	0
Denmark	0	3	3	0	0	0	0	0	0
Finland	0	0	1	0	0	0	0	0	0
France	1	4	0	69	0	2	0	0	9
Germany	4	0	0	0	0	9	0	0	0
Ireland	0	3	0	3	0	0	0	0	1
Luxembourg	5	52	1	43	7	7	0	1	7
Norway	1	7	3	1	1	1	1	1	1
Sweden	0	4	1	1	0	0	0	0	0
United Kingdom	0	0	0	1	0	0	0	0	0
Total	50	78	9	118	8	34	1	2	18

This table reports the number of GNPO labeled funds per domicile for each of the ESG and Green labels. Panel A refers to equity funds and Panel B to fixed-income funds. Several funds are awarded with multiple labels.

Table 3. Description of dataset

	GNPO-labeled funds			non-GNPO -labeled sustainable funds		
	Equity	**Fixed-income**	**Total**	**Equity**	**Fixed-Income**	**Total**
Collected funds (primary shares)	746	244	990	2396	781	3177
Less: Missing information on Morningstar Sustainability Ratings	*118*	*48*	*166*	*587*	*310*	*897*
Dataset of funds with Morningstar Sustainability Ratings	**628**	**196**	**824**	**1809**	**471**	**2280**
Less: Missing information on MSCI ESG Ratings	*100*	*29*	*129*	*250*	*10*	*260*
Dataset of funds with MSCI ESG ratings	**528**	**167**	**695**	**1559**	**461**	**2020**

Labeled funds are those with the following GNPO labels*:* Ecolabel (Austria); Towards Sustainability (Belgium); ISR (France); FNG (Germany, Austria, Liechtenstein, and Switzerland); LuxFLAG ESG (Luxembourg); Nordic Swan (Nordic countries); and Green labels: LuxFLAG Climate Finance (Luxembourg); LuxFLAG Environment (Luxembourg); and Greenfin (France). Non-labeled sustainable funds are those with Sustainable Intention field of Morningstar that do not hold any of the previous GNPO labels.

Table 4. Summary statistics of Morningstar globes and MSCI ratings of labeled funds

Sustainability ratings	ESG Labels						Green Labels		
	Ecolabel	Towards Sust.	Nordic SWAN	ISR	LuxFLAG ESG	FNG	LuxFLAG Climate Finance	LuxFLAG Environment	Greenfin
Panel A: Morningstar globes									
Equity funds									
Mean	4.23	3.89	3.64	3.83	3.58	4.01	3.00	5.00	4.00
Max	5.00	5.00	5.00	5.00	5.00	5.00			5.00
Min	1.00	1.00	1.00	1.00	2.00	2.00			2.00
SD	0.98	1.00	0.96	0.99	1.22	1.06			1.41
Observations	47	232	36	380	38	71	1	1	5
Fixed-income funds									
Mean	3.95	3.80	4.00	3.46	3.86	4.25		4.00	4.15
Max	5.00	5.00	5.00	5.00	5.00	5.00			5.00
Min	2.00	2.00	3.00	1.00	2.00	3.00			4.00
SD	0.82	0.71	0.58	0.88	0.90	0.67			0.38
Observations	43	60	7	92	7	32		1	13
Panel B: MSCI ratings									
Equity funds									
Mean	6.04	5.86	5.94	5.84	5.78	6.00	5.00	6.00	6.00
Max	7.00	7.00	7.00	7.00	7.00	7.00			6.00
Min	5.00	4.00	5.00	3.00	3.00	5.00			6.00
SD	0.62	0.80	0.69	0.76	0.90	0.67			
Observations	47	212	34	299	36	68	1	1	5
Fixed-income funds									
Mean	5.53	5.63	6.50	5.89	5.33	5.71		4.00	5.83
Max	7.00	7.00	7.00	7.00	6.00	7.00			7.00
Min	4.00	3.00	6.00	5.00	4.00	3.00			5.00
SD	0.91	0.92	0.55	0.74	0.82	0.86			0.58
Observations	40	57	6	72	6	31		1	12

This table reports the descriptive statistics of the MSR (or Morningstar globes, ranging from 1 to 5) and MSCI ratings by label (Panels A and B, respectively). Summary statistics are the mean, maximum, minimum, and standard deviation. Observations correspond to the number of funds. Each panel presents statistics for both equity funds and fixed-income funds. MSCI ratings are converted on a scale of 1 to 7 (with 1 corresponding to CCC and 7 to AAA).

