

Not-for-profit labels and commercial ratings guiding fund flows to sustainable investments

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Abstract

With the sharp increase in sustainable funds and concerns about greenwashing, labels have appeared as one solution to improve market transparency and address agency issues, amidst the criticism of private rating agencies. Their widespread adoption requires a better understanding of their effectiveness. This study draws on agency theory to analyse whether mutual funds that receive a not-for-profit label experience higher inflow, and how this differs for funds that already have a commercially issued sustainability rating. A Difference-in-Difference methodology assesses the effect of the introduction of the TowardSustainability label on fund flows compared to a control population without the label, constructed with propensity score matching. Both populations have 22,716 observations corresponding to approximately 400 labelled funds. Our results indicate that obtaining a not-for-profit sustainability label has a positive marginal effect on funds flows, but only for funds that do not have commercial ratings. These results confirm investor preference for sustainable funds and show the similarity effect of public labels and private commercial ratings on agency problems, by improving transparency.

Keywords - socially responsible investing, ESG labels, sustainability labels, agency problem

Introduction

The value of sustainability labelled products on the funds market and the number of sustainability labels is growing rapidly. By the end of 2021, € 1,337 billion assets managed by 2,119 funds were assessed by 10 different labels in Europe, a quarter of which had multiple labels. These numbers increase steadily, doubling in 2021 (Novethic, 2022). The transparency these labels bring is often presented as an effective alternative to traditional environmental regulation. They have an important role to play in finance, where a combined high level of complexity and disintermediation, challenge the efficient allocation of funds towards investments aligned with investors' – and civil society's – interests.

Our study contributes to the literature on the effectiveness of ESG transparency, by showing whether the additional information brought by not-for-profit labels drives investor behaviour. This is particularly relevant in the sustainable finance context, where a growing number of public and private initiatives try to increase transparency: new public and private non-profit labels are appearing, and regulation is changing fast with the introduction of the EU taxonomy on sustainable finance, whereas so far transparency was mostly provided by the rising requirements of commercial ratings (Dumas &

Anastasiadis, 2021). We test the effect of a sustainable finance label on the net growth in funds' assets, beyond the reinvested returns (we refer to the net movement of all cash inflows and outflows of various financial assets as “fund flows”, a robust measure in research on funds) in the Belgian fund industry. The TowardsSustainability label is particularly well suited to test our hypothesis for several reasons. First and foremost, a new label corresponds to the input of new information on the market, which should improve transparency. Studying a new case therefore brings insight on the transparency brought by labels to the market. Next, it is a not-for-profit label issued by an industry association, in a market dominated by strongly criticised commercial ratings. Finally, it is a sustainability focused label rather than just an environmental label, which aligns it better with society’s challenges by encompassing the environmental, social and governance factors, while addressing a particularly complex investment decision. It was introduced end of 2020 when our study began, allowing us to observe the effect on fund flows as they occurred. It is already a largely adopted label, representing more than 500 billion euros AuM (Assets under Management), attempting to impose itself as the market standard. In addition, two of the authors participated in the labelling process as academic advisors, and therefore could observe it in the making. It contributed to a nuanced understanding of the mechanisms at play and facilitated the validation of results with practitioners. We studied fund characteristics and flows of approximately 400 labelled funds, distributed over 23,278 share classes over a one-year period, the first year of the TowardsSustainability label.

Our results confirm the investor preference for sustainable investments already identified in literature, as evidenced by the impact of the introduction of the Morningstar globes rating on mutual funds flows (Ammann et al. 2019). Furthermore, our results show that the additional assurance of a label for funds with a commercial rating is not necessary, despite the critiques on ratings; the not-for-profit label does not result in any additional fund flows towards those funds, even when the assessments contradict each other. But the results also highlight the need to identify new sustainable funds in the market, since new information provided by the label results in fund reallocation. This additional information is valued by investors as it broadens their universe of investable funds, suggesting that this universe is currently insufficient and highlighting a key role for not-for-profit organisations to bring transparency to the market share not covered by commercial ratings.

Our article has policy implications for the regulation of sustainable investment and the allocation of funds towards socially desirable economic activities. While commercial rating agencies provide transparency for a large portion of the funds, they do not cover the full universe. Public and private labels have a role to play in providing the missing transparency for the rest of the market. Consequently, the price of applying to labels must be accessible to small funds as well, and the communication around these labels must target funds that are not covered by the rating agencies.

Finance is increasingly recognised as a key partner in the transition of the economy to address today's environmental and social challenges. As more countries consider the adoption of sustainable finance labels to reign financial power towards the transition of the economy, we provide a better understanding of the extent to which such non-profit labels can change investor behaviour. Finally, since labels will influence flows for funds that are not covered by commercial ratings, it is key that they set sufficient quality requirements and revised them regularly, in line with rising requirements of sustainability challenges.

Literature review and hypotheses development

Agency problems in the asset management industry

Though it may not always be recognised, the asset management industry serves several key purposes in society. First, as an agent serving the interests of its principal: the providers of the funds it manages, which requires an excellent understanding of investor preferences. Second, through intermediation, providing a fair, risk-adjusted return by efficiently allocating capital to improve the economy and society (Hawley & Lukomnik, 2021). Also, the asset management industry can be a powerful facilitator of price discovery and contribute to the management of asymmetric information.

