Understanding, Measuring, and Applying ESG preferences:

What We Currently Know from the Literature

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Executive Summary (EN)

As Environmental, Social and Governance (ESG) investing gains traction, understanding the preferences that drive sustainable investment decisions becomes essential for investors, asset managers, and policymakers. This paper systematically reviews the current academic literature along three key dimensions: (I) understanding investor characteristics and motives, (II) the measurement of ESG preferences, and (III) implications for asset pricing and investment behavior. Below we highlight the takeaways from our paper.

I. Understanding Characteristics and Motives of ESG (Non-)Investors

- Many studies find that investors accept lower returns or higher fees to align portfolios with their values. This is motivated by intrinsic factors such as prosocial preferences or the "warm glow" of acting sustainably.
- However, ESG investors are not a homogeneous group. A key distinction is seen between *financially sustainable investors*, who primarily pursue ESG for expected returns and diversification, and *socially sustainable investors*, who are guided by personal values such as environmental or social impact.
- Sustainable financial literacy (SFL), i.e., understanding how to evaluate sustainability characteristics in financial products, is crucial but remains low in many populations, thereby limiting ESG adoption.

II. Measuring ESG Preferences

- ESG preferences encompass three interrelated dimensions: return–sustainability, risk–sustainability, and return–risk–sustainability. The latter two remain comparatively underexplored. Time preferences may be another important related dimension.
- Revealed-preference evidence indicates that investors are willing to forgo financial returns (and to incur higher fees) for sustainability benefits and that ESG-oriented funds exhibit greater flow stability and reduced sensitivity to poor performance.
- Experimental and stated-preference methods consistently measure a positive willingness to pay (WTP) for sustainable investments, driven by non-pecuniary motivations, while revealing no or low appetite for bearing additional risk in exchange for more ESG impact. This highlights risk aversion as a constraint to sustainable investing. The extent of social or environmental impact often plays a secondary role.

III. ESG Preferences and Asset Pricing

- Incorporating an ESG-preference parameter into an extended CAPM shows that green assets in theory yield lower expected returns. This reflects non-pecuniary utility and

climate-risk hedging, and shows that robust green-investor participation lowers sustainable firms' cost of capital, thus incentivizing greener practices.

- The ESG-efficient frontier demonstrates that rising demand for sustainable assets compresses their risk premiums and boosts liquidity, that CSR initiatives mitigate systematic risk and volatility, and that sin-stock exclusions generate pricing discounts with higher expected returns.
- ESG rating divergence, driven largely by measurement (56%) and scope (38%) differences, and 6% by weighting variability, provides a hurdle for comparability and reliability of sustainability scores.

Executive Summary (NL)

ESG-beleggen wint aan populariteit, dus wordt het voor beleggers, vermogensbeheerders en beleidsmakers essentieel om inzicht te krijgen in de voorkeuren die duurzame beleggingsbeslissingen bepalen. Het gaat daarbij, naast financiële factoren, om Environmental (milieu), Social (maatschappij) en Governance (bestuur). Dit artikel biedt een systematisch overzicht van de huidige academische literatuur aan de hand van drie dimensies: (I) het begrijpen van de karakteristieken en motieven van beleggers, (II) het meten van ESG-voorkeuren, en (III) implicaties voor activaprijzen en investeringsgedrag. Hierbij de belangrijkste bevindingen uit ons artikel.

I. Het begrijpen van de karakteristieken en motieven van beleggers

- Veel studies laten zien dat individuen bereid zijn lagere rendementen of hogere kosten te accepteren om hun portefeuille af te stemmen op hun waarden, veelal gedreven door intrinsieke factoren zoals pro-sociale voorkeuren of het "warm glow"-effect door duurzaam te handelen.
- ESG-beleggers vormen echter geen homogene groep. Een belangrijk onderscheid is dat tussen financieel duurzame beleggers, die ESG vooral nastreven omwille van verwachte rendementen en diversificatiepotentieel ("waarde"), en sociaal duurzame beleggers, die zich laten leiden door persoonlijke waarden zoals milieu- of maatschappelijke impact ("waarden").
- Duurzame financiële geletterdheid (Sustainable Financial Literacy, afgekort SFL) – het vermogen om duurzaamheid in financiële producten te beoordelen – is van groot belang bij duurzame beleggingskeuzes maar blijft in veel populaties laag, wat ESG- keuzes belemmert.

II. Het meten van ESG-voorkeuren

- ESG-voorkeuren omvatten drie onderling verbonden dimensies: rendement- duurzaamheid, risico–duurzaamheid en rendement–risico–duurzaamheid. Vooral over de laatste twee dimensies valt nog veel te leren. Tijdsvoorkeuren vormen mogelijk een andere relevante dimensie.
- Uit daadwerkelijk beleggingsgedrag blijkt dat beleggers vrijwillig financieel rendement opofferen (en hogere kosten accepteren) voor duurzaamheidsvoordelen, en dat ESG-georiënteerde fondsen een stabielere instroom en minder gevoeligheid voor slechte prestaties vertonen.
- Experimentele en zelf-gerapporteerde methoden om voorkeuren te meten tonen een positieve betalingsbereidheid (WTP) voor duurzame beleggingen, gedreven door niet-financiële motieven. Tegelijk is er weinig tot geen bereidheid om extra risico te dragen

voor meer ESG-impact. Dit wijst op het belang van risicoaversie bij het doen van duurzame beleggingen. De omvang van ESG-impact speelt vaak een ondergeschikte rol ten opzichte van de beslissing om duurzaam te beleggen.

III. ESG-voorkeuren en vermogenswaardering

- Door een ESG-voorkeursparameter op te nemen in een uitgebreidere CAPM (Capital Asset Pricing Model) blijkt dat groene activa in theorie een lager verwacht rendement opleveren – een weerspiegeling van niet-financiële baten en bescherming tegen klimaatrisico's – en dat deelname van groene beleggers op de financiële markten het kapitaal van duurzame bedrijven goedkoper maakt, wat duurzaam gedrag stimuleert.
- De "ESG-efficient frontier" laat zien dat een stijgende vraag naar duurzame activa hun risicopremies verlaagt en liquiditeit vergroot, dat CSR-initiatieven (Corporate Social Responsibility) het systematische risico en de volatiliteit verlagen, en dat uitsluiting van "sin stocks" leidt tot prijsverlagingen maar ook tot hogere verwachte rendementen.
- Divergentie in ESG-scores – voornamelijk veroorzaakt door meetverschillen (56%), verschillen in reikwijdte (38%) en verschillen in weging (6%) – belemmert de vergelijkbaarheid en betrouwbaarheid van duurzaamheidsscores.