Table 5. Labeled funds versus non-labeled sustainable funds' features

VARIABLES	GNPO Labeled funds			Non-GNPO sustainable funds			t-statistic	p-value	Total Obs
	Mean	Std. dev.	Obs	Mean	Std. dev.	Obs			
Panel A: Equity funds									
Size (million USD)	832	1,570	611	579	1,190	1,805	3.63	(0.00)	2,416
Age	12.85	10.26	628	11.40	10.15	1,809	3.05	(0.00)	2,437
Management fees	1.13	0.52	477	0.98	0.54	1,267	5.19	(0.00)	1,744
MSR	3.83	1.02	628	3.52	1.05	1,809	6.57	(0.00)	2,437
Environmental Risk Score	4.14	3.56	622	4.15	3.65	1,756	-0.08	(0.94)	2,378
Social Risk Score	8.03	3.62	622	8.25	3.67	1,756	-1.36	(0.17)	2,378
Governance Risk Score	6.66	3.27	622	6.87	3.55	1,756	-0.31	(0.19)	2,378
Carbon Score	6.55	2.30	570	7.23	3.07	1,538	-5.47	(0.00)	2,108
Carbon Intensity	120.10	86.49	575	140.72	141.01	1,568	4.08	(0.00)	2,143
Number of funds in the category	3,415	2,531	604	3,384	2,623	1,758	0.26	(0.79)	2,362
MSCI ESG rating	5.83	0.77	528	5.60	0.95	1,559	5.68	(0.00)	2,087
MSCI Environmental Score	6.23	0.66	528	6.03	0.70	1,559	5.88	(0.00)	2,087
MSCI Social Score	5.34	0.36	528	5.23	0.37	1,559	5.72	(0.00)	2,087
MSCI Governance Score	5.43	0.52	528	5.24	0.67	1,559	6.71	(0.00)	2,087
Percentage of LCD funds	0.60	0.49	628	0.51	0.50	1,809	3.97	(0.00)	2,437
Percentage of Article 8 (SFDR) funds	0.50	0.50	628	0.68	0.47	1,809	-7.61	(0.00)	2,437
Percentage of Article 9 (SFDR) funds	0.30	0.46	628	0.13	0.34	1,809	8.58	(0.00)	2,437
Panel B: Fixed-income funds									
Size (million USD)	654	1,130	192	550	1,150	450	1.06	(0.29)	642
Age	11.95	10.22	196	10.32	8.96	471	1.94	(0.05)	667
Management fees	0.56	0.34	143	0.74	0.40	350	5.03	(0.00)	493
MSR	3.71	0.84	196	3.44	0.96	471	3.58	(0.00)	667
Environmental Risk Score	3.32	3.73	185	5.48	10.45	430	-3.77	(0.00)	615
Social Risk Score	8.13	3.58	185	9.76	9.34	430	-3.11	(0.00)	615
Governance Risk Score	7.16	3.48	185	8.72	9.34	430	-3.02	(0.00)	615
Carbon Score	8.37	1.72	106	8.66	1.42	186	-1.46	(0.15)	292
Carbon Intensity	157.39	106.45	103	157.99	103.41	182	-0.05	(0.96)	285
Number of funds in the category	1,916	349	196	1,781	546	471	3.86	(0.00)	667
MSCI ESG rating	5.73	0.89	167	5.25	1.23	461	5.38	(0.00)	628
MSCI Environmental Score	6.26	0.78	167	5.93	0.89	461	4.61	(0.00)	628
MSCI Social Score	5.64	0.77	167	5.45	0.83	461	2.61	(0.01)	628
MSCI Governance Score	5.83	0.73	167	5.54	0.82	461	4.17	(0.00)	628
Percentage of LCD funds	0.23	0.42	168	0.13	0.33	471	2.13	(0.04)	639
Percentage of Article 8 (SFDR) funds	0.53	0.50	196	0.66	0.47	471	3.15	(0.00)	667
Percentage of Article 9 (SFDR) funds	0.24	0.43	196	0.13	0.33	471	3.28	(0.00)	667

