

# Collective investor impact in secondary markets

A technical report on collaborative engagement and coordinated price signaling

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# About

The 2° Investing Initiative (2DII) is an international, non-profit think tank working to align financial markets and regulations with the Paris Agreement goals.

2DII coordinates some of the world's largest research projects on climate metrics in financial markets. In order to ensure our independence and the intellectual integrity of our work, we have a multi-stakeholder governance and funding structure, with representatives from a diverse array of financial institutions, regulators, policymakers, universities and NGOs.

## Author of this report:

Mickaël Mangot

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# Executive summary

This technical report provides an in-depth analysis of two collective impact mechanisms usable on public (secondary) markets that **would not be as effective if done by single investors (even the largest ones)**: price signaling and engagement. It discusses the narrative underlying the use of those mechanisms and conditions under which they can turn effective to make a positive difference.

The results are useful for investors who aim at maximizing their impact potential through collective action as well as for managers of coordination devices (ESG labels, ESG indices, proxy advisors, etc.) to improve their offering.

Regarding **collaborative engagement**, we have noted an ongoing shift of corporate ownership towards large (passive) institutional investors. This tectonic change has modified the narrative in academia around shareholder stewardship. While scholars used to consider that shareholders were doomed to be rationally apathetic due to a free-rider problem, the rise of “universal owners” fed hope in “systematic stewardship”. That hope rapidly turned illusory: observations of the behavior of the largest fund managers (the “Big Four”) show that their interests do not fully align with the need for “systematic stewardship”. Therefore, collaborative engagement of various investors (including fund managers, hedge funds, and asset owners) may constitute the long-sought solution. Nevertheless, investors that aim to coordinate their engagement efforts should pay special attention to the forming and organization of coalitions to increase success odds and decrease the residual free-riding problems (within and outside the coalition). We derived a list of recommendations from the academic literature on those issues which are further discussed in the paper:

1. Mix global and local investors
2. Include “the Big Four” when possible
3. Team up with green activist funds
4. Align objectives across participants
5. Adapt requests to the target
6. Organize roles with a multi-tier system
7. Make members accountable
8. Make good use of advisory votes
9. Exercise your full shareholder authority

Regarding **coordinated price signaling**, we note a series of critical hurdles that complexify the three pathways studied: cost of capital, signal to managers and signal to shareholders. Our investigation shows that achieving real-life impact through the altering of security prices in secondary markets via coordinated action proves to be very hypothetical, at best. Indeed, many obstacles do obstruct the way of impact investors opting for market signaling in secondary markets, namely:

- the very large size of “sustainable” investment segments within equity and bond markets,
- the high price elasticity of demand for stocks and bonds, requiring very large amount of capital to influence market prices,
- the poor responsiveness of firms’ investment decisions to actual cost of capital (especially cost of equity),
- the difficult interpretation of market returns by shareholders and managers,
- the current trend of decoupling managers’ pay from the stock price,
- the poor effectiveness of most coordination devices.

Among several coordination devices for price signaling, **we consider the replication of ESG indices** to be the mechanism the most relevant for generating collective impact through price signaling as indices ensure portfolio homogeneity across investors, unlike ratings, labels or regulations (e.g., EU’s SFDR, Green taxonomy or Climate Benchmarks) which leave more leeway to investors on how to build their portfolios.

Based on empirical estimates provided by academic literature, we estimate the average effect of capital allocation in equity and bond markets on security prices and corporate investment. For equity, we estimate that the AuM mobilized by passive funds tracking the same ESG index should represent at minimum 10% of total market cap of targeted issuers to credibly motivate managers/shareholders to act upon the market signal (when considering a 25% stock price deviation to competitors as a necessary signal) and 67% to significantly affect corporate investment through cost of equity. For bonds, we estimate that the AuM required should represent at minimum 27% of outstanding debt to significantly affect corporate investment through cost of debt.

While in most cases, such thresholds seem hard or impossible to achieve, we nevertheless propose a series of recommendations that increase chances of success for coordinated price signaling:

1. Choose a “pure” selection criterion
2. Follow the exact same strategy (e.g., by tracking an ESG index)
3. Restrict to (very) narrow market segments
4. Opt for strategies that incentivize brown firms to go green
5. Favor bonds over equity
6. Focus on financially constrained firms

Comparing the two studied strategies, we clearly show **higher confidence in the capacity of collaborative engagement to deliver impact compared with coordinated signaling.**

# Introduction

A growing number of funds self-brand as “impact funds”, including in public markets where impact mechanisms<sup>1</sup> documented by academic research are difficult to be deployed<sup>2</sup>.

This technical report provides an in-depth analysis of two collective impact mechanisms usable on public (secondary) markets that would not be as effective if done by single investors: price signaling and engagement. It discusses the narrative and the empirical evidence underlying the use of those mechanisms and conditions under which they can turn effective to make a positive difference.

We voluntarily restrain the scope of the paper to those two impact mechanisms and to public markets (i.e., bonds and public equity) because collective strategies are less necessary in private markets where the main impact mechanisms relate to funding (i.e., the service of underserved market segments and the provision of concessional/flexible capital) and de facto have an impact potential (per euro invested) mostly unrelated to an individual or collective deployment.

Across the report, impact will be used and understood as “*the causal and additional outcome to the world in comparison with a counterfactual baseline scenario*”. Impact is measured in relation to various social or environmental goals. An impact (i.e., an additional change) can be positive or negative, intended or unintended, measured or not.

“Impact investing” represents a category of financial products seeking positive, intended and measurable impacts alongside generating a financial return<sup>3</sup>. It aims at generating impact rather than only aligning with impact (i.e., investing in securities of positive impact companies). Such a distinction between impact generation and impact alignment is crucial for our discussion and has already been emphasized by researchers<sup>4</sup>.

## **Can self-labelled impact funds operating in public markets and relying on collective forms of engagement or price signaling deliver such a positive, intended, measurable and additional change that goes with their designation?**

In this report, we distinguish between *collaborative* and *coordinated* actions as subcategories of collective actions. A collaborative action is a subcategory of collective action that implies the sharing of resources between group participants and/or a clear repartition of roles while a coordinated action relies on parallel decisions by participants following the exact same strategy.

Across the report, we will only be interested in the potential observable outcomes of those collective strategies (i.e., their collective contribution) when done by an identifiable group of market participants without questioning how to, eventually, allocate the positive outcomes across the group participants (i.e., the attribution). As stimulating as this question might be, it goes beyond the scope of this report.

We insist that the lens of the paper is on the real impact potential of the collective actions performed at the level of the group, and not on their hypothetical impact if many/all other market participants would adopt the same strategy. Impact thinking, whether at individual or group level, focuses on the real consequences of the actions performed by agents and not on the hypothetical consequences of the rules followed by agents.<sup>5</sup>

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<sup>1</sup> See 2DII (2022) for a description of the various impact mechanisms and how they are actioned by several financial products.

<sup>2</sup> See Caldecott et al. (2022) for a discussion of impact potential across asset classes.

<sup>3</sup> Impact investing is indeed often characterized by industry organizations following three dimensions: intentionality, additionality and measurement.

<sup>4</sup> Busch et al. (2021)

<sup>5</sup> Impact is to be connected to “act consequentialism” in ethics, which is distinct from another ethical tradition, namely “rule consequentialism”.

# Collective impact mechanism #1: collaborative engagement

## ESG shareholder engagement as a major (collective) impact mechanism

### What shareholder engagement is

Engagement and voting are classical forms of “stewardship”, the act of protecting an asset owner’s interests, and delivering returns and long-term value from the assets. Stewardship is the process of intervention to make sure that the value of the assets is enhanced over time, or at least does not deteriorate through neglect or mismanagement.

Given its focus on preserving and enhancing long-term value on behalf of the asset owner, engagement can encompass the full range of issues that affect the long-term value of a business, including strategy, capital structure, operational performance and delivery, risk management, executive pay and corporate governance.

Using a risk perspective, ESG factors are clearly integral to these dimensions at the heart of stewards’ scrutiny. In a double materiality perspective, engagement is also more and more considered as a necessary tool to improve companies’ behaviors towards the society and the environment. The 2017 revision to the EU Shareholder Rights Directive aimed for “*sustainable shareholder engagement*” to “*improve the financial and nonfinancial performance of companies, including as regards environmental, social and governance factors*”. In the same vein, the 2020 iteration of the UK’s Stewardship Code aims for “*long-term value ... leading to sustainable benefits for the economy, environment and society*”.

Stewardship is also more and more used by environmental activists as a practice to influence corporate effects on society and the environment.

### Different forms of engagement

The sustainable strategies of active stewardship include a multitude of actions, especially private engagement dialogues, shareholder resolutions, and voting at annual general meetings. Private dialogue with management about an ESG issue is often an initial step. When the goal of a dialogue is achieved, the dialogue process is considered successful and closes, however, if dialogue fails to provide satisfactory results and is unsuccessful from the owner’s perspective, the process can move into visible (public) activism, such as a shareholder proposal to the AGM. Another option is to exclude the target from the portfolios of the activists.

Various typologies of engagement actions can be found in the regulatory, academic or grey literature. For instance, the former UK Code set out a helpful list of escalation measures that can be considered to advance engagements. While the first three might be seen by many engagement professionals as part of a standard set of tools in normal dialogue with companies, the subsequent four are more confrontational and can be recognized as forms of escalation:

- holding additional meetings with management specifically to discuss concerns;
- expressing concerns through the company’s advisers;
- meeting with the chair or other board members;
- intervening jointly with other institutions on particular issues;

- making a public statement in advance of general meetings;
- submitting resolutions and speaking at general meetings; and
- requesting a general meeting, in some cases proposing to change board membership.

An Investor Forum white paper published in November 2019 also identifies twelve different forms of engagement. Five of these are types of individual engagement (engagement by a single investment institution) while the others are forms of collaborative engagement (where an institution works with one or more others).

