ESG and Mutual Fund Competition

Ariadna Dumitrescu[1] Javier Gil-Bazo[2]

[1]**ESADE Business School**

[2]**Universitat Pompeu Fabra**

GRASFI Annual Conference

Motivation

Growing interest in sustainable investing

Bloomberg

Share

Global ESG assets predicted to hit $40 trillion by 2030, despite challenging environment, forecasts Bloomberg Intelligence

February 08, 2024

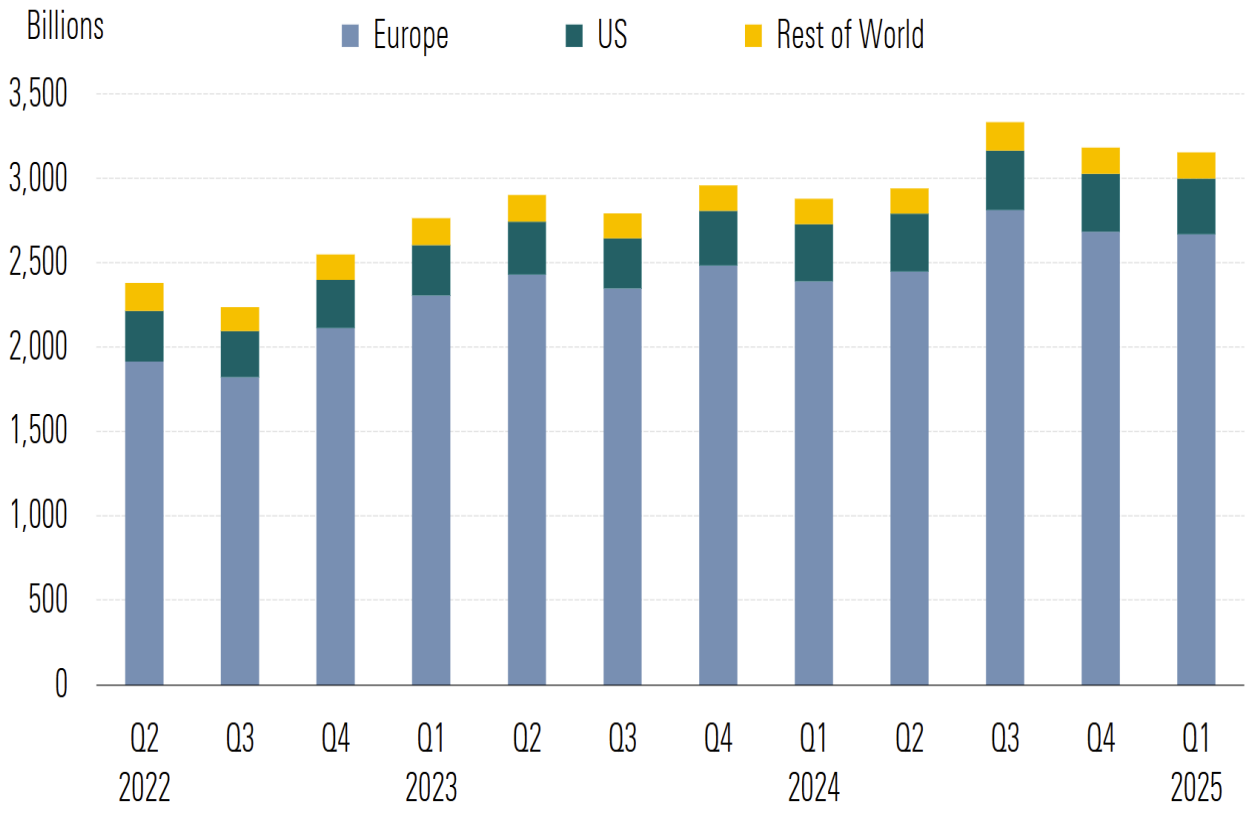
- Despite geopolitical and macro challenges, the ESG market matures and anchors capital markets – exceeding 25% of projected global assets under management
- Enhanced scrutiny and regulations to bolster the ESG market credibility
- Europe is set to remain the largest in ESG assets with over $18 trillion in 2030
- Investor appetite remains resilient as asset managers plan to boost ESG AUM

London, 8 January 2024 – Global ESG assets surpassed $30 trillion in 2022 and are on track to surpass $40 trillion by 2030 – over 25% of projected $140 trillion assets under management (AUM) according to a latest ESG report from Bloomberg Intelligence (BI).

Motivation

Growing interest in sustainable investing

Exhibit 3 Quarterly Global Sustainable Fund Assets (USD Billion)



- USD 3.16 trillion in AUM
- 32% increase since 2022
- 4.3% of global fund assets
- In Europe: 11.6%

Source: Morningstar Direct. Data as of March 2025.