This table reports descriptive statistics on fund characteristics for labeled and non-labeled sustainable equity (Panel A) and fixed-income (Panel B) funds. Size is aggregate fund size in million USD. Age is the fund age measured in years since fund inception date till September 2021. Management fees correspond to the costs shareholders paid for management and administrative services. MSR refers to Morningstar globes (1 to 5). Environmental, Social and Governance Risk Scores correspond to Morningstar risk scores with a lower value meaning a lower risk. Carbon score is the asset-weighted sum of the carbon risk scores of fund holdings, averaged over the trailing 12 months, with a lower score indicating lower carbon risk. Carbon intensity is the asset-weighted average of holdings with actual emissions data. MSCI ESG rating is converted on a scale of 1 to 7 (with 1 corresponding to the CCC rating and 7 to the AAA rating). MSCI Environmental, Social and Governance Scores correspond to MSCI scores ranging from 1 to 10, with a higher value meaning a lower risk. The T test is for the difference in means. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level.

Table 6. Alignment between GNPO labels and private ESG ratings

VARIABLES	TOP MSR (1) Coefficient	Marginal effect	TOP MSR (2) Coefficient	Marginal effect	MSCI LEADER (3) Coefficient	Marginal effect	MSCI LEADER (4) Coefficient	Marginal effect	LCD (5) Coefficient	Marginal effect	LCD (6) Coefficient	Marginal effect
					Panel A: Equity Funds							
LABELED	0.30***	0.114***			0.22***	0.073***			0.24***	0.08***		
	(0.06)	(0.02)			(0.07)	(0.02)			(0.06)	(0.02)		
GOVERNMENT			0.25***	0.094***			0.19**	0.062*			-0.01	0.00
			(0.08)	(0.03)			(0.09)	(0.03)			(0.08)	(0.03)
MULTIPLE			0.23*	0.089*			0.42***	0.139***			0.47***	0.157***
			(0.12)	(0.05)			(0.14)	(0.05)			(0.13)	(0.04)
Environmental (risk) score	Y		Y		Y		Y		Y		Y	
Number funds category	Y		Y									
Large cap style	Y		Y		Y		Y		Y		Y	
Constant	0.23		0.21		-4.21***		-4.22***		0.45***		0.46***	
	(0.29)		(0.29)		(0.34)		(0.34)		(0.10)		(0.10)	
Pseudo R^2	0.040		0.040		0.117		0.123		0.139		0.140	
Observations	2,305		2,305		2,087		2,087		2,378		2,378	
					Panel B: Fixed-income funds							
LABELED	0.36***	0.133***			0.13	0.03			0.22	0.048		
	(0.11)	(0.04)			(0.14)	(0.03)			(0.13)	(0.03)		
GOVERNMENT			0.01	0.005			0.22	0.049			-0.12	-0.026
			(0.14)	(0.05)			(0.18)	(0.04)			(0.18)	(0.04)
MULTIPLE			0.66***	0.245***			-0.33	-0.076			0.48**	0.105**
			(0.24)	(0.09)			(0.28)	(0.07)			(0.25)	(0.05)
Environmental (risk) score	Y		Y		Y		Y		Y		Y	
Number funds category	Y		Y									
Corporate bond style	Y		Y		Y		Y		Y		Y	
Constant	0.27		0.13		-8.27***		-8.32***		-0.37**		-0.28	
	(0.96)		(0.96)		(0.68)		(0.67)		(0.18)		(0.18)	
Pseudo R^2	0.0459		0.0475		0.403		0.4094		0.0904		0.0925	
Observations	615		615		628		628		615		615	

This table reports estimated coefficients and marginal effects from probit models for equity funds (Panel A) and fixed-income funds (Panel B). Variables are described in Appendix 1. Robust standard errors in parenthesis. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level.

