

# The importance of labels for sustainable investments: SFDR versus Morningstar globes <sup>\*</sup>

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## Abstract

We use the entropy balancing method to study the impact of sustainability labels on mutual fund flows and returns. We compare the informativeness of the ESG risk metrics developed by a specialised agency - the Morningstar sustainability rating - with the ESG disclosure requirements recently introduced in the European Union by the Sustainable Finance Disclosure Regulation. We find investors to follow the Morningstar's ESG ratings to inform their portfolio decisions, with more sustainable funds attracting larger net inflows. On the contrary, regulation-induced labels are generally not relevant to explain flows heterogeneity, with the only exception of Article 9 funds in which sustainable goals are the core investment objective; these latter funds also outperform their peers in terms of returns in line with ESG preferences strengthening over time.

*JEL classification:* G10, G18, G23

*Keywords:* SFDR; Morningstar sustainability rating; mutual funds; sustainability labels; entropy balancing method

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# 1 Introduction

According to (GSIA, 2021), the amount of sustainable investments - i.e. financial assets with high environmental, social, and governance (ESG) standing - reached USD 35.3 trillions in 2020 from 22.8 trillions in 2016. This impressive growth has fueled substantial research on how ESG considerations inform investors' portfolio decisions and affect the price of financial assets (Gillan et al., 2021). But what type of information do investors rely on to integrate sustainability considerations in their investment decisions? Most of the times they resort to the so called ESG scores, i.e. synthetic proxies of the degree of investment sustainability provided by specialized rating agencies. These scores have the advantage of being easily interpretable by investors, but they frequently exhibit some disagreement across rating providers, mostly because of differences in the underlying methodologies to evaluate asset sustainability (e.g. Berg et al., 2022 and Billio et al., 2021).

Against this backdrop the European Union introduced Regulation 2019/2088 (hereafter, SFDR) imposing mandatory ESG disclosure obligations and requiring the asset managers to classify investment products on the basis of sustainability objectives. According to the SFDR, European mutual funds are self-classified by portfolio managers into three different categories, namely Article 9, 8 or 6 reflecting a descending intensity in terms of portfolio sustainability. Article 9 category comprises funds that explicitly target some sustainable goals as their investment objective (*dark-green funds*), Article 8 identifies funds whose investment strategy promote some environmental or social characteristics but do not have sustainability as their main objective (*light-green funds*), whereas Article 6 covers funds where sustainability criteria do not generally drive manager's asset allocation.<sup>1</sup>

Despite the original intent of the regulator, some recent contributions claim that lack of policy guidance to classify investment products and prospectus ambiguity have already raised greenwashing concerns and resulted in some inconsistencies between the SFDR and other sustainability labels available in the market (Ramos et al., 2022 and Morningstar, 2022). In this study we use the SFDR classification to address two research questions: does regulation-induced labels explains fund flows heterogeneity? How does the SFDR interact with more established proxies of portfolio ESG risk such as the Morningstar sustainability rating (the so-called "globes")?

To answer these questions we rely on a state-of-the-art matching method, the entropy balancing developed by Hainmueller (2012), to create groups of counterfactuals for SFDR green funds (Article 8 and 9). We construct a weighting scheme matching funds in terms of Morningstar globes (the overall ESG risk measure) as well as the individual environmental, social, and governance risk scores of the fund portfolio. Our weighted regression analysis shows that Morningstar globes play an important role for portfolio decisions, with investors systematically injecting larger

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<sup>1</sup>For a detailed definition of each category see <https://bit.ly/37q5PDa>.

amount of money into funds with a lower ESG risk. As to the regulation-induced labels, we find that only Article 9 funds experienced positive inflows, suggesting that investors selectively reward only those funds where sustainability goals are the core investment objective.

We add to the literature investigating the influence of sustainability labels on fund flows, see for example [Hartzmark and Sussman \(2019\)](#), [Ammann et al. \(2019\)](#) for the response of flows to the introduction of the Morningstar sustainability rating, and [Ferriani and Natoli \(2021\)](#) or [Pástor and Vorsatz \(2020\)](#) for the impact of ESG considerations on portfolio investments during the Covid-19 crisis. The analysis of the effects of the SFDR is still in its infancy, an exception being [Becker et al. \(2022\)](#) who also investigate the impact of regulation-induced sustainability labels and find that only Article 8 funds are able to attract larger inflows. However, as acknowledged by the authors, their study does not clarify whether this result can be attributed to an increase in transparency or to sustainability. We explicitly tackle this point and show that controlling for a well-established methodology of portfolio sustainability - such as the one developed by a specialized rating agency like Morningstar<sup>2</sup> - is fundamental to properly identify the determinants of fund flows. On the contrary, limiting the analysis to the sole SFDR classification could ultimately impair the comparability of funds due to the lack of detailed and common guidelines to classify investments in terms of sustainability. Indeed, our study shows that investors generally put more value on the sustainability scores developed by the industry rather than by regulation-induced labels. The partial exception are the Article 9 funds towards which sustainability-oriented investors are willing to allocate their capital. Finally, we also find Article 9 funds to outperform their peers in terms of returns, a result that we reconcile with theoretical models showing that green assets outperform brown ones whenever ESG concerns strengthen over time.