ESG Preferences

Investors have non-pecuniary ESG preferences

ESG Preferences

Investors have non-pecuniary ESG preferences

- Renneboog, Ter Horst, Zhang (2008)
- Riedl and Smeets (2017)
- Barber, Morse, and Yasuda (2021)
- Zerbib (2019)
- Heeb, Kölbel, Paetzold, Zeisberger (2023)
- Hartzmark and Sussman (2019)
- Ceccarelli, Ramelli, and Wagner (2024)

ESG Preferences

Investors have non-pecuniary ESG preferences

- Renneboog, Ter Horst, Zhang (2008)
- Riedl and Smeets (2017)
- Barber, Morse, and Yasuda (2021)
- Zerbib (2019)
- Heeb, Kölbel, Paetzold, Zeisberger (2023)
- Hartzmark and Sussman (2019)
- Ceccarelli, Ramelli, and Wagner (2024)

Asset pricing implications

- Pástor, Stambaugh, and Taylor (2021)
- Pedersen, Fitzgibbons, and Pomorski (2021)
- Goldstein, Kopytov, Shen, and Xiang (2022)

Heterogenous "E", "S" and "G" Preferences

Source: Research in Finance

Heterogenous "E", "S" and "G" Preferences

Source: Research in Finance

Heterogenous "E", "S" and "G" Preferences

Source: Research in Finance

- Degryse, Di Giuli, Sekerci and Stradi (2023)
- Giglio, Maggiori, Stroebel, Tan, Utkus and Xu (2025)
- Siemroth and Hornuf (2023)

Research questions

- How do ESG funds compete for investors with heterogeneous ESG preferences?

Research questions

- How do ESG funds compete for investors with heterogeneous ESG preferences?
- How do competition in the ESG space and in the conventional space affect each other?
- Consequences for fees?

Research questions

- How do ESG funds compete for investors with heterogeneous ESG preferences?
- How do competition in the ESG space and in the conventional space affect each other?
- Consequences for fees?
- Consequences for performance?

Research questions

- How do ESG funds compete for investors with heterogeneous ESG preferences?
- How do competition in the ESG space and in the conventional space affect each other?
- Consequences for fees?
- Consequences for performance?
- Consequences for investors' welfare?

What we do

We develop a model of mutual fund competition with both ESG and conventional funds

What we do

We develop a model of mutual fund competition with both ESG and conventional funds

1. Investors who derive utility exclusively from alpha (neutral investors)

What we do

We develop a model of mutual fund competition with both ESG and conventional funds

1. Investors who derive utility exclusively from alpha (neutral investors)
2. Investors who derive both pecuniary utility from alpha and non-pecuniary utility from investing according to sustainability principles (ESG investors)

What we do

We develop a model of mutual fund competition with both ESG and conventional funds

1. Investors who derive utility exclusively from alpha (neutral investors)
2. Investors who derive both pecuniary utility from alpha and non-pecuniary utility from investing according to sustainability principles (ESG investors)
3. ESG investors may value specific ESG objectives differently

Related literature (I)

Models of MF competition:

- Berk and Green (2004)

Related literature (I)

Models of MF competition:

- Berk and Green (2004)
- Metrick and Zeckhauser (1998): Different taste for quality
- Gil-Bazo and Ruiz-Verdu (2008): Asymmetric information
- Nanda et al. (2000): Different liquidity needs
- Gennaioli et al. (2015): Trust reduces risk investor anxiety
- Dumitrescu and Gil-Bazo (2018), Garleanu and Pedersen (2018), Roussanov, Ruan, and Wei (2021): Frictions

The model

Four active funds differ in two dimensions:

- quality (H, L)
- sustainability (S,C)

