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The Puzzle of ESG Fund Fees

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Abstract

This paper documents that ESG funds in the U.S. charge net expense ratios that are 9.5 to 12.7 basis points lower than those of non-ESG funds. This contrasts with the existing literature on investors' willingness to pay for ESG. The fee difference is driven by the use of waivers, which offset the higher gross expense ratios of ESG funds. We explore three explanations consistent with these findings: (1) ESG funds exhibit lower expected returns, (2) heightened competition among ESG funds exerts downward pressure on fees, and (3) fund families strategically use ESG funds with low fees to cross-sell higher-fee funds.

> ESG products typically charge higher fees than more "plain vanilla" products. Globally, fee revenue from ESG-themed funds grew from $1.1 billion in 2020 to $1.8 billion in 2021. Touting a product as being "ESG" is good for business... A skeptic might believe that some ESG products are merely offered in order to extract higher management fees.
>
> SEC Commissioner Mark T. Uyeda[1]
> Jan. 27, 2023

1 Introduction

It is a common belief that mutual funds with environmental and social mandates ("ESG funds") charge higher fees than their non-ESG counterparts.[2] This is logical, since empirical evidence shows that investors are willing to pay higher fees and/or accept lower returns for ESG funds (Baker et al., 2024; Barber et al., 2021; Bauer et al., 2021; Heeb et al., 2023; Riedl & Smeets, 2017). Additionally, it is plausible that ESG funds face higher research costs, justifying higher fees.

Contrary to these expectations, this paper presents empirical evidence that from 2011 to 2024, ESG funds in the US charged net expense ratios which were, on average, 9.5 to 12.7 basis points *lower* than non-ESG funds after controlling for fund characteristics. ESG funds began to be cheaper in 2015, and the fee difference remained highly statistically significant through 2024. We conduct several robustness checks to confirm the reliability of our results. Time-invariant characteristics of the fund provider do not explain the lower fees. When comparing ESG funds to non-ESG funds operated by the same fund provider, expense ratios remain 8.5 to 11 basis points lower. The results are also persistent across subcategories of funds: retail versus institutional funds; young versus old funds; small

[1] This quote is from a speech at the "California '40 Acts Group", which can be accessed here: https://www.sec.gov/newsroom/speeches-statements/uyeda-remarks-california-40-acts-group.

[2] We use the term "ESG" instead of "ES," although we only consider funds with environmental and social mandates, since the former term is more widely used. Other authors may use responsible investment, sustainable, or other terms to refer to funds with an environmental or social mandate.

versus large funds; ETF versus traditional mutual funds; and equity versus bond funds, among others. Further, the results are not driven by unobserved fund-level characteristics: when restricting the sample to funds which switched mandates to become ESG funds, we observe lower fees during the ESG fund period. Our results are robust across four data sources, using an international sample, and for alternative ESG fund identification methods.[3]

Decomposing the fee components, we find that *gross* expense ratios (i.e., total expenses before waivers and reimbursements) are indeed higher for ESG funds. This raises the question of why these fees are not being passed on to investors in the form of higher *net* expense ratios. We find that the lower net expense ratios are due to the widespread use of fee waivers by ESG funds. Over the sample period, ESG funds are much more likely than non-ESG funds to use waivers, with the average waiver amount (conditional on a waiver) being 18.5 basis points larger (30.7% higher than the mean non-ESG fund waiver). The discretionary use of waivers to bring net expense ratios of ESG funds down is striking in light of the willingness-to-pay (WTP) of ESG investors.

We explore plausible explanations for why ESG funds exhibit lower fees. First, we investigate whether lower return expectations contribute to reduced fees. Consistent with this explanation, we find that ESG funds exhibit lower values of expected return proxies. Second, we examine the role of competition among ESG funds. Our analysis reveals that ESG funds exhibit higher average levels of portfolio overlap with their peers compared to non-ESG funds, a pattern which the literature often associates to heightened competition. While we provide only descriptive evidence, this pattern is consistent with the competition explanation. Finally, we test whether fund providers use lower fees on ESG funds as a

[3]The results are also in line with reports from the European (ESMA, 2022a, 2022b), French (Darpeix, 2024), and Austrian (FMA, 2022) security market authorities.

strategy to cross-sell higher-fee funds within the same fund family. We observe that ESG fund fees covary negatively with the fees of other funds managed by the same provider, consistent with the cross-selling explanation. We also consider whether ESG funds use waivers as a temporary strategy to raise fees later or if lower fees stem from reduced trading costs due to less active management. However, our analysis suggests these alternative explanations are unlikely.

Our findings challenge the notion that ESG investors' WTP results in higher fees. Instead, we show that lower return expectations, competitive pressures, and strategic pricing by fund families play a significant role in shaping the surprisingly low fees of ESG funds. These dynamics have led to substantial cost savings for ESG investors, which we estimate at approximately $1 billion from 2011 to 2023, with annual savings peaking at $230 million in 2022. This suggests that market forces, rather than investor WTP alone, have influenced the pricing of ESG funds, offering new insights into how sustainability preferences are incorporated into financial markets.

This paper is related to the extensive literature on mutual funds. In particular, it is related to the literature on the determinants of fund fees (J. Choi et al., 2010; Cooper et al., 2021; Elton et al., 2004; Khorana et al., 2009; Roussanov et al., 2021), competition and market share in the mutual fund industry (Abis & Lines, 2024; Berk & Green, 2004; D. Choi et al., 2016; Cooper et al., 2005; Cremers et al., 2016; Gârleanu & Pedersen, 2022; Hoberg et al., 2018; Kostovetsky & Warner, 2020; Sun, 2021; Wahal & Wang, 2011), and strategic behavior of fund managers (Brown & Wu, 2016; Dannhauser & Spilker, 2023; Evans et al., 2020; Gaspar et al., 2006; Massa, 2003; Wang, 2024).

In the fund fee literature, several papers highlight pricing anomalies in the mutual fund industry. Cooper et al. (2021) document fee dispersion in the market of S&P 500 index mutual funds and highlight the value lost by investors due to high fees. Hortaçsu

and Syverson (2004) create a theoretical model of search costs to explain cross-sectional fee dispersion of index funds and present empirical evidence in line with the model. Fee waivers are another area of focus, as Christoffersen (2001) finds that low-performing funds employ waivers to enhance net-of-fee performance. We present evidence of a pricing anomaly in the market for sustainable funds, whereby fees are lower than otherwise expected.

As for the literature on competition in the mutual fund industry, Cremers et al. (2016) show that funds which face more competition from low-cost index funds charge lower fees. Wahal and Wang (2011) use a portfolio overlap measure to proxy competition, finding that incumbent funds with high overlap with new entrants lower their fees. A textual measure of fund uniqueness is created by Kostovetsky and Warner (2020), who find no significant effect of uniqueness on fund fees, but that new and small fund families charge higher fees on new funds with high uniqueness. Hoberg et al. (2018) introduce a style-based spatial measure to determine a fund's competitors, and find that funds facing low competition charge higher fees. We find that similar competitive pressures may play an important role for the pricing of ESG funds.

We also contribute to the literature on strategic behavior in mutual fund families. Massa (2003) shows that fund providers aim to differentiate their product offering. Gaspar et al. (2006) reveal that fund families favor higher-fee funds, showing evidence of revenue maximization at the family level rather than the individual fund level. Nanda et al. (2004) find that outperformance by a fund within a family can influence flows to other funds in the family, impacting strategic decisions. Our analysis is consistent with the explanation that fund providers strategically use inexpensive ESG funds in conjunction with high-fee non-ESG funds to increase overall fund family revenue.

Finally, our paper contributes to the literature on the behavior of sustainable investors. Survey results show that investors are willing to sacrifice financial returns on

investments which align with their values (Bauer et al., 2021; Giglio et al., 2023; Riedl & Smeets, 2017). Heeb et al. (2023) provide experimental evidence that investors are willing to pay higher fees for sustainable investments, but that the WTP does not scale with the investment's impact. Barber et al. (2021) show that venture capital investors are prepared to forgo 2.5 to 3.7 percentage points in internal rate of return for impact funds. Baker et al. (2024) estimate a mostly positive WTP for ESG index funds in the US between 2019 and 2022, although it becomes negative in 2022 when sentiment towards ESG declined. We present evidence that WTP for ESG investments has not translated into high prices in the market for ESG investment funds. While sustainable investors may be willing to pay more, they have, in fact, paid less.

The remainder of the paper is as follows. Section 2 introduces the data and presents descriptive statistics. Section 3 analyzes differences in fund fees between ESG and non-ESG funds and provides evidence of lower fees for ESG funds. Section 4 introduces and tests three explanations as to why ESG funds exhibit lower fees: lower return expectations, heightened levels of competition, and strategic cross-selling by fund providers. Section 5 concludes.

2 Data

This primary analysis of this paper uses data from the CRSP Survivor-Bias-Free US Mutual Fund dataset with additional fund fee data from the SEC Mutual Fund Prospectus Risk/Return dataset.

2.1 Sample Construction

The sample contains quarterly observations of US open-end mutual funds in the CRSP dataset from Q1 2011 to Q2 2024. Exchange-traded funds (ETFs) and exchange-traded

notes (ETNs) are also included in the sample, both of which are referred to as ETFs. Observations were dropped if there were less than ten unique ESG funds within the CRSP style classification across the sample, leaving 21 CRSP style classifications.

The final sample contains over one million fund-quarter observations, covering 44,220 funds.[4] Additional data which is used in subsequent analysis is retrieved from Eikon (see Appendix C) and Morningstar (see Appendix B).

2.2 Variable of Interest and Controls

The main variable of analysis is the expense ratio, which is the ratio of net expenses divided by total net assets (TNA). This is the amount that shareholders ultimately pay to finance the operation of the fund. Figure 1 presents the decomposition of reported annual fee items according to the XBRL US Mutual Fund Risk/Return Summary Taxonomy.[5] All fee items are represented a percentage of TNA, in annual terms, and in basis points.

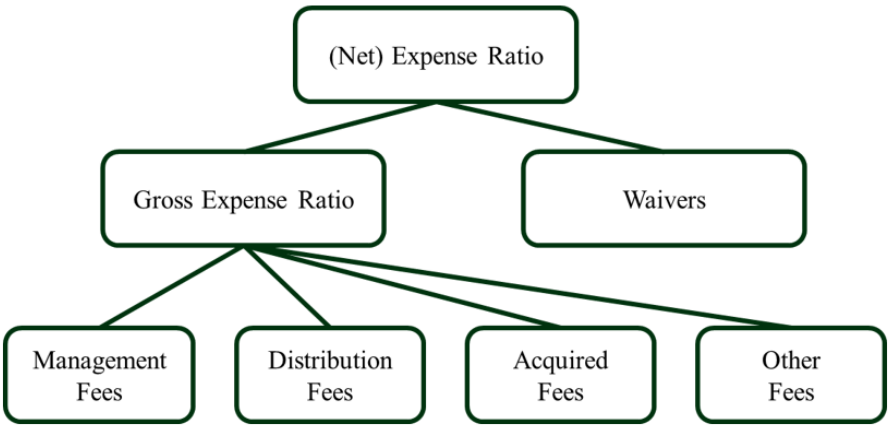


Figure 1: **Annual Fee Decomposition**
This figure presents the decomposition of reported annual fee items according to the XBRL US Mutual Fund Risk/Return Summary Taxonomy. A link denotes that the lower item is a subset of the upper item, e.g., (Net) Expense Ratio is calculated as the sum of Gross Expense Ratio and Waivers. For further information, refer to the "Mutual Fund Risk/Return Summary Taxonomy Preparers Guide" from the SEC. The file can be accessed here: https://xbrl.sec.gov/rr/rrsummaryfilinginfo.htm. This decomposition does not include load fees, which are not part of the annual fee. Variable definitions can be found in the Appendix.

[4]The paper uses the term "fund" to mean a specific share class of a fund, which is given a unique CRSP fund number. The sample covers approximately 14,000 SEC "series". A series is the grouping one or more share classes within one mutual fund.

[5]For further information, refer to the "Mutual Fund Risk/Return Summary Taxonomy Preparers Guide" from the SEC. The file can be accessed here: https://xbrl.sec.gov/rr/rrsummaryfilinginfo.htm.

The (net) expense ratio comprises of the gross expense ratio and waivers. The gross expense ratio includes all of the expenses of the fund. The expenses are mostly contracted fees used to pay for the management, marketing and distribution, administration, and custodial services provided for the fund. The Board of Directors must approve of any increases to the contracted fees (Christoffersen, 2001). Waivers are voluntarily exercised by the fund manager to lower the amount of contractual fees collected, thereby lowering the expense ratio paid by investors. Christoffersen (2001) provides a detailed overview of contracted fees and the use of waivers by mutual funds.

Acquired fees come from from other funds within a fund's portfolio. As such, they are only relevant for so-called "funds-of-funds". Distribution fees, which are often referred to as 12b-1 fees in the US, comprise of marketing and promotion expenses. So-called "other fees" contain all other expenses which are not included in management, acquired, or distribution fees, and can include legal, custodian, accounting, administration, and transfer agency fees.

Whereas all of the fee items in Figure 1 appear as separate items in the SEC dataset, the CRSP Mutual Fund dataset only contains separate data points for expense ratio, management fees, and distribution fees. In the CRSP data, waivers are included in the management fee data point. Therefore, when waivers are larger than management fees, the management fees are reported as negative in the CRSP dataset. This is not the case in the SEC data, which reports each item separately.

Following the literature (Cremers et al., 2016; Khorana et al., 2009), we also calculate Total Shareholder Cost (TSC). This is calculated as the sum of fund i's maximum front and rear load (after five years of holding), divided by five, plus the net expense ratio. Dividing the load fees by five also assumes a five year holding period. TSC is used since it incorporates load fees, and therefore gives a better indication of actual costs for a typical

investor with a five year holding period.

We include a set of control variables which have been shown in the literature to explain fees. Age of the fund in years from its inception date is included to control for possible effects of fund maturity on fees. Two controls are used to account for economies of scale: $log(TNA)$ and $log(Family)$ measure the natural log of TNA in USD of the fund and the fund family, respectively. The dummy variable $Index$ takes the value of one if the fund is an index fund, ETF takes the value of one for ETFs, and $Inst.$ takes the value of one if the fund is an institutional fund. Depending on the specification, time- and fund-level fixed effects are also used as controls to explain fund fees.