In general, engagement actions can be classified across three dimensions:

- **Private vs public:** engagement can take the form of private or public actions. Private actions include implementing a private dialogue with the company management, writing a private letter to the management, meeting with the chair or other board members, etc. Oppositely, public actions include making a public statement in advance of general meetings, submitting resolutions and speaking at general meetings, requesting a general meeting, in some cases proposing to change board membership, etc. Research has shown that investors are much more likely to privately engage than to file a shareholder proposal<sup>6</sup>. Studies claim that many active sustainable investors interact with companies in their portfolios behind the scenes and out of sight from media scrutiny<sup>7</sup>.
- **Consensual vs confrontational:** while some actions are within the realm of normal interactions with invested companies (private letters, dialogue, meetings with the management, etc.), others resemble more to overt confrontation. The former come first in a typical escalation strategy and leverage the common interests of investors and investees. Indeed, it is commonly observed an improvement in corporate performance and a rise in the stock price for companies that endorsed specific ESG changes required by engagers<sup>8</sup>. Still, when consensual dialogue is unsuccessful and important milestones are not met, engagers might opt for more confrontational techniques, including making a public statement in advance of general meetings, submitting resolutions and speaking at general meetings, requesting a general meeting, proposing to change board membership, formally requesting a special audit of the company, taking concerns public in the media, seeking governance improvements and/or damages through litigation or arbitration, divesting or formally adding the company to an exclusion list, etc. Activist hedge funds have used confrontational versions of engagement to target firms with high environmental impact, with a notable example being Engine No. 1's vote targeting Exxon Mobil's board composition (see Box #2 on p. 29). There are early signs of this disruptive model of driving corporate change being scaled up.
- **Individual vs coordinated:** engagement can be run individually or within a collective. Collective engagement is often the most resource-efficient method for engagement as every investor is inevitably resource-constrained. Pooling those limited resources should consequently enable greater efficiency. A multitude of investor coalitions covering ESG have been created recently – with environmental issues in particular rallying investors together. Among these are Climate Action 100+ (CA 100+), the Asia Investor Group on Climate Change (AIGCC), Australia's Investor Group on Climate Change (IGCC), Europe's Institutional Investor Group on Climate Change (IIGCC) and Ceres in the US. Collaborative engagement is considered to be highly effective, as it leverages the shareholders' influence without increasing the risk of running an overconcentrated portfolio<sup>9</sup>. Therefore, collaborative engagement is the topic of this chapter.

It is to be noted that engagement is not restricted to equity owners. If some actions in relation with shareholder rights are, by nature, out of scope for bondholders, others are still operant. Fixed-income stewardship is getting more attention<sup>10</sup> and financial institutions are developing engagement strategies for corporate fixed income and, in a lesser extent, for sovereign debt<sup>11</sup>.

<sup>6</sup> McCahery, Sautner and Starks (2016); Krueger et al. (2020).

<sup>7</sup> Barko et al. (2022), Rehbein et al. (2013)

<sup>8</sup> Serafeim and Yoon (2022), Flammer et al. (2021)

<sup>9</sup> Dimson et al. (2021)

<sup>10</sup> Hoepner and Schneider (2022)

<sup>11</sup> Responsible Investor (2022)

## Academic and practitioners' support

### Theoretical and empirical support

Shareholder engagement to generate ESG impact is an approach that has gathered both theoretical and empirical support among academia and practitioners.

First, the approach is supported by theoretic models<sup>12</sup> that show that in a competitive world, voice (engagement) is more effective than exit (divestment) in pushing firms to act in a socially responsible manner. If a majority of investors are socially responsible, voice is supposed to deliver the socially desirable outcome. Even when socially responsible investors are not a majority across the whole market, as long as they can concentrate their holdings in a subset of firms in which they represent a majority (without significantly affecting the diversification of their portfolio), they can have an impact that is proportional to their size. Thus, they can do better than an exit strategy, which will have an impact less than proportional to the AuM of socially responsible investors.

This conclusion is also in line with the findings from Krueger, Sautner and Starks (2020). The authors surveyed institutional investors and found that they consider engagement rather than divestment to be a more effective approach to address climate risks. Practically, **engagement appears to be the most effective impact tool in secondary markets**, especially in the public equity market, where investors do not directly finance investees and can have tough difficulties affecting market prices (see next chapter).

Second, empirical evidence points in the direction of a positive effect of engagement actions on ESG issues if specific requirements are met (see table 1). Some high-profile engagement campaign successes, like the one by Engine No.1 at Exxon in 2021, which saw the US activist fund secure three positions on the US oil major's board for its nominees, have strengthened the case.

Several empirical studies have analyzed the extent to which companies comply with shareholder engagement requests on ESG issues. They obtain that a significant part, between 18% and 60%, achieves success.

***Table 1: success rates of ESG engagement campaigns***

Study	# of requests	Sample period	Success rate	Type of requests
Bauer et al. (2022)	7,415	2007-2020	20%	ESG
Dimson et al. (2021)	1,654	2008-2018	53%	ESG
Barko et al. (2022)	847	2005-2014	60%	ESG
Hoepner et al. (2020)	1,712	2005-2018	31%	ESG
Dyck et al. (2019)	147	2004-2013	33%	ESG
Dimson et al. (2015)	2,152	1999-2009	18%	ESG

A consistent finding across the literature is that **requests in the environmental domain tend to have lower success rates compared with requests in the social domain**, and that requests in the corporate governance domain have the highest rate of success. Dimson et al. (2015) attribute this to the fact that reforms in the environmental domain are likely to be costlier than those in the governance domain. More explicitly, Barko et al. (2022) show that requests that require some form of costly reorganization have lower success rates compared with requests that entail lower costs.

<sup>12</sup> Broccardo et al. (2020)

### Effects on ESG ratings and ESG information disclosure

Engaging companies on ESG issues is often found to positively influence ESG ratings of the engaged companies. Barko et al. (2022) and Dyck et al. (2019) show that shareholder proposals are associated with subsequent increases in the ESG ratings of targeted companies. Barko et al. (2022) obtain that private engagement induces ESG rating adjustments: firms with poor ex ante ESG ratings experience a rating increase after complying with the activist's demands, whereas firms with high ex ante ESG ratings experience a rating decrease following the revelation of their ESG problems. Using a propensity score matched difference-in-differences research design, Bonacchi et al. (2020) observed that the introduction of the engagement disclosure tiering system in UK was associated with increases in ESG performances (in the form of ESG ratings) in investee companies. Their results are consistent with high quality engagement investors (Tier 1) being more effective than lower quality engagement investors (no-tier) in improving ESG performance overall.

Engaging companies on ESG issues also leads to an improved disclosure of ESG information by engaged companies. Indeed, Flammer, Toffel, and Viswanathan (2021) find that firms that are targeted by more environmental shareholder proposals are more likely to disclose climate risk information voluntarily.

### Real-life outcomes of engagement campaigns

A multitude of recent academic papers have investigated whether engagement on ESG issues by shareholders had led to real-life ESG improvements.

For instance, Akey and Appel (2020) and Chu and Zhao (2019) find that hedge fund activism campaigns are associated with a 17% to 20% decrease in chemical emissions at plants of targeted firms. Naaraayanan et al. (2020), using plant-level data, find that targeted firms targeted by environmental activists reduce their toxic releases, greenhouse gas emissions, and cancer-causing pollution. Azar, Duro, Kadach, and Ormazabal (2021) find that ownership and engagement of "Big Three" asset managers (Blackrock, Vanguard, and State Street Global Advisors) have a robust and negative effect on the level of total CO<sub>2</sub> emissions among MSCI index constituents. In contrast, Bauer et al. (2022) obtain in their analysis a decrease in CO<sub>2e</sub> intensity due to environmental engagements but that total CO<sub>2e</sub> emissions are unaffected.

### Positive spillover effects

Other studies have noted that ESG improvements were not restricted to targeted firms but also reached other companies through various channels.

Denis, Jochem, and Rajamani (2020) find that the peers of firms experiencing a weak say-on-pay proposal (i.e., a low support by shareholders to the executive compensation program proposed by the firm) decrease CEO compensation by 10.1% relative to a control group. Similarly, firms sharing a director with a firm that experienced a proxy contest to replace board members improve their corporate governance subsequently (Zhang, 2021). Bauer, Derwall & Tissen (2022b) obtain that proposal withdrawals lead to an average 7.9% increase in the environmental score of non-targeted firms that are connected to the target firm through overlapping directorships. They also find that connected firms are more likely to set an emission target after a proposal withdrawal at the target firm but do not significantly change their CO<sub>2e</sub> emissions.

### Institutional support

Alongside the growing importance of institutional investors in corporate ownership, regulators and professional associations have issued stewardship codes to provide detailed frameworks supporting investor stewardship.

In the aftermath of the Great Financial Crisis, UK's Financial Reporting Council issued the world's first stewardship code in 2010. Industry best practice had not delivered in the run-up to the financial crisis, but a code with regulatory backing was thought likely to have greater force. Industry acceptance of the code was

relatively rapid, particularly among fund managers. The 2010 Stewardship Code had seven principles. Institutional investors should:

- publicly disclose their policy on how they will discharge their stewardship responsibilities;
- have a robust policy on managing conflicts of interest in relation to stewardship and this policy should be publicly disclosed;
- monitor their investee companies;
- establish clear guidelines on when and how they will escalate their activities as a method of protecting and enhancing shareholder value;
- be willing to act collectively with other investors where appropriate;
- have a clear policy on voting and disclosure of voting activity;
- and report periodically on their stewardship and voting activities.

The UK Stewardship Code went through a more fundamental redrafting to produce the 2020 version of the code. The new code includes twelve principles (plus an alternate six for service providers), where formerly there were seven, and displays an increased ambition for practical delivery by signatories. Investors are expected to report annually on activity, and most importantly, on outcomes from that activity. Each of the new principles has associated outcomes that must be reported on, and requires concrete examples of what has been delivered practically for clients and beneficiaries. Signatories will no longer fulfil the demands of the Code by publishing policy statements filled with ambitious assertions, instead they must deliver practical effects from their actions. Principles 7 and 8 require the integration of ESG factors into the investment process and include an effective oversight of service providers. The disclosures of related outcomes need to be explanations of how these processes have been delivered effectively on behalf of clients and beneficiaries. Principles 9 to 12 cover engagement (and voting) activities. The intended outcome of these principles (that must be part of the annual reporting) is to show substantive change at companies (or other investee assets) as a result of the engagement activity. The disclosure of at least some voting outcomes, not just the investor's voting activity, is also expected.

The European Union has also embraced the concept of engagement. Directive (EU) 2017/828 of 17 May 2017 amended Directive 2007/36/EC—the so-called Shareholders' Rights Directive (hereinafter, SRD II)—precisely “as regards the encouragement of long-term shareholder engagement”. Based on “clear evidence” of the inadequacy of the current level of institutional monitoring of, and engagement with, portfolio companies, and the excessive focus on short-term returns, the SRD II is aimed at encouraging long-term shareholder engagement. According to the SRD II, “effective and sustainable shareholder engagement is one of the cornerstones of the corporate governance model of listed companies”. Hence, Article 3(g) of the SRD II requires Member States to ensure (on a comply-or-explain basis) that institutional investors and asset managers “develop and publicly disclose an engagement policy” describing “how they monitor investee companies on relevant matters, including strategy, financial and non-financial performance and risk, capital structure, social and environmental impact and corporate governance, conduct dialogues with investee companies, exercise voting rights and other rights attached to shares, cooperate with other shareholders, communicate with relevant stakeholders of the investee companies and manage actual and potential conflicts of interests in relation to their engagement.”