Introduction

As awareness of Environmental, Social, and Governance (ESG) factors grows, it becomes increasingly important to understand, measure, and effectively apply ESG preferences. A thorough overview of ESG preferences and their impact is essential for alignment of investment strategies with sustainability goals and meeting the evolving expectations of beneficiaries, regulators, and society. Within the pension industry, incorporating ESG considerations into investment decisions is seen as an essential step towards long-term financial stability and societal responsibility. This sentiment was recently expressed by Laura van Geest of the Dutch Authority for the Financial Markets (AFM), highlighting it as a key strategic direction for the sector.[1]

The roots of ESG investing lie in the integration of ethical considerations into business practices, grounded in stakeholder theory and the recognition of companies as moral entities within a broader social framework (Donaldson & Preston, 1995; Freeman, 1994, 2010; Mitchell et al., 1997; Wood, 1991).[2] This evolution challenged the traditional separation of business decisions from ethical responsibilities as it emphasized the interconnectedness of financial outcomes and societal impact. ESG investing is becoming more mainstream in finance, reflecting its increasing relevance in modern financial practices and its substantial growth in assets under management, which reached 21.9 trillion US dollars in the five major markets (Global Sustainable Investment Review 2022, 2023).

The growing focus on ESG presents several critical questions, as follows. What distinguishes ESG investors from non-ESG investors? What factors drive or deter individuals from pursuing ESG investments? How can ESG preferences be measured, potentially with risk preferences? What are effective elicitation methods? And, what are the asset pricing implications of ESG investment preferences? Addressing these questions is relevant for asset managers, institutional investors, policymakers, and researchers as they aim to understand the underlying motivations and potential impacts of ESG integration.

This paper explores these questions through a structured review of the current academic literature, offering insights into the behavioral, financial, and ethical dimensions of ESG investing. By examining why certain investors prioritize ESG considerations (or not) over traditional financial metrics, we can better understand the trade-offs between financial returns, risk management, and the non-pecuniary benefits that align investments with personal and societal values.

1 For more information, visit: https://www.afm.nl/nl-nl/sector/actueel/2024/augustus/column-laura-augustus

2 For a more extensive review of the transformation towards ESG investing, see Townsend (2020) and Talan & Sharma (2019). They highlight the historical and ethical foundations that have propelled ESG investing into an essential aspect of modern finance.

The paper is structured as follows. Section 1 describes the literature on understanding the characteristics and motives of ESG investors and non-investors. Section 2 describes the literature on measuring ESG preferences, via revealed and stated preferences, including the dimension of risk. Section 3 describes the literature on incorporation of ESG preferences in investment frameworks with the implications for portfolio construction and asset prices, including divergence in ESG ratings.

I. Understanding the characteristics and motives of ESG (non-)investors

This section reviews the literature that examines the psychological, social, and economic factors that shape ESG preferences and beliefs. More specifically, we aim to understand the motives for (non-)ESG investments and the characteristics of (non-)ESG investors. Which characteristics distinguish ESG investors from conventional investors? What are the motivations for making ESG investments? What is the role of sustainable financial literacy? The section ends with a discussion of related concepts, definitions, and terminology.

Characteristics and motivations of ESG (non-)investors

Riedl and Smeets (2017) discuss the characteristics that differentiate socially responsible investors from conventional investors. They combine survey data, administrative records, and incentivized "experiments", thereby revealing that intrinsic social preferences and signaling are significant determinants of socially responsible investment (SRI) decisions. Socially responsible investors exhibit more prosocial behavior, as evidenced by their willingness to forgo financial returns and pay higher management fees to align their portfolios with social values. These investors also tend to be higher educated and to have larger portfolios (in terms of wealth) than conventional investors. Financial motives, such as return expectations, play a less prominent role. Socially responsible investors often expect lower returns from SRI funds. Pessimistic return expectations decrease the likelihood of holding such funds.

Brunen and Laubach (2022) provide insights into the characteristics that distinguish ESG investors from non-ESG investors through the lens of sustainable consumption habits. Their study shows that individuals who make sustainable choices in their daily lives are more likely to choose sustainable investment strategies to align their portfolios with their values, even when it involves higher fees. Building on Riedl and Smeets (2017), who identify prosocial behavior as a key characteristic of socially responsible investors, Brunen and Laubach (2022) emphasize that financially incentivized sustainable consumption strongly predicts ESG preferences.

Giglio et al. (2025) offer a detailed analysis of the characteristics that distinguish ESG-focused investors from their counterparts and stress that ESG preferences are complex and multifaceted. The authors identify significant differences in portfolio choices based on ESG beliefs through an extensive survey panel of U.S. retail investors. Specifically, they find that investors that prioritize ethical or climate-related considerations hold more ESG-oriented assets, with portfolio allocations that reflect varying degrees of ESG commitment. However, financial expectations still play a notable role among value-driven investors, independent of other investment motives. The authors find, in their sample, meaningful ESG holdings only

for investors who expect these investments to outperform the market, even among those investors who report that their most important ESG investments are driven by ethical or hedging considerations.

Similarly, Lagerkvist et al. (2020), in their choice experiment with Swedish private investors, show that preferences for SRI funds are influenced mostly by latent behavioral characteristics, contrary to sociodemographic factors such as age, gender, or income. Their study finds that, while sustainability strategies and environmental concerns are critical drivers of fund selection, there is significant heterogeneity among private investors. This heterogeneity is reflected in distinct investor segments with varying preferences. For instance, some investors prioritize environmental sustainability, favoring funds with positive screening or sustainability-themed strategies. Other investors, on the other hand, are less interested in sustainability and focus on financial return and risk management. Notably, sociodemographic variables, such as age, gender, or income, have limited predictive power in distinguishing investor segments, suggesting that deeper behavioral attributes, such as attitudes toward sustainability, risk tolerance, and psychological distance, play a more critical role in shaping investment decisions.

Døskeland and Pedersen (2016) contribute to understanding of the motivations behind ESG investing by exploring the dual influences of financial wealth and framing on responsible investment decisions. A natural field experiment with Norwegian investors revealed that wealth framing—presenting ESG investments as financially attractive—was significantly more effective than moral framing in driving both information-seeking and actual investment behavior. Investors exposed to wealth-framed messaging were 13% more likely to explore ESG investments and 21% more likely to purchase ESG funds than those exposed to moral framing. By demonstrating the impact of framing, their study highlights the importance of aligning financial and ethical benefits to appeal to diverse investor motivations.