2.3 ESG Fund Identification

An important step in the analysis is to identify ESG funds. We use a keyword approach, whereby ESG takes the value of one if at least one ESG keyword appears in the fund name. The keywords, which can be found in Appendix A, were chosen to largely align with the keywords of Andrikogiannopoulou et al. (2022), van der Beck (2021), and Michaely et al. (2024). We identify a total of 1,614 ESG funds in the sample.

There are important benefits of using fund name, as opposed to external labels, for ESG identification. First, this approach allows us to use the entire CRSP Mutual Fund dataset, rather than limiting the analysis to the intersection of CRSP and another dataset containing fund labels. Second, fund names are available as a time series, enabling the identification of mandate changes when the fund name also changes. In our sample, 427 funds experience a change in the ESG identification variable.

Additionally, identifying ESG funds based on their names provides a direct link to the intended classification by the fund provider. Since the pricing and ESG status of the fund are both determined by the fund provider, it is crucial to use an identification

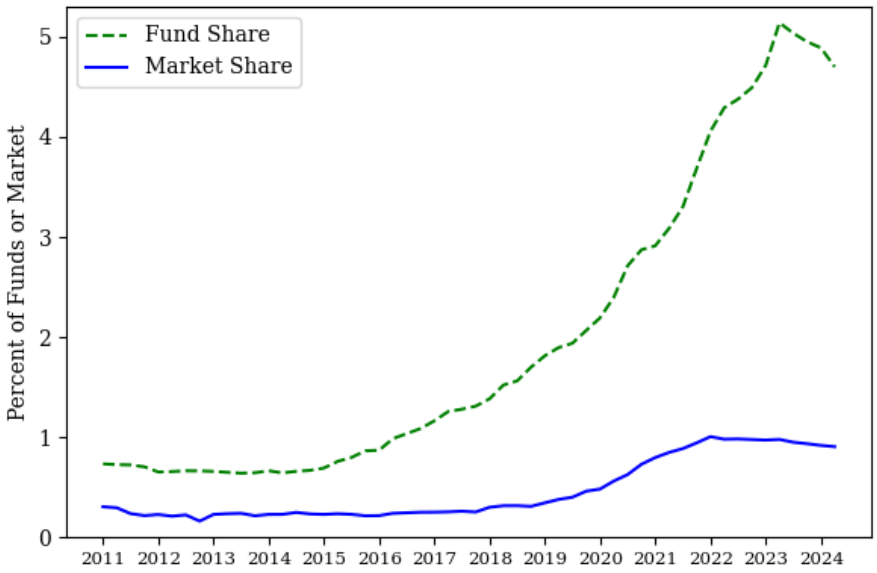
method that reflects how the provider views and markets the fund. Fund names, which are chosen by fund providers, provide a straightforward way to capture this. In contrast, third-party ratings such as Morningstar's sustainability ratings (i.e., the "globes") rely on less transparent methodologies. Relying on fund names offers a common-sense approach that avoids the gray-box nature of third-party evaluations, aligning the ESG designation more directly with the intentions of the fund providers.

As a robustness check, we compare our identification with Eikon's classification of responsible investment funds in Appendix C, finding consistent results. Using all Q2 2024 observations, we find a correlation coefficient of 0.79 between our keyword-based identification and Eikon's responsible investment label. This high correlation suggests that our method is consistent with external classifications while retaining the flexibility and transparency of a fund name-based approach.

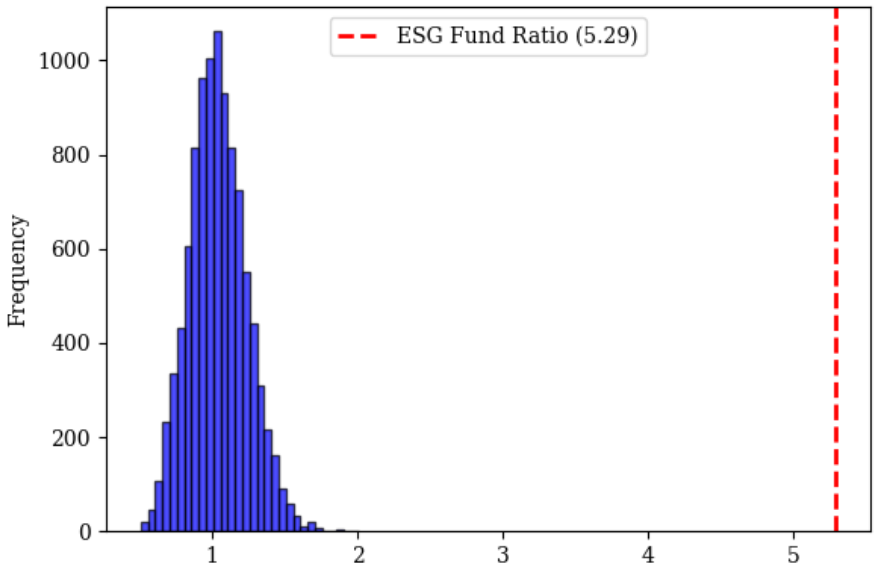
2.4 Descriptive Statistics

Figure 2, Panel A plots the share of market value and share of number of funds for ESG funds across the sample. The number of ESG funds started to increase exponentially starting around 2015, peaking at 5.1% of total funds in Q2 2023. The market share of the ESG funds, however, started to rise in 2016, peaking at 1% of the total open-end mutual fund market in Q1 2022. While both the market share and the share of total funds increased, the gap between the two implies that ESG funds are considerably smaller, and that there are more ESG funds than their market share suggests.

Figure 2, Panel B shows the results of a Monte Carlo simulation with market data as of Q4 2023 conducted to evaluate the rarity of the observed ratio of the share of ESG funds to their market share. The simulation randomly selected 1,269 funds (equal to the number of ESG funds as of Q4 2023) from the universe of funds, calculating the ratio of



Panel A: **Market Share and Fund Share Over Time**



Panel B: **Monte Carlo Simulation of Fund to Market Share Ratio**

Figure 2: **Market Share and Fund Share of ESG Funds**
Panel A plots the combined market share of ESG funds (blue solid line) and the share of total funds (green dashed line) per quarter over the sample. These values are not winsorized. Panel B plots a histogram of the results from a Monte Carlo simulation with 10,000 iterations in which funds were drawn randomly from the sample of funds in Q4 2023, and the ratio of share of number of funds to market share is calculated each iteration. The vertical red line represents the ESG fund share to market share ratio.

their share of funds to market share. This process was repeated 10,000 times to generate the distribution shown in the histogram. The observed ratio for ESG funds of 5.29, marked by the vertical red line, lies far in the upper tail of the distribution. This result demonstrates that the observed gap between the share of ESG funds and their market share is unlikely to occur by chance. This pattern is suggestive of high competition within the ESG fund market.

Table 1 presents descriptive statistics. Full variable definitions can be found in the Appendix. Continuous variables are winsorized at the 1% level across the sample. The descriptive statistics show that ESG funds have lower expense ratios, management fees, distribution fees, and TSC. ESG funds also have larger waivers, where a negative waiver represents a lower fee paid by the investors. However, they exhibit higher gross expense ratios and "other" fees.

ESG funds also tend to be younger and smaller, but come from larger fund families. There are less dead ESG funds in the sample compared to non-ESG funds, as represented by the dummy variable *Dead*. ESG funds are more likely to be ETFs, index funds, and institutional funds.

3 Fee Analysis

This section introduces the baseline specification used to explain fund fees. We also conduct analysis to explore time-varying effects.

3.1 Baseline Analysis

To test whether ESG funds have higher fees, we conduct panel regressions of fund fees on an ESG indicator variable and a set of control variables. The baseline specification is the following:

Table 1: **Descriptive Statistics**
This table reports the descriptive statistics of the sample, grouped by *ESG*. The t-stat is from a Welch's t-test comparing the means across the groups. Continuous values are winsorized at the 1% level across the sample. Panel A contains fee data points in annual terms at the fund-quarter level. Panel B contains additional variables at the fund-quarter level. Panel C contains variable at the fund-month level. Variable definitions can be found in Appendix A.

	Non-ESG Funds						ESG Funds						
Panel A	Count	Mean	Std	25%	50%	75%	Count	Mean	Std	25%	50%	75%	t-Stat
(Net) Exp. Ratio (CRSP)	1,025,120	93.93	55.23	54	89	127	20,974	82.76	50.18	45	75	112	-31.82
Mgmt. Fee (CRSP)	1,033,209	28.32	102.18	15.10	46.80	70	21,035	-6.32	135.31	-0.50	32	59.90	-36.91
Dist. Fee (CRSP)	483,780	48.45	33.03	25	25	80	7,722	46.01	33.45	25	25	80	-6.35
TSC (CRSP)	1,025,120	106.85	67.56	55	96	152	20,974	92.99	62.71	45	79	129	-31.63
(Net) Exp. Ratio (SEC)	355,873	101.31	52.20	65	94	129	8,000	85.47	50.12	49	78	112	-27.93
Gross Exp. Ratio (SEC)	355,873	133.83	128.05	73	105	154	8,000	147.65	161.23	62	103	169	7.62
Waiver Amt. (SEC)	355,873	-31.45	110.05	-16	-1	0	8,000	-61.35	144.34	-49	-7	0	-18.41
Mgmt. Fee (SEC)	355,277	53.96	31.19	30	55	75	7,995	52.16	26.31	30	53	74	-6.05
Dist. Fee (SEC)	323,254	24.13	36.47	0	15	25	7,016	19.57	31.30	0	0	25	-12.02
Acquired Fee (SEC)	120,461	28.59	29.72	2	17	53	1,502	18.74	23.19	1	4	28.75	-16.30
Other Fees (SEC)	355,873	47.66	114.18	9	21	40	8,000	74.50	147.70	7	27	68	16.15
Panel B	Count	Mean	Std	25%	50%	75%	Count	Mean	Std	25%	50%	75%	t-Stat
Age (years)	1,322,877	11.33	8.30	5	9	16	27,274	8.68	8.36	2	5	13	-51.68
TNA (m. USD)	1,307,285	795.70	5074.32	6.20	48.70	284.50	27,225	208.83	775.85	2.40	17.30	110.10	-90.77
Family TNA (b. USD)	1,140,969	398.97	867.23	20.27	91.64	289.42	25,748	624.96	1256.60	10.47	78.06	357.31	28.70
Index	1,326,772	0.09	0.28	0	0	0	27,301	0.16	0.37	0	0	0	33.56
ETF	1,326,772	0.05	0.22	0	0	0	27,301	0.14	0.35	0	0	0	42.62
Inst.	1,326,772	0.50	0.50	0	0	1	27,301	0.60	0.49	0	1	1	33.55
Dead	1,326,772	0.25	0.43	0	0	0	27,301	0.12	0.32	0	0	0	-63.62
Cosine Similarity: cs_{it}	328,802	0.11	0.09	0.03	0.09	0.16	6,659	0.13	0.09	0.06	0.11	0.19	15.64
Turnover Ratio (%)	976,652	79.51	194.70	23	44	82	20,647	62.67	114.03	21	36	68	-20.59
Panel C	Count	Mean	Std	25%	50%	75%	Count	Mean	Std	25%	50%	75%	t-Stat
Monthly Return (bp)	3,914,427	54.23	362.01	-95.96	43.99	225.39	79,050	63.69	438.46	-178.96	62.69	319.76	6.03
Mechanical ICC	669,133	-4.05	25.71	-23.01	-2.69	14.50	16,980	-14.70	18.27	-26.61	-15.46	-3.62	-74.17
Analyst ICC	703,664	66.18	10.35	59.65	66	72.77	16,847	60.38	8.86	54.74	60.17	65.89	-83.52
Three-Factor α	1,964,051	-25.18	40.99	-38.99	-18.75	-3.56	39,000	-19.61	40.10	-35.57	-13.33	1.22	27.16
Four-Factor α	1,906,470	-23.61	36.90	-37.06	-17.94	-3.58	38,222	-18.34	37.80	-33.59	-12.65	1.44	27.02
Five-Factor α	1,882,962	-22.58	40.99	-36.83	-16.90	-1.64	37,843	-19.61	41.20	-37.95	-14.09	1.03	13.89
BvB α	1,992,027	-4.78	124.20	-46.06	-3.58	38.09	39,309	-0.34	128.31	-46.11	0.07	46.65	6.80

$$f_{it} = \beta_1 ESG_{it} + \sum_{j=2}^{k} \beta_j \mathrm{C}_{jit} + \gamma_i + \delta_t + \epsilon_{it} \tag{1}$$

where f_{it} is the fee (i.e., expense ratio, management fee, etc.) of fund i at time t. The term C_{jit} denotes the control variables: Age, $log(TNA)$, $log(Family)$, $Index$, ETF, and $Inst$. We avoid the use of subscripts where possible for style purposes. The error term is denoted by ϵ_{it}.

Time invariant fixed effects (γ_i) include the CRSP style code to exploit variation within a fund style classification.[6] Some specifications include fund provider fixed effects, which compares funds to others within the same fund family. Fund provider fixed effects are deployed for two reasons: (1) there could be unobserved fund provider characteristics

[6]To be precise, CRSP style codes are not strictly time invariant. While the majority of funds retain the same CRSP style code throughout the sample, some switch.

which explain both the level of fund fees and the propensity to have ESG funds, and (2) the results will show the average fee difference of ESG and non-ESG funds available to a hypothetical investor who is comparing similar funds within the same fund family. Year fixed effects (δ_t) are used to control for variation in fund fees across time. This is an important control, since the emergence of ESG funds covaries with the overall trend in declining fees throughout the sample, as shown in Figure 2.

The parameter of interest is β_1, the coefficient on ESG. The expected sign is positive, denoting that after controlling for covariates ESG funds exhibit higher fees than non-ESG funds. This result would align with the literature on ESG investors' WTP.