## 2 Data and method

We obtain data on weekly flows to global equity mutual funds during the period 10 March - 31 August 2021 from Morningstar. We start on the date in which the SFDR came into force and, to avoid any inconsistency, terminate the analysis in August 2021 when Morningstar adopted a new methodology to embed country risk ratings in its sustainability score.<sup>3</sup> Our sample includes 3193 EU mutual funds and 13521 non-EU domiciled mutual funds.<sup>4</sup> As concerns EU-domiciled

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<sup>2</sup>In 2016, Morningstar was the first specialized agency to develop a system for measuring mutual funds' sustainability and currently provides a ranking for more than 40,000 mutual funds.

<sup>3</sup>September is the first month in which the sustainability score reflects the new methodological assessment, see [Barr et al. \(2021\)](#).

<sup>4</sup>We consider funds included in the Morningstar Global Broad category "Equity" and require funds to have an average size of at least USD 20 millions. We exclude funds with missing data for flows or for any of the controls used in the matching procedure and in the estimation. We also exclude from the estimation a very few funds reporting a SFDR classification but domiciled outside the EU.

funds, approximately 43.7% are classified as Article 8, 51% as Article 6, and only 5.3% as Article 9.

The first step of our analysis requires to create a weighting scheme using the entropy balancing method. In practice, we define different set of weights to match treated units, i.e. funds labeled either as Article 8 or Article 9. We consider two different subsamples to construct the group of controls, one based on EU domiciled funds (essentially Article 6 funds) and one relying on non-EU domiciled funds. Our balancing method imposes, distinctly for the two subsamples of controls, equality constraints on the mean and the variance of an extensive list of mutual funds characteristics: total net asset, monthly return, fund age, % of portfolio liquid assets, % of portfolio assets invested in advanced economies, Morningstar rating (the so called “stars”), Morningstar sustainability rating (the globes), and portfolio environmental, social, and governance risk scores. To avoid any concern due to the transition to the new EU regulation, we apply the entropy balancing method using covariate values for October 2019, the month before the SFDR was published. Compared to conventional matching methods, the entropy balancing delivers a weighting scheme that is adjusted to match the sample moments of covariates across treated and control groups. In turn, this allows to retain more information from the preprocessing phase - no control units are discarded, the balancing weights reassess the relative importance of each observation - and it makes the balance checking exercise unnecessary. Moreover, this approach allows to explicitly account for portfolio sustainability also in the matching procedure. We then estimate the following pooled regressions to examine the impact of sustainability labels on investors’ flows:

$$\begin{aligned} \text{Net flow}_{i,m,w} = & \alpha + \sum_{k=1}^4 \text{Net flow}_{i,m,w-k} + \text{Sustainability rating}_{i,m-1} + \text{Article SFDR}_i + \\ & + \text{Morningstar rating}_{i,m-1} + \sum_{k=1}^4 \text{Return}_{i,m,w-k} + Z_{i,m-1} + \epsilon_{i,m,w} \quad (1) \end{aligned}$$

where *Net flow* are weekly flows to investment fund *i* in month *m* and week *w*, *Sustainability rating* is the number of globes assigned to the fund, *Article SFDR* identifies the two dummy variables to distinguish funds with respect to their SFDR classification, *Morningstar rating* is the number of Morningstar stars which proxies for the risk-adjusted performance of the fund, *return* are fund’s weekly return, *Z* is a set of lagged fund’s characteristics,  $\alpha$  is a constant, and  $\epsilon$  is the error term. Analogously, the empirical specification to estimate the impact of sustainability on fund return is:

	Control group: EU funds		Control group: Non-EU funds	
	(1)	(2)	(3)	(4)
Morningstar sust. rating	0.157*	0.952***	0.195**	0.702**
	(1.702)	(2.697)	(2.088)	(2.564)
Article 8	0.276			
	(1.211)			
Article 9		1.094***		
		(2.725)		
Article 8			0.050	
			(0.254)	
Article 9				1.207***
				(3.199)
Morningstar rating	0.457***	0.344	0.253***	0.163
	(4.409)	(1.601)	(2.714)	(0.959)
Controls	Y	Y	Y	Y
Time FE	Y	Y	Y	Y
N	66484	39556	107976	81048
R <sup>2</sup>	0.04	0.11	0.03	0.09