While Døskeland and Pedersen (2016) emphasize the dominant role of financial framing in driving ESG investments, it's not all about the money. Gutsche et al. (2023) highlight the influence of non-pecuniary motives, particularly the "warm glow" of positive emotions derived from acting sustainably, which often surpass financial considerations in motivating sustainable investment behavior. Their field experiment with German financial decision-makers demonstrates that while financial literacy and environmental values play essential roles, non-pecuniary factors, such as "warm glow" feelings, are equally important. They find that a warm glow, as an expression of impure altruism, is the most critical driver of sustainable investment behavior, surpassing other factors such as perceived financial returns. Moreover, the authors suggest that framing ESG investments in ways that enhance these emotional benefits could further mobilize private capital for sustainable development, offering actionable insights into the origins of ESG preferences.

The results presented above indicate that not all sustainable investors are alike. An important distinction is made by Starks (2023), who explores the dual motivations behind sustainable investing, distinguishing between investors driven by "*value*" (i.e., "financially sustainable investors") and those guided by "*values*" (i.e., "socially sustainable investors"). *Financially sustainable investors* prioritize profit potential and market-based factors such as diversification. They focus more on risk-return optimization. *Socially sustainable investors* focus on aligning their portfolios with personal principles, such as environmental and social impact. The author argues that this distinction is critical for understanding ESG investment decisions, as financial returns and sustainability objectives coexist but shape investment choices differently.

Borrowing this systematization, Degryse et al. (2023) provide further insights into the motivations behind sustainable investing, emphasizing the distinction between financially and socially driven ESG investors. Their study, conducted among a representative sample of the Dutch population via the LISS panel, reveals the existence and difference of these two primary groups, in line with Starks (2023).

Degryse et al. (2023) show that financially sustainable investors are typically influenced more by profitability and market factors. Socially sustainable investors, on the other hand, prioritize alignment with personal values, such as environmental and social impact. Both groups can be distinguished according to certain socio-demographic characteristics. Investors who focus on social sustainability tend to have a higher level of social preferences, formal education and general trust, and are more likely to be politically left-wing.
Building on this, Kräussl et al. (2024) highlight that investor motivations are far from homogeneous, ranging from ethical and moral considerations to reputational concerns and financial risk management. These preferences influence the adoption of ESG criteria and the trade-offs that investors are willing to make between financial and non-pecuniary benefits.

The study by Kräussl et al. (2024) emphasizes that many investors derive utility from holding green assets, even without financial outperformance. This effect aligns with Gutsche et al. (2023) on non- pecuniary benefits, where sustainability and societal impact often outweigh financial considerations. However, they also point out that uncertainty surrounding ESG ratings and the actual effect of green investments can dampen investor confidence, leading to hesitation or reluctance to adopt ESG strategies. We discuss the importance of ESG rating divergence towards the end of this paper. Such uncertainty may weaken the relationship between ESG scores and financial performance, further complicating investment decisions.

Hornuf et al. (2025) analyze investor behavior of new German robo-advisor clients. They find that when new investors must make a choice, 30% choose a sustainable portfolio while 70% choose a conventional portfolio. This can be influenced to some extent by setting a default on the sustainable investment. If that case, 36% choose sustainable versus 23%

when conventional is the default. Of those who invest sustainably, 60% believe in a higher return for their chosen portfolio, so they could be characterized as financially sustainable investors. Hence the remaining 40% invest sustainably despite their belief that this is likely to lead to financial underperformance. The conventional investors almost exclusively believe in the relative outperformance of their chosen portfolio compared to the sustainable alternative.

Sustainable financial literacy

Filippini et al. (2024) survey a large sample of Swiss households to measure financial literacy, environmental literacy, and sustainable finance literacy.

- *Financial literacy* is well-defined in the literature. It measures the understanding of traditional financial concepts, such as interest rates, inflation, and risk diversification (Lusardi and Mitchell, 2014).
- *Environmental literacy* measures the awareness and understanding of general sustainability principles, such as Sustainable Development Goals (SDGs) of the United Nations (UN), causes of pollution, and greenhouse gases (Filippini et al., 2024; Anderson and Robinson, 2022).
- *Sustainable financial literacy* (SFL) is defined by Filippini et al. (2024) as the knowledge and skill of identifying and assessing financial products according to their reported sustainability-related characteristics.

First, the findings of Filippini et al. (2024) indicate that Swiss households, despite their typically high financial literacy by international standards, demonstrate relatively low levels of SFL compared to existing definitions of sustainable finance. Second, SFL plays a significant role in the ownership of sustainable financial products at the individual level. This finding is also confirmed by Degryse et al. (2023) for Dutch households in the LISS panel. Additionally, the empirical results of Filippini et al. (2024) and Anderson and Robinson (2022) show a generally low level of sustainability, or environmental, literacy.

Related concepts

The definition, concept, and extent of ESG draws from and overlaps with Socially Responsible Investing (SRI) and Corporate Social Responsibility (CSR). While distinct in scope and intent, these frameworks share a common foundation in the integration of ethical, social, and environmental considerations into financial and corporate decision-making. Additionally, a recent field that sparks quite some interest in finance involves biodiversity and biodiversity risk. Currently, it is hard to give a single encompassing definition of the concept of ESG. As a result, we discuss these three related concepts, which could be used interchangeably.

Socially Responsible Investing (SRI)

SRI has historically emphasized values-driven exclusionary practices, such as avoiding investments in companies associated with harmful social or environmental practices (Revelli, 2017). Over time, SRI has evolved to incorporate non-pecuniary (values) and pecuniary (value) motivations, aligning with ESG's dual emphasis on financial returns and societal impact. This evolution has redirected academic and practical attention to the relationship between financial returns and social impact. While some studies suggest that financial performance and social responsibility coexist (Hill et al., 2007; Krumsiek, 2003; Laufer, 2003; Muñoz-Torres et al., 2004), the overall literature highlights a more nuanced and complex relationship. For instance, Revelli and Viviani's (2015) meta-analysis of 85 studies involving 190 experiments examines the financial performance of SRI funds compared to traditional investments. Their findings reveal no inherent financial advantage or disadvantage for SRI funds, thus emphasizing that variations in performance often stem from differences in how SRI dimensions are measured and implemented. Their study also highlights that outcomes may depend on geographic regions, thematic focuses, and methodological approaches, reflecting the complexity of evaluating SRI's financial implications. This ambiguity suggests that SRI investors might accept lower financial returns to achieve their social or ethical goals (Renneboog et al., 2008). Riedl and Smeets (2017) likewise support such behavior, as discussed earlier in the context of ESG investment characteristics. Their study demonstrates that social preferences, rather than financial motives, are the primary drivers of SRI investment decisions. Overall, this shows that the concepts of ESG and SRI are closely related.