Table 2 displays the results from the baseline specifications. Standard errors are clustered at the fund level since treatment, i.e., ESG identification, is assigned at the fund level. Panel A compares ESG funds to non-ESG funds across fund providers, and Panel B uses fund-provider fixed effects to control for time-invariant characteristics, therefore exploiting variation of fund fees within fund providers. Waivers are omitted from the analysis for now, since they will be analyzed separately in subsequent analysis.

The coefficients on the control variables have signs and magnitudes in line with the literature (Cooper et al., 2021; Cremers et al., 2016; Khorana et al., 2009). Fees increase in age, and decrease in fund size and fund family size. Index funds, ETFs, and institutional funds exhibit significantly lower fees. A significant amount of the variation in fund fees can be explained, indicated by the high R^2, in line with Khorana et al. (2009).

Beginning with Panel A, across fund providers, ESG funds exhibit *lower* expense ratios, management fees, distribution fees, and TSC. Depending on whether CRSP or SEC fee data is used, ESG funds have net expense ratios which are 9.5 to 12.7 basis points lower than their non-ESG counterparts, which is 10 to 12.5% of the mean non-ESG fund expense ratio (93.9 and 101.3 for CRSP and SEC data points, respectively). The

Table 2: **Fees of ESG funds versus non-ESG funds**
This table reports the results from regressions of Equation 1 using fund fees as the dependent variable. Each dependent variable is stated above the column number. Fees are reported in basis points and in annual terms. Panel A compares across fund providers, and Panel B uses fund-provider fixed effects to compare within fund provider. Panel B restricts the sample to fixed effects groups with variation in the ESG variable. All specifications use year and CRSP style classification fixed effects. ESG is an identifier for ESG funds. Age is the fund age in years. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. $Index$ identifies index funds. ETF identifies ETFs. $Inst.$ identifies institutional funds. Full variable definitions can be found in the Appendix. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

Panel A	CRSP				SEC					
	Exp. Ratio	Mgmt. Fee	Dist. Fee	TSC	Exp. Ratio	Gross Exp. R.	Mgmt. Fee	Dist. Fee	Acq. Fee	Other Fee
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ESG	-9.508***	-23.741***	-5.560***	-7.777***	-12.689***	3.057	-2.212***	-4.694***	-6.942***	14.124***
	(1.158)	(2.871)	(1.889)	(1.306)	(1.100)	(3.086)	(0.759)	(0.907)	(1.482)	(2.951)
Age	0.738***	1.128***	0.371***	0.894***	0.682***	-0.678***	0.082***	0.369***	0.073**	-0.943***
	(0.031)	(0.040)	(0.040)	(0.041)	(0.032)	(0.046)	(0.017)	(0.025)	(0.037)	(0.042)
log(TNA)	-4.524***	10.123***	-3.905***	-3.865***	-4.779***	-14.891***	-0.208***	-3.318***	-0.779***	-11.025***
	(0.081)	(0.194)	(0.101)	(0.092)	(0.077)	(0.208)	(0.047)	(0.057)	(0.084)	(0.200)
log(Family)	-3.812***	-2.988***	2.182***	-3.622***	-4.034***	-7.611***	-3.964***	1.585***	0.662***	-5.200***
	(0.101)	(0.174)	(0.121)	(0.123)	(0.107)	(0.205)	(0.060)	(0.072)	(0.087)	(0.190)
Index	-23.390***	-15.849***	-11.910***	-29.069***	-25.731***	-24.356***	-20.651***	-5.123***	-12.576***	3.770**
	(1.203)	(1.495)	(1.248)	(1.381)	(1.240)	(1.831)	(0.743)	(0.692)	(0.749)	(1.504)
ETF	-13.862***	3.100*	-10.960***	-11.288***	-16.105***	-35.496***	-1.531**	0.074	7.968***	-32.601***
	(1.089)	(1.609)	(1.453)	(1.234)	(1.135)	(1.961)	(0.724)	(0.541)	(1.511)	(1.614)
Inst.	-41.062***	-2.962***	-19.639***	-68.876***	-41.561***	-43.887***	-5.102***	-33.181***	0.520	-6.805***
	(0.499)	(0.824)	(0.534)	(0.576)	(0.500)	(0.977)	(0.300)	(0.397)	(0.493)	(0.910)
Observations	1,042,060	1,050,099	490,007	1,042,060	315,292	315,292	314,794	287,529	104,107	315,292
R^2	0.503	0.147	0.151	0.557	0.505	0.268	0.451	0.338	0.263	0.143
Adjusted R^2	0.503	0.147	0.151	0.557	0.505	0.268	0.451	0.338	0.262	0.143
Panel B	CRSP				SEC					
	Exp. Ratio	Mgmt. Fee	Dist. Fee	TSC	Exp. Ratio	Gross Exp. R.	Mgmt. Fee	Dist. Fee	Acq. Fee	Other Fee
	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
ESG	-8.479***	-29.153***	-8.216***	-7.771***	-10.959***	10.383***	-2.282***	-6.191***	-5.423***	21.290***
	(1.225)	(3.311)	(1.994)	(1.412)	(1.169)	(3.569)	(0.678)	(0.956)	(1.043)	(3.452)
Age	1.169***	1.199***	0.779***	1.289***	1.205***	0.158	0.219***	0.617***	0.152**	-0.696***
	(0.059)	(0.087)	(0.099)	(0.073)	(0.058)	(0.098)	(0.031)	(0.049)	(0.064)	(0.090)
log(TNA)	-4.931***	7.737***	-5.081***	-4.319***	-4.848***	-13.036***	-0.401***	-3.304***	-1.602***	-8.882***
	(0.153)	(0.399)	(0.273)	(0.171)	(0.149)	(0.428)	(0.096)	(0.113)	(0.182)	(0.404)
log(Family)	-3.823***	-1.144*	0.033	-4.457***	-4.399***	-9.049***	-3.282***	-0.209	-0.767**	-5.500***
	(0.237)	(0.670)	(0.404)	(0.284)	(0.251)	(0.722)	(0.142)	(0.185)	(0.318)	(0.718)
Index	-40.399***	-38.473***	-13.148***	-45.836***	-41.795***	-33.934***	-33.711***	-4.408***	-4.296	4.242
	(1.455)	(2.613)	(2.127)	(1.910)	(1.432)	(3.089)	(0.986)	(0.929)	(2.948)	(2.660)
ETF	4.401***	21.857***	5.962***	6.838***	4.120***	-16.584***	7.909***	4.362***	5.883	-28.035***
	(1.463)	(2.670)	(2.007)	(1.814)	(1.451)	(3.007)	(1.047)	(0.846)	(3.583)	(2.529)
Inst.	-42.779***	-2.311	-21.909***	-68.304***	-42.523***	-46.104***	-6.411***	-35.274***	0.832	-7.369***
	(1.049)	(1.958)	(1.240)	(1.258)	(1.058)	(2.324)	(0.566)	(0.875)	(0.978)	(2.191)
Observations	126,980	128,522	38,305	126,980	41,296	41,296	41,279	34,529	3,547	41,296
R^2	0.573	0.132	0.278	0.617	0.582	0.302	0.445	0.447	0.279	0.157
Adjusted R^2	0.573	0.132	0.277	0.617	0.581	0.301	0.444	0.447	0.272	0.156

discrepancy between the CRSP and SEC net expense ratios (column 1 versus column 5) could stem from minor sample differences or data inconsistencies. CRSP includes in the definition of expense ratio that "[the value] *may* include waivers and reimbursements..."

(emphasis our own). This leads us to believe that the expense ratio in CRSP sometimes includes fee waivers, which is in contrast to the SEC data.

The results suggest that the ex-post savings for ESG investors has been substantial. Multiplying the lower estimate of the fee difference (i.e., 9.5 bps) with the TNA of each ESG fund each quarter gives a rough estimate of the average dollar amount saved by ESG investors.[7] Taking the summation results in total savings from 2011 to 2023 of approximately $1 billion. This peaks at around $230 million in 2022.

Column 2 uses management fees from CRSP as the dependent variable, which includes fee waivers. This specification suggests that management fees are much lower for ESG compared to non-ESG funds, with a coefficient of -23.7 basis points. Column 7 uses the SEC management fees, which is separate from waivers. This suggests that pure management fees are lower for ESG funds, with average values being 2.2 basis points lower than non-ESG funds, which is 4.1% of the non-ESG fund mean. A larger portion of the fee difference can be attributed to distribution fees, as suggested by columns 3 and 8.

ESG funds also exhibit lower TSC compared to non-ESG funds. On average, ESG funds have TSC values 7.8 basis points lower than non-ESG funds, which is 7.3% of the mean non-ESG value. This suggests that the low expense ratio for ESG funds are not significantly offset by higher load fees. Acquired fees are also 24.3% lower for ESG funds compared to the non-ESG fund mean (28.6 bp). These fees, however, are only applicable for fund-of-funds, which is why the number of observations is smaller compared to other specifications.

In contrast to the other specifications, column 10 shows that "other fees" are significantly higher for ESG funds. The magnitude is large; on average, ESG funds have

[7] We calculate the total savings of each ESG fund i at time (quarter) t as the following: $TNA_{it} \times ((1 + (-9.5/100/100))^{1/4} - 1)$.

other fees which are 14.1 basis points larger than non-ESG funds, which is 29.6% of the non-ESG fund mean. Unfortunately, we cannot observe the components of these fees.[8]

Column 6 suggests that across fund providers, gross expense ratios of ESG funds are not significantly different than those of non-ESG funds. The higher other fees of ESG funds appear to be offset by lower management, distribution, and acquired fees. At the same time, net expense ratios are lower for ESG funds, which suggests that waivers are being used to bring the net expense ratio down below that of non-ESG funds, on average. Subsequent analysis will focus on the use of waivers.

It is possible that an unobserved, time-invariant characteristic of the fund provider explains both low fees and high propensity of having ESG funds. To handle this, Panel B uses fund provider fixed effects, thereby exploiting variation in fund fees within fund providers (i.e., within the fund family). For each specification, the sample was restricted to only include CRSP style/year/fund provider combinations with variation in the ESG variable. That is, observations were kept if a fund provider had at least one ESG and one non-ESG fund in the same CRSP style in that given year.

The results in Panel B are largely similar to those in Panel A. ESG funds exhibit lower net expense ratios, management fees, distribution fees, and acquired fees than comparable non-ESG funds offered by the same fund provider. The large negative coefficient on ESG in column 12, versus the small negative coefficient in column 17, suggests that waivers are considerably larger for ESG funds (since, as previously noted, management fees in the CRSP dataset include waivers).

A key distinction of the within fund provider analysis is that ESG funds exhibit even higher other fees compared to non-ESG funds offered by the same fund provider.

[8]Some information on the components of "other fees" could be contained in the footnotes of the SEC prospectus data. However, after our qualitative reading of a subset of the footnotes, we do not observe any pattern for where the "other fees" of ESG funds come from.

The coefficient on ESG of 21.3 indicates that ESG funds have other fees which are 44.7% higher than the mean non-ESG other fee value across the sample. Interestingly, gross expense ratios are also higher for ESG funds. On average, ESG funds have gross expense ratios which are 10.4 basis points higher than non-ESG funds within the same fund family, which is 7.8% higher than the non-ESG mean across the sample. Higher gross fees might explain why some, including SEC commissioners, believe that fees of ESG funds are higher. The presence of higher gross fees but lower net fees suggests that waivers are being used to lower the end expense amounts paid for by the investor.

3.2 Waiver Usage

The difference between the gross and net expense ratio of a fund is, by definition, waiver amount (see Figure 1). This section explores waivers in more depth by (1) testing whether ESG funds are more likely to use waivers, and (2) analyzing the waivers amounts for ESG and non-ESG funds, controlling for fund characteristics.

Table 3 reports the results from logistic regressions to test whether ESG funds were more likely to use waivers. The coefficients on the control variables are generally in line with Wahal and Wang (2011). Funds which are older, larger, and part of larger fund families are less likely to offer waivers. The coefficient on ESG is positive across the specifications, indicating a positive effect of being an ESG fund on the propensity to offer a waiver. The coefficient ranges from 0.154 to 0.383, depending on the specification, which corresponds to odds ratios of 1.17 to 1.47. This means that the odds of an ESG fund offering a waiver is 17 to 47% higher than for non-ESG funds.

Table 4 reports the results of regressions to examine the size of waivers. The waiver amount in basis points is regressed on ESG and the set of usual control variables. Waivers can be thought of as negative fees, i.e., the more negative the waiver value, the higher the

Table 3: **Waiver Usage of ESG funds versus non-ESG funds**
This table reports the results from logistic regressions to explain the usage of waivers. The dependent variable, $Waiver$, takes the value of one if the fund uses a waiver. Reported coefficients are in log-odds units. ESG is an identifier for ESG funds. Age is the fund age in years. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. $FrontLoad$ is a dummy variable which identifies whether the fund has a front load. $Index$ identifies index funds. ETF identifies ETFs. $Inst.$ identifies institutional funds. Gross Exp. Ratio is the gross expense ratio in basis points. All specifications use year and CRSP style classification fixed effects. Standard errors are reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Dependent variable: Waiver			
	(1)	(2)	(3)	(4)
ESG	0.383^{***}	0.154^{***}	0.280^{***}	0.309^{***}
	(0.024)	(0.026)	(0.026)	(0.028)
Age		-0.021^{***}	-0.027^{***}	-0.029^{***}
		(0.001)	(0.001)	(0.001)
$log(TNA)$		-0.181^{***}	-0.164^{***}	-0.077^{***}
		(0.002)	(0.002)	(0.002)
$log(Family)$		-0.087^{***}	-0.094^{***}	-0.039^{***}
		(0.002)	(0.002)	(0.002)
$FrontLoad$		0.349^{***}	0.395^{***}	0.611^{***}
		(0.012)	(0.013)	(0.014)
$Index$			-0.144^{***}	0.135^{***}
			(0.018)	(0.019)
ETF			-1.419^{***}	-1.175^{***}
			(0.023)	(0.024)
$Inst.$			0.185^{***}	0.693^{***}
			(0.009)	(0.010)
Gross Exp. Ratio				0.010^{***}
				(0.000)
Deviance	496,977	398,700	391,906	373,413
Observations	363,873	315,292	315,292	315,292

waiver. Across fund providers, ESG funds issue waivers which are, on average, 16.2 basis points larger than non-ESG funds (column 1). This is a large value, as it is 51.6% of the mean waiver value for non-ESG funds (31.4 bp). Using fund provider fixed effects, this difference increases to 20.6 basis points (column 2).