Table 1: Impact of Morningstar sustainability rating and SFDR classification on fund flows, robust t-statistics in parentheses. Regressions are estimated using weights obtained via entropy balancing. Columns (1) and (3) compute the regression weights under the assumptions that Article 8 funds are the treated units; columns (2) and (4) consider Article 9 funds as the treated units. \*, \*\*, and \*\*\* denote significance at, respectively, the 10%, 5% and 1% level. Morningstar sustainability rating are the Morningstar globes on a 1-5 scale, Article 8, Article 9 are two dummy variables to distinguish funds according to the SFDR classification, Morningstar rating are Morningstar stars on a 1-5 scale. Other controls include: lagged net flows and returns, fund size, fund age, the share of cash and the share of equity invested in advanced economies with respect to total net assets, the environmental, social and governance risk score. Time fixed effects are at weekly frequency.

$$\begin{aligned}
\text{Return}_{i,m,w} = & \alpha + \sum_{k=1}^4 \text{Return}_{i,m,w-k} + \text{Sustainability rating}_{i,m-1} + \text{Article SFDR}_i + \\
& + \text{Morningstar rating}_{i,m-1} + \sum_{k=1}^4 \text{Net flow}_{i,m,w-1} + Z_{i,m-1} + \epsilon_{i,m,w} \quad (2)
\end{aligned}$$

### 3 Results

Results on the impact of Morningstar sustainability rating and SFDR classification on fund flows are reported in Table 1. The first two columns present the estimates of Equation 1 obtained by applying the entropy balancing method to EU domiciled funds only, whereas the last columns 3-4 present the corresponding estimates using non-EU domiciled funds to create control groups.

	Control group: EU funds		Control group: Non-EU funds	
	(1)	(2)	(3)	(4)
Morningstar sust. rating	-0.003 (-0.577)	0.003 (0.294)	-0.005 (-0.891)	0.014 (1.335)
Article 8	0.007 (0.672)			
Article 9		0.055** (2.257)		
Article 8			0.002 (0.190)	
Article 9				0.043** (2.353)
Morningstar rating	0.031*** (5.776)	0.026** (2.073)	0.030*** (6.414)	0.027*** (3.188)
Controls	Y	Y	Y	Y
Time FE	Y	Y	Y	Y
N	66484	39556	107976	81048
R <sup>2</sup>	0.53	0.59	0.52	0.58

Table 2: Impact of Morningstar sustainability rating and SFDR classification on mutual fund returns, robust t-statistics in parentheses. Regressions are estimated using weights obtained via entropy balancing. Columns (1) and (3) compute the regression weights under the assumptions that Article 8 funds are the treated units; columns (2) and (4) consider Article 9 funds as the treated units. \*, \*\*, and \*\*\* denote significance at, respectively, the 10%, 5% and 1% level. See Table 1 for the list and definition of both variables and controls. Time fixed effects are at weekly frequency.

As to sustainability labels, we find industry scores to be positive and highly significant which confirms previous evidence on the importance of Morningstar globes to explain investors' flows (e.g. [Hartzmark and Sussman, 2019](#), [Ammann et al., 2019](#)). The impact of Morningstar globes is much larger when the estimation is performed using the observations matching the subset of Article 9 funds; this suggests that Morningstar labels have even greater influence to explain flows variations for funds putting more weight on ESG attributes. In line with these findings, Table 1 shows that the sustainability labels introduced by the SFDR only matter for Article 9, i.e. funds where sustainability goals are the core investment objective, while we do not find any statistical significant effect for Article 8 funds. The impact for Article 9 funds is also quite sizable in economic terms: *dark-green* funds collect approximately 1.1-1.2 USD million per week more than other funds, a value that is very close to the average net fund flows in our sample. The results are robust to the inclusion of a wide set of mutual funds characteristics, most notably the Morningstar (star) ratings which have been found to be critical to explain fund flows, especially for retail investors ([Ben-David et al., 2022](#)). Interestingly, while being positive, the impact of Morningstar rating turns out to be non-statistically significant when the matching is restricted to Article 9 funds (columns 2 and 4 of Table 1). These findings emphasize the importance of controlling for