Corporate Social Responsibility (CSR)

CSR focuses on how companies embed environmental and social concerns into their strategic and operational decisions to create sustainable value for stakeholders. Historically, CSR was primarily viewed through the lens of shareholder theory, which often positioned social responsibility as a cost or donation that detracted from shareholder value (Flammer, 2015). However, the perspective has shifted, and CSR can enhance corporate reputation and stakeholder relationships, thereby providing competitive advantages (Velte, 2022).

Flammer (2015) demonstrates that CSR proposals can generate tangible financial benefits, including positive announcement returns and improved accounting performance. The author's analysis of shareholder proposals related to CSR reveals that narrowly approved proposals lead to measurable financial gains. These gains stem primarily from improved labor productivity and sales growth, suggesting that CSR initiatives align with ethical and social values and serve as profitable investments. This finding challenges the commonly perceived trade-off between social responsibility and financial performance, thus highlighting the potential for alignment.

Adding to this perspective, Velte (2022) provides a structured review of 54 meta-analyses on CSR, examining its corporate governance determinants and financial and non-financial consequences. His findings reinforce that CSR performance, particularly environmental performance, positively impacts financial outcomes. Moreover, the author identifies key corporate governance attributes, such as board independence, gender diversity, and board size, as significant drivers of effective CSR strategies. These governance mechanisms enhance CSR performance and mitigate the risks of greenwashing and information overload, thereby strengthening stakeholder trust and corporate legitimacy. Velte (2022) also emphasizes that the relationship between CSR and financial performance is context-dependent, with variations influenced by industry, region, and the specific CSR dimensions under evaluation.

Biodiversity

Biodiversity, while narrower in scope compared to broader ESG initiatives, is coming on its own as a dimension in the academic literature on sustainable finance as academics and practitioners increasingly recognize the systemic importance of ecosystems for economic and societal stability. Biodiversity loss—marked by declines in wildlife populations and leading to ecosystem degradation—poses physical and transition risks to businesses, industries, and investors.

Recent academic studies, such as by Garel et al. (2023), emphasize the materiality of biodiversity risks in financial markets by introducing the Corporate Biodiversity Footprint (CBF). This metric quantifies a firm's impact on biodiversity by aggregating environmental pressures, such as land use, greenhouse gas emissions, and water and air pollution, into a single biodiversity impact measure. Firms with high CBF values, representing significant biodiversity loss, face transition risks tied to regulatory and policy changes aimed at biodiversity preservation, such as the Kunming Declaration and the launch of the Taskforce on Nature-Related Financial Disclosures (TNFD). These events have signaled shifts in investor expectations, with evidence suggesting that firms with high CBF values began to experience a biodiversity footprint risk premium, reflecting higher returns that investors require to compensate for heightened transition risks.

Giglio et al. (2024) propose a biodiversity risk exposure framework that quantifies physical and regulatory risks at corporate and industry levels. Using textual analysis, biodiversity-focused funds, and corporate disclosures, the study highlights the economic importance of biodiversity risks in sectors such as food, pharmaceuticals, and utilities, which depend heavily on ecosystem services. The researchers find that industries with high exposure to biodiversity risks display a positive correlation between their stock returns and biodiversity news, suggesting that biodiversity risk is increasingly priced into asset valuations.

Key Takeaways

- Intrinsic motivations, such as ethical values, desire for impact, and the "warm glow" of doing good, play important roles in the demand of sustainable investments. They also lead to a willingness to pay for sustainability. However, studies also show that financial framing and return expectations significantly influence ESG adoption.
- Hence, sustainable investors differ in their motives. Key distinctions emerge between "financially sustainable investors," who are primarily motivated by expected market performance, and "socially sustainable investors," whose decisions reflect personal principles. This duality illustrates the heterogeneous nature of ESG investors and the importance of tailoring communication and financial products to diverse investor profiles.
- Sustainable financial literacy (SFL) is a critical enabler of ESG investment. Despite their relatively high general financial literacy, both Swiss and Dutch households show limited understanding of sustainable finance concepts. However, higher levels of SFL are positively associated with ESG product ownership, suggesting a clear role for education in promoting sustainable investment behavior.

Policy implications: Pension funds and insurers ideally take into account that members differ in their motives (financial vs. societal) and goals (environmental, social, and governance) for sustainable investment; framing in communication is a potentially influential factor in pension-related and other decision-making. Demographics alone appear to be insufficient to predict preferences,thus highlighting the importance of surveying plan members. Heterogeneity is typically easier to manage in individualized than in collective plans. Clear information, communication, and targeted tools to raise sustainable financial literacy (SFL) are essential, as plan members might lack fundamental knowledge about sustainability and investments.

II. Measuring ESG preferences

Measurement of ESG preferences has, broadly speaking, at least three dimensions. We can distinguish the following three relationships between risk, return, and sustainability: (i) between return and sustainability, (ii) between risk and sustainability, and (iii) between return, risk, and sustainability. On the first relationship, between return and sustainability, studies have been conducted in the literature and some early conclusions can be made. However, studies on relationships that also involve risk are scarcer, as less is known according to the literature, so still many steps can be made in this direction.

This section reviews the literature that studies the relations within this so-called risk-return-ESG triangle. How much are investors willing to pay, or to accept, for sustainable investments? How much risk are investors willing to take, or to forego, for sustainable investments? What are effective methods for measuring these relations? And how stable are ESG preferences? These preferences can be measured via *revealed preference observations* – study of actual decisions of individuals – or via *experimentally measured or stated preferences* – using surveys or (online) experiments.[3]

Revealed ESG preferences

The upsurge of ESG investing reflects a growing recognition that investments can serve dual purposes: generating financial returns and promoting ethical or societal goals (Starks, 2023). The willingness to trade off financial returns for non-financial benefits is well-documented in the literature, also within the domain of SRI. First, we describe results based on revealed preferences.

Investment funds and flows – Regarding the relationship between returns and sustainability, the general conclusion from the literature appears to be that individuals are willing to give up financial returns ("value") for non-financial benefits ("values") that come from sustainability investments. Direct evidence for this comes from Bauer et al. (2021). They conduct a survey with a Dutch pension fund, giving participants an actual vote in SRI policy making. Two-thirds of the pension fund participants are willing to expand the fund's engagement with companies based on selected SDGs (i.e., United Nations Sustainable Development Goals), even when they expect it to hurt financial performance. Support remains strong after the fund implements the choice. An important reason for the choice appears to be the social preferences of participants.