Columns 3 and 4 are conditional on the issuance of a waiver, which removes the effect that ESG funds are more likely to issue waivers. For the funds which issue waivers, ESG funds have waivers which are 18.5 basis points larger, which is 30.7% higher than the mean waiver value for non-ESG funds conditional on a waiver (60.2 bp). Within a given find provider, this difference is 25.3 basis points. These amounts are large compared to the

Table 4: **Waiver Amounts of ESG funds versus non-ESG funds**
This table reports the results from a regression of the waiver amount on a set of control variables. Waivers are reported in basis points and in annual terms, with lower values indicating a larger waiver (i.e., negative fees paid). ESG is an identifier for ESG funds. Age is the fund age in years. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. $FrontLoad$ is a dummy variable which identifies whether the fund has a front load. $Index$ identifies index funds. ETF identifies ETFs. $Inst.$ identifies institutional funds. Columns 3 and 4 are conditional on the issuance of a waiver, i.e., $Waiver = 1$. All specifications use year and CRSP style classification fixed effects. The specifications which use fund provider fixed effects restrict the sample to fixed effects groups with variation in the ESG variable. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Dependent variable: Waiver Amount (bp)			
	(1)	(2)	(3)	(4)
ESG	-16.211***	-20.576***	-18.507***	-25.315***
	(2.934)	(3.029)	(4.192)	(4.639)
Age	1.358***	1.148***	2.190***	1.926***
	(0.041)	(0.096)	(0.071)	(0.198)
$log(TNA)$	9.897***	6.791***	14.674***	11.186***
	(0.195)	(0.345)	(0.300)	(0.677)
$log(Family)$	3.189***	8.129*	5.253***	7.779
	(0.182)	(4.264)	(0.294)	(7.163)
$Index$	0.257	-1.958	7.825***	-14.111*
	(1.457)	(2.541)	(2.933)	(7.955)
ETF	17.717***	29.157***	4.125	24.630***
	(1.522)	(2.942)	(3.484)	(8.261)
$Inst.$	2.094**	5.278**	1.304	5.818
	(0.890)	(2.076)	(1.428)	(3.948)
$Waiver = 1$			Yes	Yes
Provider FE		Yes		Yes
Observations	315,292	41,296	169,142	15,457
R^2	0.128	0.249	0.157	0.311
Adjusted R^2	0.128	0.245	0.157	0.302

average expense ratio of 134.1 basis points. These results raise the question of why ESG funds frequently offer such large waivers. Section 4 explores potential explanations.

3.3 Fund Fees Over Time

To explore the development of fund fees over time, the following panel regression specification is used:

$$f_{it} = \beta_1 \left(ESG_{it} \times Q_t \right) + \beta_2 Q_t + \sum_{j=3}^{k} \beta_j \mathrm{C}_{jit} + \gamma_i + \epsilon_{it} \tag{2}$$

where f_{it} is the net expense ratio from the CRSP dataset. The term Q_t denotes dummy variables for each quarter, with Q1 2011 as the reference quarter. The term γ_i represents the CRSP style classification fixed effects. The same set of control variables are used as previous analyses. Figure 3 plots the interaction effects for ESG funds ($\beta_1 + \beta_2$, blue solid line) and non-ESG funds (β_2, red dashed line). The shaded band around the ESG fund line represents the 95% confidence interval on β_1.

Both groups of funds have a downward trend in expense ratios across the sample, with average expense ratios for non-ESG funds being approximately 15 basis points lower in 2024 than in 2011. In the beginning of the sample, there is largely no statistically significant difference in fund fees between the two groups. This changes in 2015, when a large fee difference emerges and persists throughout the rest of the sample. This roughly coincides with the increase of availability of ESG funds, as seen in Figure 2.

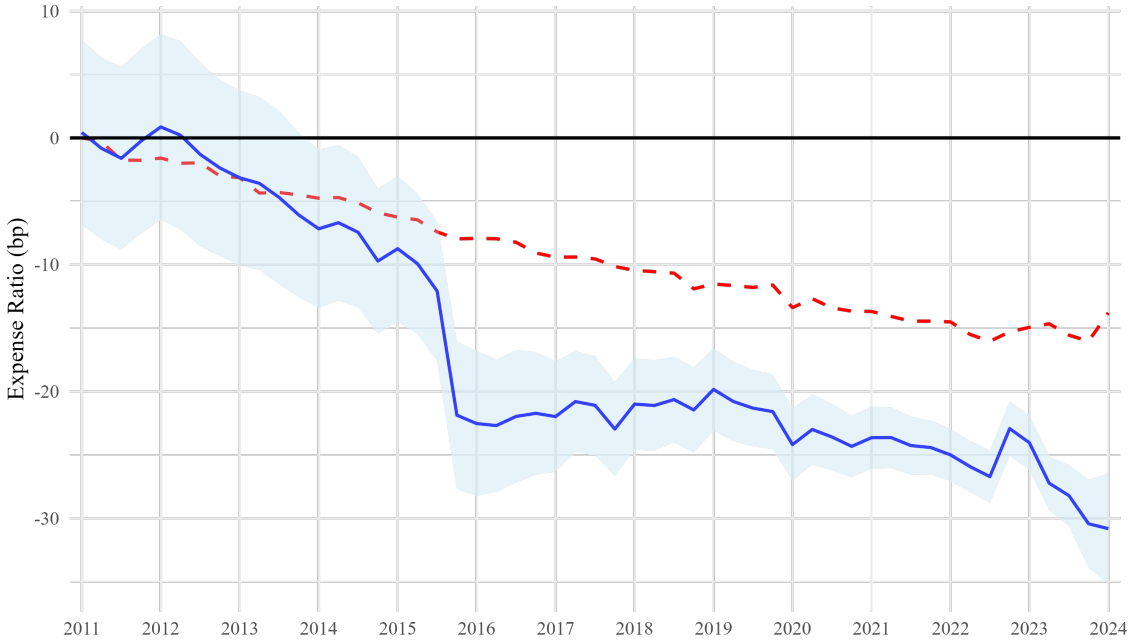


Figure 3: **Explaining Fees of ESG and non-ESG funds with Time Interactions**
This figure plots the coefficients $\beta_1 + \beta_2$ (blue solid) and β_2 (red dashed) from Equation 2, using (net) expense ratio from CRSP as the dependent variable. The following control variables are used: Age, $log(TNA)$, $log(Family)$, $Index$, ETF, and $Inst$. CRSP style fixed effects are deployed. The difference between the lines denotes the fee difference between ESG and non-ESG funds. The bands around the blue solid line represent the 95% confidence intervals. Standard errors are clustered at the fund level.

3.4 Robustness

Our findings are reliable across various robustness checks, with consistent results across different data sources, identification methods, and subsamples. Appendix B repeats the analysis using data from Morningstar and finds that ESG funds have expense ratios which are 12.6 basis points lower than non-ESG funds. The results in Appendix B are consistent using an alternative ESG identification method which uses the fund's investment strategy text. Appendix C repeats the analysis using data from Eikon and finds similar magnitudes of fee differences in the US sample. The results are also replicated using an international sample in Appendix C. Importantly, the results are robust to an alternative ESG identification method which uses Eikon's "responsible investment" fund label.

Further, our results are robust to fund fixed effects, indicating they are not driven by unobserved, time-invariant fund characteristics. Appendix D shows that for funds which

switched mandates (i.e., had variation in the ESG variable), the net expense ratio averaged 6.1 basis points lower while designated as an ESG fund. Appendix E shows that the results are robust to an alternative specification which allows for non-linear age effects. Finally, in Appendix F we verify that these effects are consistent across subsamples: institutional versus retail funds, index versus actively managed funds, younger versus older funds, large versus small funds, equity versus bond funds, load versus no-load funds, and ETFs versus traditional mutual funds.

In all robustness tests, ESG funds consistently exhibit lower expense ratios, with the estimates indicating a differential of around 10 to 12 basis points.

4 Possible Explanations

This section explores potential explanations for why ESG funds charge lower fees than comparable non-ESG funds. Our analysis provides evidence supporting three primary explanations: lower return expectations, heightened competition among ESG funds, and strategic cross-selling by fund families. Together, this suggests that market forces, rather than the WTP, are a significant driver of the fees of ESG funds.

In addition, we investigate alternative explanations. First, we consider whether ESG funds use waivers strategically, only to increase fees after the waivers expire. Second, we explore the possibility that ESG funds are "lazy" active funds, meaning they engage in less active management and thereby incur lower costs. We find no evidence in support of these alternative explanations.

4.1 Expected Returns

It is plausible that lower expected returns for ESG funds explain lower net fees. We test this explanation by comparing expected return proxies of ESG and non-ESG funds. We

restrict our subsample to equity ESG funds for this analysis.

We use monthly stock-level expected return proxies from Lee et al. (2021).[9] Two expected return proxies are used, both of which are using the implied cost of capital (ICC) method.[10] In general, ICC expected return proxies are calculated using data on earnings expectations. One of the proxies is referred to as "mechanical" by Lee et al. (2021) since it uses cross-sectional regressions to estimate earnings, following the method of Hou et al. (2012). This is the ICC proxy used by Pástor et al. (2022), who test the expected return gap between green and brown stocks (i.e., the "greenium"). The second proxy is based on analyst earnings forecast estimates.

We aggregate the stock-level expected return proxies to the fund-level by value-weighting based on fund holdings. We require that a fund have expected return values for at least 50% of it's value-weighted portfolio before aggregating at the fund-level. We match the expected return proxy data to the CRSP mutual fund holdings data by matching stocks on their PERMNO. The resulting sample contains 13,577 funds, of which 572 are ESG funds. Observations are at the fund-month level, and return expectations are for $t + 1$.

Table 5 presents the results of panel regressions which regress the expected return proxy on the *ESG* variable and the previous set of controls. Columns 1 and 3 compare across fund providers, and columns 2 and 4 use fund provider fixed effects to compare ESG funds to non-ESG within fund providers. The negative coefficient on *ESG* across specifications suggests that ESG funds have lower expected returns. For perspective, a 6.6 basis point lower expected return, as suggested by column 1, is 25.7% of the standard deviation of the mechanical ICC of non-ESG funds. The values are large, considering they

[9]The data is collected from the authors' website, which can be accessed here: https://leesowang2021.github.io/data/.

[10]The reader is referred to Lee et al. (2021) for a detailed explanation of the measures. Both are composite measures with several inputs.

Table 5: **Expected Returns of ESG funds versus non-ESG funds**
This table reports the results from a regression of expected return proxies on a set of control variables. The mechanical ICC (called Mech. ICC) and analyst-based ICC from Lee et al. (2021) are used at the monthly level, and reported in basis points. The sample is restricted to equity funds over the period of 2011 to 2023. *ESG* is an identifier for ESG funds. *Age* is the fund age in years. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. $FrontLoad$ is a dummy variable which identifies whether the fund has a front load. *Index* identifies index funds. ETF identifies ETFs. *Inst.* identifies institutional funds. The specifications which use fund provider fixed effects restrict the sample to fixed effects groups with variation in the *ESG* variable. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Dependent variable:			
	Mechanical ICC		Analyst ICC	
	(1)	(2)	(3)	(4)
ESG	-6.597***	-7.229***	-4.003***	-3.772***
	(0.787)	(1.094)	(0.303)	(0.398)
Age	-0.025	0.238***	0.002	0.121***
	(0.036)	(0.074)	(0.012)	(0.028)
$log(TNA)$	-0.900***	-1.484***	-0.343***	-0.555***
	(0.100)	(0.246)	(0.033)	(0.089)
$log(Family)$	-0.150	-4.277***	0.011	-0.469
	(0.101)	(1.589)	(0.035)	(0.589)
Index	4.848***	3.799	0.569**	0.399
	(0.829)	(2.377)	(0.261)	(0.765)
ETF	4.098***	7.430***	0.995***	2.679***
	(1.083)	(2.420)	(0.349)	(0.740)
Inst.	-1.125*	0.706	-0.358*	0.347
	(0.582)	(1.248)	(0.189)	(0.445)
Provider FE		Yes		Yes
Observations	514,022	61,152	530,313	61,419
R^2	0.222	0.343	0.347	0.462
Adjusted R^2	0.222	0.340	0.347	0.459

are in monthly terms; a monthly value of 6.6 basis points equates to 79.5 basis points in annual terms. The negative coefficient in columns 2 and 4 suggest that the expected return difference is not driven by time-invariant fund provider characteristics, as ESG funds exhibit lower expected returns than non-ESG funds in the same fund family.