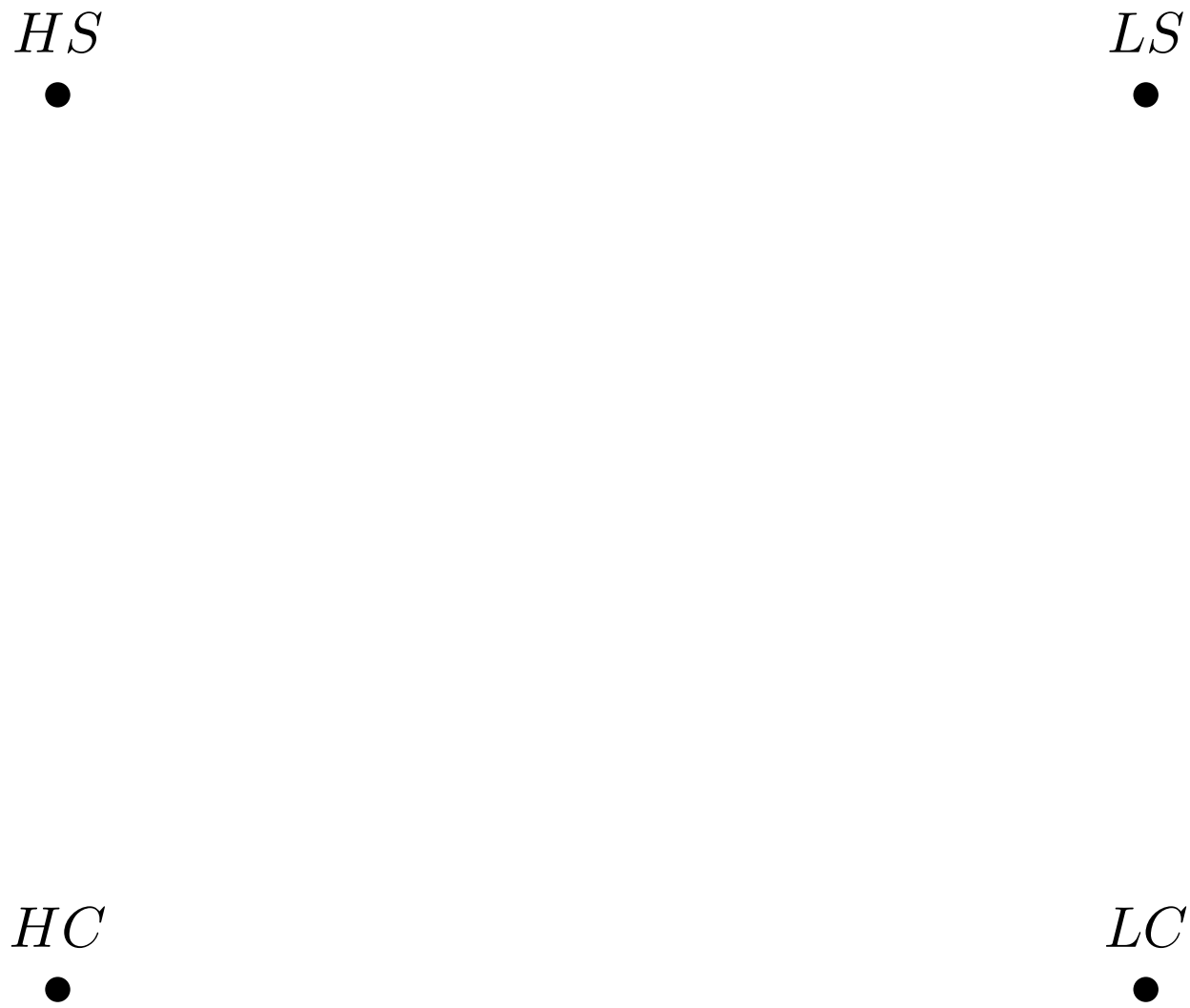
	ESG Funds	Conventional Funds
High	HS	HC
Low	LS	LC

$R_{HS} > R_{LS}$, $R_{HC} > R_{LC}$ and $R_{HC} \geq R_{HS}$

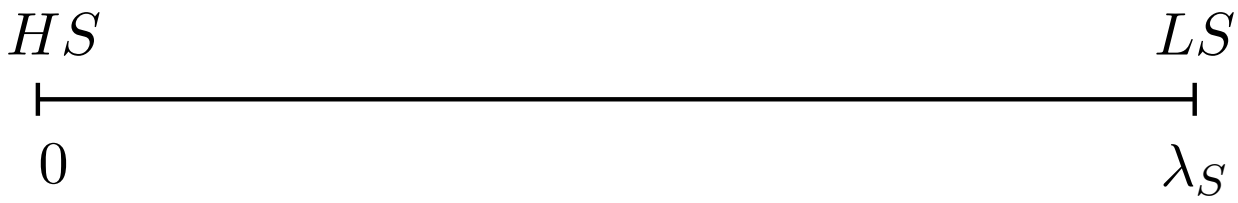
Continuum of investors:

- ESG investors (λ_S),
- Neutral Investors (λ_N)

The model



The model



The Investor's Problem

Each investor is endowed with one dollar and pays a fee f_φ for investing with an active mutual fund φ

- Neutral investors' utility (all funds):