In this industry, one party is often an agent for another and may face agency problems, such as conflicts of interest. A financial manager thus has a fiduciary duty to serve the shareholders' interests. Many ethical issues in financial management involve the balancing of this duty with the interests of other groups. The industry is a classic example of agency problems (Chevalier & Ellison, 1997) with multiple potential conflicts of interest between funds and their investors. Indeed, the information funds handle and how this information feeds outcomes aligned with their strategy, is not directly observable. The agency problem is aggravated for long-term investment horizons, due to the temporal gap between the investment decision and the potential payoff (Neal & Warren, 2015; Shah, 2014). Schoenmaker & Schramade (2019) plead for a better focus of the industry on long-term value creation, which is how it can build trust and truly perform the social purpose of finance, according to them. Asset managers must provide products that meet transition preparedness requirements in a way that is credible and verifiable. This is quite a challenge as the authors note that "even professionals are confused by the current state of the field" (Schoenmaker & Schramade, 2019, p. 19).

Complexity and lack of transparency are two important shortcomings that hinder asset management's functions. The long chain of intermediates between the dispersed providers of capital and the ultimate user of capital (possibly a company or project in the real economy) leads to a loss of information, and a need for each party to monitor the investment's performance and impact (Schoenmaker & Schramade, 2019). Because of the increased complexity and sophistication that accompanied the development of

finance, investors and their managers heavily rely on ratings to gather information, make sense of it and make investment decisions. Commercial sustainability ratings have thus become a key driver of investment decisions, besides the original credit ratings, providing much needed transparency on companies' performance and risk, but also provoking unintended consequences of “rating addiction” (Cash, 2018).

While the shortcomings of the asset management industry could be addressed through improved transparency towards investors, it appears that the mechanisms to improve transparency – specifically commercial ratings – are not satisfying (Gyönyörová, Stachoň, & Stašek, 2021). They come with a lack of transparency on their methodologies (Folger-Laronde, Pashang, Feor, & El Alfy, 2020) leading to divergent rating information (Berg, Kölbel, & Rigobon, 2019). Historically, there even seems to be a positive relationship between ESG disclosure and rating disagreement, with more information leading to more dispersed ratings due to a lack of standardised rules and norms upon which we assess a firm's outcomes. (Christensen, Serafeim & Sikochi, 2021). Literature highlights these contradictions but does not determine whether they affect investors' decisions. International regulation such as SFRD¹ attempts to address these issues, but the voluntary aspect of the disclosure does not fully alleviate the lack of trust and sources of potential conflicts of interest due to the agency problem. Safeguarding the financial system from conflicts of interest can be done with regulation, but also with market mechanisms from within the system. The effectiveness of labels, one such safeguarding mechanism from within the system, is of utmost importance considering the already large amount of regulation addressing the financial system. We will thus investigate how investment decisions are affected by contradictory information between the commercial rating and the non-profit label.

In this context, labels and ratings come as additional assurance of an investment's sustainability. While sustainability ratings and labels both provide information on sustainability, they differ in terms of who produces them (for-profit rating agencies for the prior, government, NGOS, not-for-profit industry associations for the latter). They also differ in terms of who pays for them: users of the information pay for sustainability ratings – unlike the business model of credit ratings – while the issuers of securities typically pay for sustainability labels. In addition, they differ in terms of who communicates them: the rating agency for the prior, the fund distributor for the latter. It is unclear whether and how they differ in terms of the trust they gather, and the investment behaviours they induce, which this study investigates. Both typically provide transparency as their main function. But they can also cater to sophisticated investors by providing them a tool to constrain and control their dispersed investments. Cash (2018) suggests that they provide a solution to the agency problem of

¹ [Regulation \(EU\) 2019/2088 of the European Parliament and of the Council of 27 November 2019 on sustainability-related disclosures in the financial services sector.](#)

widely invested institutional investors characterised by multiple layers of delegation. They control the actions of their ‘agents’ (those selling them the funds they distribute or invest in) by prohibiting their asset managers from investing in unlabelled underlying funds, limiting their risk, although they lack the information to quantify that risk themselves. Studies of ESG reporting on the corporate side indicate that multiple disclosures (such as a combination of SASB disclosures and Bloomberg’s ESG scores for companies) provide different information, and the investors value the complementarity of these different ESG information sources (Eng, Fikru, & Vichitsarawong, 2022). A similar question can be raised in the sustainable fund industry, where labels might provide different information from ratings. This remains to be proven empirically, to determine how and where labels can indeed provide the much-needed trusted additional transparency to overcome agency issues.

The above development supposes that investors have preferences for various investment attributes. We rely on fund flows as an indication of investor preference, which we justify in the next section.

Investor preference and fund flows

The broad literature on fund flows has confirmed a positive relation between fund flows and various performance measures, controlling for a variety of attributes such as size (Sirri & Tufano, 1998), or fees (Wang & Young, 2020). These studies conclude that fund flows reflect investor preferences depending on fund attributes. However, the complexity of the investors’ decision may lead to suboptimal choices, due to the difficulty to access and process material information. Better information on an attribute might thus reorient fund flows and correct decision-making biases. This additional information will typically come from a third party, as evidenced by the substantial impact of information intermediaries who provide free access to simple information (Ammann, Bauer, Fischer & Müller, 2019; Steen, Moussawi & Gjolberg, 2020).