Figure 4 plots the coefficient on the interaction between the *ESG* variable and dummy

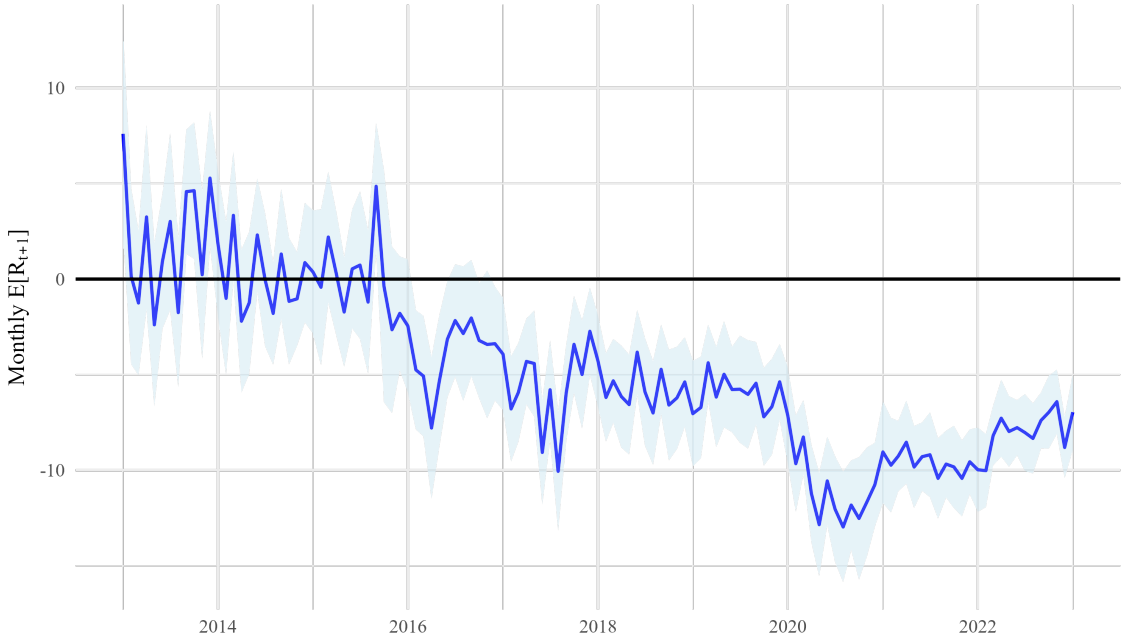


Figure 4: **Monthly Expected Return with Time Interactions**
This figure plots the coefficient of the interaction between ESG and year-month dummy variables, in a panel regression to explain expected returns. A negative value can be interpreted as a lower expected return for ESG funds. The mechanical ICC expected return proxy from Lee et al. (2021) is used, which uses the method of Hou et al. (2012). The following control variables are used: Age, $log(TNA)$, $log(Family)$, $Index$, ETF, and $Inst$. CRSP style fixed effects are deployed. The bands represent the 95% confidence intervals. Standard errors are clustered at the fund level.

variables for each month from 2013 to 2023, in a regression of the mechanical ICC measure on the set of control variables. The result is a figure which plots the difference between expected returns of ESG and non-ESG funds, controlling for other factors. The expected returns of ESG funds begin to dip below that of non-ESG funds around 2016, coinciding with the period in which the fund fee difference began to emerge. From then on, ESG funds maintained a lower expected return, on average, than non-ESG funds.

These results are consistent with the explanation that investors expected lower returns for ESG funds, which put downward pressure on fund fees. Our results are also in line with the theoretical predictions of Pástor et al. (2021) and the empirical findings of Pástor et al. (2022). Appendix G also presents results of panel regressions to explain *realized* returns across ESG groups, and finds further results in line with the literature. While ESG funds exhibited lower expected returns, they had higher realized returns, particularly

during the period of 2020 to 2022 when inflows to ESG funds were rapidly increasing.

4.2 Competition

One other possible explanation is that a highly competitive market, with relatively few ESG investors but many ESG funds, exerted downward pressure on fees. Two observations support this explanation. First, the number of ESG funds grew rapidly starting in 2015, as shown in Figure 2, while their market share increased at a much slower pace. Second, ESG funds were more likely to issue waivers, and these waivers tended to be larger than those of non-ESG funds. Together, these observations suggest a competitive environment, where a growing number of suppliers were competing for a relatively stagnant market share. In this section, we compliment these findings with descriptive analysis of the competitive environment.

Some studies have used holdings overlap as a measure of competition (Hoberg et al., 2018; Wahal & Wang, 2011). We proxy competition between two given funds as the cosine similarity of their holdings. For each fund i with peer fund j in quarter t, the cosine similarity is calculated as the following:

$$cs_{ijt} = \frac{\sum_{h=1}^{N} w_{ih} w_{jh}}{\sqrt{\sum_{h=1}^{N} w_{ih}^2} \sqrt{\sum_{h=1}^{N} w_{jh}^2}} \in [0, 1]$$

where $h = 1...N$ is the union of the set of holdings in each fund's portfolio, i.e., all the holdings which are present in at least one of the two funds. The w_{ih} term represents the weight of holding h in fund i's portfolio. This measure is bounded between zero and one, since we only consider positive weights. A value of zero indicates that funds i and j have no holdings overlap and a value of one indicates complete overlap, both in the set of holdings and the weights within the portfolio. This measure is similar to the "market value of overlap" measure of Wahal and Wang (2011), but it is not sensitive to differences

in fund size. Hoberg et al. (2018) also use cosine similarity of fund pairs' holdings as an alternative measure of competition.

A challenge in calculating this measure comes from the computational intensity of comparing each fund to all other funds.[11] To make computation easier, we reduce fund i's peer group to funds which are in the same CRSP style category. We also limit the sample to only equity funds and to non-institutional funds, leaving 12,508 funds. Reducing the peer group not only makes computation easier, but it arguably makes the peer groups more realistic for a representative investor. We aggregate cs_{ijt} from the fund-pair level to the fund level by taking the average across all fund pairs within the peer group.[12] For fund i, with peers $j = 1...K$, we calculate the fund-level average cosine similarity as:

$$cs_{it} = \frac{\sum_{h=j}^{K} cs_{ijt}}{K}$$

Figure 5 plots the average cosine similarity measure for ESG and non-ESG funds across the sample. In the third quarter of 2015, the cosine similarity of ESG funds experienced a sharp increase. This coincides with the increase in number of ESG index funds, but it may also be due to portfolio composition changes by existing ESG funds.

From then on, our measure indicates that ESG funds exhibited higher portfolio overlap with their peers. This is striking, considering that within each CRSP style, both ESG and non-ESG funds have the same set of peers, yet ESG funds have a higher overlap with their average competitor. We view this as evidence of a competitive market for ESG funds. While we cannot prove that competition caused prices to drop, our observations are consistent with this explanation.

[11] To illustrate, each quarter has about 25,000 unique funds, which corresponds to over 300 million fund pair combinations: $\binom{25{,}000}{2} = \frac{(25{,}000)(25{,}000-1)}{2} = 312,487,500$.

[12] We create alternative measures which (1) weight each fund pair overlap by fund j's size, and (2) take the median fund pair overlap. The results are consistent with all aggregation methods.

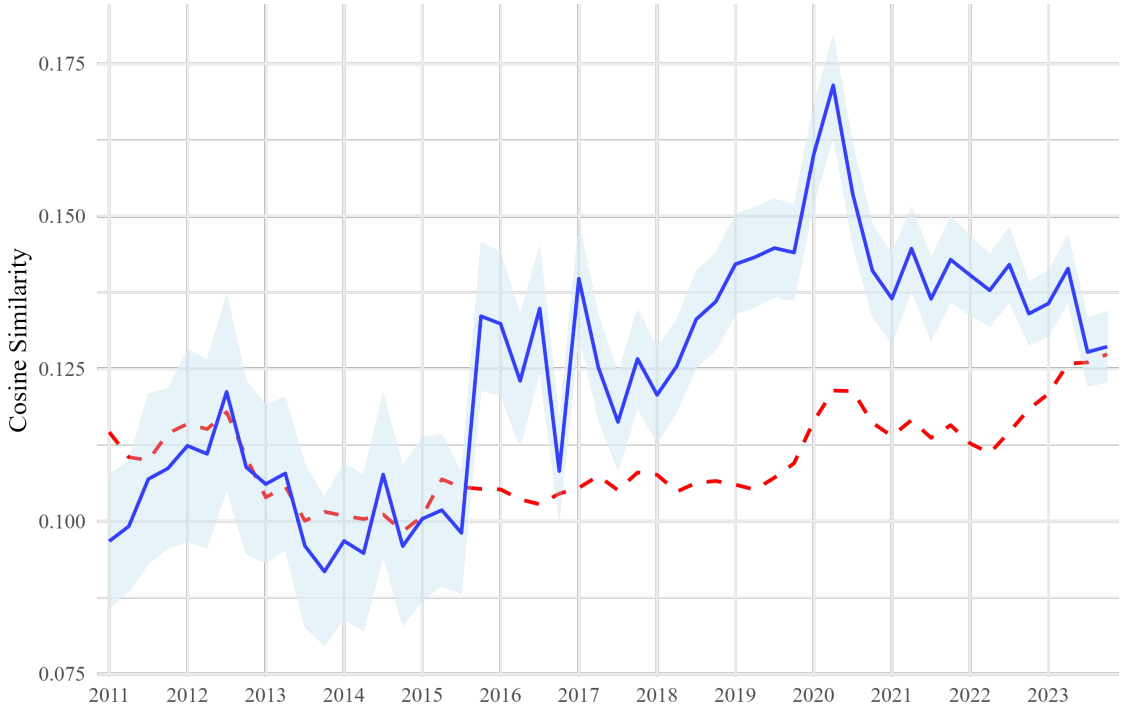


Figure 5: **Cosine Similarity Over Time**
This figure plots the average cosine similarity measure for ESG (blue solid) and non-ESG (red dashed) funds from 2011 to 2023. The shaded bands represent the 95% confidence interval calculated at each point in time.

To test the relationship between holdings overlap and fund fees, we repeat regressions of the base specification (Equation 1). Since the distribution of cosine similarity across funds is non-normal, we do not simply include cs_{it} in the regression and assume that any relationship between fees and cs_{it} is purely linear. Instead, we identify a fund as having high competition with its peers if its cosine similarity is greater than one or two standard deviations above the mean, where standard deviation and mean are defined at time t. We restrict the sample in all regressions to those observations with values for cs_{it}, which are non-institutional equity funds.

We perform analysis to test whether the relationship between ESG funds and fees is mediated through competition. Table 6 presents the results from the analysis. Column 1 establishes the original finding that ESG funds exhibit lower expense ratios. This provides us with a direct effect which will be used as the baseline. Column 2 presents the

Table 6: **Competition Hypothesis**
This table reports the results from a mediation analysis to test whether ESG funds exhibit lower fund fees due to high competition. Fees are reported in basis points and in annual terms. *ESG* is an identifier for ESG funds. cs_{it} is the average cosine similarity of fund i with it's peers in time t. $z_{cs} > 1$ and $z_{cs} > 2$ are dummy variable which take the value of one if the value of cs_{it} is greater than one or two standard deviations above the mean, respectively. That is, if the z-scores are greater than one or two. All specifications use year and CRSP style classification fixed effects, and include the usual set of controls which are unreported. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Exp. Ratio	cs_{it}	Exp. Ratio			
	(1)	(2)	(3)	(4)	(5)	(6)
ESG	-7.169**	0.016***			-7.068**	-6.940**
	(2.922)	(0.005)			(2.925)	(2.923)
High Comp: $z_{cs} > 1$			-3.539**		-3.492**	
			(1.482)		(1.480)	
High Comp: $z_{cs} > 2$				-9.418***		-9.309***
				(2.023)		(2.023)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	210,929	210,929	210,929	210,929	210,929	210,929
R^2	0.337	0.386	0.337	0.338	0.338	0.338
Adjusted R^2	0.337	0.386	0.337	0.338	0.338	0.338

relationship between our *ESG* and our proxy of competition, cs_{it}, and shows that ESG funds exhibit higher values of cosine similarity with their peers. This number, however, is quite small considering the standard deviation of cs_{it} is 0.094. Columns 3 and 4 establish the link between the high competition and expense ratios. Both columns show that high levels of cosine similarity are positively associated with low expense ratios.

Finally, columns 5 and 6 include both the *ESG* variable and indicators for high competition in the specification to explain expense ratios. While the coefficients on the high cosine similarity dummies remain negative and statistically significant, the coefficients on *ESG* do not experience much change from the baseline specification of column 1. This suggests that there is a partial mediation effect, but that it only explains a small fraction of the fee difference.

While we observe that ESG funds exhibit high levels of cosine similarity, and that

high cosine similarity is associated with lower fees, the lower fees for ESG funds do not seem to be largely driven by higher levels of competition with peers. Further, in unreported analysis we find no evidence that high cosine similarity is associated with larger waiver amounts.

4.3 Strategic Cross-Selling

An additional explanation as to why ESG funds exhibit lower fees is that fund providers are willing to offer low fees to attract new investors who will then additionally invest in high-fee funds with the fund provider. This cross-selling would be a strategic action by the fund provider if it increases the overall revenue, despite leaving a consumer surplus on the ESG fund. An important motivation for this hypothesis is the finding that most ESG investors have only a small percentage of their assets invested in ESG funds, and a larger portion in other funds (Giglio et al., 2023).

To test this hypothesis, we create two additional control variables. First, we create the dummy variable $Top10$, which is one when a fund provider has one or more funds which are in the top 90^{th} percentile of expense ratios, grouped by quarter and CRSP style. In total, 32% of quarter/provider observations have at least one so-called "high-fee" funds. We interact this dummy variable with the ESG variable to test whether fund providers with high fee funds have lower-fee ESG funds (compared to ESG funds offered by fund providers without high-fee funds).

This dummy variable may be more likely to take the value of one for fund providers which have many funds. For this reason, we create a second variable, $zExpOthers$, which is the z-score of the mean expense ratio of all other non-ESG funds in other CRSP styles offered by the same fund provider that quarter. The intuition behind this variable is the following: a fund provider is likely to cross-sell funds which are in other CRSP styles

to the initial fund. If an ESG investor decides to invest in an ESG fund with a given fund provider, $zExpOthers$ will represent the average fee across all other funds offered by the fund provider that quarter in other CRSP styles. A z-score is taken for ease of interpretation. The z-score is calculated per quarter, so that the time trends of fees are not explaining the variation in the control variable. As with the $Top10$ variable, we are interested in the coefficient on the interaction with ESG. We expect both coefficients to be negative, indicating a negative relationship between ESG fund fees and the fund fees of other funds within the same family.

Table 7 presents the results from regressions of net expense ratios and waivers on ESG, the new cross-selling variables, the interactions, and the same set of controls as previous analysis. Across all specifications, the coefficient on the interaction is negative and statistically significant. Starting with column 1, ESG funds which are offered by fund providers which have a high-fee fund exhibit lower net expense ratios than other ESG funds (as indicated by the negative sign on the interaction term). Column 2 suggests that the difference in waiver size is almost entirely driven by fund providers which offer high-fee funds, since the coefficient on ESG is not statistically significant, while the interaction term is negative and highly significant.