Revisions of both the UK Stewardship Code and the EU Shareholder Rights Directive target ESG stewardship. In the EU, the revision recognizes that “greater involvement of shareholders in corporate governance is one of the levers that can help improve the financial and non-financial performance of companies, including as regards environmental, social and governance factors”<sup>13</sup>. The 2020 iteration of the UK's Stewardship Code aims for “long-term value ... leading to sustainable benefits for the economy, environment and society”.

Similarly, in the Stewardship Code drafted in 2017 by the European Fund and Asset Management Association (EFAMA), the concept of stewardship covers the monitoring of, voting the shares of, and engagement with, investee companies. Stewardship is defined as “engagement, i.e. the monitoring of and interaction, with

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<sup>13</sup> Directive (EU) 2017/828

*investee companies, as well as exercising voting rights attached to shares. Engagement can be on matters such as: business strategy and its execution; risk management; environmental and social concerns; corporate governance issues such as board composition and the election of independent directors, together with executive remuneration; compliance, culture and ethics; and performance and capital structure. Asset managers have a duty to act in the best interests of their clients as they are entrusted with their money.”* EFAMA Principles are intended to enhance the quality of dialogue with companies, and “do not constitute an obligation to micro-manage or intervene in the day-to-day affairs of investee companies or preclude a decision to sell a holding where that is the most effective response to such concerns.” For the European asset management industry, environmental and social issues are a relevant topic for engagement and practices in that domain (like for other engagement topics) should be improved.

And the trend is not stalling as very recent updates have shown. In its “Briefing on EC targeted consultation regarding SFDR Implementation” issued at end 2023, the Platform on Sustainable Finance acknowledges that “*engagement with investee companies is a vital tool for driving the transition of the real economy toward sustainability, particularly for companies outside the EU that may prioritize sustainability differently or use alternative indicators*”. The Platform “*suggests issuing guidance how PAI could be used for investors’ engagement activities, considering them as dynamic, actionable data within the engagement process rather than static information for exclusion. The focus should be on tangible improvements and impact in the real economy.*” The Platform also suggests exploring whether such guidance could include outlining standardized disclosure of engagement activities and/or a new EU Stewardship Code.

National sustainable finance labels are also pushing for a more transparent and more intense use of ESG shareholder engagement and voting by financial intermediaries. In its 2024 version, the French “Label ISR” (the largest sustainable finance label in Europe in terms of covered AuM) makes the ESG engagement policy (dialogue and voting) with issuers one of its four pillars for labelling. One criterion is that the general voting policy and the resources in place are consistent with the fund’s objectives. In practice, the asset management company must have formalized its voting policy and published the latter on its website. It must also publish the latest voting policy report on its website. The other criterion is that the ESG engagement policy and the means implemented are consistent with the fund’s objectives. It implies that the ESG engagement policy must have been formalized by the management company and published on its website. More concretely, the applicant fund must demonstrate that it has processes in place to ensure that each ESG engagement action is subject to i) an explicit request to the issuer, ii) a clear objective, enabling the degree of success to be assessed, iii) a predefined timeframe, at the end of which a formal assessment is made, and iv) when necessary, follow-up and escalation actions. Finally, the applicant fund publishes its latest ESG engagement report on its website.

**Against this backdrop, in recent years, there has been a growing momentum across Europe that effective, outcome-oriented ESG engagement by asset managers and institutional investors should become a common practice.**

## The complex case for ESG shareholder engagement

### Free-riding and rational apathy

Despite the growing multi-stakeholder momentum on the need for institutional investors to perform credible stewardship, engagement actions have been known for decades to be hindered by a collective-action problem.

When there is dispersed ownership, shareholders bear all of the costs of overseeing corporate managers, but enjoy only a sliver of the gains if their oversight leads to performance improvements. As a result, shareholders ignore oversight and leave corporate leaders with a great deal of discretion over how they run their firms, discretion that allows for mismanagement, abuse and neglect of long-term environmental or social issues.

When a blockholder invests only her own capital, her incentive to engage with management is limited to the impact on the value of that capital, even though successful engagement positively affects all shareholders. In other words, engagement is a public good and is therefore underprovided relative to the social optimum.

Overcoming the problems that stem from this separation of ownership from control, so-called “agency costs”, has long been considered the principal problem in corporate governance.

Corporate law scholars have traditionally taken the view that a widely dispersed shareholder base is incapable of effectively monitoring management. More specifically, a theoretical argument holds that retail investors are unable to adequately inform themselves about their own voting behavior (**high information costs**) or to coordinate their voting behavior with other shareholders (**high coordination costs**). This is a necessary tactic given that, individually, they cannot exert sufficient influence to have a grip on management. Moreover, the costs of ensuring that a shareholder is provided with the necessary information are far too high for each individual investor in relation to the size of their shareholding.

Thus, each individual shareholder rationally opts to rely on other shareholders to perform the monitoring function and bear the associated costs, in the hope that they will themselves nonetheless benefit from their engagement (**free rider problem**).

As a consequence, shareholders, especially small-size shareholders like retail investors, have been characterized as displaying a “**rational apathy**”. The same logic applies, but to a lower extent, to moderate-size blockholders. Considering the abovementioned free-riding issue, Mahoney and Mahoney (2021) or Brest et al. (2018) have concluded that institutional investors are unlikely to ultimately steer the economy towards greater sustainability.

Finally, engagement is undermined by **shareholder self-selection**. When shareholders disagree with managers’ strategy, they tend to deny ownership or divest.<sup>14</sup> Therefore, they cannot lead engagement initiatives or bring their voice to initiatives launched by others.

## Uncertain incentives

A critical question to ask when one assesses the rational incentive for investors to perform costly ESG stewardship is the expected gains they can reap in case of success.

Interestingly, most studies have documented a positive effect on companies’ operating performance and stock prices in case of successful ESG engagements.

Barko et al. (2021) find that successful engagements boost targets’ sales. Risk-adjusted excess stock returns (with four-factor adjustment and relative to a matched sample of nonengaged firms) of successful engagements outperform those of unsuccessful engagements by 2.7%. Results are especially strong for firms with low ex ante ESG scores. Specifically, targeted firms in the lowest ex ante ESG quartile outperform matched peers by 7.5% in the year after the end of the engagement.

In the same vein, Flammer et al. (2021) find that companies which voluntarily disclose climate change risks following environmental shareholder activism achieve a higher valuation post disclosure, suggesting that investors value transparency with respect to firms’ exposure to climate change risks.

This effect on stock prices is relevant to asset managers. More valuable companies mean higher AuM. Increased performance also may attract new investors, which would further increase AuM, and may even give asset managers a justification for raising fees. Thus, asset managers have the incentive to invest in corporate oversight to the extent that increases in AuM and fees justify the associated costs.

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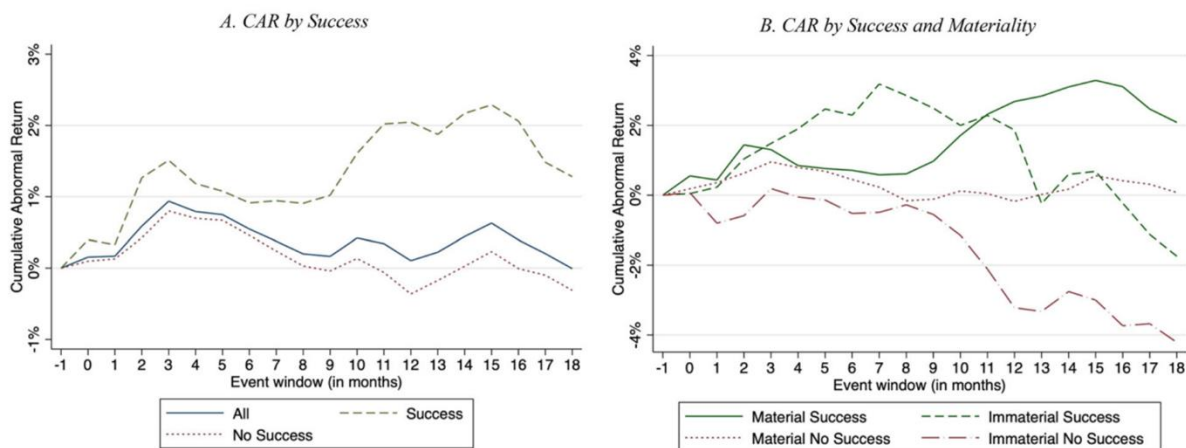
<sup>14</sup> Levit et al. (2023)

But the improvement in the engaged company's valuation is far from being systematic. It especially depends on the type of subjects they are engaged in and the engagement outcome (success or failure).

Bauer et al. (2023) study private shareholder engagements with 2,465 publicly listed firms from 2007 to 2020 about environmental, social, and governance (ESG) issues. They examine to what extent private engagements address financially material ESG issues and contribute to firm performance. They find that around 75% of engagements are financially material. Targets of successful material engagements significantly outperform their peers by 2.5% over the next 14 months. The average cumulative risk- and peer-adjusted abnormal returns in the 14 months after a material engagement are 2.4% (environment), 6.0% (social), and 2.3% (governance), whilst the abnormal returns of immaterial engagements are not statistically significant (see figure 1).

Beyond abnormal positive returns, Hoepfner et al. (2020) show that engagement on environmental, social and governance (ESG) issues can benefit shareholders by reducing engaged companies' downside risk, measured using the lower partial moment and value at risk.

**Figure 1: cumulative abnormal returns after engagements**



Source: Bauer et al. (2023)

Yet, the success rate and the subsequent potential change in the stock price pattern should not be considered as homogeneous within the sample of material engagements. Some shareholder requests may be financially material for engaged companies but would result in a financial net loss for the company. This occurs when the cost of reform for the company exceeds the benefits of complying with existing or upcoming regulations. Therefore, they have lower chance to obtain support by the company's management and/or reach majority during AGMs. If they succeed, then the positive reaction by the market is not granted.