Table 7. Alignment between third-party labels and SFDR article 9 funds

VARIABLES	Article 9 SFDR							
	(1)		(2)		(3)		(4)	
	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect
Panel A: Equity funds								
LABELED	0.58***	0.144***	0.65***	0.162***				
	(0.06)	(0.02)	(0.07)	(0.02)				
GOVERNMENT					0.19**	0.047**	0.20**	0.048**
					(0.08)	(0.02)	(0.09)	(0.02)
MULTIPLE					0.99***	0.237***	1.01***	0.245***
					(0.12)	(0.03)	(0.13)	(0.03)
TOP MSR	0.23***	0.056***			0.23***	0.055***		
	(0.06)	(0.02)			(0.06)	(0.02)		
MSCI LEADER			0.32***	0.079***			0.30***	0.073***
			(0.07)	(0.02)			(0.07)	(0.02)
Constant	-1.25***		-1.32***		-1.20***		-1.25***	
	(0.05)		(0.06)		(0.05)		(0.06)	
Pseudo R^2	0.045		0.059		0.063		0.075	
Observations	2,437		2,087		2,437		2,087	
Panel B: Fixed-income funds								
LABELED	0.36***	0.081***	0.55***	0.13***				
	(0.13)	(0.03)	(0.13)	(0.03)				
GOVERNMENT					-0.18	-0.038	-0.09	-0.02
					(0.18)	(0.04)	(0.19)	(0.04)
MULTIPLE					1.02***	0.222***	1.08***	0.247***
					(0.24)	(0.05)	(0.25)	(0.05)
TOP MSR	0.76***	0.17***			0.73***	0.159***		
	(0.13)	(0.03)			(0.14)	(0.03)		
MSCI LEADER			0.19	0.044			0.22*	0.051*
			(0.13)	(0.03)			(0.13)	(0.03)
Constant	-1.61***		-1.27***		-1.53***		-1.22***	
	(0.12)		(0.10)		(0.11)		(0.10)	
Pseudo R^2	0.081		0.041		0.1041		0.061	
Observations	667		628		667		628	

This table reports estimated coefficients and marginal effects from probit models for equity funds (Panel A) and fixed-income funds (Panel B). Variables are described in Appendix 1. Robust standard errors in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level.

Table 8. Alignment between labels and a ESG-related name

VARIABLES	ESG NAME							
	(1)		(2)		(3)		(4)	
	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect	Coefficient	Marginal effect
Panel A: Equity funds								
LABELED	0.38***	0.146***	0.39***	0.152***				
	(0.06)	(0.02)	(0.06)	(0.02)				
GOVERNMENT					0.29***	0.113***	0.26***	0.1***
					(0.07)	(0.03)	(0.08)	(0.03)
MULTIPLE					0.28**	0.107**	0.35***	0.134***
					(0.12)	(0.05)	(0.13)	(0.05)
TOP MSR	0.35***	0.137***			0.36***	0.138***		
	(0.05)	(0.02)			(0.05)	(0.02)		
MSCI LEADER			0.35***	0.135***			0.35***	0.134***
			(0.06)	(0.02)			(0.06)	(0.02)
Constant	-0.30***		-0.34***		-0.28***		-0.31***	
	(0.04)		(0.05)		(0.04)		(0.05)	
Pseudo R^2	0.029		0.030		0.027		0.027	
Observations	2,437		2,087		2,437		2,087	
Panel B: Fixed-income funds								
LABELED	0.70***	0.243***	0.78***	0.288***				
	(0.12)	(0.04)	(0.12)	(0.04)				
GOVERNMENT					0.77***	0.113***	0.66***	0.243***
					(0.15)	(0.03)	(0.16)	(0.06)
MULTIPLE					0.27	0.107	0.63**	0.232**
					(0.26)	(0.05)	(0.27)	(0.10)
TOP MSR	0.79***	0.272***			0.81***	0.138***		
	(0.10)	(0.03)			(0.10)	(0.02)		
MSCI LEADER			0.31***	0.113***			0.31***	0.115***
			(0.10)	(0.04)			(0.10)	(0.04)
Constant	-0.48***		-0.28***		-0.47***		-0.25***	
	(0.08)		(0.08)		(0.08)		(0.08)	
Pseudo R^2	0.117		0.077		0.124		0.070	
Observations	667		628		667		628	