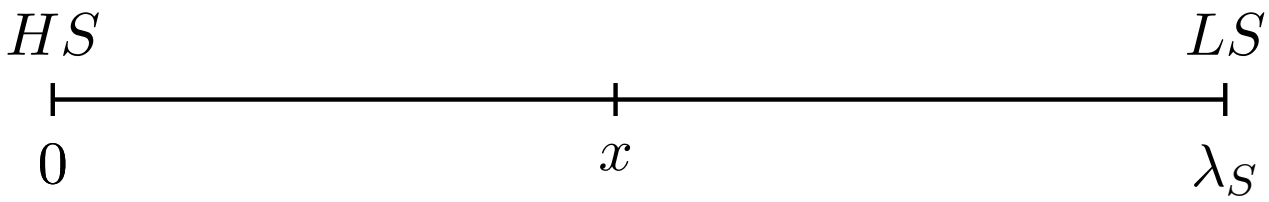
$$U_\varphi^N = R_\varphi - f_\varphi$$

- ESG investor i's utility (ESG funds):

$$U_{i,\varphi}^{ESG} = R_\varphi - f_\varphi + (u_0 - kd_{i,\varphi}) \text{ , where}$$

- u_0 is the non-pecuniary utility of an investor whose preferences match exactly the fund φ,
- $d_{i,\varphi}$ denotes the distance between the investor i and fund φ
- k denotes the ESG preferences intensity

The ESG Investor's Problem



$$U_{HS}^{ESG}(x) = R_{HS} - f_{HS} + u_0 - kx \qquad U_{LS}^{ESG}(x) = R_{LS} - f_{LS} + u_0 - k(\lambda_S - x)$$

HC

$U_{HC}^{ESG} \ll 0$

LC

$U_{LC}^{ESG} \ll 0$

The Manager's Problem

Fund managers choose the fees that maximize their profits (zero marginal costs) given investors' demand functions and the other managers' strategies.

Fees are a fraction of AUM (mutual funds)

$$\max_{f_\varphi} \Pi_\varphi = f_\varphi \left(q_{S,\varphi} + q_{N,\varphi} \right),$$

Equilibrium

Conventional funds compete à la Bertrand
HC fund sets a fee f_{HC} such that

$$R_{HC} - f_{HC} > R_{LC}$$

$\Rightarrow$ HC fund drives LC fund out of the market.

Equilibrium

Conventional funds compete à la Bertrand
HC fund sets a fee f_{HC} such that

$$R_{HC} - f_{HC} > R_{LC}$$

$\Rightarrow$ HC fund drives LC fund out of the market.

No investors choose to invest in the low quality conventional (LC) fund

$$\overset{*}{q}_{N,LC} = 0,$$
$$\overset{*}{q}_{S,LC} = 0.$$

Equilibrium

High quality funds HS and HC compete to attract neutral investors. If the funds compete à la Bertrand they set a fee $f_{HS} = 0$ and $f_{HC} = R_{HC} - R_{HS} \geq 0$.

However setting $0 < f_{HS} < R_{HS} - R_{LS}$ the HS fund serves the ESG investors who have a sufficiently high preference for him.

The HC fund sets $f_{HC} < f_{HS}$ and serves all neutral investors.

Equilibrium

High quality funds HS and HC compete to attract neutral investors. If the funds compete à la Bertrand they set a fee $f_{HS} = 0$ and $f_{HC} = R_{HC} - R_{HS} \geq 0$.

However setting $0 < f_{HS} < R_{HS} - R_{LS}$ the HS fund serves the ESG investors who have a sufficiently high preference for him.

The HC fund sets $f_{HC} < f_{HS}$ and serves all neutral investors.

ESG funds cater to ESG investors and the high quality conventional fund caters to neutral investors

$$\begin{aligned} \overset{*}{q}_{N,HC} &= \lambda_N, \\ \overset{*}{q}_{N,HS} &= \overset{*}{q}_{N,LS} = 0. \end{aligned}$$

ESG Funds

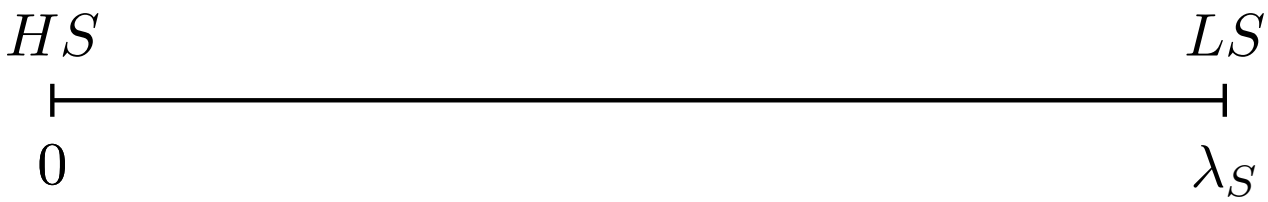
The two ESG funds, HS and LS, compete only against each other for ESG investors

ESG Funds

The two ESG funds, HS and LS, compete only against each other for ESG investors

Three cases:

Case 1: small preference intensity k: All ESG investors invest in the HS fund.