## The (over)promise of universal stewardship

### Tectonic shifts in company ownership

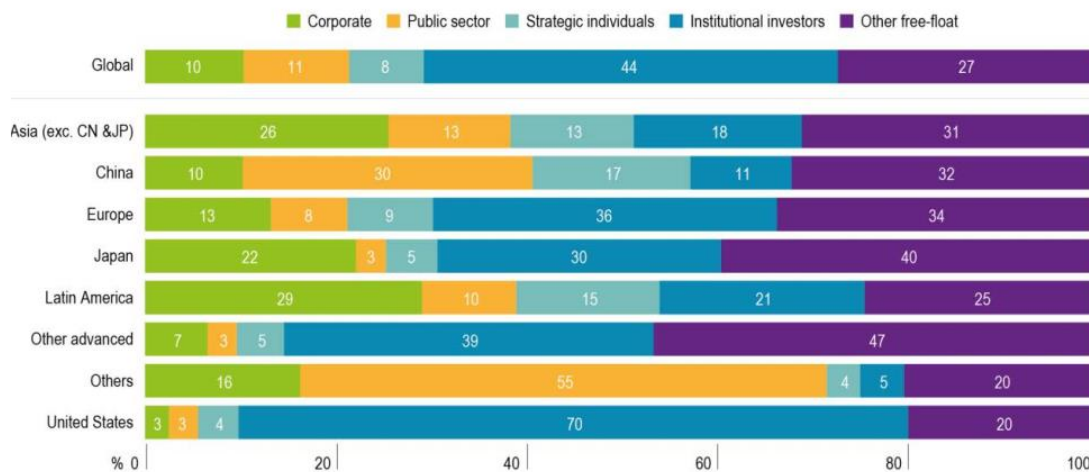
Collaborative engagement by institutional investors might be facilitated by profound changes in the ownership structures of publicly traded corporations in numerous jurisdictions.

### From direct to intermediated ownership

While the “Berle-Means corporation”<sup>15</sup>, with a widely dispersed shareholder base, has long been the paradigm of US and UK stock markets, they both have experienced an increasing concentration of share ownership among institutional investors since the 1980s at the latest. In parallel, the concentrated ownership structures of numerous continental European countries have been broken up in recent decades, and institutional investors have increasingly gained in importance in these countries.

As a consequence, institutional shareholdings are now the dominant form of equity ownership worldwide; according to OECD calculations, institutional investors currently hold 44% of the global market capitalization of listed companies<sup>16</sup>. In the US (and also in UK), institutional investors are by far the most important investor group, owning 70% of all listed companies. This dominance does not exist in other markets. For example, it is significantly lower in Europe (36%), in Japan (30%) and in China (11%)<sup>17</sup>.

**Figure 2: ownership structure of listed companies**



Source: OECD 2023

### Increased concentration in the asset management industry

A second major trend is the increasing concentration in the asset management industry.

The market is more concentrated in the US than elsewhere. Since 1980, the top 10 institutional investors have quadrupled their holdings in US stocks and, at the end of 2021, the five largest mutual fund and exchange traded fund sponsors accounted for 54 % of the industry’s total assets<sup>18</sup>. While not as dramatic as in the US, concentration within the asset management industry is significant in the EU as well. At the end of 2021, the top 20 EU asset managers accounted for 44% of total AuM of the industry.

Enriques and Strampelli (2024) collected data on the shareholdings of the 25 largest institutional investors in all continental European companies included in the Euro Stoxx 50 and the fifteen largest UK companies in the FTSE 100 as of the end of April 2022. They find that leading institutional investors rank among the largest shareholders in most companies comprised in the Stoxx 50 index. On average, the top institutional

<sup>15</sup> It refers to the description of a typical separation of ownership and control in America’s largest companies in Adolf Berle and Gardiner Means’ renowned 1932 book *The Modern Corporation and Private Property*. Diffuse share ownership and consequential managerial autonomy would then become hallmarks of American corporate governance for decades.

<sup>16</sup> OECD (2023)

<sup>17</sup> Ibid.

<sup>18</sup> Enriques and Strampelli (2024)

shareholder at these companies owns 6.54% of the equity, the top three institutional shareholders own 14.09%, and the top five institutional shareholders 18.50%.

They also look at the cumulative shareholding of the Big Three (BlackRock, Vanguard, State Street) and the Big Four (adding Fidelity). The percentage held by the Big Three and the Big Four in the Euro Stoxx 50 companies amounts to 8.31% and 9.40%, respectively.

**From active to passive intermediates**

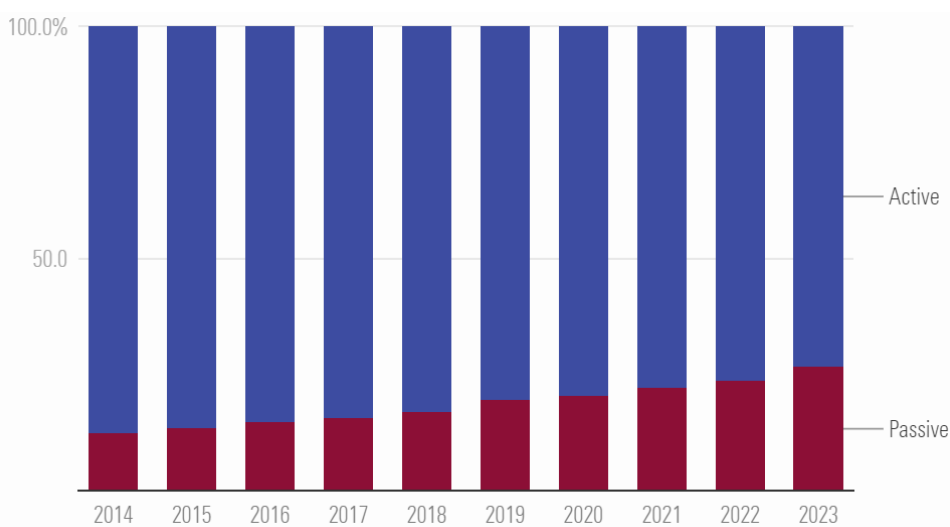
A third major movement in corporate ownership has been the shift from active to passive management by institutional investors.

Since Vanguard introduced the first publicly available index fund back in 1976 (Wells Fargo already offered a version for its institutional clients), the market share of passive funds (as a % of total AuM) has constantly increased to surpass 50% in the US in early 2024.

Focusing on equity, Enriques and Strampelli (2024) obtain that passive funds accounted for 18 % of US stock market capitalization at the end of 2022, surpassing the 14 % held by active funds. A remarkable feature of the passive index fund industry is its extreme concentration. The market is dominated by Blackrock, Vanguard and State Street Global Advisors (SSGA) - the Big Three - which, overall, manage over 90% of all AUM in passive funds in the US. According to Lazard<sup>19</sup>, at the end of 2021, Vanguard, BlackRock and State Street together held on average 18.7 per cent of S&P 500 companies. Their ownership of smaller companies was even more concentrated as they held 22.8 % of the shares in the S&P MidCap 400 index and 28.2 % in the S&P SmallCap 600 index.

In Europe, the trend is identical but suffers a significant lag. Morningstar data shows that as of December 31, 2023, 26.7% of total assets under management in Europe were attributable to passive strategies that replicate a benchmark (the universe considered includes open-ended funds and ETFs, while excluding money market funds and funds of funds), a proportion that has doubled over 10 years.

**Figure 3: market shares of active and passive funds in Europe**



Source: Morningstar. As of December 31, 2023.

The passive investing industry is also extremely concentrated in Europe. Top 5 ETF issuers - Ishares (Blackrock), Amundi, UBS, xtrackers (DWS) and BNP Paribas Easy - represent a total market share of 80%.

<sup>19</sup> Lazard (2022)

**Figure 4: largest ETF providers in Europe**

Sorted by end of year AuM		End of year 2023	
		ASSETS IN \$M	SHARE
1	iShares	143,264	35.5%
2	Amundi	75,809	18.8%
3	UBS	41,258	10.2%
4	Xtrackers by DWS	34,366	8.5%
5	BNP Paribas Easy	18,805	4.7%

Source: Trackinsight

### Too big to be passive?

Some of the fund managers – especially the Big Three – are often classified as too big to be passive<sup>20</sup>. This point of view relates to the public and political pressure exerted on large fund managers to actually exercise their voting rights and not to merely follow management or the recommendations of proxy advisors. Indeed, the rise of passive investing and its high concentration is considered to enhance the penchant of large institutional investors and fund managers for favoring ESG policies and initiatives<sup>21</sup>.

This view can be supported by several arguments. First, when investors are invested in virtually every firm in the market, they are less concerned with the performance of individual portfolio companies, and more interested in the state of whole economies, if not the world economy. Seen in this light, funds that “own the market” might be the ideal conduits for the internalization of a large fraction of the negative externalities caused by environmental damage or social disparities.

Second, a growing number of long-term institutional investors like pension funds recognized that sustainability (both of their portfolio companies and of society more generally) is a precondition for being able to honor their pension promises which would be due decades into the future. Therefore, assumably they should be more inclined to taking a long-term view of their holdings<sup>22</sup>.

And third, stewardship expenses should not be a problem for large asset managers. They manage hundreds of billions, if not trillions, of dollars and can spread diligence costs across the funds they manage. There is also a higher chance compared with small asset managers that the money will be well spent. Since they control so many votes, it is more likely that their positions will prevail. They also benefit from spillover effects. Stock research for asset-allocation decisions should generate much of the knowledge necessary for informed voting.

**All of this provides hope that the large asset managers might provide the management oversight that was lacking when retail investors dominated the market.**

<sup>20</sup> Mülbert and Sajnovits (2022)

<sup>21</sup> Condon (2020).

<sup>22</sup> Sautner and Starks (2021)

## The “portfolio primacy” theory

This “portfolio primacy” theory is based on the view that the goal of index funds is not to maximize the value of individual companies (shareholder primacy) but rather to maximize the value of their entire investment portfolio (portfolio primacy).

Diversified portfolios include both companies that externalize climate costs (“climate externalities”) onto society and companies that bear those costs. Therefore, the argument goes, whenever these climate externalities result in a net loss for the market portfolio, “a portfolio-wide owner should be motivated to curtail those externalities at the source.” According to the portfolio primacy theory, we should expect index funds to undertake the role of “climate stewards” and push companies to reduce their climate externalities<sup>23</sup>.

For example, oil companies are responsible for a significant fraction of carbon emissions, while companies in the hospitality industry (for instance, if they own waterfront hotels) are believed to be especially vulnerable to the effects of climate change. Therefore, a portfolio that includes both oil and hospitality stocks internalizes the externalities imposed by one industry on the others. If these climate externalities result in a net portfolio loss (in the example, if the losses suffered by the hospitality industry are larger than the corresponding gains for oil companies), the holder of the portfolio will benefit from a reduction or elimination of such externalities, even if it would damage one subset of companies (in the example, oil companies)<sup>24</sup>.