Columns 3 and 4 allow for a more illustrative interpretation, since $zExpOthers$ is a continuous variable. Starting with column 3, ESG funds from fund providers which have average values for the expense ratio of the other funds (i.e., $zExpOthers = 0$) display expense ratios which are 11.1 basis points lower than non-ESG funds. However, ESG funds from fund providers with other fund fees which are two standard deviations above the mean (i.e., $zExpOthers = 2$) have expense ratios which are approximately 17.7 basis points lower than their non-ESG counterparts (i.e., $(2 \times -3.275) - 11.140 \approx -17.7$). This fee difference vanishes for fund providers which have expense ratios for other funds

Table 7: **Cross-Selling Hypothesis**
This table reports the results from regressions of net expense ratios or waiver amounts on a set of control variables. Fee data is from the SEC data set. *ESG* is an identifier for ESG funds. *Top*10 identifies fund providers which have one or more funds in the top 90^{th} percentile of expense ratios. *zExpOthers* is the z-score of the mean expense ratio of all other non-ESG funds in other CRSP styles offered by the same fund provider. The unreported control variables are the following: *Age* is the fund age in years. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. *Index* identifies index funds. *ETF* identifies ETFs. *Inst.* identifies institutional funds. All specifications use year and CRSP style classification fixed effects. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Exp. Ratio	Waiver Amt.	Exp. Ratio	Waiver Amt.
	(1)	(2)	(3)	(4)
ESG	-9.431***	-5.214	-11.140***	-19.354***
	(1.292)	(4.961)	(1.151)	(3.079)
*Top*10	28.963***	5.631***		
	(0.475)	(0.986)		
zExpOthers			15.744***	1.993***
			(0.255)	(0.474)
ESG × *Top*10	-3.831**	-15.591***		
	(1.687)	(5.571)		
ESG × *zExpOthers*			-3.275***	-14.232***
			(0.957)	(2.432)
Controls	Yes	Yes	Yes	Yes
Observations	315,292	315,292	293,703	293,703
R^2	0.541	0.128	0.557	0.128
Adjusted R^2	0.541	0.128	0.557	0.128

which are 3.4 standard deviations below the mean (i.e., $11.140/3.275 = 3.4$). Column 4 shows that waivers are the likely explanation for the fee difference. Fund providers which have $zExpOthers = 2$, on average, have waivers of approximately 48.8 basis points (i.e., $(2 \times -14.232) - 19.354 \approx -47.8$) larger than non-ESG funds.

In summary, this analysis provides results which are consistent with the explanation that fund providers use low fees on ESG funds to cross-sell higher fee non-ESG funds. Such a strategy is also consistent with the competition explanation. Finally, these findings align with the literature on strategic decision making by fund providers on the fund family level

(Evans et al., 2020; Gaspar et al., 2006; Massa, 2003; Wang, 2024).

4.4 Alternative Explanations

We explore two alternative explanations to why ESG funds exhibit lower fees: (1) that fund managers use waivers to draw in new investors, only to subsequently raise fees, and (2) that ESG funds incur lower costs because they are less active.

Starting with the first alternative explanation, it is possible that fund managers use waivers to have the option to readily increase fees in the future by discontinuing the waiver. This was a potential explanation of waiver usage proposed by Christoffersen (2001). To test this, Appendix H presents the results of regressions of a change in fees on the *ESG* variable and the usual set of control variables. The sample is limited to those funds which discontinue waivers, of which there are 181 ESG funds and 8,285 non-ESG funds. ESG funds which discontinue a waiver in quarter t (i.e., funds which do not report a waiver in SEC filings in quarter t, but did so in $t-4$) do not exhibit higher subsequent changes in management fees and expense ratios in $t+4$ and $t+8$. Therefore, we find no evidence of this explanation.

Another potential explanation for the lower net expense ratios of ESG funds is that they are "lazy" active funds. This explanation suggests that ESG funds engage in less active management, reflected in lower trading activity, which could reduce transaction costs and other related expenses. Evidence supporting this explanation includes the observation that ESG funds exhibit lower average turnover ratios (see the descriptive statistics in Table 1).

However, a closer examination of the fee components casts doubt on this explanation. Management fees, which reflect the cost of portfolio management, are only about 2 basis points lower for ESG funds compared to non-ESG funds (as shown in Table 2). This

small difference is insufficient to account for the much larger gap in net expense ratios. Additionally, "other fees", which include administrative costs, are significantly higher for ESG funds, particularly within fund provider. Transaction costs, which arise from trading activity, would likely be reflected in management fees or possibly "other fees," but not in distribution or acquired fees. Given these observations, it is unlikely that the lower net expense ratios of ESG funds can be attributed to reduced trading costs. Instead, as discussed in Section 3.2, waivers appear to play the dominant role in driving the fee differences. These waivers are unrelated to transaction costs and reflect discretionary decisions by fund managers, likely influenced by competitive pressures or strategic pricing considerations.

5 Conclusion

This paper shows that ESG funds exhibit lower fees than traditional funds. Our analysis reveals that while the gross expense ratios (i.e., before fee waivers) of ESG funds are often higher, net expense ratios of ESG funds are considerably lower compared to non-ESG funds, driven by both management and distribution fees. The magnitude of this fee discrepancy is substantial: across fund providers, ESG funds have expense ratios that are, on average, 9.5 to 12.7 basis points lower than comparable non-ESG funds. This fee reduction for ESG funds first emerged in 2015 and has persisted through 2024. It is also is observed across various subsamples: old versus young funds, large versus small funds, among other subsamples, affirming that the pattern of reduced ESG fees is broadly applicable rather than driven by specific fund types. These findings are surprising considering the experimental evidence of a WTP for sustainable investment products. The fee difference is quite large in magnitude: we estimate the total savings from 2011 to 2023 to be approximately $1 billion.

We perform several robustness checks to show our results are reliable. The results remain consistent even when controlling for unobserved provider-level fixed effects, indicating that ESG funds exhibit lower fees than non-ESG funds offered by the same provider. The results are also not driven by unobserved fund-level characteristics. Our findings are robust to alternative data sources—including SEC, Eikon, and Morningstar datasets—and to an alternative identification of ESG funds.

Our findings highlight the strategic use of fee waivers as a key factor in driving down net expense ratios for ESG funds. These waivers, which are more frequent and larger in magnitude for ESG funds than for non-ESG funds, offset higher gross fees. We explore three plausible explanations as to why ESG funds exhibit lower fees. First, we examine whether investors expect lower returns for ESG funds. We find evidence for this explanation, which compliments the literature on a negative premium for green stocks by providing fund-level evidence. Second, we explore whether increased competition among ESG funds could be driving low fees. We present descriptive evidence that ESG funds exhibit higher holdings overlap with their peers than non-ESG funds, indicating a more competitive environment. Finally, we test whether fund providers use lower fees on ESG funds as a strategy to cross-sell higher-fee funds within the same fund family. Our findings suggests that ESG fund fees covary negatively with the fees of other funds offered by the same provider, which is consistent with the cross-selling explanation.

In summary, this paper provides compelling evidence that ESG funds strategically use fee waivers to reduce high gross expense ratios, resulting in net expense ratios lower than those of comparable non-ESG funds. These findings suggest that fee waivers function as a competitive tool, positioning ESG funds attractively within a rapidly growing market. It also suggests that an ex-ante WTP for sustainable investments does not necessarily translate into higher ex-post costs. We hope this evidence is useful to policymakers by

challenging the expectation that sustainable investors consistently face higher fees.

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Appendices

A Variable Definitions

Variable Name	Variable Definition
ESG	A dummy variable which takes the value of one if the fund has an ESG keyword in its name. The keywords are the following: (case sensitive) ESG, CSR, SRI, SDG, (case insensitive) enviro, ethic, responsib, sustain, climate, carbon, clean, social, impact, green, pollution, gender, fair, thematic, earth, screen conscious, human rights, fossil free, women in leadership, and better world. Note that some terms include spaces before and after so that funds are not misclassified solely based on company name (e.g., Greenhill & Co.).
Age	Age of the fund in years since the inception date.
log(TNA)	The natural log of the TNA of the fund.
log(Family)	The natural log of the TNA of the fund family.
Index	A dummy variable which takes the value of one if the fund is an index fund. This corresponds to the *INDEX_FUND_FLAG* data point in the CRSP dataset. We also label a fund as an index fund if the term "index" is used in the fund name.
ETF	A dummy variable which takes the value of one if the fund is an ETF or ETN. This corresponds to the *ET_FLAG* data point in the CRSP dataset.
Inst.	A dummy variable which takes the value of one if the fund is an institutional fund. This corresponds to the *INST_FUND* data point in the CRSP dataset.
Dead	A dummy variable which takes the value of one if the fund is dead, i.e., no longer active. This corresponds to the *DEAD_FLAG* data point in the CRSP dataset.
Turnover Ratio	The turnover ratio of the fund in percent. This is defined by CRSP as the "minimum (of aggregated sales or aggregated purchases of securities), divided by the average 12-month total net assets of the fund." This corresponds to the *TURN_RATIO* data point in the CRSP dataset.
CRSP Style	The CRSP style code. Refer to the CRSP Survivor-Bias-Free US Mutual Fund Guide for a breakdown of the classification and a mapping to Lipper, Strategic Insights, and Wiesenberger fund codes.
(Net) Expense Ratio (CRSP)	The expense ratio of the most recently completed fiscal year. Reported as a percent of total assets, in basis points. This corresponds to the *EXP_RATIO* data point in the CRSP dataset. As stated in the CRSP Survivor-Bias-Free US Mutual Fund Guide: "[this data point] may include waivers and reimbursements, causing it to appear less than the management fee."

Variable Name	Variable Definition
Management Fee (CRSP)	The management fee of the most recently completed fiscal year. Reported as a percent of total assets, in basis points. This corresponds to the *MGMT_FEE* data point in the CRSP dataset. As stated in the CRSP Survivor-Bias-Free US Mutual Fund Guide: "The management fee can be offset by fee waivers and/or reimbursements which will make this value differ from the contractual fees found in the prospectus. Reimbursements can lead to negative management fees."
Distribution Fee (CRSP)	The actual 12b-1 fee of the most recently completed fiscal year. Reported as a percent of total assets, in basis points. This corresponds to the *ACTUAL_12B1* data point in the CRSP dataset.
TSC (CRSP)	Total Shareholder Cost, which is calculated as the sum of the maximum front and rear load (after five years of holding), divided by five, plus the net expense ratio. Load fees and expense ratios are from CRSP.
(Net) Expense Ratio (SEC)	"Total annual fund operating expenses after fee waiver or expense reimbursement" as a percentage of assets, according to the *Mutual Fund Risk/Return Summary Taxonomy Preparers Guide* from the SEC. The file can be accessed here. This corresponds to the *NetExpensesOverAssets* data point in the SEC Mutual Fund Prospectus Risk/Return dataset.
Gross Expense Ratio (SEC)	"Total annual fund operating expenses" as a percentage of assets, according to the SEC. This is the sum of management, distribution, acquired, and other fees. This corresponds to the *ExpensesOverAssets* data point in the SEC dataset.
Management Fee (SEC)	Management fees as a percentage of assets. These fees are "generally paid out of fund assets to its adviser in exchange for managing the fund," according to the SEC (see the SEC Glossary here). This corresponds to the *ManagementFeesOverAssets* data point in the SEC dataset.
Distribution Fee (SEC)	Marketing, promotion, service, and distribution expenses as a percentage of assets. These are often referred to as 12b-1 fees in the US. This corresponds to the sum of the following data points in the SEC dataset: *DistributionAndService12b1FeesOverAssets* and *DistributionOrSimilarNon12b1FeesOverAssets*.
Acquired Fee (SEC)	Fees originating from funds held by the fund as a percentage of assets, therefore relevant for "fund-of-funds". This corresponds to the *AcquiredFundFeesAndExpensesOverAssets* data point in the SEC dataset.

Variable Name	Variable Definition
Other Fee (SEC)	All other expenses as a percentage of assets which are not included in management, acquired, or distribution fees, and can include legal, custodian, accounting, administration, and transfer agency fees. This corresponds to the sum of the following data points in the SEC dataset: *OtherExpensesOverAssets*, *Component1OtherExpensesOverAssets*, *Component2OtherExpensesOverAssets*, and *Component3OtherExpensesOverAssets*.
Waiver Amount (SEC)	Fee waivers or reimbursements as a percentage of assets. A negative value indicates a positive waiver, i.e., a fee reimbursement given to investors. This corresponds to the *FeeWaiverOrReimbursementOverAssets* data point in the SEC dataset.
$Waiver$	A dummy variable which takes the value of one if the fund has reported a waiver/reimbursement in its SEC disclosures.
$FrontLoad$	A dummy variable which takes the value of one if the fund has a front load. Load data is from CRSP.
Mechanical ICC	An expected return proxy based on the Internal Cost of Capital approach, calculated at the stock-level using cross-sectional regressions to estimate earnings. The stock-level data is retrieved from Lee et al. (2021) and aggregated to the fund-level using holdings data from CRSP. We require that a fund have expected return values for at least 50% of it's value-weighted portfolio before aggregating at the fund-level.
Analyst ICC	An expected return proxy based on the Internal Cost of Capital approach, calculated at the stock-level using analyst earnings forecasts. The stock-level data is retrieved from Lee et al. (2021) and aggregated to the fund-level using holdings data from CRSP. We require that a fund have expected return values for at least 50% of it's value-weighted portfolio before aggregating at the fund-level.
Cosine Similarity: cs_{it}	A proxy of competition, calculated as the average cosine similarity of fund i's portfolio with each of its peers' ($j = 1...K$) portfolios in time t. The value is bounded between zero and one. A value of zero indicates that funds i and j have no holdings overlap and a value of one indicates complete overlap, both in the set of holdings and the weights within the portfolio.
$Top10$	A dummy variable which takes the value of one if the fund provider has one or more funds which are in the 90th percentile of expense ratios, grouped by year-quarter and CRSP style. Expense ratios are used from CRSP.