This table reports estimated coefficients and marginal effects from probit models for equity funds (Panel A) and fixed-income funds (Panel B). Variables are described in in Appendix 1. Robust standard errors in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level.

Appendix 1

Description of variables used in the probit models

Variables	Description	Source
TOP MSR	Dummy variable if the fund has MSR equal to 4 or 5 globes, zero otherwise.	Morningstar
MSCI LEADER	Dummy variable if the fund has MSCI ESG rating equal to AAA or AA, zero otherwise.	MSCI
LCD	Dummy variable if the fund is awarded Morningstar LCD, zero otherwise. LCD is awarded to funds with a Portfolio Carbon Risk Score below 10 for the trailing 12 months, and exposure to companies with fossil-fuel involvement below 7% over the same trailing 12 months.	Morningstar
Article 9 SFDR	Dummy variable if the fund is classified as article 9, zero otherwise.	Morningstar
ESG NAME	Dummy variable if the fund has ESG jargon in the name, zero otherwise. Fund names include a wide variety of ESG-related expressions. The most common are ESG, Sustainable, Social, Environment, ISR, Responsible, Climate, Impact, and Green. The complete list of designations is available upon request.	Morningstar
LABELED	A dummy variable that indicates if the fund holds a government or Non-Profit Organization sponsored label, 0 otherwise.	Authors
GOVERNMENT	A dummy variable that indicates if the fund holds a government sponsored label, zero otherwise.	Authors
MULTIPLE	A dummy variable that indicates if the fund holds more than 1 label, zero otherwise.	Authors
Environmental Risk Score	Risk Score on the environmental (E) pillar by Morningstar calculated as an asset-weighted average of the corresponding company-level environmental risk score.	Morningstar
Number funds category	Log of the number of funds in the Morningstar global category.	Morningstar
MSCI Environmental Score	MSCI Environmental Score measures holdings' management of and exposure to key environmental risks and opportunities	MSCI
Large cap style	Dummy variable if an equity fund is classified as a large cap fund, zero otherwise.	Morningstar
Corporate bond style	Dummy variable if a fixed-income fund is classified as a corporate bond fund, zero otherwise.	Morningstar