In fact, portfolio primacy has received increasing support among public institutions, market players, and environmental activists<sup>25</sup>. For example, in 2011, a report by the United Nations Principles for Responsible Investment argued that large asset managers are “**universal owners**,” with “*highly diversified and long-term portfolios that are representative of global capital markets*,” and are therefore exposed to “costs from environmental damage caused by companies.” The report concluded that “*it is in the financial interest of Universal Owners to address environmental impacts of business activities to reduce this exposure*.” In November 2017, the head of the Japanese Government Pension Fund stated that the main driver of return for the fund was market-wide performance, rather than company-level performance, and therefore the fund would hire social and environmental experts to try to improve market return by producing a positive impact on society and the economy. In December 2021, the Shareholder Commons, a nonprofit organization engaged in shareholder advocacy on social and environmental issues, submitted a shareholder proposal at BlackRock, the world’s largest asset manager, advocating a shift from traditional investment stewardship to portfolio primacy.

In a recent survey<sup>26</sup>, 861 finance academics, professionals, and public sector regulators and policy economists were asked to indicate the most important mechanisms in moving corporations to reduce their carbon footprint. Of all respondents, 48% chose “institutional investors” as one of the three most important mechanisms, alongside carbon taxes and government subsidies. Among respondents working in the private sector, 56% chose institutional investors.

## Beta vs alpha engagement

Portfolio primacy theory reveals an important fact: widely diversified investors are likely to be more incentivized than undiversified investors to address systematic risks like climate risk.

Gordon (2022) argued that large, diversified investors’ foremost duty should be to address “systematic” risk, as opposed to idiosyncratic, firm-level risk. Coining the term “**systematic stewardship**,” he noted that most asset managers’ business model drives them to pursue policies to mitigate portfolio-wide risk, which most notably would include factors such as climate change, financial stability, and social stability. In a similar vein,

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<sup>23</sup> Tallarita (2023)

<sup>24</sup> Ibid.

<sup>25</sup> Ibid.

<sup>26</sup> Stroebel and Wurgler (2021)

Coffee (2021) has shown that common owners should rationally concentrate on systematic risk and generally disregard the idiosyncratic risk of individual firms.

Therefore, broadly diversified institutional investors should have a special interest in actively influencing their portfolio companies to improve their ESG profile. This will hold true, in particular, for passive index funds, which do not have the option of disinvestment. For such investors, pushing for a better ESG profile across the entire portfolio might be a viable strategy even if it reduces the profitability of an individual portfolio company, as long as this strategy lowers the overall susceptibility of their portfolio to systematic market shocks and tail events.

This understanding has led to the emergence of a new form of shareholder activism, often referred to as “**beta activism**.” Unlike traditional activism seeking to generate returns from individual companies, beta activism aims to address economy or portfolio-wide risks, particularly related to climate change.<sup>27</sup>

**As a conclusion, there are several arguments to suggest that “systematic stewardship” could become a new normal for large and universal institutional investors. Unfortunately, existing evidence fails to support that they have already conducted an overhaul of their engagement practices, as highlighted by the following section.**

## A mixed state of affairs

### How large asset managers vote

Looking at the voting behavior of institutional investors, one can only provide mixed support for the theory of “portfolio primacy” or “universal stewardship”.

For instance, ShareAction recently analysed how 69 of the world’s largest asset managers voted on 257 shareholder resolutions aimed at improving companies’ impacts on some of the most pressing social and environmental issues. They tracked their performance over time, and coherence with their own policy commitments<sup>28</sup>.

They observed an overall poor support for shareholder resolutions on environmental or social issues and highlighted obvious stewardship deficiencies from major asset managers. Overall support for shareholder resolutions peaked in 2021, falling in 2022 and 2023. US asset managers show particularly poor performance. Asset managers in the US supported just a quarter of resolutions, on average. It is at odds with the support from European asset managers that reaches an average of 88%.

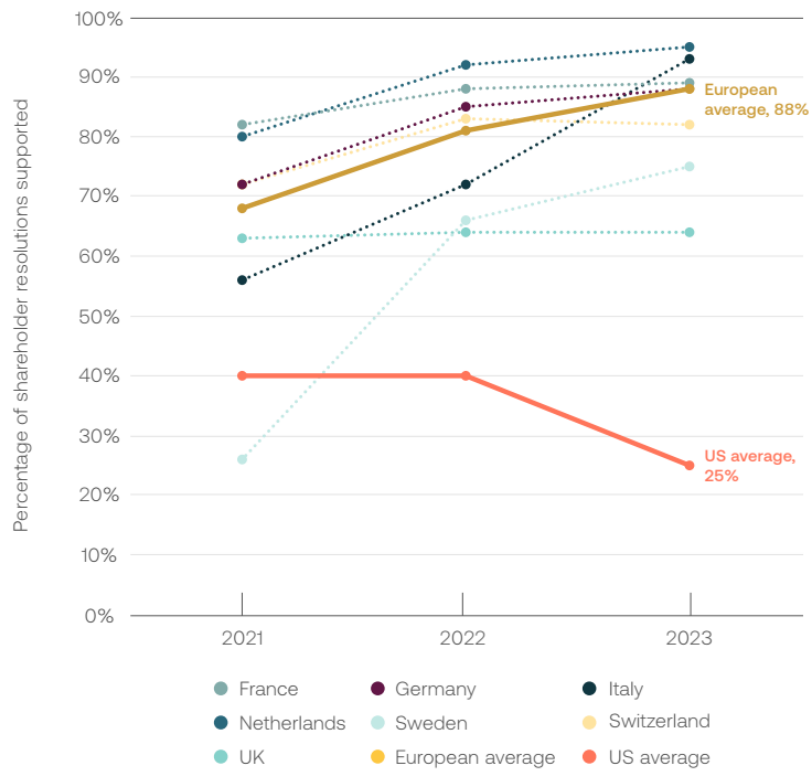
The significant decline in the support of large US asset managers affected the success of E or S related resolutions. According to ShareAction, in 2023 only 3% of assessed resolutions passed, just eight out of 257 resolutions. This is down from 21% of assessed resolutions in 2021.

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<sup>27</sup> Alexandre (2020)

<sup>28</sup> ShareAction (2023)

**Figure 5: percentage of shareholder resolutions supported by large asset managers**



Source: ShareAction (2023)

### An active-passive gap

It also appears that ESG stewardship performed by passive investors lags stewardship by active investors.

Heath et al. (2022) and Bubb and Catan (2022) show that passive investors are overall more pro-management in that they lag in vetoing management proposals or supporting shareholder proposals by a margin of 10-13 percentage points vis-a-vis actively managed funds.

In a similar vein, Brav et al. (2024) find that passive funds are 9-10 percentage points less likely than active funds to support dissidents<sup>29</sup> in proxy contests while Liu (2019) obtains that passive institutional investors, who usually tend to strictly follow voting recommendations by proxy advisors, are 30 percentage points less likely to support the activists (compared with recommendations) when ISS endorses the dissident nominees.

### How the Big Four vote

The pro-management bias is especially salient when looking at the voting records of the Big Four. Excluding them from the family of passive funds, the active-passive gap would be significantly reduced from 9-10 points to only 4.4 percentage points) according to Brav et al. (2024). Fichtner, Heemskerk, and Garcia-Bernardo (2017) show that the big three usually vote in the same way. But they usually vote with management suggestions, not against them.

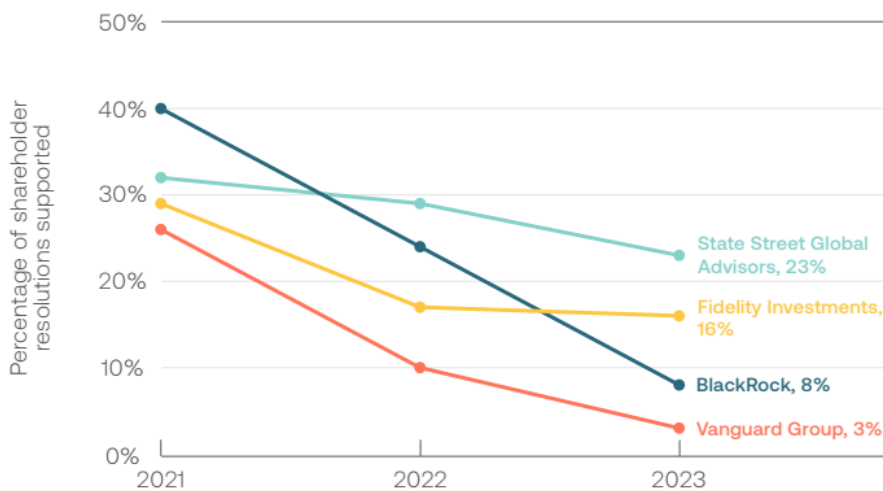
Prior to 2021, the Big Four had consistently voted against shareholder proposals focused on environmental accountability. That year, they remarkably changed their attitude. They vastly increased their support for

<sup>29</sup> Dissidents are shareholder nominees for board member seats in run-up with nominees by the management.

environmental proposals and also participated in the high-profile Exxon campaign initiated by the activist hedge fund Engine n°1 (see Box #2 on p. 29).

In 2021, BlackRock's support for environmental proposals was ten times higher than the previous year. As pointed out by scholars<sup>30</sup>, this shift lines up with the change from the Trump administration, which was hostile to institutional-investor involvement on environmental issues, to the Biden administration, which had pushed for it. But that year proved to be a singular one. Ever since, the support of the Big Four to environmental or social shareholder resolutions has kept on retracting, possibly in relation with the Republican-led "ESG backlash" occurring in the US.