3 See Appendix A for review of selected literature review of the actual performance of ESG investments on financial markets.

As shown earlier, Riedl & Smeets (2017) provide additional evidence for such behavior by linking administrative investor data with survey responses and incentivized "experiments". They find that SRI investors expect lower returns on socially responsible mutual funds compared to conventional funds, and they are willing to pay higher management fees.

The authors demonstrate that investors with strong social preferences are significantly more likely to hold SRI funds. Social signaling also plays a role, as investors who frequently discuss their investment choices with others are more likely to choose SRI funds. Interestingly, Riedl and Smeets (2017) note that, while social preferences strongly influence the decision to invest in SRI funds, they do not significantly affect the proportion of SRI holdings within a portfolio once the initial decision is made, in line with Heeb et al. (2023). This suggests that strong social preferences are critical in overcoming the initial hurdle of investing in SRI, but other factors, such as financial considerations, may guide subsequent allocation decisions.

Analyzing fund flows, following the introduction of Morningstar's sustainability ratings, Hartzmark and Sussman (2019) examine how investors value sustainability. Their findings indicate that funds with higher sustainability ratings experienced significant inflows, while those with lower ratings did not see substantial outflows. This suggests that investors actively seek sustainable investments but are not necessarily deterred by poor sustainability scores. Moreover, investors appear willing to accept lower financial returns in favor of sustainability, indicating that sustainable investments hold intrinsic value beyond financial performance.

Barber et al. (2021) extend this perspective by providing evidence from venture capital (VC) funds that pursue both financial returns and social impact. Their study reveals that impact funds earn, on average, 4.7 percentage points lower internal rates of return than traditional VC funds, even after controlling for industry, geography, and fund characteristics. This underperformance highlights that, for impact investors, the societal benefits generated by impact funds outweigh the lower financial returns.

Stability – Coming back to actual fund flows, Bollen (2007) documents that flows to SRI mutual funds exhibit lower volatility than those to conventional mutual funds. This reduced volatility suggests that investors in SRI funds are less prone to rapid reallocation of capital in response to short-term market fluctuations. Bollen (2007) attributes this stability to the non- pecuniary benefits that SRI investors derive from aligning their investments with personal values, such as social responsibility and ethical considerations. These non-pecuniary preferences act as a buffer against the tendency to withdraw funds during periods of negative performance, contributing to the overall stability of SRI mutual fund flows.

Building on this, Renneboog et al. (2011) extend the analysis by showing that SRI fund flows are also significantly less responsive to negative past performance when compared

to conventional funds, particularly for funds that employ negative screening. Negative screening excludes, for example, the tobacco and cluster ammunition industries, resonating with the ethical priorities of SRI investors, who derive additional satisfaction from aligning their investments with personal values. This non-financial utility reduces sensitivity to underperformance and reflects the scarcity of alternative options that match specific social or environmental preferences, further stabilizing SRI fund flows.

Bansal et al. (2022) explore the time-varying demand for SRI at the market level. Their study demonstrates that highly rated socially responsible stocks outperform lower-rated ones during good economic times but underperform during recessions. Wealth-dependent preferences appear to drive this dynamic: when households experience higher financial wealth, they can afford to prioritize SRI investments, leading to greater demand for high-SRI stocks and, consequently, higher realized returns. Conversely, tighter wealth constraints during economic downturns lead to diminished demand for SR stocks and lower realized alphas.

Experimentally measured ESG preferences

Here we describe results based on experimentally measured preferences, including potential elicitation methods.

Willingness to pay – Inspiration for a quantitative measurement of ESG preferences can be drawn from Heeb et al. (2023). They examine how willing investors are to pay for sustainable investments in the form of a one-time (management) fee (so-called "willingness to pay"– WTP). Although investors show a significant WTP for sustainable investments, their WTP is not higher for investments with a higher impact. In other words, the degree of impact is secondary to being able to say that you are investing sustainably. When investors compare different sustainable investment options, their WTP responds to relative but not absolute levels of impact. Regardless of investment impact levels, investors experience positive emotions when choosing sustainable options. These findings suggest that WTP for sustainable investments is driven primarily by an emotional appreciation of impact itself.

Return, risk, and ESG – Duchêne et al. (2022) add to the insights of quantitative trade-offs by investigating the interplay between return, risk, and environmental impact through an experiment involving finance professionals and students. Their findings indicate that, while participants are willing to accept lower returns for investments with positive environmental externalities (as measured by CO2 reductions through donations), they are not willing to bear increased risk for such benefits. This suggests that prioritizing environmental impact is contingent on maintaining a stable risk profile.

Holzknecht and Erhart (2024) use a similar micro-level approach by introducing an experimental framework that explicitly quantifies the trade-offs between risk, return, and ESG, accounting for varying degrees of uncertainty in ESG information. Their online experiment with US participants adapts the Gneezy and Potters (1997) investment task to include ESG attributes. Their findings are consistent with, e.g., Duchêne et al. (2022): individuals are not willing to bear increased risk for more sustainability, but they are willing to pay for sustainable investments.

Using a vignette study, Yang (2024) developed a method to simultaneously measure the WTP for return, risk, and sustainability among Dutch pension fund participants. In line with the previous two methods, Yang (2024) varies pensions along the three dimensions of return, risk and sustainability. Preliminary results indicate that participants prefer sustainable investments in their pension if it does not involve more than a certain amount—233 EUR per month on a (hypothetical) retirement income of 3,200 EUR per month. Participants display the highest WTP for "environmental" investments (374 EUR), then for "social" investments (229 EUR), and lastly for "governance" investments (117 EUR). Regarding risk preferences, participants are not willing to give up 353 EUR for a more risky investment relative to a less risky investment.