Variable Name	Variable Definition
$zExpOthers$	The z-score of the mean expense ratio of all other non-ESG funds in other CRSP styles offered by the same fund provider that year-quarter. Expense ratios are used from CRSP.
Three-Factor α	The alpha of a fund from the model of Fama and French (1993). This is calculated using monthly data from CRSP by performing rolling regressions from $t-1$ to $t-36$.
Four-Factor α	The alpha of a fund from the model of Carhart (1997). This is calculated using monthly data from CRSP by performing rolling regressions from $t-1$ to $t-36$.
Five-Factor α	The alpha of a fund from the model of Fama and French (2015). This is calculated using monthly data from CRSP by performing rolling regressions from $t-1$ to $t-36$.
BvB α	The alpha of a fund from the model of Berk and van Binsbergen (2015). This is calculated using monthly data from CRSP by performing rolling regressions from $t-1$ to $t-36$.
M* Globes	The sustainability rating of the fund from Morningstar, on a scale from one to five "globes".
M* Rating	The overall rating of the fund from Morningstar, on a scale from one to five "stars".

B Robustness Check - Morningstar

Table 8 presents the results from regressions of Equation 1 using data from Morningstar. The sample contains data for 5,463 open-end mutual funds in the US from 2014 to 2023. The outcome variable is annual net expense ratio. There are three variables of interest: *ESGName*, *ESGStrat.*, and M* Globes. The first, *ESGName*, uses the same name identification procedure as the main analysis. The second, *ESGStrat.*, takes a value of one if the fund's strategy contains one or more of the ESG keywords. The final, M* Globes, identifies ESG funds using the sustainability rating (i.e., the "globes") from Morningstar, treated as a continuous variable from one to five.

All specifications use year and fund type fixed effects, where fund type is either "equity" or "fixed income". Column 2, 4, and 6 use fund provider fixed effects, but do no limit the sample to those observations with variation in the variable of interest, as to not put further restrictions on the sample size. Deploying fund provider fixed effects ensures that we compare ESG funds to similar non-ESG funds in the same fund provider. The results are consistent with Table 2 and the magnitude of the coefficients in columns 1 and 2 are strikingly similar. The results suggest that ESG funds exhibit annual net expense ratios which are, on average, 12.6 basis points lower than comparable non-ESG funds, which is 14.2% of the non-ESG mean (88.9 bp). Within fund providers, the fee difference is about 10.1 basis points.

Similar results are observed using *ESGStrat.* as the ESG fund identification variable. The magnitude of the fee difference, however, declines to 6.5 basis points across fund providers and 5.4 basis points within fund provider. Columns 5 and 6 use the Morningstar sustainability rating as the identification variable. Column 5 suggests that across fund providers, a one "globe" increase is associated with 1.8 basis points lower expense ratios. This relationship loses statistical significance when deploying fund provider fixed

effects, however, as shown in column 6. We use the keyword identification method in our main analysis because it more directly reflects the intended classification by the fund provider and captures mandate changes over time, offering a transparent and straightforward alternative to complex third-party methodologies like Morningstar's sustainability rating.

Table 8: **Fees of ESG funds versus non-ESG funds - Morningstar**
This table reports the results from regressions of Equation 1 using data from Morningstar. Annual net expense ratio is reported in basis points and in annual terms. *ESGName* is an identifier for funds which have an ESG term in their names. *ESGStrat.* is an identifier for funds which have an ESG term in their fund strategies. M* Globes is the sustainability rating by Morningstar, treated as a continuous variable. *Age* is the fund age in years. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. *Inst.* identifies institutional funds. M* Rating is the fund's star rating, treated as a continuous variable. All specifications use year and fund type (i.e., equity or fixed income) fixed effects. Columns 2, 4, and 6 use fund provider fixed effects. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Dependent variable: Annual Net Expense Ratio					
	(1)	(2)	(3)	(4)	(5)	(6)
ESGName	-12.625***	-10.061***				
	(3.109)	(2.871)				
ESGStrat.			-6.529**	-5.447**		
			(2.637)	(2.428)		
M* Globes					-1.834***	-0.450
					(0.699)	(0.583)
Age	0.412***	0.294***	0.414***	0.297***	0.392***	0.290***
	(0.063)	(0.051)	(0.063)	(0.051)	(0.070)	(0.060)
$log(TNA)$	-3.741***	-3.051***	-3.718***	-3.026***	-4.610***	-3.763***
	(0.310)	(0.265)	(0.310)	(0.264)	(0.358)	(0.339)
$log(Family)$	-6.091***	-1.193*	-6.123***	-1.176*	-6.349***	-0.656
	(0.347)	(0.631)	(0.348)	(0.630)	(0.370)	(0.895)
Inst.	-7.955***	-6.967***	-7.870***	-6.809***	-9.150***	-6.759***
	(1.196)	(1.284)	(1.196)	(1.284)	(1.522)	(1.667)
M* Rating	-3.463***	-2.211***	-3.430***	-2.205***	-2.642***	-1.696***
	(0.515)	(0.348)	(0.514)	(0.348)	(0.608)	(0.464)
Provider FE		Yes		Yes		Yes
Observations	36,468	36,468	36,468	36,468	22,695	22,695
R^2	0.302	0.600	0.301	0.600	0.287	0.580
Adjusted R^2	0.301	0.594	0.301	0.594	0.286	0.572

C Robustness Check - Eikon

Table 9 presents the results from regressions of Equation 1 using data from Eikon. The sample contains annual observations for 59,607 in the Eikon database from 2011 to 2024, 6,396 of which are US funds. Total Expense Ratio (TER) is the dependent variable. According to Eikon, the dummy variable $RI, Eikon$ "identifies funds that include ESG, SRI, Positive-/Negative Screening, Impact Investing and/or Religious criteria in their overall screening process." The results are consistent with Table 2, both in the international sample (columns 1 and 2) and the US-domiciled sample (columns 3 and 4).

Table 9: **Fees of ESG funds versus non-ESG funds - Eikon**
This table reports the results from regressions of Equation 1 using data from Eikon. TER is reported in basis points and in annual terms. $RI, Eikon$ is an identifier for funds with the "responsible investment" label by Eikon. Age is the fund age in years. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. $Inst.$ identifies institutional funds. All specifications use year and fund type (i.e., equity, fixed income, etc.) fixed effects. Columns 2 and 4 use fund provider fixed effects, and restrict the sample to fixed effects groups with variation in the $RI, Eikon$ variable. Columns 1 and 2 use an international sample, and columns 3 and 4 restrict the sample to US funds. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Dependent variable: TER			
	(1)	(2)	(3)	(4)
$RI, Eikon$	-5.903***	-3.118***	-9.873***	-6.773***
	(0.811)	(0.800)	(1.721)	(1.558)
Age	0.842***	1.005***	0.470***	0.621***
	(0.048)	(0.046)	(0.050)	(0.049)
$log(TNA)$	-0.879***	-1.161***	-4.121***	-4.078***
	(0.167)	(0.157)	(0.241)	(0.222)
$log(Family)$	-4.748***	-4.634***	-7.697***	-6.791***
	(0.214)	(0.197)	(0.237)	(0.225)
$Inst.$	-36.400***	-36.394***	-21.091***	-19.873***
	(1.161)	(0.933)	(0.961)	(0.877)
Sample	Int.	Int.	US	US
Type FE	Yes		Yes	
Classification FE		Yes		Yes
Observations	764,840	760,492	68,570	68,328
R^2	0.436	0.525	0.485	0.585
Adjusted R^2	0.436	0.524	0.485	0.585

D Robustness Check - Fund Fixed Effects

The following analysis runs panel regressions of Equation 1 using fund-level fixed effects to control for unobserved, time-invariant fund characteristics which could affect both fund fees and propensity to be an ESG fund. As such, the coefficient on ESG exploits the variation in fees of funds which experienced a change in mandate, i.e., a change in the ESG variable. There are 427 funds in the sample which experienced a change in the ESG throughout the sample.

The negative and statistically significant coefficient on ESG in column 1 suggests that the funds which switched mandates exhibited lower expense ratios while they were ESG funds. Similar conclusions can be said of management fees (column 2) and TSC (column 4). There is no significant change in distribution fees. In summary, this is consistent with our baseline results in Table 2, and it suggests that our results are not driven by unobserved, time-invariant fund characteristics.

Table 10: **Fees of ESG funds versus non-ESG funds - Fund Fixed Effects**
This table reports the results from regressions of Equation 1 using fund fixed effects to control for time-invariant fund characteristics. Fees are from CRSP and are reported in basis points and in annual terms. All specifications also use year fixed effects. *ESG* is an identifier for ESG funds. *Age* is the fund age in years. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Dependent variable:			
	Exp. Ratio	Mgmt. Fee	Dist. Fee	TSC
	(1)	(2)	(3)	(4)
ESG	-6.121***	-8.667**	0.070	-7.035***
	(0.875)	(3.779)	(0.367)	(1.129)
Age	-0.215***	0.904***	-0.041**	0.236***
	(0.049)	(0.067)	(0.016)	(0.079)
$log(TNA)$	-0.697***	12.351***	0.106***	-0.621***
	(0.037)	(0.289)	(0.018)	(0.041)
$log(Family)$	-1.391***	1.935***	-0.055	-1.231***
	(0.095)	(0.413)	(0.039)	(0.116)
Observations	1,042,060	1,050,099	490,007	1,042,060
R^2	0.975	0.779	0.990	0.969
Adjusted R^2	0.974	0.771	0.990	0.968

E Robustness Check - Non-Linear Age Effect on Fund Fees

This section reports the results of panel regressions of Equation 1 using alternative specifications which allow for non-linear age effects. Expense ratio data from both the CRSP and SEC datasets are used. The purpose of this robustness check is to ensure that the observed effects of the ESG fund dummy are not driven by potential non-linearities in fund age, which may influence expense ratios.

For example, it is plausible that younger funds set particularly low fees to attract investors and build their asset base, with this effect diminishing as funds mature and become more established. Since ESG funds tend to be younger, this could explain why ESG funds exhibit lower fees. To account for such potential non-linearities, three alternative specifications are tested: a quadratic term for age (columns 2 and 5), a logarithmic transformation of age (columns 3 and 6), and a linear term for age as a baseline (columns 1 and 4). Across all specifications, the coefficient on the ESG dummy remains negative and statistically significant at the one percent level, confirming that ESG funds exhibit lower expense ratios even when non-linear age effects are considered.

These results reinforce the results that ESG funds exhibit lower expense ratios, independent of potential non-linearities in fund age.

Table 11: **Fees of ESG funds versus non-ESG funds - Non-Linear Age Effects**
This table reports the results from regressions of Equation 1 using alternative specifications which allow for non-linear age effects. Fees are reported in basis points and in annual terms. All specifications also use year fixed effects. ESG is an identifier for ESG funds. Age is the fund age in years. Age^2 is the fund age squared. $log(Age)$ is the natural log of the fund age. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. $Index$ identifies index funds. ETF identifies ETFs. $Inst.$ identifies institutional funds. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Dependent variable:					
	Exp. Ratio (CRSP)			Exp. Ratio (SEC)		
	(1)	(2)	(3)	(4)	(5)	(6)
ESG	-9.508***	-7.263***	-7.363***	-12.689***	-9.900***	-10.098***
	(1.158)	(1.136)	(1.139)	(1.100)	(1.064)	(1.070)
Age	0.738***	3.252***		0.682***	3.665***	
	(0.031)	(0.071)		(0.032)	(0.069)	
Age^2		-0.080***			-0.096***	
		(0.002)			(0.002)	
$log(Age)$			9.979***			10.581***
			(0.249)			(0.244)
$log(TNA)$	-4.524***	-4.858***	-5.028***	-4.779***	-5.261***	-5.533***
	(0.081)	(0.081)	(0.083)	(0.077)	(0.077)	(0.080)
$log(Family)$	-3.812***	-3.942***	-3.898***	-4.034***	-4.165***	-4.108***
	(0.101)	(0.100)	(0.100)	(0.107)	(0.105)	(0.106)
$Index$	-23.390***	-24.416***	-23.911***	-25.731***	-26.992***	-26.203***
	(1.203)	(1.180)	(1.181)	(1.240)	(1.214)	(1.214)
ETF	-13.862***	-10.884***	-10.980***	-16.105***	-11.975***	-12.038***
	(1.089)	(1.079)	(1.080)	(1.135)	(1.121)	(1.125)
$Inst.$	-41.062***	-40.972***	-40.263***	-41.561***	-41.504***	-40.232***
	(0.499)	(0.495)	(0.485)	(0.500)	(0.491)	(0.483)
Observations	1,042,060	1,042,060	1,042,060	315,292	315,292	315,292
R^2	0.503	0.518	0.513	0.505	0.528	0.520
Adjusted R^2	0.503	0.518	0.513	0.505	0.528	0.520

F Robustness Check - Explaining Fees Across Subsamples

Table 12 presents regression results of the baseline specification across subsamples. Column 1 (2) restricts the sample to non-institutional (institutional) funds. Column 3 (4) restricts the sample to non-index (index) funds. Column 5 (6) restricts the sample to funds which are less than or equal to (greater than) two years old. Column 7 (8) restricts the sample to funds whose TNA is less than or equal to (greater than) the median TNA that year. Column 9 (10) restricts the sample to equity (bond) funds. Column 11 (12) restricts the sample to load (non-load) funds. Finally, column 13 (14) restricts the sample to non-ETFs (ETFs).

We are able to reproduce the results across all sample splits. While the magnitude differs, suggesting conditional average treatment effects, ESG funds exhibit consistently lower expense ratios than their non-ESG counterparts.