$$x = \lambda_S$$

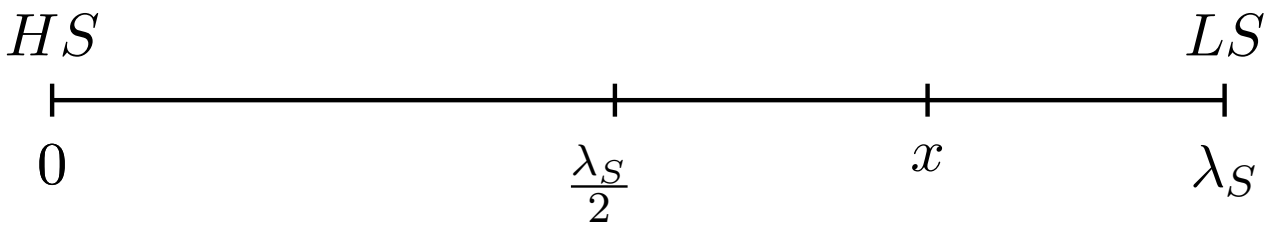
ESG Funds

The two ESG funds, HS and LS, compete only against each other for ESG investors

Three cases:

Case 1: small preference intensity k: All ESG investors invest in the HS fund.

Case 2: medium preference intensity k: Both ESG funds share the market of ESG investors



$$x = \frac{\lambda_S}{2} + \frac{\Delta}{6k}$$

ESG Funds

The two ESG funds, HS and LS, compete only against each other for ESG investors

Three cases:

Case 1: small preference intensity k: All ESG investors invest in the HS fund.

Case 2: medium preference intensity k: Both ESG funds share the market of ESG investors

Case 3: large preference intensity k: The market is not covered and funds act as local monopolies

ESG Funds

The two ESG funds, HS and LS, compete only against each other for ESG investors

Three cases:

Case 1: small preference intensity k: All ESG investors invest in the HS fund.

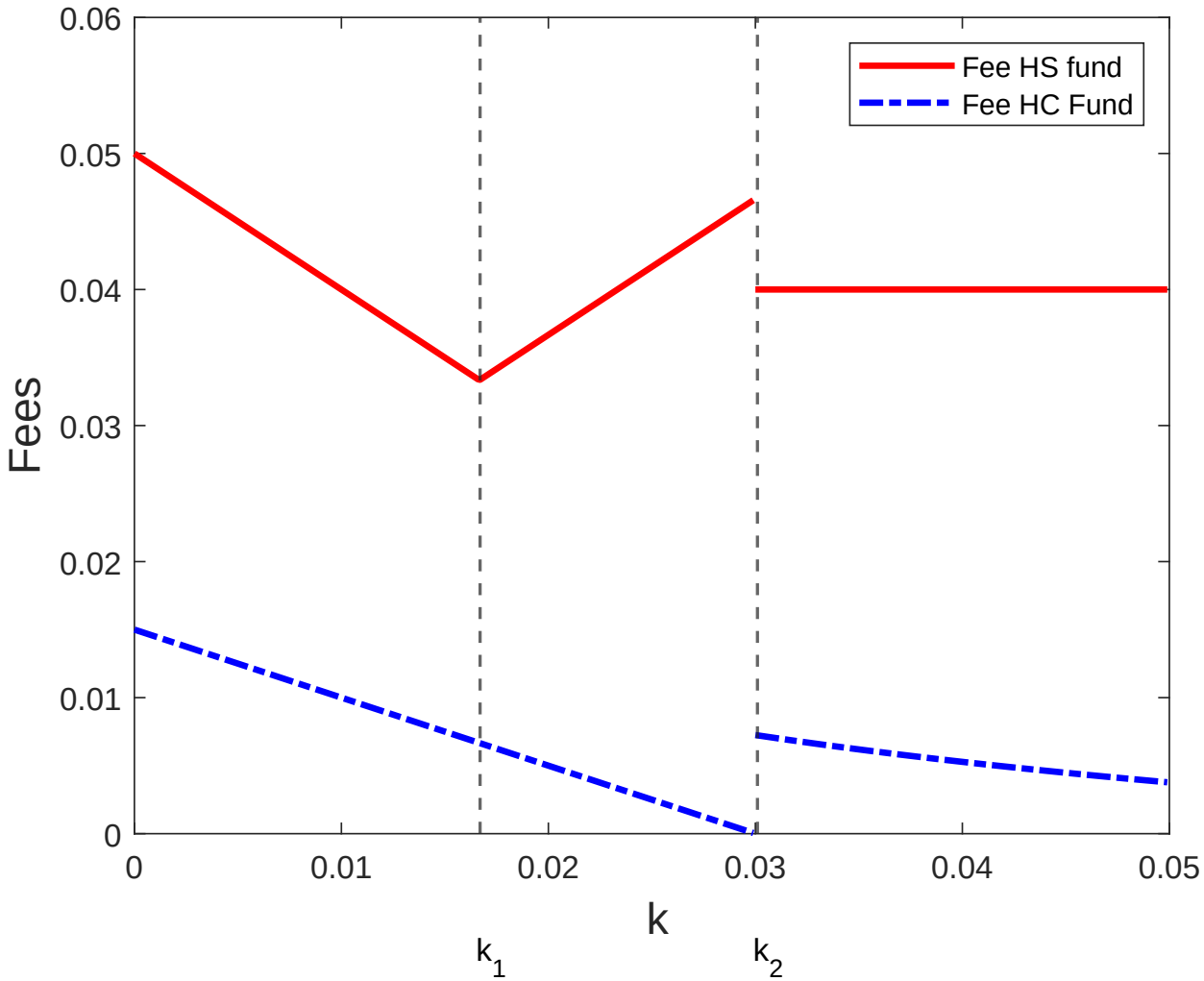
Case 2: medium preference intensity k: Both ESG funds share the market of ESG investors