Note that time preferences may also play an important role in eliciting risk preferences and ESG preferences, as ESG impact typically materializes over long horizons and the impact is typically surrounded with uncertainty. Goossens et al. (2024) find in a representative sample of the Canadian population that risk and time preferences differ not only between the finance and ESG domains, but also within the ESG domain across multiple subdomains such as carbon emissions, poverty, and biodiversity. Hence, preferences are context-dependent and cannot be readily applied to other domains.[4]

Key Takeaways

- ESG preferences span three interlinked dimensions: return–sustainability, risk– sustainability, and return–risk–sustainability. Yet almost all empirical research has focused on the return–sustainability relation. Studies that examine how much additional risk investors will accept (or forgo) for greater impact are still scarce. Emerging evidence also points to investors' intertemporal trade-offs (short- vs. long-term sustainability outcomes) as a potentially important fourth dimension.
- Actual fund flows and investor choices show that many investors are willing to sacrifice expected returns (and pay higher fees) to gain sustainability benefits. ESG-oriented funds attract steadier inflows and are less sensitive to poor performance than conventional

4 Beliefs about ESG investments potentially play an important role as well, but these are outside the scope of the current paper as we focus on preferences.

funds. This stability reflects the non-pecuniary utility of ESG. Lab and survey experiments consistently find a positive WTP for sustainable investments, driven by emotional and social-signaling motives, while revealing little appetite for higher risk in exchange for greater ESG impact. Risk aversion thus emerges as a key constraint on deeper sustainable-investment uptake. Moreover, the absolute magnitude of environmental or social impact often plays a secondary role behind the psychological rewards of "being seen" to invest responsibly.

Policy implications: Pension funds and insurers ideally start testing with integrated approaches to elicit sustainability and risk preferences from plan members. Testing methods for integrated elicitation can provide deeper insights into how participants want to balance pension income, risk tolerance, and sustainability objectives. Such approaches move beyond the current narrow focus on return–sustainability trade-offs and help capture broader dimensions, including risk–sustainability interactions and potentially even intertemporal considerations (short- vs. long-term outcomes). By better understanding these complex preference structures, pension fund boards can make investment decisions that align more closely with members' needs. De Zwart et al. (2025) make suggestions for three potential integrated methods.

III. ESG preferences in investment frameworks: implications for portfolio construction and asset prices

This section investigates how ESG preferences and beliefs shape asset prices and investment behavior. The growing body of research on sustainable finance builds mostly on traditional asset pricing frameworks, such as the Capital Asset Pricing Model (CAPM) and mean-variance portfolio theory (MPT), by incorporating ESG considerations. These adaptations reflect the increasing relevance of sustainability in determining long-term value. By understanding investor motivations and measuring ESG preferences we gain an improved understanding of behavior at the micro level, which we can use to better understand how asset prices behave at the macro level.

The current section reviews this literature. How can ESG preferences be modeled in an investment framework? What are the implications of ESG preferences on portfolio construction and asset prices? What do we know about ESG divergence?

A seminal paper is that of Pástor, Stambaugh, and Taylor (2021). The authors model ESG preferences in investors' utility functions by introducing an additional parameter besides classical risk aversion. Their model proposes that green assets have lower expected returns for two main reasons: investors derive utility from holding these assets, and these assets serve as a hedge against climate risk. Despite their lower expected returns, green assets can outperform when positive shocks to the ESG factor exist. These shocks are manifested through the changes in consumers' and investors' preferences for green products and investments – this ESG factor and the market portfolio efficiently price assets within a two-factor model.

Their findings show the implications of sustainable investing on both financial markets and real-world corporate behavior. Their model predicts that a substantial presence of green investors in the market can lower the capital costs of green firms. These lower capital costs, in turn, incentivize firms to adopt greener practices, leading to a tangible positive impact on the environment. The study also suggests that the size of the ESG investment industry is contingent upon the variance in investors' ESG preferences. Moreover, the model challenges conventional notions within asset pricing by demonstrating that the ESG factor does not solely operate on risk aversion but is also driven by investor utility derived from ESG characteristics. This is a potential explanation for why investors might willingly accept lower expected financial returns in exchange for the non-pecuniary benefits of holding green assets.

Pedersen, Fitzgibbons, and Pomorski (2021) build on this perspective by developing the concept of the ESG-efficient frontier, which balances risk, return, and ESG considerations in portfolio construction. Their model demonstrates how equilibrium returns for high-ESG

assets are influenced by the proportion of ESG-motivated investors in the market. As the demand for ESG-friendly investments rises, these assets experience reduced risk premiums and increased liquidity, which can reshape capital allocation patterns on a macro scale. This systemic shift in capital flows fosters greater integration of sustainability into mainstream finance, ultimately accelerating the transition toward more responsible investment practices.

Albuquerque, Koskinen, and Zhang (2019) combine theoretical and empirical insights to explore how CSR affects firm risk and valuation. Their findings indicate that CSR activities reduce systematic risk by fostering stronger customer loyalty and increasing product differentiation.[5] Firms that engage in CSR enjoy lower stock volatility and greater resilience during periods of financial stress. On a macro level, widespread CSR adoption can reduce overall market volatility and contribute to financial stability by lowering the aggregate risk of the market. This enhanced stability is particularly critical during economic downturns, where CSR-engaged firms tend to outperform their peers.

Hong and Kacperczyk (2009) offer a perspective on how social norms influence asset pricing, focusing on the behavior of institutional investors toward sin stocks (e.g., tobacco, alcohol, and gaming). They show that institutional constraints driven by social norms lead to reduced analyst coverage and lower institutional ownership of these stocks. As a result, sin stocks trade at a discount compared to their fundamentals and offer higher expected returns as compensation. This study illustrates how non-financial considerations, like norms-based exclusion, can have a systemic market pricing influence.

Zerbib (2022) introduces the Sustainable Capital Asset Pricing Model (S-CAPM), which explains how exclusionary screening and ESG integration create two distinct premiums—exclusion premiums and taste premiums. Exclusion premiums arise when investors systematically exclude certain assets (e.g., sin stocks) from their portfolios, while taste premiums emerge as a reward for holding assets with strong ESG characteristics. These premiums lead to market segmentation and adjustments in risk-return profiles, especially in industries that undergo significant environmental transitions, such as utilities and energy.

Heinkel, Kraus, and Zechner (2001) offer an early and influential model that shows how individual exclusionary practices by ESG investors can raise the cost of capital for polluting firms. When a significant fraction of investors exclude these firms from their portfolios, it limits their access to funding, forcing them to pay a premium for capital. This pressure incentivizes some companies to adopt greener practices to regain broader market access. The model highlights the direct impact of individual preferences on corporate behavior, illustrating how sustainability considerations can influence asset pricing and capital allocation decisions at the firm level.

5 See Appendix B for potential risk management benefits of ESG investments.

ESG divergence

Not only for portfolio construction and asset pricing, but also to guide individual investors in choosing suitable products, it is important to be able to assess the ESG impact of companies and investments. ESG divergence refers to the significant inconsistencies in evaluating the environmental, social, and governance performance of companies by different rating agencies. These discrepancies, which often exist, arise from variations in methodologies, data sources, and weighting criteria across providers, complicating the ability of investors and stakeholders to assess ESG performance reliably.