Investor preference for sustainability is one such attribute that has been investigated and confirmed by increased fund inflows by Hartzmark and Sussman (2019) who examined for-profit sustainable rankings and fund flows. The authors demonstrated that the universe of mutual fund investors in the US collectively put a positive value on sustainability by providing causal evidence that market-wide demand for funds varies as a function of the private sustainability ratings. This is confirmed by Ammann et al. (2019) who examine the effect of the introduction of Morningstar’s Sustainability Rating in March 2016 on mutual fund flows. They show that mutual funds with a high sustainability rating (4 or 5 globes) exhibited an abnormal increase in flows compared to those with a low sustainability score. Similarly, Ceccarelli et al. (2021) study the impact of the Morningstar new eco-label (launched in April 2018) for mutual funds, the Low Carbon Designation (LCD), on fund flows. Spikes in the flows for green funds in Europe and in the US after the introduction of a label are

evidence they add to the increasing demand for climate-conscious investment products (Ceccarelli et al., 2021). Drawing on agency-theory predictions and the above empirical evidence, hypothesis H1 for the introduction of the TowardsSustainability label is as follows:

H1: Mutual funds that receive the label experience higher inflows than mutual funds that do not receive the label.

The sustainability information provided by ratings and labels facilitate investors' decisions by reducing information asymmetry due to various barriers and costly searches, as explained by Gutsche & Zwergel (2020). We contribute to this conversation on agency theory by showing under what conditions a label certification leads to investment decisions, in several declinations of hypothesis H2. A first condition verified is whether a label is most effective when there is stronger lack of information, as suggested by agency theory's focus on transparency, with Hypothesis 2a:

H2a: Mutual funds with no Morningstar ratings that receive the label experience higher inflows than mutual funds with no Morningstar rating that do not receive the label.

A second condition verified is whether a not-for-profit label is more effective than a for-profit label. The lack of trust in the rating sector and potential conflicts of interest due to their business model may lead investors to prefer not-for profit ratings, particularly in situations where ratings contradict each other. A perceived threat of greenwashing from funds with low sustainability may also influence this trust. Thus, the hypotheses related to whether information from public initiatives is more valued than from private initiatives can be stated as follows:

H 2b: Mutual funds with **high** Morningstar ratings that receive the label experience higher inflows than mutual funds with **high** Morningstar ratings (4 or 5 globes) that do not receive the label.

H 2c: Mutual funds with **low** Morningstar ratings (1 to 3 globes) that receive the label experience higher inflows than mutual funds with **low** Morningstar ratings that do not receive the label.

Based on prior studies, we expect H1, H2a and H2c to be validated, while H2b would be rejected.

The introduction in 2016 of the Morningstar Sustainability Rating, ranking mutual funds' ESG profile, gave investors insight on the sustainability of many of their funds. The coverage is wide, corresponding to the most common funds requested by clients. It also facilitated academic research of investor preferences for sustainable funds by providing large amounts of quantitative data (Steen et al., 2020). Funds are listed from best to worst on a scale of 5 to 1 based on their ranking within their category. A "high" score of 5 globes indicates that a fund is in the top 10 percentile within its fund category. Five years after the introduction of this rating, other private and public initiatives have emerged to facilitate the allocation of investors' funds following their preference for sustainability. Whether these new initiatives, such as the TowardsSustainability label, provide useful additional information to the market,

resulting in additional flows towards sustainable finance, beyond the ones facilitated by existing transparency mechanisms, remains to be investigated. Indeed, a measure of success of a sustainability label is not only its level of adoption, and the assets under management it represents, but its ability to reallocated funds to investments identified as sustainable by the label. Should there be evidence of such inflows, we could conclude that the label brings trusted additional transparency to overcome agency issues and align fund inflows with investors' preference for sustainable finance.

Specifically, this article asks whether the non-profit *Towards Sustainability* label brings additional trust and assurance to the confusing market of for-profit ratings, or if it is mostly important to provide additional coverage for sustainable investments not rated by commercial agencies.

Data and model

The label offers us an excellent context for a data-driven analysis in a quasi-experimental setting. Our main objective is to measure the effect of the label on sustainable investment decision through its impact on fund flows.

The Towards Sustainability label

In response to a need for clearer signalling of sustainable investments, the Belgian asset management association Felbein set up the *Towards Sustainability* label. The label is awarded and updated by a non-profit Central Labeling Agency (CLA), governed by a board composed of directors from the financial sector and independent members. It receives the recommendations of the Eligibility Board, composed of financial industry representatives and of independent experts (mostly academics) on awarding the 'Towards Sustainability' label to individual products, based on the assessment reports received from the independent Verifier. An Advisory Board, composed of financial industry representatives and civil society representatives, defines the standard, and updates it regularly. All three board have independent chairs. Finally, the Quality Standard Verifier², which is not part of the CLA, certifies the alignment of funds' policies and processes with the label's requirements, providing independent external ESG audit.

The label imposes the exclusion of various activities which are regarded as unsustainable, at the company level, in each sector. Its focus is on eliminating significant harm, mostly at the start of the value chain. The intention is for the label to be within reach of everyone in the asset management industry, as evidenced by its name "Towards" Sustainability. It positions itself as a quality assurance for sustainable finance products, providing transparency and a guarantee to investors that a series of principles are respected. The content of the label is built around five key principles: (1) sustainability investment strategies; (2) avoiding harm by excluding unsustainable companies, (3) transparency on the processes, (4) information flows to clients and (5) supervision through internal verification

² Two of the authors belong the QS Verifier Partnership, as academic advisors.

processes. An update of the label took place in 2021, after its first two years of existence, although the data for this study falls under the first version of the label.