**Figure 6: percentage of shareholder resolutions supported by the Big Four**



Source: ShareAction (2023)

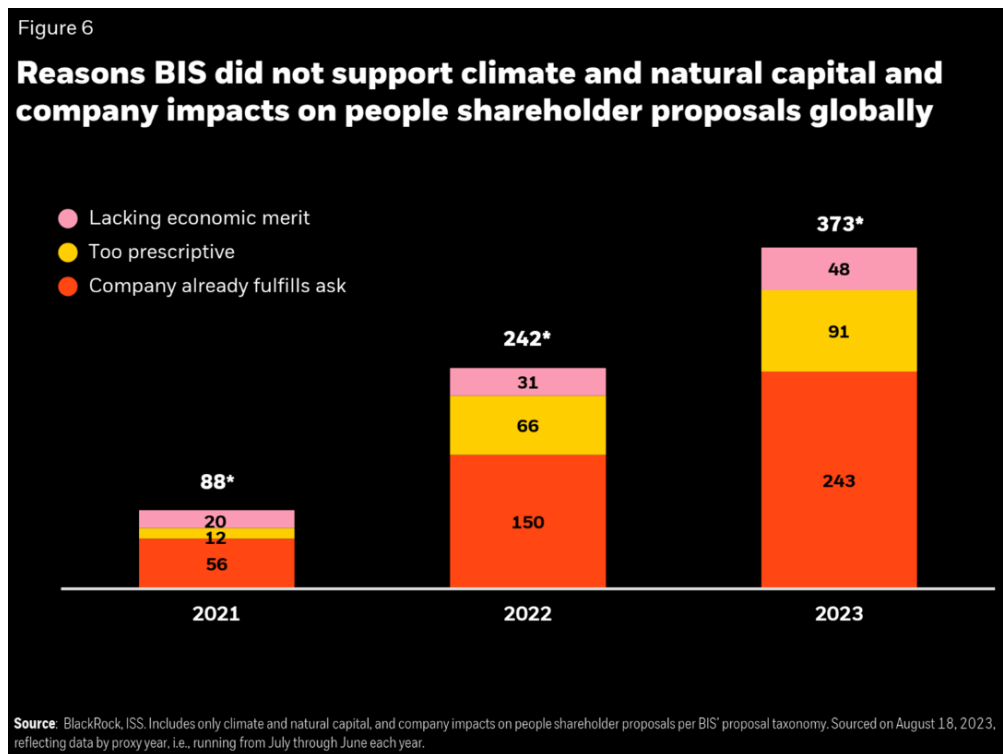
In 2023, their support varied from 3% at Vanguard to 23% for State Street, far below proxy recommendations from Glass Lewis and ISS (respectively 36% and 78%). Such positions strongly conflict with the "portfolio primacy" theory<sup>31</sup>.

In its 2023 report on the proxy season, Blackrock provide interesting details on its vote on shareholder proposals. Globally, Blackrock Investment Stewardship (BIS) supported 26 out of the 399 shareholder proposals on climate and natural capital and company impacts on people that BIS voted on (~7%). Blackrock did not support shareholder proposals that were overly prescriptive or unduly constraining on management, that lacked economic merit, or made asks that the company already fulfills (see figure 7).

<sup>30</sup> Schwartz (2022).

<sup>31</sup> Despite improvements in the recent years, Big Four have also been regularly criticized for having too small stewardship teams when compared to their overall AuM, the number of invested companies and the related number of annual resolutions to consider.

**Figure 7: why Blackrock did not support environmental or social shareholder resolutions**



Source: Blackrock (2023)

### An all-too-optimistic narrative

The absence of beta stewardship reasonably questions the “portfolio primacy” narrative. Is it really in the large institutional investors’ economic interest to perform systematic stewardship?

### Elusive gains

Indeed, the case for profitability is highly theoretical. It assumes that i) the stewardship activity leads to real-life changes in corporate behavior, ii) actual changes in corporate behavior is perceived by the market as mitigating market climate risk and climate risk is priced into the market, iii) any loss to an invested company from adopting more sustainable practices, is made up by the gains to other invested firms and iv) associated gains (in the form of additional fees) are substantial for asset managers.

For some of those (necessary) assumptions, there is so far, at best, limited evidence suggesting that they hold true:

- **Assumption #1: stewardship leads to real-life company changes.** As suggested in a prior section, there is mounting evidence that engagements by asset managers in general and the Big Four in particular is associated to positive company changes, especially reduced carbon emissions. Therefore, this part of the narrative is not the most dubious. If the Big Four were to engage companies more about their environmental or social practices, there would most probably be effective progress.
- **Assumption #2: positive climate risk news is priced by the market.** While there is ample evidence<sup>32</sup>, showing that climate attention and market-wide climate news affect stock returns of green and brown firms in a logical way, with stock prices of brown (green) firms falling (rising) when negative climate mitigation news is released, there is to our knowledge no study documenting a market-wide response to a (positive) company-specific mitigation news. Therefore, the assumption of a positive market-wide response in case

<sup>32</sup> Huij et al. (2023); Ardia et al. (2022); Maeso and O’Kane (2023).

of a disclosed change in behavior by an oil company in response to successful engagement is so far only conjectural.

- **Assumption #3: portfolio composition effects would lead to net gains.** The total return effect of aggressive climate stewardship is a sum of direct effects on engaged high emitters and indirect effects on the rest of the market, especially sectors that would benefit the most from successful climate mitigation (notably recreation and tourism, insurance companies, the health sector, and the agricultural sector). By contrast, absent any mitigation policies, technology shock, or change in social preferences, oil and gas companies will continue to profit from carbon emissions. Thus, an index fund focusing on major carbon emitters (such as the energy sector) will have very different incentives to address climate change than an index fund focusing on industries vulnerable to carbon externalities. Simulations<sup>33</sup> show that the net portfolio effect for the Big Three is uncertain and is highly sensitive to chosen assumptions. The net effect could be negative when we assume that the benefits of climate mitigation do not increase linearly with market capitalization, but larger companies benefit from climate mitigation proportionally less than smaller companies or when the asset manager is sponsoring a proportionally large energy fund (e.g., Vanguard). In conclusion, the increase in AuM from actively participating in corporate governance at high-emitting portfolio firms is speculative and, most probably, small especially if we aggregate potential losses on other activities in case of degraded business relationship with engaged companies (e.g., sponsoring of corporate saving plans).
- **Assumption #4: the net gains for the universal asset managers are non-trivial.** In case the overall effect on portfolio return is positive, the fund manager will only keep a tiny fraction of the gain. Standard agency theory implies that, relative to blockholders who invest their own capital, holders of delegated blocks like investment funds should engage less than expected by their investors because delegation by definition results in lower “skin in the game.” The asset managers’ gains are restricted to the fees associated with the activist-driven increase in the valuation of holdings. This agency problem is multiplied in case of low-fee passive investment funds. In 2020, Vanguard’s average fee was 0.09%, State Street’s was 0.16%, and BlackRock’s was 0.25%. Let’s assume an abnormal increase by 2,5%<sup>34</sup> of the market valuation of TotalEnergies (around €150 bn in April 2024) in case the market positively perceives a climate-friendly shift in the major’s strategy due to successful engagement by one of the Big Four (that is supposed to hold a 5% participation). For the systemic asset manager, this would translate to a neglectable increase in its annual fees in the range between €150,000 and €400,000. This is the meager direct payoff in case of a very positive scenario when i) the engagement is successful, ii) the outcome is positively valued by the market and iii) the initial price gain is maintained over years<sup>35</sup>. In practice, nothing ensures that a climate-friendly shift by an oil major will be accompanied by a positive abnormal return of its stock. Anecdotal evidence may even support the opposite, as shown by BP’s share price upswing when the company announced a scale back in its 2030 emission reduction targets in February 2023. In the week after BP announced it would trim down its carbon reduction goals, BP shares shot up 15.5%. Conversely, one could simulate the net portfolio effect of a price decrease of the oil major’s stock and a price increase for the rest of the portfolio. But empirical estimates for portfolio effects of idiosyncratic ESG announcements are lacking.

### A residual free-riding problem

Moreover, the free-riding problem does not magically vanish with the rise of universal owners. Because of the overlapping ownership across universal owners, there is only a competitive advantage for stewardship when asset management firms own proportionally more shares in the target firm than their competitors. If it owns

<sup>33</sup> Tallarita (2023)

<sup>34</sup> Indeed, Bauer et al. (2023) find that the targets of successful material engagements significantly outperform their peers by 2.5% over the following 14 months.

<sup>35</sup> deHaan et al. (2018) found, for example, that long-term returns from activism insignificantly differ from zero. Thus, the immediate price bump may reverse in the future.

proportionally fewer, then the intervention worsens the fund's competitive position. For index funds, there is no hope for competitive advantage through stewardship. Since index funds own the same firms in the same proportions as other index funds tracking the same index, they cannot outcompete other index funds by improving the performance of their portfolio firms. It is only competitively advantageous to decrease the systemic climate risk if an asset managers' funds are more exposed to climate change risk than its competitors. If their funds are less exposed, then making portfolio firms more environmentally conscious may actually hurt their competitive position. Another incentive arises if investors happen to choose their index fund providers based on the seriousness of their ESG engagement policy

### **Less universal than you think**

Tallarita (2023) provides a conceptual and empirical assessment of the potential impact of portfolio primacy on climate change mitigation by examining the scope of action, economic incentives, and fiduciary conflicts of index fund managers.

The analysis reveals three major limits, each reinforcing the others, that undermine the promise of portfolio primacy. First, the potential scope of index fund stewardship is narrow, as most companies around the world, especially most carbon emitters, are private, state-owned or controlled companies. Second, index funds internalize only a fraction of the social cost of climate change and therefore have very weak incentives to engage in ambitious climate stewardship. Third, index fund managers advise dozens of index funds with conflicting interests with respect to climate mitigation and therefore face serious fiduciary conflicts that would hamper any ambitious mitigation strategy. The different observations are presented in more detail in the following sections.

#### **A reduced room for maneuver**

Publicly traded companies, the target of index fund stewardship, represent only a subset of the global economy. According to the Carbon Majors Report, of all the carbon emissions produced by the 122 major fossil fuel producers in the world, only 31% have been from public companies.<sup>36</sup>

Even within the subset of public companies, most firms, including most carbon emitters, are controlled by state governments or private shareholders or otherwise have an influential blockholder who can frustrate stewardship initiatives by institutional investors.

A study<sup>37</sup> of the 10,000 largest publicly listed companies in the world obtained that in 29% of the companies, the largest shareholder owns more than 50% of the stock; and in 21% of the companies, the largest shareholder owns between 30% and 49.9% of the stock.

Tallarita (2023) focused on the ownership structure of the 253 oil, gas, and coal companies included in the FTSE Global All Cap Index, one of the broadest indices tracked by index funds. He estimated that 61% of the index is represented by companies in which insiders own more than 20% of the shares (and even 94% outside of the United States, Canada, and the United Kingdom).

Just like private companies, controlled companies and companies with a major blockholder are unlikely to sacrifice company level profits in exchange for portfolio-level gains. Insiders owning a significant fraction of the company shares are typically less diversified than institutional investors. In fact, they often have a large fraction of their wealth invested in that particular company.

Stewardship and engagement in the presence of blockholders is still possible, and there is evidence that institutional investors and even hedge funds do engage with companies with concentrated ownership. But the success odds are significantly reduced.

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<sup>36</sup> CarbonMajors (2024)

<sup>37</sup> De la Cruz et al. (2019)

So-called universal owners would also have to consider the possibility that inducing public firms to reduce environmental externalities and mitigate climate risk will generate a competitive response from non-public companies that will eliminate the benefits from these actions for their other invested companies (e.g., when a public company closes a profitable but polluting activity and a private competitor reacts by increasing its own activity). If that were to happen, “universal owners” would suffer the loss without receiving any corresponding gains.