In their important and popular work, Berg et al. (2022) decompose ESG divergence into three primary components: measurement divergence, scope divergence, and weight divergence. They use ESG ratings from six prominent ESG rating agencies: Kinder, Lydenberg, and Domini (KLD), Sustainalytics, Moody's ESG (Vigeo-Eiris), S&P Global (RobecoSAM), Refinitiv (Asset4), and MSCI. The most important component for explaining ESG divergence is measurement divergence, which contributes 56% to the ESG divergence; it occurs when agencies assess the same ESG factors using different metrics. Another quite important component for ESG divergence is scope divergence (38%), which arises from differences in the aspects of ESG that each rater includes. Although less significant, weight divergence (6%) reflects variability in the relative importance assigned to specific ESG factors.

Another critical factor is the "rater effect", described by Berg et al. (2022), wherein an agency's overall view of a firm biases the firm's score across multiple ESG categories. In other words, a firm receiving a high score in one category is more likely to receive high scores in all other categories from the same rater. This effect is substantial: controlling for which firm is rated and in which category the firm is rated, the rater effect explains 15% of the variation of category scores. This is also known as the "halo effect" and introduces additional subjectivity, particularly for firms with high visibility.

Obviously, this ESG divergence poses a substantial concern to the efforts in ESG investing, as institutions and investors lack clear guidance about how sustainable certain companies and investment products are.[6]

Key Takeaways

- Extensions of classical asset-pricing frameworks (e.g., CAPM) integrate an ESG- preference parameter in investors' utility functions, yielding green assets with lower expected returns—reflecting non-pecuniary utility and climate-risk hedging. Sizeable green-investor participation reduces the cost of capital of sustainable firms, thus incentivizing greener corporate behavior.

6 See Appendix C for potential consequences of ESG divergence.

- The ESG-efficient frontier illustrates how a growing share of ESG-motivated investors compresses risk premiums and enhances liquidity for high-ESG assets. Empirical evidence from CSR research shows that corporate sustainability initiatives lower systematic risk and stock volatility. Norm-driven exclusions of “sin stocks” create pricing discounts and higher expected returns.
- ESG divergence is primarily due to measurement (56%) and scope (38%) differences, with weightings contributing a smaller share (6%). A pronounced “rater effect” (15% of variation) reflects “halo” biases across categories. Such inconsistencies impede the ability of investors to compare the true sustainability performance of firms.

Policy implications: The heterogeneity of ESG preferences poses challenges for designing collective investment plans. Further research, both academic and in the industry, is needed to develop portfolio strategies that integrate these diverse motives. ESG integration does not necessarily need to be considered only as an ethical choice but can also be considered as a form of risk management. Overreliance on a single ESG rating provider exposes funds to measurement errors; combining multiple rating sources or developing internal assessment frameworks can mitigate this risk and improve comparability. However, the rating divergence still poses a problem generally.

IV. Conclusion

This paper provides a comprehensive overview of what we currently know from the fast-evolving academic literature about ESG preferences, including their measurement and implications. ESG investment behavior is shaped by a mix of financial, psychological, and ethical motives, evidencing that investors are willing to trade off returns for sustainability. However, their behavior is not uniform, so it is important to distinguish between different motives, most notably social and financial ones. A further challenge arises from knowledge and perception heterogeneity among pension plan members. Also, measuring these preferences remains complex, with revealed and stated preference methods both offering distinct advantages. While ESG preferences are shown to influence asset prices and corporate behavior, methodological issues, such as ESG divergence, continue to challenge consistent implementation.

For institutional investors, especially in the pension industry, these findings highlight the need for nuanced engagement with beneficiary preferences, improved ESG literacy, and robust frameworks for preference measurement. Going forward, in line with EIOPA's points of attention regarding their advice for incorporating sustainability preferences into the investment decision, key questions remain on how to understand, measure, and align members' sustainability preferences (especially in a collective investment portfolio), how to address lack of knowledge and low engagement, and how to standardize ESG metrics, balance financial and ethical imperatives, and design default strategies that reflect diverse and sometimes conflicting investor goals.

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Appendix A: Actual Performance of ESG Investments

While understanding and measuring preferences for return, risk, and sustainability is important, it is also worthwhile to study the actual relations between return, risk, and sustainability as observed in financial markets.

Friede et al. (2015) provide evidence that ESG investing does not necessarily entail a sacrifice in financial performance. Their meta-analysis of over 2,200 empirical studies reveals that approximately 90% report a non-negative relationship between ESG factors and corporate financial performance (CFP), with the majority indicating a positive correlation. Furthermore, their findings show that the positive ESG–CFP relationship holds across different asset classes, regions, and methodologies. Particularly positive results show up in emerging markets and younger asset classes such as green real estate and corporate bonds. This consistency over time challenges the notion that ESG investing requires financial trade-offs. Instead, they position ESG as a strategic tool for achieving both ethical and financial objectives. The study also highlights the distinction between portfolio and non-portfolio studies, noting that non-portfolio studies tend to show stronger positive relationships, likely due to the impact of implementation costs and market noise in portfolio-based research.

Applying a global survey, Amir and Serafeim (2018) examine why and how investment professionals use ESG information. Relevance to investment performance is the most frequent motivation for use of ESG data, followed by client demand and product strategy, introducing change to companies, and then ethical consideration.

Hassel et al. (2005) argue that environmental performance, while relevant to investors, is often associated with increased operational costs that can depress market valuations. Similarly, Palmer et al. (1995) emphasize that stricter environmental standards, while beneficial for societal outcomes, frequently lead to higher compliance costs for firms, which may reduce profits. For example, investments in cleaner technologies or resource efficiency, as noted by Rassier & Earnhart (2011) and Sueyoshi & Goto (2010), often impose high upfront costs, which can strain short-term profitability despite potential long-term benefits.

Building on this, Velte (2017) investigates the impact of ESG factors on financial performance in German-listed companies and provides evidence of a positive relationship between ESG performance and return on assets. Analyzing firm-year observations from the DAX30, TecDAX, and MDAX indices between 2010 and 2014, Velte (2017) demonstrates that the governance component of ESG has the most substantial influence on financial performance compared to environmental and social factors. While ESG factors enhance accounting-based performance measures such as return on assets, the study finds no significant effect on market-based metrics such as Tobin's Q.