The adoption of the label was driven by demand from the largest Belgian fund distributors who submitted files for each of the financial products they wished to be labelled. These are notably the investors that already have access to sustainability data from multiple providers and ratings. The large asset managers active in Belgium also put pressure on the funds they distributed that were not developed in-house, requiring them to be labelled as well if they were to continue distributing them. The label considers that it orders the market as it provides a minimum assurance and mitigates agency problems between widely invested institutional investors and their agents selling them the funds they distribute.

The intention is for the label to be mainstream someday and cover the whole market, resulting rapidly in the broad adoption of the label by different actors in the sustainable finance market. After one year, the coverage of the Towards Sustainability label was 499 funds and financial products holding €238 billion in assets under management, making it the second most important label in terms of assets under management, behind the French SRI label covering €259 billion of assets, managed by 514 funds (Novethic, 2020).

Data and method

To verify our hypothesis, we compared funds labelled with the Belgian *Towards Sustainability* label with similar unlabelled funds. To derive an estimate of the effect of the label on fund flows, we employed the Difference-in-Differences (DiD) empirical methodology, using monthly net funds flows $FLOW_{i,t}$ as the independent variable and the binary variable (x_1 labelled or not) as the main explanatory variable.

Difference-in-Differences approaches are applied when certain groups are exposed to a treatment and others are not. This method uses panel data to calculate the marginal effect of a treatment (receiving the *Towards Sustainability* label) on an outcome (average monthly funds flows). To measure this effect, we compare the changes in the funds flows that occur over time in a treatment group (labelled funds in our case) and a control group (built to keep the same characteristics as the treated population). Our DiD measures the marginal effect of flows resulting from being labelled for different control groups.

To reduce the risk of high heterogeneity between the treatment and the control group that would result in a selection bias, we used the propensity score matching (PSM) to construct our control population. This method is used to estimate the causal treatment effect by pairing elements of a treatment group with elements of a control group based on a propensity score (PS). The PS defines the probability of

being in the treatment group given the covariates. Once this step is successfully done, we ran Difference-in-Difference (DiD) analysis with a set of data that has been matched.

PSM treats the causal effects in observational studies. Its application is wide and according to Rosenbaum and Rubin (1983) can include a matched sampling on the univariate propensity score, which is a generalisation of a discriminant matching, or a (ii) multivariate adjustment by subclassification on the propensity score where the same subclasses are used to estimate treatment effects for all outcome variables. PSM can be used through many matching methods, such as the "Nearest Neighbour" algorithm that matches a treated unit to a control unit(s) that is closest in terms of a distance measure such as a logit. As this is the most common approach, we adopted it in our study.

A propensity score model must first be created to match items from the treatment group (e.g. Labelled funds) with the items from the control group (e.g. non-labelled funds) based on the propensity score. This first step of the matching is to compute that propensity score for each fund which will give the probability of a company to be the target of a labelled fund conditioned on a set of regressors, X.

The PS is given by $Prob[Y = 1|X] = G'(x' b)$, where $G(\cdot)$ is the normal cumulative distribution function. For this model, a probit is used where the outcome variable Y is Treated and the independent (matching) variables X.

Starting with all the funds labelled "towards sustainability" during the first round of labelling, we created a control population from all the funds that, like those of the label, are distributed in Belgium. We made sure to choose funds of comparable age and size. We therefore used these two matching variables.

$$P(Y_i=1 | Size_i ; Age_i) = \Phi(\beta_0 + \beta_1 Size_i + Age_i + \epsilon_i) \quad (1)$$

where $Y_i = Treated_i$

Once the matching is done on each monthly panel data, we only keep the matched items in both groups. In this exercise, all the treated fund monthly data were successfully matched with a fund from the control group resulting in a set of 45,432 observations (panel data). Our data are divided in 2 distinct periods (t=0, before the label and 1 after), with fund flow data available for the period from December 2018 to November 2020.

We define monthly relative net flow as the net growth in fund assets beyond reinvested returns. Following Sirri and Tufano (1998), we calculated it as (Eq.2)

$$\text{FLOW}_{i,t} = \frac{\text{TNA}_{i,t} - \text{TNA}_{i,t-1}(1 + R_{i,t})}{\text{TNA}_{i,t-1}}, \quad (2)$$

where $\text{TNA}_{i,t}$ are total net assets of fund i at the end of month t , and $R_{i,t}$ is the return of fund i during that month. This measure reflects the percentage growth of a fund's assets under management in excess of the growth that would have occurred if no new funds had flowed in, and all dividends had been reinvested. To mitigate the influence of extreme outliers, net flows were winsorized at the 1% and 99% levels.