### Limited internalization

The second limit of portfolio primacy highlighted by Tallarita (2023) is that index fund managers internalize climate externalities to a very limited degree and therefore have very weak incentives to engage in ambitious climate stewardship.

To begin with, index fund portfolios internalize only the effects of climate change on large corporations, not the effects on small and micro firms or on consumers<sup>38</sup>. Climate costs borne by the other economic agents are not internalized by index funds and therefore do not prompt them to act. In fact, under portfolio primacy, index funds would even be inclined to support climate strategies that would protect large corporations while creating negative effects for consumers and society. Furthermore, index funds are disproportionately invested in richer economies, which are relatively less vulnerable to climate change. Large corporations in developed countries can adapt to climate change more easily and more effectively than small firms and individuals in developing countries. For example, a multinational company can move the production of some of its products from countries more severely hit by rising temperatures to colder countries, whereas local family businesses, small farmers, and employees cannot.

Most of the benefits of climate mitigation policies performed now will only be felt within decades, which requires the discounting of those benefits. In a problematic way, index funds like the rest of the market likely discount the distant future at a much higher rate than what most experts believe is the correct social discount rate for climate damage. The consensus among experts is that society should discount future climate damage at a rate between 1% and 3%. By contrast, the stock market discount rate is aligned to the cost of equity and therefore locates at 7% or higher.

This difference in discount rate compounds over time and shrinks the volume of “acceptable” climate mitigation efforts. Under a 2% discount rate, an institutional investor holding 1% of the world economy would be willing to spend more than \$2,2 billion in 2024 in order to generate \$1 trillion economy-wide climate benefits in 2100. By contrast, using a 7% discount rate, the same institutional investor would be willing to spend no more than \$58 million, only 2.5% of the socially desirable investment.

To sum up, large investors typically have a much shorter time horizon than society as a whole, they do not internalize all the beneficial effects of climate mitigation investments, and the opportunity cost of their capital is the equity market return which is several times higher than a rational social discount rate. All put together, those features massively decrease the incentives for “universal owners” to perform climate stewardship.

### Portfolio composition and fiduciary conflicts

Finally, one should remember that index fund managers advise hundreds of funds with different investment objectives and therefore face severe fiduciary conflicts that could discourage thorough climate stewardship.

Some of their funds would lose money if asset managers supported a climate mitigation measure that penalizes oil companies but benefits the stock market as a whole. Therefore, even if a climate mitigation measure results in a net gain for the stock market, some index funds within the same family will have incentives to oppose it on behalf of the funds’ investors.

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<sup>38</sup> Tallarita (2023)

For example, there is agreement among experts that climate change will materially affect recreation and tourism, insurance companies, the health sector, and the agricultural sector. By contrast, absent any mitigation policies, technology shock, or change in social preferences, oil and gas companies will continue to profit from carbon emissions. Thus, an index fund overweighted on major carbon emitters (such as the energy sector) will have very different incentives to address climate change than an index fund focusing on industries vulnerable to carbon externalities. Noticeably, large equity indices are overweighted on high-emission sectors and have average temperature scores above the economy<sup>39</sup>.

Under the existing law, a mutual fund must be managed “on behalf of its investors.” In particular, the law makes it clear that mutual funds must operate in the interest of all classes of investors and that such a duty is violated when the fund acts in the interests of directors, officers, investment advisers, special classes of investors, other mutual funds, or entities engaged in other lines of business.<sup>40</sup> Given that mutual funds have a fiduciary duty to promote the best interest of their clients, ESG fund investors can expect their shares to be cast with sensitivity toward ESG matters. It appears plausible that, in such a situation, the investment adviser should vote and engage companies in opposite and conflicting ways on behalf of different funds to replicate the interests of the funds’ investors.

In practice, however, index fund managers often do not make this kind of decision at the level of individual funds. They typically have centralized governance offices that make decisions on voting and other engagement issues at the level of the entire institution. Market observers have claimed that many of these funds fail to vote in harmony with their advertised goals. Conflicts might arise due to fund families’ incentives to use their funds’ votes in the family interest, which might not align with individual funds’ fiduciary duties.<sup>41</sup>

Several papers have reached the conclusion that institutional investors would also resort to strategic voting to overcome fiduciary conflicts. Noe and Jin (2023) use a model to show that in the equilibrium, ESG-indifferent universal owners vote strategically by insincerely supporting green proposals when it is unlikely that their votes are pivotal. Each ESG-indifferent universal owner would like to see the proposal fail but, because of reputation costs, would prefer not to vote against the proposal. Her vote only affects her welfare when her vote is pivotal. So, ESG-indifferent universal owner will trade off the benefit of voting yes, avoiding reputation costs, against the cost of voting yes, the value reduction produced by a yes vote when that vote is pivotal. Environmental and social (ES) funds in non-ES families (i.e., asset management firms) must balance incorporating their shareholders’ non-financial interests and maximizing shareholder value favored by their families.

Empirically, Michaely et al. (2022) confirm that these funds support ESG proposals that are far from the majority threshold, while opposing them when their vote is more likely to be pivotal. This strategic behavior by funds is driven by their institutional clients’ ability to monitor funds votes, and to discipline funds with lower inflows when they provide low average support for ESG proposals. They obtain that the support for ESG resolutions by ESG funds in non-ESG families depicts a U-shape centered around the 50% approval threshold. The support of these funds increases with the voting outcome when the outcome is below 30%, but it decreases when the outcome is between 30% and 50%. After the majority threshold is passed, the support of these funds increases again with the voting outcome. In a nutshell, ESG funds in non-ESG families seem to strategically choose to support ESG resolutions when their votes had only small chance to affect the final outcome.

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<sup>39</sup> Cosemans and Schoenmaker (2022)

<sup>40</sup> Tallarita (2023)

<sup>41</sup> Lipton (2017); Hirst (2018).

### Box #1: Blackrock's stewardship philosophy

In its report on its voting during the 2022-2023 proxy season<sup>42</sup>, Blackrock explains its stewardship philosophy and its practical consequences on voting and resolution filing. It highlights a firm-level financial-only stance at odds with the portfolio primacy theory.

*“As a fiduciary, BlackRock’s sole focus is on advancing our clients’ financial interests. Our stewardship activities, including voting on shareholder proposals, are performed with that fiduciary mindset. Shareholder proposals span a wide range of topics and have varying degrees of relevance for companies across sectors, locations, and business models. We evaluate each proposal on its economic merit, considering the company’s individual circumstances and maintaining a singular focus on the proposal’s implications for long-term financial value creation. Blackrock Investment Stewardship (BIS)’ evaluation considers whether a shareholder proposal addresses a material risk that, if left unmanaged, may impact a company’s long-term financial performance. We look for consistency between the specific request formally made in the proposal, the proponents’ related communications on the issues, the company’s practices and disclosures, and the costs and benefits to the company of meeting the request made in the proposal. BIS also reviews a company’s governance practices and disclosures against those of their peers. BIS is more likely to support shareholder proposals that request disclosures that help us, as long-term investors, better understand the material risks and opportunities companies face and how they are managing them, especially where this information is additive given the company’s existing disclosures. In some cases, we may support business-relevant shareholder proposals that address gaps in a company’s approach to material business risks.”*

*“BIS does not support shareholder proposals that we view as inconsistent with long-term financial value or where the intent is to micromanage companies. This includes proposals that are unduly prescriptive and constraining on the decision-making of the board or management, that call for changes to a company’s strategy or business model, or that address matters that, based on our analysis, are not material to how a company delivers long-term shareholder value. In our view, it is not appropriate for minority shareholders, such as BlackRock, to seek to direct companies on how they should manage their business. That is the responsibility of management, with oversight from the board. In addition, we do not believe that shareholder proposals are the proper means for addressing issues unrelated to a company’s future financial performance.”*

In the report, they astonishingly explain that Blackrock must abstain from drafting shareholder resolutions: *“BIS complies with the requirements under the various laws and regulations that limit how BlackRock can interact with the companies in which we invest on behalf of our clients. As such, BIS does not file shareholder proposals at companies’ shareholder meetings, but we vote on proposals put forth by others.”*

### Beyond portfolio primacy

If portfolio primacy is not a convincing narrative to explain ESG or climate stewardship, then what can explain the public statements and, in some cases, concrete engagement actions of large asset managers in favor of climate risk disclosure and emissions reductions?

Tallarita (2023) highlights several possible theoretical reasons that go beyond the rationale of portfolio primacy. One reason might be that asset managers use the promise of climate stewardship as a marketing tool to attract clients interested in climate change or as, some scholars have advanced<sup>43</sup>, a way to obtain personal favor with elected officials, policymakers or regulators. The swinging behavior by the Big Four in 2021 and following years, in parallel first with Joe Biden’s election and a change of tone at the SEC and then with the ESG backlash run by Republican policymakers, might be interpreted as a support for the latter thesis.

Another explanation pertains to the anticipation of upcoming increased regulation. If market participants anticipate a transition toward a low-carbon economy due to regulatory intervention, they have good economic

<sup>42</sup> Blackrock (2023)

<sup>43</sup> Tallarita (2023)

reason to pressure companies into preparing for it in order to avoid a disorderly transition and decreased AuM and associated fees.

Another driver might be funds investors' concern about climate issues, which creates a demand for environmentally conscious mutual funds and thus an incentive for investment managers to signal their commitment to climate mitigation, whatever the expected effect of holdings' valuations. Indeed, positive fund flow reactions to ESG branding have been reported, either via obtaining external sustainability ratings, or signing up to ESG networks such as PRI<sup>44</sup>. But it is not clear whether climate-concerned investors adapt their allocations to asset management firms based on news regarding the intensity of their ESG or climate stewardship.

A final driver might be the effect of moral and social norms on investment managers, either because they hold genuine beliefs that favor environmentally friendly behaviors or because they are forced to act in that way as a result of image concerns and social pressure.

In conclusion, the "utility function" that large asset managers may try to maximize appears to be a very complex one, including direct portfolio effects on engaged firms and their rivals, indirect effects on capital inflows, and interests into maintaining good relationship with different stakeholders (companies, regulators and policy makers) as well as a good overall reputation.

That multi-dimensional utility function may account for the massive differences in behaviors between European and US-based asset managers as they are embedded in widely different socio-political environments regarding ESG investing.

## The rise of hedge fund ESG activism

### A growing and evolving practice

Another group of investors involved in the disciplining of companies are hedge funds. Because they are not subject to regulation that governs mutual funds and pension funds, hedge funds can hold highly concentrated positions in small numbers of companies, and use leverage and derivatives to extend their reach. Therefore, they are more interested in any share price increase (or decrease when they have built short positions) in case of engagement success.