APPENDIX Tables

Table A1: Correlation between variables

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Panel A: Equity funds																
(1) TOP MSR	1.00															
(2) MSCI LEADER	0.12	1.00														
(3) LCD	0.26	0.06	1.00													
(4) LABELED	0.10	0.11	0.17	1.00												
(5) GOVERNMENTAL	0.10	0.12	0.13	0.83	1.00											
(6) MULTIPLE	0.07	0.10	0.11	0.47	0.48	1.00										
(7) Environmental Risk Score	-0.11	0.07	-0.20	-0.07	-0.06	-0.03	1.00									
(8) Social Risk Score	-0.07	-0.22	-0.10	-0.08	-0.07	-0.05	0.96	1.00								
(9) Governance Risk Score	-0.03	-0.19	-0.11	-0.08	-0.07	-0.05	0.97	0.99	1.00							
(10) Number of funds in the category	0.10	0.10	0.23	0.01	0.00	0.04	-0.09	0.01	-0.03	1.00						
(11) Large cap style	0.19	0.01	0.39	0.11	0.12	0.06	-0.08	0.04	0.03	0.29	1.00					
(12) MSCI Environmental Score	0.25	0.36	0.14	0.12	0.13	0.04	-0.22	0.14	0.17	0.26	0.35	1.00				
(13) MSCI Social Score	0.23	0.51	0.10	0.12	0.13	0.09	0.09	-0.14	0.02	0.04	0.19	0.44	1.00			
(14) MSCI Governance Score	0.01	0.61	0.03	0.13	0.10	0.11	-0.07	-0.43	-0.54	0.00	-0.31	0.17	0.39	1.00		
(15) ESG Name	0.15	0.15	-0.02	0.11	0.10	0.09	-0.06	-0.07	-0.07	0.08	0.02	0.17	0.14	0.06	1.00	
(16) Article 9 SFDR	0.09	0.12	0.03	0.19	0.16	0.24	-0.05	-0.08	-0.08	0.08	-0.03	0.16	0.09	0.10	0.19	1.00
Panel B: Fixed-income funds																
(1) TOP MSR	1.00															
(2) MSCI LEADER	0.37	1.00														
(3) LCD	0.19	0.29	1.00													
(4) LABELED	0.13	0.14	0.16	1.00												
(5) GOVERNMENTAL	0.08	0.14	0.10	0.85	1.00											
(6) MULTIPLE	0.14	0.08	0.12	0.47	0.52	1.00										
(7) Environmental Risk Score	-0.13	-0.21	-0.10	-0.11	-0.11	-0.05	1.00									
(8) Social Risk Score	-0.16	-0.08	-0.03	-0.09	-0.09	-0.05	0.97	1.00								
(9) Governance Risk Score	-0.14	-0.08	-0.03	-0.08	-0.08	-0.05	0.97	0.99	1.00							
(10) Number of funds in the category	-0.01	0.27	0.10	0.12	0.12	0.06	0.03	0.14	0.12	1.00						
(11) Corporate bond style	0.20	0.35	0.20	0.10	0.09	0.08	-0.07	-0.04	-0.06	0.15	1.00					
(12) MSCI Environmental Score	0.44	0.67	0.32	0.16	0.16	0.13	-0.22	-0.09	-0.10	0.22	0.38	1.00				
(13) MSCI Social Score	-0.02	-0.16	-0.16	0.08	0.03	0.02	-0.21	-0.25	-0.24	0.00	-0.28	-0.27	1.00			
(14) MSCI Governance Score	0.11	0.19	-0.05	0.14	0.09	0.07	-0.22	-0.15	-0.14	0.24	-0.24	0.01	0.77	1.00		
(15) ESG Name	0.32	0.15	0.05	0.24	0.23	0.16	-0.09	-0.08	-0.08	0.03	0.10	0.23	-0.05	-0.01	1.00	
(16) Article 9 SFDR	0.23	0.09	-0.01	0.12	0.08	0.20	-0.07	-0.09	-0.09	0.00	0.05	0.17	0.05	0.05	0.23	1.00

This table reports the pairwise correlations between dependent and independent variables. The description of these variables is presented in Table A4 in appendix.

Table A2 – Alignment between GNPO labels and Morningstar globes using a Multilogit model

	MSR							
	1 vs. 3 Globes	2 vs. 3 Globes	4 vs. 3 Globes	5 vs. 3 Globes	1 vs. 3 Globes	2 vs. 3 Globes	4 vs. 3 Globes	5 vs. 3 Globes
Panel A: Equity funds								
LABELED	-0.95**	-0.15	0.18	0.76***				
	(0.42)	(0.18)	(0.12)	(0.13)				
GOVERNMENTAL					-0.55	-0.19	0.26*	0.46***
					(0.48)	(0.23)	(0.15)	(0.17)
MULTIPLE					-1.00	-0.26	0.08	0.66***
					(1.04)	(0.39)	(0.25)	(0.25)
Environmental (risk) score	Y	Y	Y	Y	Y	Y	Y	Y
Number funds category	Y	Y	Y	Y	Y	Y	Y	Y
Large cap style	Y	Y	Y	Y	Y	Y	Y	Y
Observations	2,305	2,305	2,305	2,305	2,305	2,305	2,305	2,305
Panel B: Fixed-income funds								
LABELED	-0.04	-0.23	0.56***	0.42				
	(0.68)	(0.38)	(0.21)	(0.30)				
GOVERNMENTAL					0.59	-0.11	0.05	-0.06
					(0.70)	(0.43)	(0.26)	(0.39)
MULTIPLE					-13.16**	-0.84	0.90**	0.99*
					(0.69)	(1.12)	(0.44)	(0.58)
Environmental (risk) score	Y	Y	Y	Y	Y	Y	Y	Y
Number funds category	Y	Y	Y	Y	Y	Y	Y	Y
Corporate bond style	Y	Y	Y	Y	Y	Y	Y	Y
Observations	615	615	615	615	615	615	615	615