Additionally, we add many control variables in our DiD models that have been found to influence mutual fund flows. We reported data on various performance measures (1), return volatility (2) as a measure of risk, fund size (3), fund fees or expenses (4), and fund age (5), as these characteristics are identified as major drivers of fund flows in the mutual fund flow literature. We ignored investment style and style deviation practices as the evidence of their effect on fund flows is currently inconclusive (Muñoz, Vargas, & Vicente, 2021)

Alpha and raw returns were selected as performance's measures for their strong predictive power for mutual fund flows (Ivković & Weisbenner, 2009; Sirri & Tufano, 1998). Like Ammann et al. (2019), we selected the 1 period lagged 1-year index-based alpha calculated by Morningstar and the 1-month raw return (Lag (Alpha,1 & Lag(Monthly return,1))). Using those two performance measures, we control for short- and long-term performance effects.

We add the 12-month lagged return volatility as a measure of risk (STDEV) since funds with a higher return volatility tend to receive fewer inflows (Sirri & Tufano, 1998).

While financial markets measure fund size by the fund's total net assets under management, we used logarithms of this variable to limit the skew of the distribution, due to the dispersion of fund size in our sample (Log Fund size).

Mutual fund investors prefer funds with lower expense ratios (Ivković and Weisbenner, 2009, Sirri and Tufano, 1998), leading to a negative fee-fund flow relationship. Nevertheless, the literature on the turnover-flow relationship is sparse and mostly inconclusive. Due to the limited coverage ratio of funds' net expense ratio and its turnover ratio in our data, we use management fees from Morningstar and Bloomberg databases as our variable to reflect expenses (MS_MGT_FEE and BL_MGT_FEE).

We used fund age measured in days as a control variable to reflect the lower level of flows observed in older funds (Chevalier and Ellison, 1997) (Age).

The correlation matrix in Table 1 provides preliminary evidence of the impact of the control variables on funds flows. Independent and control variables are statistically significantly correlated with the

dependent variable, supporting the proposition that these independent variables are important determinants of funds flows. The correlation coefficients among the independent variables suggest that multicollinearity is not a serious problem in our empirical models as none of these coefficients exceeds the 0.80 threshold.

Table 1: Correlation Matrix

	Fund Flows	Treatment	t	DID	Mthly Return	StandDev	Log Fund Size	Alpha	BL_MGT_FEE	Age
Fund Flows	1,0000									
	/									
Treatment	0,0143	1,0000								
	(0,0023)	/								
t	-0,0136	-0,1878	1,0000							
	(0,0037)	(0,00)	/							
DID	0,0043	0,5210	0,4997	1,0000						
	(0,3606)	(0,00)	(0,00)	/						
Monthly Return	0,0688	0,0101	-0,0403	-0,0163	1,0000					
	(9,38e-49)	(0,0317)	(8,14e-18)	(0,0005)	/					
StandDev	-0,0100	-0,0666	0,3423	0,1618	0,0796	1,0000				
	(0,0336)	(6,08e-46)	(0,00)	(4,57e-264)	(9,71e-65)	/				
Log Fund Size	-0,0032	0,0190	0,0271	0,0484	0,0180	-0,0173	1,0000			
	(0,4931)	(5,31e-05)	(7,87e-09)	(5,65e-25)	(0,0001)	(0,0002)	/			
Alpha	0,0260	0,1121	0,0493	0,1522	0,0743	0,0378	0,1113	1,0000		
	(3,15e-08)	(7,51e-127)	(7,08e-26)	(1,98e-233)	(1,04e-56)	(7,56e-16)	(4,43e-125)	/		
BL_MGT_FEE	-0,0130	-0,0153	-0,0204	-0,0389	0,0042	0,1510	0,0800	-0,0872	1,0000	
	(0,0054)	(0,0011)	(1,38e-05)	(1,10e-16)	(0,3731)	(7,37e-230)	(1,78e-65)	(2,52e-77)	/	
Age	-0,0357	0,2513	0,0423	0,1118	-0,0095	-0,0021	0,0932	0,0247	0,2119	1,0000
	(2,93e-14)	(0,00)	(1,89e-19)	(2,41e-126)	(0,0425)	(0,4930)	(3,84e-88)	(1,47e-07)	(0,00)	/

We also include the so-called “sustainability globes” published by Morningstar on a 1-5 scale (5 indicating top sustainability performers) as a control variable in our first model, to test the first hypothesis. To do this, we constructed a binary variable (Globe) equal to 1 for high and above average globes funds and 0 otherwise. It was then used as a categorical variable to test hypotheses 2a, 2b and 2c. All the control variables were 1-month lagged, except for age.

Monthly data on total net assets, total returns, inception dates, assets under management (at fund and share class levels), and Modern Portfolio Theory’s alpha were collected from the Morningstar database. The database was supplemented with data from the Morningstar Direct database, from which we also obtained monthly Morningstar Star Globes and monthly standard deviations. Management fees were supplemented with data from Bloomberg. Finally, the database was cleaned by removing missing observations.

The table below gives a summary of our panel data and shows the descriptive statistics of the independent variable studied and the different control variables for the two populations.

Table 2: Data and variable description of the matched samples

	Treatment	Control
# Observations	22,716	22,716
Monthly Fund Flows		
Min	-0.50497	-0.50563

Max	5.71314	5.66766
Mean	0.03742	0.024489
Median	-0.00002	-0.00547
Matching Variables (Mean)		
Age	6,173	3,944
Log Fund size	19.57	19.52
Control Variables (Mean)		
Alpha	-0.08957	-1.131438
Mth. return	0.3432	0.2609
StandDev	12.31378	13.44045
Fees	0.8539	0.8774

For the hypotheses 2b and 2c, we broke down these two populations of labelled and unlabelled funds to distinguish funds with above average and below average sustainability profiles, using the Morningstar globes as indicator.