Case 3: large preference intensity k: The market is not covered and funds act as local monopolies

LS fund charges a lower fee than HS, but not low enough to offset differences in before-fee performance

Fees comparison

Case 1 **Case 2** **Case 3**



Fees comparison

When the ESG market is covered by both funds, $k_1 < k < k_2$, the average fee in the ESG segment is higher than or equal to the fee in the conventional segment of the market:

$$\frac{f_{HS} + f_{LS}}{2} \geq f_{HC}.$$

Fees comparison

When the ESG market is covered by both funds, $k_1 < k < k_2$, the average fee in the ESG segment is higher than or equal to the fee in the conventional segment of the market:

$$\frac{f_{HS} + f_{LS}}{2} \geq f_{HC}.$$

This result is consistent with the empirical evidence that ESG funds charge higher management fees than conventional funds:

- Raghunandan and Rajgopal (2022),
- Baker et al. (2022) and
- Huij et al. (2023).

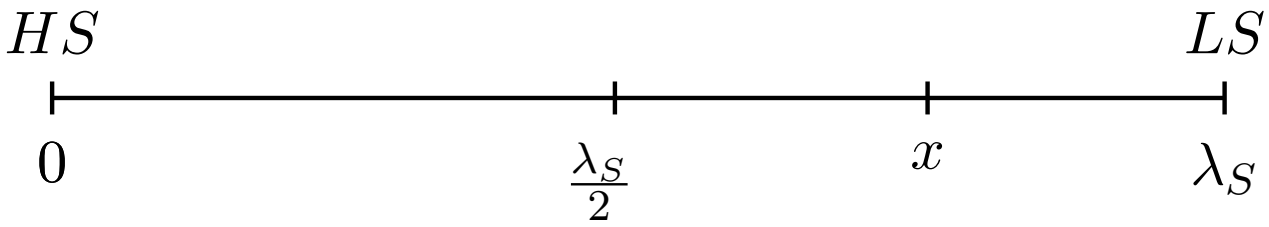
ESG Mandates

Drivers for integrating ESG into mandates

- Regulation (SEC, ESMA)
- Investor demand
- Consumer consciousness

ESG Mandates

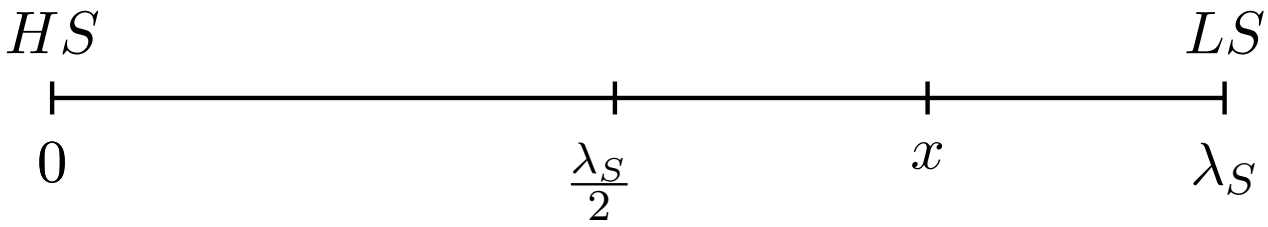
ESG and Conventional Funds



$$x = \frac{\lambda_S}{2} + \frac{\Delta}{6k}$$

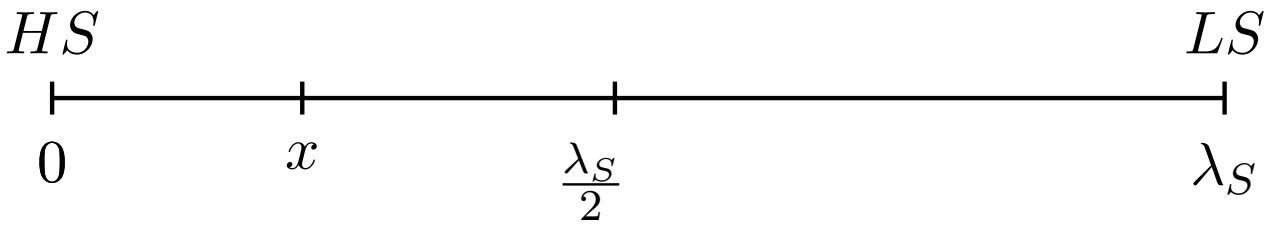
ESG Mandates

ESG and Conventional Funds



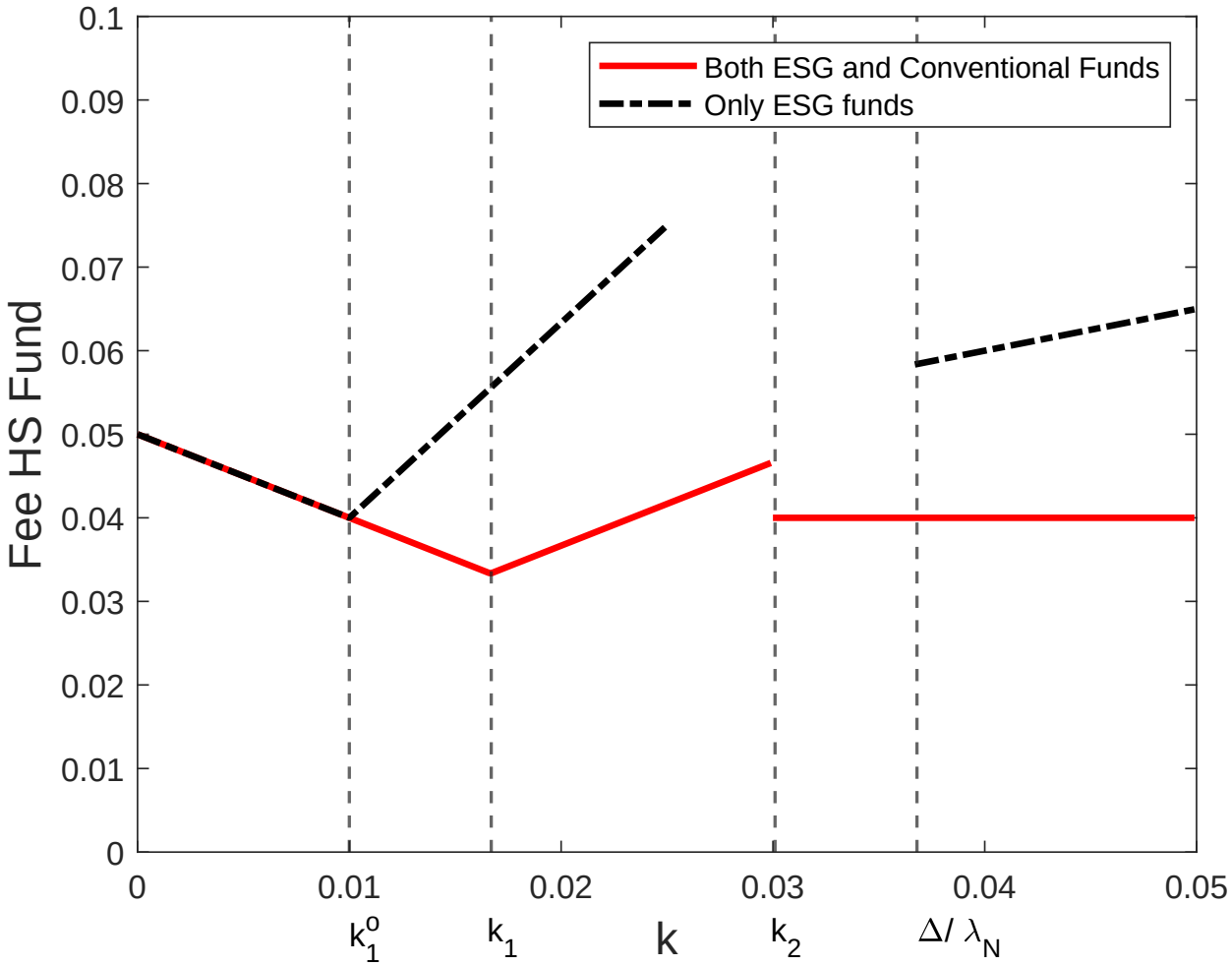
$$x = \frac{\lambda_S}{2} + \frac{\Delta}{6k}$$