This table reports estimates from multilogit models for equity funds (Panel A) and fixed-income funds (Panel B). The dependent variable is Morningstar globes (1 to 5), the reference case is 3 globes. LABELED is a dummy variable taking the value of 1 for GNPO labeled funds and 0 otherwise. GOVERNMENTAL is a dummy variable taking the value of 1 for funds holding governmental labels and 0 otherwise. MULTIPLE is a dummy variable taking the value of 1 for funds holding multiple labels and 0 otherwise. Environmental (risk) score corresponds to the Morningstar Environmental risk score. Number funds category is the log of the number of funds in the Morningstar global category. Large cap and corporate bond style variables are dummy variables for large cap equity funds and corporate fixed-income funds. Robust standard errors in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level.

Table A3 - Alignment between GNPO labels and MSCI ratings using a Multilogit model

VARIABLES	MSCI Ratings										
	B *vs.BB*	BB *vs.B*	A *vs.BBB*	AA *vs.BBB*	AAA *vs.BBB*		B *vs.BB*	BB *vs.B*	A *vs.BBB*	AA *vs.BBB*	AAA *vs.BBB*
			Panel A: Equity funds								
LABELED	16.35**᾽	-1.09	0.51**	0.80***	0.59**						
	(1.76)	(0.86)	(0.26)	(0.25)	(0.28)						
GOVERNMENTAL							-13.16**᾽	-0.96	0.34	0.66**	0.18
							(1.25)	(1.15)	(0.32)	(0.30)	(0.34)
MULTIPLE							-6.95***	14.85**᾽	0.58	1.10*	1.46**
							(1.53)	(1.26)	(0.62)	(0.63)	(0.65)
Environmental score	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Large cap style	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	2,087	2,087	2,087	2,087	2,087		2,087	2,087	2,087	2,087	2,087
			Panel B: Fixed-income funds								
LABELED	13.02**᾽	-0.73	0.88**	0.92**	0.73						
	(0.55)	(0.69)	(0.38)	(0.39)	(0.45)						
GOVERNMENTAL							-14.18**᾽	14.38**᾽	1.03**	1.05**	1.28**
							(0.66)	(0.51)	(0.49)	(0.51)	(0.56)
MULTIPLE							-11.23**᾽	11.60**᾽	0.16	-0.17	-1.09
							(1.05)	(1.00)	(0.85)	(0.86)	(0.97)
Environmental score	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Corporate bond style	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	628	628	628	628	628		628	628	628	628	628

This table reports estimates from multilogit models for equity funds (Panel A) and fixed-income funds (Panel B). The dependent variable is MSCI ESG ratings grades (CCC to AAA), the reference case is BBB. LABELED is a dummy variable taking the value of 1 for GNPO labeled funds and 0 otherwise. GOVERNMENTAL is a dummy variable taking the value of 1 for funds holding governmental labels and 0 otherwise. MULTIPLE is a dummy variable taking the value of 1 for funds holding multiple labels and 0 otherwise. Environmental score corresponds to the MSCI Environmental score. Large cap and corporate bond style variables are dummy variables for large cap equity funds and corporate fixed-income funds. Robust standard errors in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% level.

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