Several panel DiD regressions models we performed to capture the effect of the label on flows using pooled regressions. The regressions include all the asset classes that have sufficient data allowing the calculation of monthly flows. We treat the explanatory variable x_1 , the Label, as a binary variable 0 (not labelled) to 1 (labelled) since we do not expect the effect to be linear.

$$FLOW_{i,t} = \beta_0 + \beta_1 T + \beta_2 x_1 + \beta_3 (x_1 \cdot T) + \sum_{z=2}^N \beta_z x_z + \varepsilon_{i,t} \quad (3)$$

where FLOW is the monthly net flows of fund i at time t ,

T is the time variable = 0 before the labelling date and 1 after.

X_1 is the binary explanatory variable = 0 control group and 1 for the treatment group

X_z are the control variables

($X_1 \cdot T$) will be renamed DiD later in the results tables

Results

Our first DiD panel regression of the monthly net flow $FLOW_i$ on the binary variable (labelled or not) for the full dataset (treated and untreated population) confirms positive and significant coefficients between the net flows and the labelling variable (treatment) and a positive and significant marginal effect (**H1 not rejected**).

Table 3: Result DiD Model on all data

	Estimate	Std. Error	t value	Pr(> t)	
			1.711e-		
(Intercept)	8.930e-02	1.711E-02	5,218	1.81E-07	***
T	2.414E-03	3.690E-03	0.654	0.051302	

Treatment	1.138E-02	3.792E-03	3,001	0.00269	***
DID	1.058E-02	5.002E-03	2,115	0.03447	**
Age	-9,510E-06	8.088E-07	-11,758	< 2e-16	***
lag(StandDev)	-8,608E-04	1.589E-04	-5,418	6.05E-08	***
lag(Log Fund Size)	-1,963E-03	8.629E-04	-2,275	0.02292	**
lag(Alpha)	1.917E-03	2.270E-04	8,447	< 2e-16	***
lag(Monthly Return)	1.173E-02	2.993E-04	39,200	< 2e-16	***
lag(BL_MGT_FEE)	-3,836E-03	1.651E-03	-2,323	0.02017	**
Globes	2.434E-03	2.901E-03	0.839	0.40141	

Note: significance reported as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Indeed, the coefficient for variable DiD (marginal change in fund flow) is positive and significant, meaning that the label has a positive effect on fund flows in comparison with non-labelled funds. Mutual funds that receive the label experience higher inflows than mutual funds that do not receive it.

We run robustness checks to tackle methodological issues to verify that our results are also compliant to different specifications of the models in terms of endogeneity by analysing the fixed effect. Also, when proceeding with DiD analysis, a current robustness check consists in tackling the risk of violation of the parallel trend assumption. For the parallel trend assumption to hold in the DiD analysis, fund flows in the control group must move parallel with fund flows in the treatment group until the labelling event. This might not be the case if there are events affecting the relationship, implying that the marginal effect would not come from the event.

To address the concern over the parallel trend hypothesis, we followed the Bilinski and Hartfield (2020) non-inferiority approach. Building on the latter, we estimate the restricted model and its unrestricted version as follows:

$$F_{t,i} = a_0 + \sum_{k=T_0}^D \beta_k 1(k = t \cap T2_i = 1) + \alpha_i + \gamma_t + \varepsilon_{t,i} \quad (4)$$

$$F_{t,i} = a'_0 + \sum_{k=T_0}^D \beta'_k 1(k = t \cap T2_i = 1) + \theta T2_i t + \alpha_i + \gamma_t + \varepsilon'_{t,i} \quad (5)$$

Where $F_{t,i}$ is the monthly flow of fund i at month t , β_0 is the intercept, D_0 is the time at which the treatment starts, D is the number of months. T_1 is the dummy related to the treatment, β_i is a fund fixed effect and β_t is a time-fixed effect. β and β' are then computed as :

$$\beta = \frac{1}{k} \sum_{i=1}^k \beta_i, \beta' = \frac{1}{k} \sum_{i=1}^k \beta'_i \quad (6)$$

This test allowed us to verify that the parallel trend assumption is not violated.

Further results

To test our further hypotheses 2a, 2b and 2c and to deepen the interpretation of our first result confirming investor preference for sustainable funds, we broke down the analysis on sub-populations (the one with a high globe, the other with a low globe and the one with no globes) to test whether this result is dependent on whether funds are already known as sustainable or not. Is this marginal effect of the not-for-profit label on monthly flows different for funds already recognised as sustainable according to the commercial “black-box” ratings?

When observing our data (in table 4), we note that 57.51% of the labelled funds already have a Morningstar rating but less than 50% of labelled funds are recognised by the market as having an above average quality of sustainability, measured by the number of Morningstar Globes.

Table 4: Sample size by subcategories.

	Treatment High Globes	Treatment Low Globes	Treatment No Globes	Control High Globes	Control Low Globes	Control No Globes
Nbr. Obs.	10382	2682	9652	3530	7181	12005
% of each pop.	45,70%	11,81%	42,49%	15,54%	31,61%	52,85%

As expected, the proportion of high globes is higher in the population of funds that have received the label (Treatment group) than in the control population sampled from all funds distributed on the market. Table 5, below, provides a summary of our panel data and includes descriptive statistics by sub-populations.