Only ESG Funds

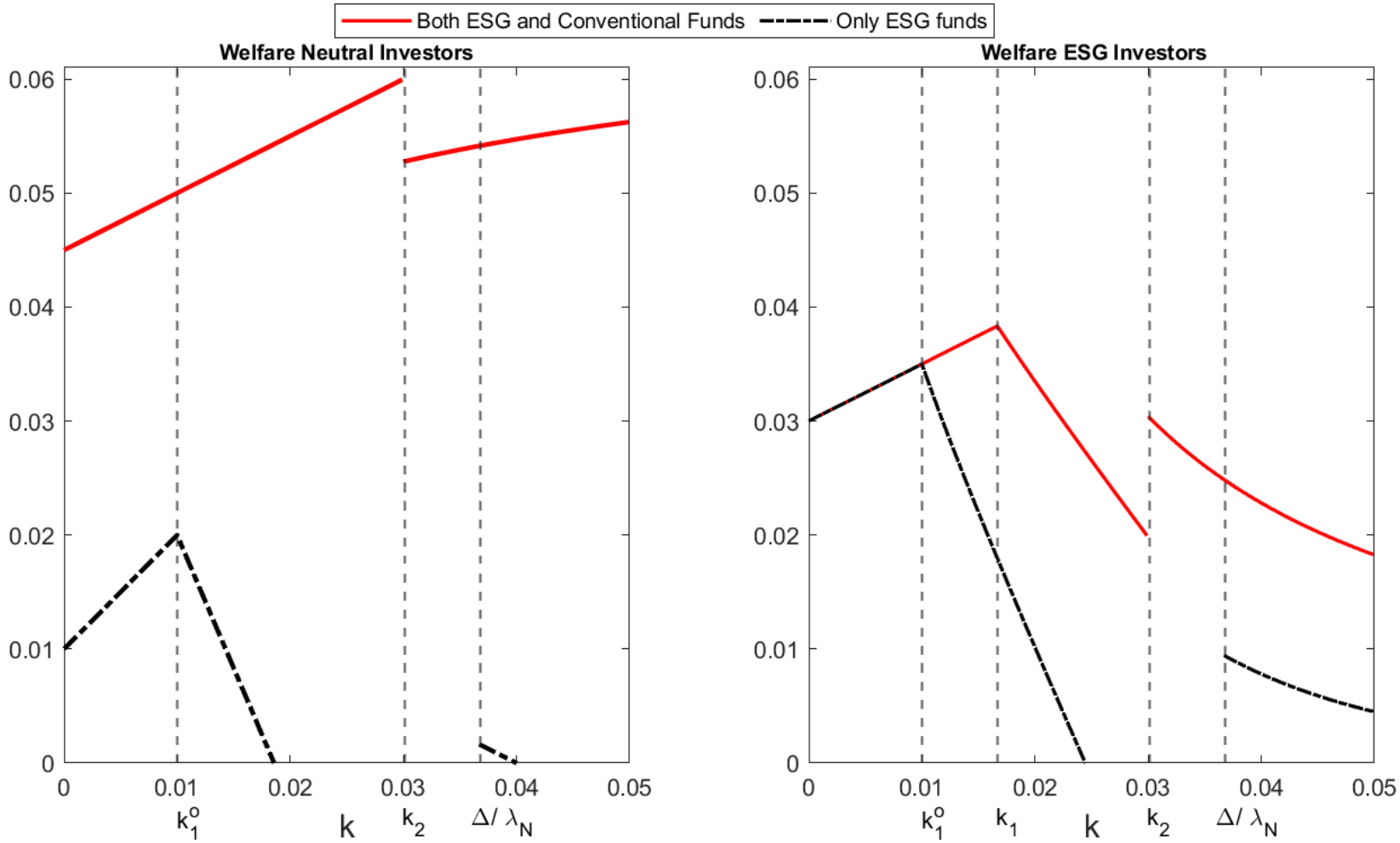


$$x = \frac{\lambda_S}{2} + \frac{\Delta}{6k} - \frac{\lambda_N}{3}$$

ESG Mandates



Investors' welfare



Implications

Model explains why ESG funds charge higher fees.

Implications

Model explains why ESG funds charge higher fees.

New empirical predictions:

- more variation in fees in the ESG space
- more variation in net performance: survival of underperforming ESG funds

Conclusions

First to ask: How does the existence of investors with heterogenous ESG preferences affect competition in the market for financial services?

Conclusions

First to ask: How does the existence of investors with heterogenous ESG preferences affect competition in the market for financial services?

Segmentation arises endogenously in a model with heterogenous investors and heterogeneous funds

Conclusions

First to ask: How does the existence of investors with heterogenous ESG preferences affect competition in the market for financial services?

Segmentation arises endogenously in a model with heterogenous investors and heterogeneous funds

New predictions:
- Coexistence of funds with different net performance in the ESG segment

- No differences in performance in the more competitive conventional segment of the market