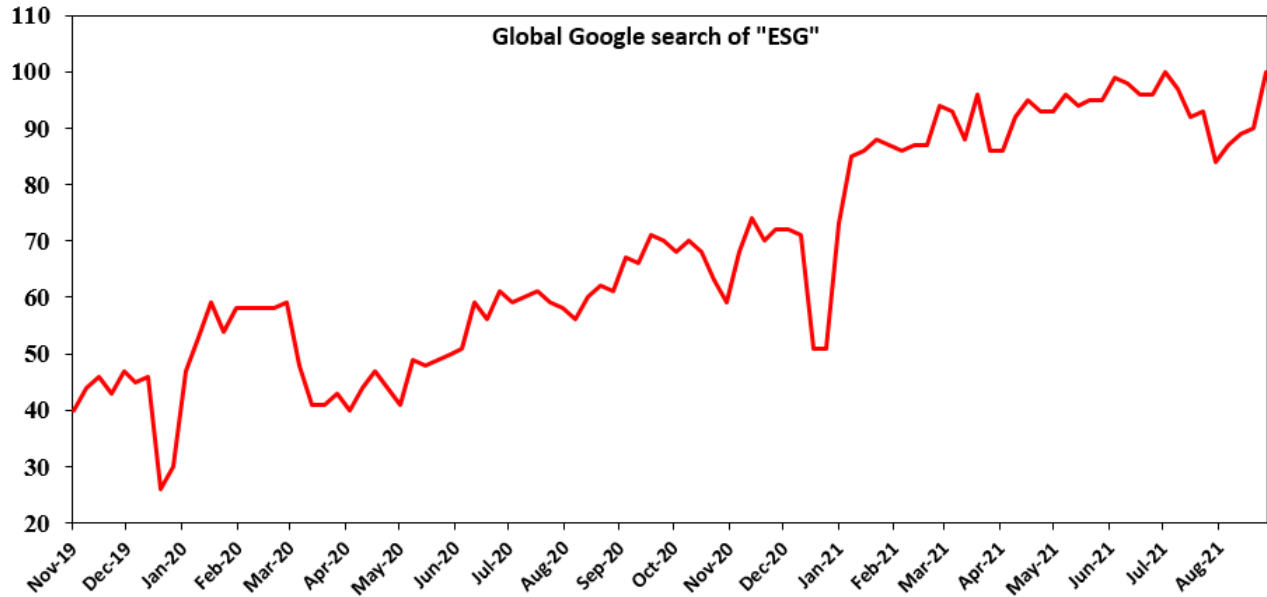


Figure 1: Number of web searches for the term "ESG" obtained from Google trends. The series begins with the publication of the SFDR (November 2019) and terminates when Morningstar implemented a methodological change in its sustainability score (September 2021). Data refer to global web searches; higher values are indicative of more frequent searches.

portfolio sustainability measures and implicitly suggest that traditional risk-return considerations *per se* are not effective to explain investors' preferences vis-à-vis highly sustainable investments.

Did higher levels of sustainability result in better fund performance? Table 2 shows that a better ESG standing is generally not associated with higher ex-post returns, whereas the coefficients of Morningstar ratings are always highly significant which is not unexpected as Morningstar stars explicitly control for risk and cost-adjusted performance. Interestingly, the coefficient of Article 9 is also positive and statistically significant suggesting that funds with strong ESG-objectives outperform their peers. In a recent theoretical contribution Pástor et al. (2021) show that green assets outperform brown ones when ESG concerns strengthen over time. We use the intensity of web searches for the acronym "ESG" to proxy for the dynamics of ESG preferences since the introduction of the SFDR; the results are displayed in Figure 1 showing a significant shift in ESG tastes over recent months. To the extent that the niche of dark-green funds are effectively able to capture the increasing interest of investors towards highly sustainable assets, then our results reconcile with the Pástor et al. (2021) predictions of ESG assets outperformance.

## 4 Conclusions

We study the impact of sustainability labels on mutual fund flows and returns by comparing an industry proxy of ESG risk - the Morningstar globes - with the ESG disclosure requirements intro-

duced by the SFDR. Our empirical strategy relies on the entropy balancing method that maximizes the informative content of the data set to create groups of counterfactuals explicitly accounting for portfolio sustainability levels. We find investor flows to systematically respond to Morningstar's sustainability ratings, with low-ESG risk funds attracting larger net flows, whereas regulation-induced labels positively affect fund flows only when sustainable goals are the core investment objective (Article 9 funds). These latter funds also outperform their peers in terms of returns, possibly reflecting a strengthening of investors' ESG concerns. Focusing on the mutual fund industry, our findings underlines the importance of transparency and comparability across sustainability measures, an issue that has stimulated an intense debate among policymakers over the last years (e.g. [Visco, 2019](#) and [Boffo and Patalano, 2020](#)). Going forward this is particularly crucial to enhance the informative content of the SFDR classification and ensure that the self-assessment of ESG attributes effectively conveys information on the actual ESG risk of funds portfolios.



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