Table 5: Descriptive statistics of sub populations

	Treatment High Globes	Treatment Low globes	Treatment No globes	Control High Globes	Control Low Globes	Control No Globes
# Observations	10382	2682	9652	3530	7181	12005
FLOW						
Min	-0,50322	-0,504975	-0,50452	-0,4862	-0,48493	-0,50563
Max	5,67579	4,951892	5,71314	5.184.634	5,49892	5,66766
Mean	0,04037	0,036559	0,03449	0.033484	0,01714	0,027
Median	-0,00062	-0,005806	0,0017	-0.005858	-0,01104	-0,00357
Control Variables (Mean)						
StandDev	15,2701	19,18787	7,4487	171.923	18,5059	9,3072
Mth. return	0,4569	0,3166	0,2282	0.5677	0,3318	0,1282
Alpha	0,1255	0,1552	-0,3889	-0.221	-1,384	-1,594
Log fund size	19,32	19,67	19,82	19.55	19,58	19,48
Age	5.628	6,271	6,733	3.967	4,16	3,808
Fees	0.8558	1,045	0,7988	0.980	1,0062	0,7699

A DiD model on our data with no globes reveals a positive and significant coefficient for the DiD variable (**H2a validated**), confirming the role that labels can play for the market segment not covered by commercial ratings.

Table 8 : Result DiD Model on no globes data

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	1.071 ^{e-01}	2.309 ^{e-02}	4,639	3.53 ^{e-06}	***
t	2.832 ^{e-03}	5.151 ^{e-03}	0.550	0.58252	
Treatment	1.088 ^{e-03}	5.131 ^{e-03}	2,121	0.03397	**
DID	1.434 ^{e-02}	7.728 ^{e-03}	1,855	0.06357	*
Age	-9,866 ^{e-06}	1.223 ^{e-06}	-8,069	7.48 ^{e-16}	***
lag(StandDev)	-8,558 ^{e-04}	3.217 ^{e-04}	-2,660	0.00782	***
lag(Log Fund Size)	-2,689 ^{e-03}	1.175 ^{e-03}	-2,288	0.02215	**
lag(Alpha)	2.015 ^{e-03}	3.938 ^{e-04}	5,117	3.13 ^{e-07}	***
lag(Monthly Return)	1.199 ^{e-02}	6.355 ^{e-04}	18,873	<2 ^{e-16}	***
lag(BL_MGT_FEE)	-7,928 ^{e-03}	2.533 ^{e-03}	-3,130	0.00175	***

Note: significance reported as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Our next DiD model (Hypothesis 2b) applied to high globes funds only from treated and control populations is quite different. Results show that the DiD variable is no longer significant, meaning that if funds already had high Morningstar globes, receiving the label did not have any marginal impact on funds flows (**H2b rejected**). When the market already has information from commercial ratings indicating good sustainability of a fund, the additional information brought by a non-profit label confirming this sustainability performance does not serve as additional reassurance resulting in additional flows. As expected, these are not the investments most suspected of greenwashing and for

which there is a high lack of trust. We run the same analysis for low sustainability funds, where lack of trust may be an issue.

Table 6 : Result DiD Model on high globes data

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	1.074 ^{E-01}	3.478E-02	3,087	0.00203	***
T	3.092 ^{E-03}	9.656E-03	0.320	0.74882	
X1 (Treatment)	7.694 ^{E-03}	8.842E-03	0.870	0.38425	
DID	5.807 ^{E-03}	1.082E-02	0.537	0.59145	
Age	-9,546 ^{E-06}	1,243E-06	-7,677	1.73 ^{e-14}	***
lag(StandDev)	-1,422 ^{E-03}	2.986E-04	-4,762	1.93 ^{e-06}	***
lag(Log Fund Size)	-2,542 ^{E-03}	1.728E-03	-1,471	0.14123	
lag(Alpha)	2.677 ^{E-03}	4.004E-04	6,687	2.37 ^{e-11}	***
lag(Monthly Return)	1.155 ^{E-02}	4.901E-04	23,566	<2 ^{e-16}	***
lag(BL_MGT_FEE)	6.006 ^{E-03}	3.005E-03	1,998	0.04570	**

Note: significance reported as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Our last DiD model testing hypothesis 2c shows that obtaining the label does not bring a positive and significant marginal effect on flows for funds with a low globe Morningstar either (**H2c rejected**). Meaning that when a fund was not previously recognised by the Morningstar rating as sustainable (low globe), the new, contradictory, information brought by the label indicating the sustainability of the fund does not result in extra flows.