Table 12: **Explaining Fees - Subsamples**
This table reports the results from regressions of Equation 1 where the sample is subject to certain conditions. Fees are reported in basis points and in annual terms. *ESG* is an identifier for ESG funds. *Age* is the fund age in years. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. *Index* identifies index funds. *ETF* identifies ETFs. *Inst.* identifies institutional funds. All specifications use year and CRSP style classification fixed effects. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Dependent variable: Exp. Ratio					
	Non-Inst.	Inst.	Non-Index	Index	Age≤2	Age>2
	(1)	(2)	(3)	(4)	(5)	(6)
ESG	-11.808***	-7.547***	-8.864***	-12.326***	-2.512**	-8.544***
	(2.420)	(1.042)	(1.273)	(2.214)	(1.141)	(1.419)
Age	0.797***	1.011***	0.686***	1.669***	3.840***	0.608***
	(0.049)	(0.035)	(0.032)	(0.148)	(0.184)	(0.032)
$log(TNA)$	-7.197***	-3.094***	-4.271***	-6.968***	-2.613***	-5.233***
	(0.159)	(0.084)	(0.081)	(0.332)	(0.096)	(0.091)
$log(Family)$	-3.061***	-4.016***	-3.399***	-6.448***	-4.785***	-3.531***
	(0.164)	(0.112)	(0.107)	(0.283)	(0.110)	(0.112)
Index	-19.739***	-26.944***			-22.081***	-24.473***
	(2.488)	(0.993)			(1.058)	(1.357)
ETF	-35.980***	-11.321***	-20.069***	-1.175	-16.960***	-11.025***
	(5.614)	(0.971)	(1.208)	(1.286)	(0.973)	(1.301)
Inst.			-41.047***	-42.901***	-42.788***	-40.946***
			(0.503)	(2.238)	(0.701)	(0.520)
Observations	459,237	582,823	957,850	84,210	132,365	909,695
R^2	0.368	0.437	0.486	0.597	0.533	0.508
Adjusted R^2	0.368	0.437	0.486	0.597	0.533	0.508

	TNA≤Med.	TNA>Med.	Equity	Bond	No Load	Load	Non-ETF	ETF
	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
ESG	-6.260***	-9.649***	-7.597***	-16.366***	-9.046***	-9.044***	-10.274***	-2.398*
	(1.357)	(1.596)	(1.385)	(1.635)	(1.186)	(3.436)	(1.308)	(1.263)
Age	1.725***	0.374***	1.099***	0.212***	0.846***	0.339***	0.740***	1.192***
	(0.054)	(0.031)	(0.043)	(0.043)	(0.037)	(0.051)	(0.032)	(0.136)
$log(TNA)$	-2.645***	-6.841***	-4.737***	-4.386***	-4.562***	-1.673***	-4.596***	-2.305***
	(0.140)	(0.179)	(0.099)	(0.133)	(0.085)	(0.215)	(0.082)	(0.258)
$log(Family)$	-3.533***	-2.875***	-4.298***	-2.026***	-3.532***	-5.838***	-3.788***	-4.652***
	(0.132)	(0.131)	(0.116)	(0.202)	(0.110)	(0.257)	(0.109)	(0.185)
Index	-11.930***	-33.713***	-24.429***	-16.691***	-26.237***	-5.229	-25.560***	-12.849***
	(1.692)	(1.185)	(1.294)	(3.193)	(1.259)	(3.696)	(1.465)	(1.323)
ETF	-25.656***	-4.023***	-15.578***	-11.390***	-11.421***			
	(1.500)	(1.164)	(1.220)	(2.441)	(1.130)			
Inst.	-47.370***	-32.594***	-41.893***	-38.071***	-47.621***	-16.521***	-41.148***	-14.902***
	(0.657)	(0.623)	(0.625)	(0.780)	(0.590)	(3.724)	(0.501)	(5.343)
Observations	521,201	520,859	727,438	314,622	903,524	138,536	985,624	56,436
R^2	0.500	0.505	0.489	0.511	0.522	0.475	0.486	0.500
Adjusted R^2	0.500	0.504	0.489	0.511	0.522	0.475	0.486	0.499

G Realized Returns

This section analyzes the realized risk-adjusted return of ESG funds versus non-ESG funds. Monthly alpha for fund i in time t is calculated by regressing excess returns on a set of factors, as defined by the Fama-French three factor model (Fama & French, 1993), the Carhart four factor model (Carhart, 1997), and the Fama-French five factor model (Fama & French, 2015). We perform rolling regressions using factor data from $t-1$ to $t-36$. We also calculate alpha using the method of Berk and van Binsbergen (2015), which uses Vanguard index funds to benchmark fund performance. The sample for this analysis is restricted to equity funds.

To analyze fund performance, monthly alpha values are then regressed on a set of control variables. The control variables were selected for their ability to explain monthly alpha, and to largely align with Cooper et al. (2021). These include age of the fund, log of TNA, log of fund family TNA, a dummy variable for institutional funds, the standard deviation of monthly returns over the previous 36 months, and the expense ratio (in monthly terms to match the monthly alpha). Variable definitions can be found in Appendix A.

Table 13 presents the results. Across all models, ESG funds exhibited higher alpha. This outperformance is not explained by time-invariant fund provider characteristics, as suggested by the positive and significant coefficients on the specifications which deploy for fund provider fixed effects. These values are large, considering they are in monthly terms. These results align with the theoretical framework of Pástor et al. (2021) and the empirical evidence by Pástor et al. (2022), which indicate that shifting investor preferences can temporarily boost performance in sustainable assets. Consequently, our analysis suggests that ESG investors did not face a trade-off in the form of weaker risk-adjusted returns during the sample period 2011 to 2024.

Figure 6 plots the time-series effects of the three-factor monthly alpha from 2011

Table 13: **Realized Risk-Adjusted Returns of ESG funds versus non-ESG funds**
This table reports the results from regressions of monthly alpha at the fund level on a set of control variables. Alphas are calculated using monthly data and a 36 month window. Alphas and expense ratios are reported in basis points and in monthly terms. Three-Factor α is from the model of Fama and French (1993). Four-Factor α is is from the model of Carhart (1997). Five-Factor α is is from the model of Fama and French (2015). BvB α is calculated using the method from Berk and van Binsbergen (2015). ESG is an identifier for ESG funds. Age is the fund age in years. Std. Dev. Returns is the standard deviation of monthly returns from $t-1$ to $t-36$. Exp. Ratio is the expense ratio in monthly terms. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. $Inst.$ identifies institutional funds. Variable definitions can be found in Appendix A. All specifications use year and CRSP style classification fixed effects. The specifications which use fund provider fixed effects restrict the sample to fixed effects groups with variation in the ESG variable. The sample is restricted to only include equity funds. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Three-Factor α		Four-Factor α		Five-Factor α		BvB α	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ESG	9.413***	9.311***	8.921***	8.905***	7.569***	8.423***	5.488***	6.308***
	(0.953)	(1.061)	(0.890)	(1.004)	(0.978)	(1.149)	(0.967)	(0.938)
Std. Dev. Returns	-0.076***	-0.053***	-0.070***	-0.052***	-0.041***	-0.029***	-0.021***	-0.019***
	(0.003)	(0.005)	(0.002)	(0.005)	(0.003)	(0.006)	(0.002)	(0.005)
Exp. Ratio	-0.101**	0.022	-0.161***	0.007	-0.047	0.080	-0.411***	-0.219*
	(0.039)	(0.124)	(0.037)	(0.118)	(0.039)	(0.130)	(0.037)	(0.114)
Age	-0.139***	-0.070	-0.127***	-0.045	-0.148***	-0.049	-0.018	0.050
	(0.021)	(0.049)	(0.020)	(0.047)	(0.021)	(0.053)	(0.019)	(0.044)
$log(TNA)$	1.554***	1.267***	1.452***	1.199***	1.589***	1.259***	0.738***	0.765***
	(0.055)	(0.141)	(0.052)	(0.133)	(0.054)	(0.147)	(0.050)	(0.134)
log(Family)	0.241***	5.704**	0.231***	4.556*	0.365***	5.865**	0.554***	-3.443*
	(0.063)	(2.734)	(0.060)	(2.556)	(0.063)	(2.506)	(0.062)	(2.073)
$Inst.$	2.082***	3.645***	2.081***	3.695***	2.054***	3.708***	2.055***	2.866***
	(0.299)	(0.812)	(0.286)	(0.779)	(0.301)	(0.843)	(0.273)	(0.695)
Provider FE		Yes		Yes		Yes		Yes
Observations	1,392,655	144,443	1,391,370	144,316	1,391,503	144,276	1,393,568	144,508
R^2	0.350	0.409	0.320	0.397	0.298	0.382	0.023	0.040
Adjusted R^2	0.350	0.408	0.320	0.396	0.298	0.381	0.023	0.038

to 2023. The solid blue line represents the sum of the coefficients of (1) the interaction of ESG with year-month dummies and (2) year-month dummies. The red dashed line represents the coefficients on the year-month dummies. The difference in monthly alpha between ESG and non-ESG funds appears to be driven by the period starting in 2020, coinciding with the extreme growth in ESG fund flows, with values ranging from 7.9 to 10 basis points.

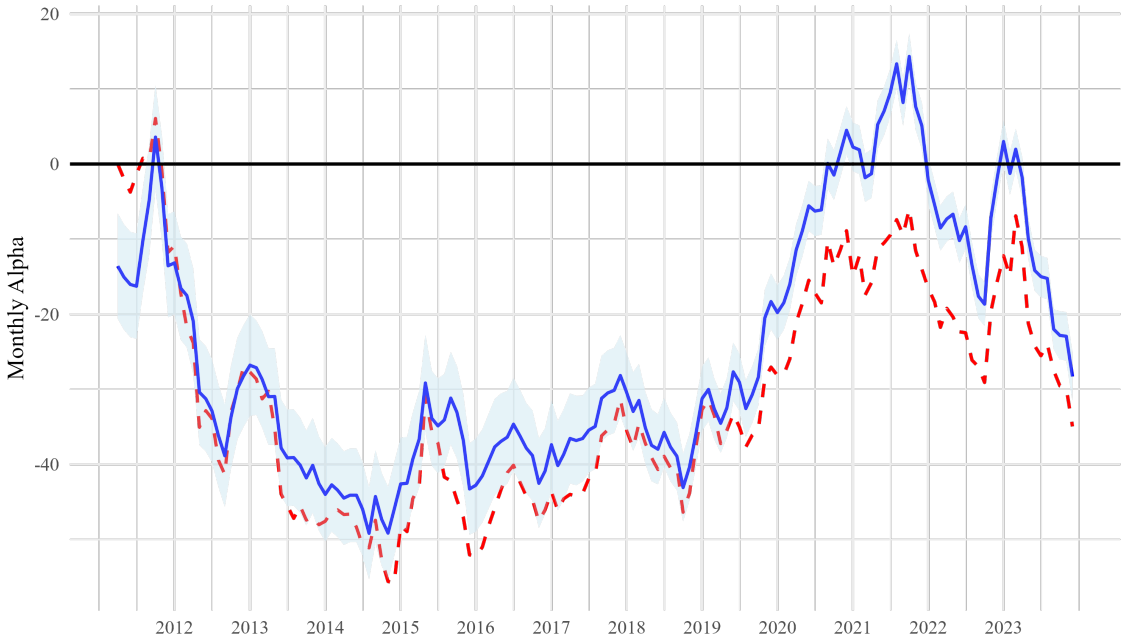

Figure 6: **Explaining Monthly Alpha with Time Interactions**
This figure plots the coefficients of the (1) interaction of the ESG dummy with year-month dummies plus the year-month dummies (blue solid) and (2) the year-month dummies (red dashed) from a regression of monthly Fama-French three factor alpha on a set of control variables. The following control variables are used: Age, $log(TNA)$, $log(Family)$, $Index$, ETF, and $Inst$. CRSP style fixed effects are deployed. The bands around the blue lines represent the 95% confidence intervals. The sample is restricted to only include equity funds. Standard errors are robust.

H Waiver Discontinuation, Fee Increase Explanation

This analysis tests the alternative explanation that ESG fund use waivers strategically to provide the option to raise fees in the future. This was a potential explanation of waiver usage proposed by Christoffersen (2001). To test this, we regress changes in fees from t to $t+4$ on the ESG variable and the usual set of control variables. The sample is limited to those funds which discontinue waivers, of which there are 181 ESG funds and 8,285 non-ESG funds. Table 14 reports the results. ESG funds which discontinue a waiver in quarter t (i.e., funds which do not report a waiver in SEC filings in quarter t, but did so in $t-4$) do not exhibit higher subsequent changes in management fees and expense ratios in $t+4$ and $t+8$. In fact, fees decrease by larger amount for ESG funds, as indicated by the negative coefficient. Therefore, we do not see evidence that ESG fund managers use waivers as an option to subsequently raise fees.

Table 14: **Fee Increase Hypothesis**
This table reports the results from a regression of the change in fees from t to $t+4$ or $t+8$ on a set of control variables. The sample is restricted to funds which discontinue a waiver in t. Fees are reported in basis points and in annual terms. All specifications use year and CRSP style classification fixed effects. *ESG* is an identifier for ESG funds. *Age* is the fund age in years. $log(TNA)$ and $log(Family)$ are the natural log of TNA for the fund and the fund's family, respectively. *Index* identifies index funds. *ETF* identifies ETFs. *Inst.* identifies institutional funds. Full variable definitions can be found in the Appendix. Standard errors are clustered at the fund level and reported in parentheses. *p<0.1; **p<0.05; ***p<0.01.

	Δ_{t+4} Mgmt. Fees	Δ_{t+8} Mgmt. Fees	Δ_{t+4} Exp. Ratio	Δ_{t+8} Exp. Ratio
	(1)	(2)	(3)	(4)
ESG	-0.820***	-1.456***	-0.817*	-1.006
	(0.269)	(0.408)	(0.464)	(0.666)
Age	0.002	0.002	0.001	-0.017
	(0.004)	(0.006)	(0.010)	(0.014)
$log(TNA)$	0.015	0.070***	0.035	0.164***
	(0.011)	(0.020)	(0.028)	(0.042)
$log(Family)$	-0.016	-0.037	-0.113**	-0.208***
	(0.015)	(0.026)	(0.044)	(0.068)
Index	0.036	0.666***	-0.781**	-1.110**
	(0.105)	(0.173)	(0.343)	(0.513)
ETF	-0.802***	-1.347***	1.387***	3.019***
	(0.242)	(0.366)	(0.486)	(0.768)
Inst.	0.014	0.006	0.227	0.221
	(0.063)	(0.106)	(0.146)	(0.216)
Observations	7,976	6,946	8,012	6,981
R^2	0.025	0.049	0.029	0.048
Adjusted R^2	0.020	0.043	0.025	0.043

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