Further nuances emerge when considering ESG disclosure. Fatemi et al. (2018) reveal that while ESG strengths enhance firm value, ESG-related disclosures play a dual role: they help mitigate the adverse valuation effects of ESG weaknesses. Still, they can reduce the perceived benefits of ESG strengths. This suggests that ESG transparency can act as both a corrective tool and a limiting factor, depending on how stakeholders perceive disclosures. Xie et al. (2019) complement this perspective by showing that ESG disclosure has a nonlinear relationship with financial performance, with moderate levels of disclosure optimizing operational efficiency. Excessive or insufficient disclosure, on the other hand, can hinder corporate performance by leading to greenwashing concerns or information overload. These findings highlight the importance of balance and context in leveraging ESG activities and disclosures to enhance financial outcomes.

Appendix B: Risk Management Benefits of ESG

Beyond financial returns, ESG factors offer potential risk management benefits, particularly in mitigating reputational damage and safeguarding corporate value during crises.

Godfrey et al. (2009) emphasize CSR's "insurance-like" properties, showing that CSR activities that target secondary stakeholders can temper punitive stakeholder reactions during negative events. This moral capital shields shareholder value, reducing the financial impact of adverse outcomes.

Building on this foundation, Sassen et al. (2016) analyze data from European firms between 2002 and 2014. Their study reveals that improved social performance significantly reduces firm-specific risks, such as idiosyncratic risk, and that environmental performance mitigates risk in environmentally sensitive industries. These findings emphasize ESG's dual role as both a driver of long-term value and a mechanism for managing uncertainty.

Similarly, Kumar et al. (2016), using a quantitative model to assess the risk-adjusted performance of ESG-focused firms, find that these companies experience significantly lower stock volatility than their non-ESG counterparts without compromising returns. This indicates that ESG integration enhances risk management and sustains profitability, thereby challenging traditional assumptions about the trade-off between risk and return. Extending this perspective, Verheyden, Eccles, and Feiner (2016) demonstrate that ESG screening can improve risk-adjusted returns in investment portfolios by reducing downside risks while maintaining or enhancing portfolio performance.

The protective value of ESG is particularly evident in times of market instability. For example, Moalla and Dammak (2023) highlight that firms with robust ESG performance experienced reduced stock price volatility during the COVID-19 pandemic, emphasizing ESG's role as a stabilizing factor during crises. Conversely, low ESG performance can intensify risks. Luo and Balvers (2017) identify a boycott risk premium for sin stocks, demonstrating that reduced demand from socially responsible investors increases their perceived risk, necessitating higher compensation for holding such stocks. Furthermore, Hoepner et al. (2023) illustrate that low ESG performance exacerbates downside risk, exposing firms to potential undervaluation and unforeseen liabilities. Their findings reveal that ESG shareholder engagements significantly reduce downside risks, mainly by addressing environmental issues such as climate change, which mitigates tail risks and enhances firm resilience.

In summary, the financial performance benefits and risk management advantages of ESG investing highlight its growing relevance in modern investment strategies. While traditional perspectives emphasized the costs of ESG adoption, robust evidence demonstrates that ESG can enhance profitability, mitigate risks, and provide stability during periods of market

volatility. However, realizing these benefits requires careful consideration of the context in which ESG practices are implemented. Factors such as industry characteristics, regional dynamics, and the balance of ESG disclosure all play critical roles in shaping outcomes. By aligning financial objectives with sustainability considerations within the proper context, ESG integration offers a compelling case for investors seeking to balance economic returns with ethical and societal impact.

Appendix C: Consequences of ESG Divergence

ESG divergence introduces significant uncertainty for investors, undermining the reliability of ESG scores as a basis for decision-making. This lack of consistency creates barriers to practical portfolio construction, particularly for individuals pursuing sustainable investment strategies.

When ESG ratings for the same firm differ significantly across providers, investors face challenges in evaluating the sustainability profile of firms, which can diminish confidence in both financial and non-financial outcomes (Avramov et al., 2022; Gibson Brandon et al., 2021).

A key finding from Berg et al. (2024) is the critical role of specific ESG ratings, such as those by MSCI, in shaping investor behavior. Their study demonstrates that ESG funds primarily rely on MSCI ratings when making investment decisions, with significant changes in fund holdings occurring in response to MSCI upgrades or downgrades. However, they also show that the market's reliance on a single rating system amplifies the risks of divergence across other rating providers. As fund managers adjust holdings gradually over time, the slow and uneven reaction to rating changes exacerbates market inefficiencies caused by inconsistent ESG data. This issue is further compounded by findings from Serafeim and Yoon (2022), who emphasize that markets respond differently to ESG information depending on its perceived financial materiality. Investors exhibit stronger reactions to ESG news that is classified as financially material, suggesting that the lack of standardization in rating frameworks may dilute the impact of ESG integration on investment decisions. The unpredictability introduced by ESG divergence may result in distorted market signals, as evidenced by the muted reactions to non-material ESG information.

One critical consequence of ESG divergence is its impact on equity risk. Higher divergence in ESG ratings increases perceived uncertainty about a firm's performance, leading to elevated equity risk premiums. Investors demand higher returns to compensate for the ambiguity introduced by inconsistent ESG metrics, which raises the capital costs of firms. This effect is particularly pronounced in the environmental dimension of ESG ratings, where divergence is often most acute (Gibson Brandon et al., 2021).

ESG divergence moreover discourages investments in green assets, as the lack of clarity about a firm's sustainability profile reduces the willingness of ESG-focused investors to engage. Behavioral evidence shows that uncertainty about ESG ratings weakens investor motivation to prioritize sustainability objectives over financial returns, deterring them from making impactful, sustainable investments (Erhart & Holzknecht, 2024). These inconsistencies also create inefficiencies in market pricing. Billio et al. (2021) demonstrate that divergence across ESG benchmarks disperses the preferences of ESG-focused investors, thus reducing the collective impact of sustainability-driven market behavior. Their findings reveal

that fragmented ESG indexes, caused by rating disagreements, undermine the financial performance and broader goals of sustainable investing.

These inconsistencies also lead to inefficiencies in market pricing. Berg et al. (2024) highlight that ESG rating divergence not only distorts pricing signals but also limits the overall impact of sustainable investing on the real economy. For instance, while changes in ESG ratings influence fund ownership and stock returns, they show little evidence of affecting the capital expenditures or environmental practices of firms. Such findings suggest that ESG rating divergence dilutes the potential of ESG investing to achieve broader systemic change.

In summary, ESG divergence poses a substantial challenge for investors by increasing uncertainty, eroding confidence in ESG metrics, and raising the capital costs of firms. Increasing standardization and transparency in ESG ratings is essential to address these issues. Such efforts would enhance the reliability and comparability of ESG data, empowering investors to better align their financial goals with sustainability objectives.

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