Table 7 : Result DiD Model on low globes data

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	3.931 ^{e-02}	4.100 ^{e-02}	0.959	0.33773	
t	-1,361 ^{e-03}	6.540 ^{e-03}	-0.208	0.85222	
Treatment	1.696 ^{e-02}	8.903 ^{e-03}	1,905	0.05681	*
DID	1.603 ^{e-02}	1.145 ^{e-02}	1,400	0.16143	
Age	-9,602 ^{e-06}	2.370 ^{e-06}	-4,051	5.13 ^{e-05}	***
lag(StandDev)	-3,057 ^{e-04}	3.058 ^{e-04}	-0.999	0.3176	
lag(Log Fund Size)	2.447 ^{e-04}	2.049 ^{e-03}	0.119	0.90491	
lag(Alpha)	1.223 ^{e-03}	4.087 ^{e-04}	2,992	0.00278	***
lag(Monthly Return)	1.171 ^{e-02}	4.542 ^{e-04}	25,782	<2 ^{e-16}	***
lag(BL_MGT_FEE)	-8,055 ^{e-03}	3.215 ^{e-03}	-2,506	0.01224	**

*Note: significance reported as * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.*

To summarize, our results show that the label has a positive marginal effect on fund flows which were not already rated (H2a). Yet the label did not have a positive marginal effect on flows of funds already rated by Morningstar (high or low globe) (H2b and H2c).

Discussion and Conclusion

This study examines the added value of not-for-profit labels in a market dominated by commercial rating agencies, by providing additional transparency and assurance. While existing studies focus on ratings provided by for-profit private companies to identify the desirability of sustainable investments, very few focus on the impact of public or private not-for-profit labels in terms of fund flows. By focusing on an exogenous event

The findings of this research indicate that obtaining a sustainability label has a positive marginal effect on funds flows compared to unlabelled funds. This confirms investor preference for sustainable investments already identified in literature (Ammann et al. 2019). The marginal effect appears for funds that did not have Morningstar Globes. However, the marginal increase in fund flows is not present for funds with high or low Morningstar Globes. This clarifies the role of the governments, NGOS and not-for-profit industry associations behind these labels in mitigating the agency problems of the asset management industry. When the label confirms existing information (case of high globe funds), or contradicts existing information (low globes), there is no effect: in other words, there was no added value for additional transparency when commercial rating agencies have already covered the market. When the label covers new funds (no globes), there is a positive effect on fund flows. Investors are looking for more sustainable funds but will not let contradictory information override their decisions driven by private commercial labels, despite all the criticism against these. We see that rating disagreement (Berg, Kölbel & Rigobon, 2019) does not paralyze investors.

This second result sheds light on the role of not-for profit ratings, that do not seem to be considered as more valuable or more trustworthy than commercial ratings by investors. All information is considered, regardless of the organization publishing it. It confirms the notion of transparency as the key source of the agency problem in the asset management industry. We can conclude the importance of having a sustainability assessment for all funds. Other key sources of agency problem in the asset management industry such as the increased complexity of the industry's business model, along with the different investment time horizons (Neal & Warren, 2015), the sophistication of actors and products that accompanied the development of finance (Lukomnik & Hawley, 2021) or the long chains of intermediaries, do not seem to drive investor decisions for sustainable funds. Future studies

should distinguish retail and institutional investors to determine how these results vary with the sophistication of the investor.

Our results show that new positive information on sustainability is integrated in the investment decisions if there was no prior rating. But our study does not allow us to determine whether this integration occurs by conviction for sustainability or for marketing purpose. To overcome this limit, complementary studies could interview investors about their motivation and how the label helped them reach their objectives. Further studies could also use this result to assess information efficiency of financial market for sustainability, evidencing a certain maturity of these markets. To validate this proposition, we would have to study whether negative information on sustainability (once enough data is available on the removal of a label for a fund) is also integrated by investors.

Our analysis has implications for policymakers, fund managers, and labelling agencies. Policy makers will note the evidence of a growing interaction of governments with private certifications systems as a governance tool for sustainable development in other spheres than the financial one, including in Belgium (D'Hollander & Marx, 2014). This not only allows governments to stimulate the adoption of private certification systems, but also to shape their design and effectiveness. A similar cooperation between governments and private labels for sustainable financial products is not currently the case in Belgium but should be considered. A cooperation between government and the industry-led label may increase its awareness and adoption among retail investors. This segment of investors lacks financial education, including regarding sustainable finance, and could gain in trust and awareness should the label be supported by the national financial regulator. Another implication for policy makers is that they should support a reasonable price for the label, keeping it accessible for small and local funds. Indeed, while most of the market is covered by private ratings, part of the market is not. Labels play an important role in bringing transparency to this part of the market, if their pricing makes them financially accessible to these all funds. This also requires communication targeted towards these unrated sustainable funds, who are currently not part of the negotiations for the industry-led initiative and are less aware of it.

Next, fund managers have evidence of the importance of labels to attract investors to their funds, similar to the importance of having a good rating which was already known (Amman et al., 2019). This gives them leverage because they can drive the request for a label, whereas they don't drive the request to be rated by commercial agencies. As a not-for-profit industry-led initiative, the labelling process includes dialogue with the applicants and an intention to help the market learn and improve. Asset managers who are not covered by rating agencies may choose to enter this process, at their own discretion. Once they receive the label, they will be rewarded with superior positive fund flows.

Finally, our study is a call to labelling agencies to face up to their responsibilities to offer a high-quality label in terms of sustainability, as it highlighted the power of a sustainable-labelling scheme to attract capital flows towards the transition to a sustainable economy. This quality requirement should push them to review the standard regularly, updating it in line with rising requirements of sustainability challenges. The TowardSustainability label understands this, as it foresees regular updates. Since fund managers now have a justification of the time and money spent on labelling their funds, as they lead to a marginal increase in fund flows, labelling agencies can expect more label applications from funds that aren't covered by commercial ratings.

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