Hedge fund managers also tend to be less interested than institutional investors in holding good relationships with engaged firms as well as less prone to conflicts of interests that could arise from corporate banking, insurance or (conventional) asset management activities.

Historically, activist hedge funds have tried to gather support from other investors to pressure companies into implementing value-enhancing actions. Activist hedge funds aim to invest in businesses and then take actions that boost the companies' stock price before selling the shares for a profit soon afterwards. Among other requests, they do this by demanding that companies cut costs, scale back investments, restructure assets and redistribute cash to shareholders.

Activist hedge funds' strategies are sometimes described as aggressive and destabilizing by minority owners and management, as they often are made public and use confrontational techniques (see below).

The strategies activists employ continue to evolve as more enter the market and seek to differentiate themselves. Fewer activists are agitating purely for balance sheet optimization as a standalone thesis, in part because the large institutional investors that dominate today's shareholder bases are less receptive to this.

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<sup>44</sup> Hartzmark and Sussman (2019); Gibson-Brandon, Glossner, Krueger, Matos, and Steffen (2022); Kim and Yoon (2023).

Instead, funds have evolved their approaches. One approach is including arguments involving environmental, social and governance factors (ESG) into campaigns by pointing to an insufficient ESG strategy or unaddressed exposure to ESG risks. Such tactics may emerge from a desire to appeal to institutional shareholders.<sup>45</sup>

### The activist toolbox

Hedge fund activists can use the full array of options, including the most confrontational ones to obtain desired changes at targeted companies. Those include the filing of shareholder resolutions, proxy contests and, less frequently, litigation. Such methods contrast with collaborative engagement preferred by more conventional institutional investors (pension funds, insurers, mutual funds, etc.).

A proxy fight refers to the act of a group of shareholders joining forces and attempting to gather enough shareholder proxy votes to win a corporate vote. The voting bids in a proxy vote could include replacing incumbent directors from the board to highlight dissatisfaction with the current management of affairs. Proxy fights also emerge over corporate takeovers and mergers, most notably with hostile takeovers.

Boardroom battles have a long history since they go back to the East India Company<sup>46</sup> Over the past two decades, the importance of proxy contests, or contested elections for board representation, has increased markedly as shareholder activism has become both an established investment strategy and an important form of corporate governance.

In last resort, ESG activist hedge funds can go to court. Indeed, ESG litigations are on the rise. ESG litigation refers to legal action that is taken against companies for alleged violations of related laws, regulations or standards. It is increasingly seen by investors as the sharp end of escalated engagement. “A *successful litigation, where a legal judgement confirms specific wrongdoing, is one of the most effective ways of forcing a company to act, given its legally binding nature,*” says Emmet McNamee, Head of Stewardship at the UN-convened Principles for Responsible Investment (PRI)<sup>47</sup>.

Litigation is already a well-established escalation strategy for shareholders in the US but has been little used in Europe. Litigation has been seen as potentially running counter to the UK and European approach to engagement, which has valued process and good, long-term, enduring relationships between companies and their investors. It is nevertheless mentioned as one of the available techniques in some stewardship codes, like IIGCC’s Net Zero Stewardship Toolkit.

Shareholders of various types are starting ESG-based legal disputes against companies over various motives. If the chosen motives are very jurisdiction-specific, several cross-country trends do emerge, especially disputes over the provision of misleading or insufficient information, the breach of fiduciary duty (e.g., in case companies fail to take adequate actions to mitigate their impact on climate change) and ESG liabilities (e.g., when companies are considered to be responsible for the ESG wrongdoings of their, potentially foreign, subsidiaries).

Hedge funds may benefit from shareholder litigation in two ways. First, they might consider taking short positions in issuers that they suspect of reprehensible actions and, then, initiate litigations. Second, if firms hold long positions in issuers that have given incorrect disclosures and have experienced adverse share price reactions to those errors becoming known, those funds can potentially seek to recover losses through litigation.

Indeed, if shares lose value due to negligent or illegal behavior, investors are entitled to seek redress. The unreasonable or illegal withholding of information, especially at the time shares were purchased, most

<sup>45</sup> Baker et al. (2023)

<sup>46</sup> Gramm (2016)

<sup>47</sup> ESG Investor (2023)

certainly constitutes a valid reason. There have been numerous examples of such activity recently, where the nature of the information being withheld from the market may relate to illegal accounting practices (Wirecard), allegations of bribery and corruption (Rolls Royce & Glencore) or the withholding of material information to investors (Volkswagen) resulting in groups of like-minded institutions seeking restitution through the courts<sup>48</sup>. In a similar vein, an ESG controversy leading to a decrease in share price may constitute a triggering point for starting litigation.

Should funds wish to litigate on this basis or others, specialist third-party funders are likely to accept to underwrite the claims. Brussels-based litigation funder Deminor has forecast that the global funding market will grow by 8.3% a year over the coming years and Europe's share of the global markets is likely to reach nearly 16% of a total of €18.7 billion by 2025, driven by non-compliance with ESG standards, human rights and consumer rights.<sup>49</sup> That's underpinned by the European Representative Action Directive, which made collective actions available in all EU countries at the end of 2022.

Litigation finance has often been seen as a source of reputational risk, but the growth of ESG investing has opened the possibility of a reverse effect, that of positive reputational impact from taking part in a case that could generate common good.

### Box #2: the iconic Engine n°1 vs ExxonMobil proxy battle

An iconic proxy battle is the one initiated by the nascent hedge fund Engine No. 1 at ExxonMobil in 2021<sup>50</sup>. The hedge fund was set up in December 2020, shortly before the beginning of the proxy battle. It was an unknown hedge fund, though some of its management had worked in larger structures before. The founder of the hedge fund, Christopher James, used his own money to sponsor the proxy battle.

The motivations of the fund are not completely clear, as it invested over \$30 million to influence the outcome of a company it had invested \$40 million in. Part of this proxy battle was not about the return on ExxonMobil shares, but more about making the hedge fund known.

It appears that Engine n°1's founder wanted to start a new type of ETF inspired by an idea developed by two economists, James Hart and Olivier Zingales a few years earlier: a passive ETF that would actively engage companies on ESG grounds. The proxy fight would be Engine No. 1's declaration that it aimed to force the world's biggest companies to consider environmental and social performance as seriously as they took financial returns. What James wanted to do versus Exxon, one writer quipped, was like "making a name for yourself by punching the biggest bully in the yard in the nose."

But as ExxonMobil was underperforming its peers, there was also a business case for change in leadership. For the decade that ended Feb.19, 2020 — that is, right before the COVID pandemic — Exxon's shares had returned 28 percent to shareholders, compared to 85 percent for its average peer and 275 percent for the S&P 500. The company's earnings had been similarly anemic, falling annually from 2018 through 2020. In 2020, Exxon would report a net loss of \$13 billion or \$5.25 a share.

Before convincing shareholders to accept changes at the board, Engine No.1 needed a credible list of directors to propose. Large asset managers would not want any drastic change. The Engine No. 1 strategy therefore did not aim to replace the chairman. They did not even suggest replacing any current board members. Instead, they simply suggested adding four new directors to the board. Almost all were previous oil and gas executives. A key weakness of Exxon that James had noticed was the lack of energy expertise on its board of directors. They had experience as large company executives, but not as oil executives.

While first achieving very slow gathering of support, the campaigner obtained, a few days before the vote, the support by proxy advisors. The Pensions & Investment Research Consultants (PIRC) was the first proxy voting advisory firm to lead the charge (they backed all 4 directors proposed by Engine n°1), rapidly followed by ISS (who supported three out of four) and Glass Lewis (two out of four). The Engine No. 1 attack also triggered some reaction on ExxonMobil's side, even before the proxy vote took place. ExxonMobil promised a \$3bn investment in a "Low Carbon Solutions" initiative. It increased the size of its board from 10 directors to 12 in an

<sup>48</sup> PA Future (2023)

<sup>49</sup> Deminor (2022).

<sup>50</sup> For thorough descriptions of the chain of events or its actors, see Naef (2022) and Henitz (2022).

attempt to show that it was already going in the direction of Engine No. 1. But this did not stop Engine No. 1 from waging its proxy battle.

On May 25th (one day before the proxy vote), Blackrock joined the fight and decided to support three out of the four Engine No.1 candidates. The announcement of the vote was leaked by Blackrock, and not communicated officially.

On May 26<sup>th</sup> the AGM started. Forty minutes after the meeting began, ExxonMobil called for an hour-long recess, which is highly unusual in AGMs. Engine No.1 wanted to stress how this sudden break to sway final shareholder was undemocratic. A member of the Engine n°1's team, the very experienced Charles Penner, went live on CNBC. The meeting resumed and the votes took place. Finally, three Engine n°1's candidates were elected.

The cost of the proxy battle has drawn a lot of attention. It has been estimated that ExxonMobil spent approximately \$35 million to keep the directors from getting elected. On the other hand, Engine No.1 spent \$30 million in the battle (for a mere \$40 million stake in ExxonMobil...).

The real outcomes have also been largely debated. Tomar, Desai, and Rajgopal (2021) argued that the vote is unlikely to change the strategic direction of ExxonMobil while the same chief executive stays in place. Others had a more positive view on the outcome, arguing that even before the proxy victory, ExxonMobil changed the course of its policy. DesJardine and Bansal (2021) argued that because of the proxy battle ExxonMobil has proposed a \$100bn public-private carbon capture project in Houston as well as \$3bn of investment in low-emissions technologies through a new venture.

After the victory, Engine No. 1 launched an Exchange Traded Fund (ETF) called "Transform 500 ETF". The ExxonMobil proxy battle was a marketing case in point for how it could be running its ETF. It was (a very effective way) to show how this ETF was different from the large providers such as Blackrock, Vanguard and State Street.

## Wolf packs

Wolf packs refer to a prominent and controversial governance tactic used by activist hedge funds. The tactic involves multiple hedge funds or other activist investors congregating around a target, with one acting as a "lead" activist and others as peripheral activists.

Wolf pack activity appears to be ostensibly uncoordinated—i.e., no formal coalition is formed—a fact that is usually attributed to an attempt by the funds to circumvent the requirement for group filing (under Regulation 13D in the US) when governance activities are coalitional. Second, wolf packs appear to form dynamically. The market's knowledge of the formation of a wolf pack (either through word of mouth or public announcement of by the lead activist) often leads to additional activist funds entering the fray against the target corporation, resulting in a rapid change in composition of the target's shareholder base.

In recent years, the empirical literature in finance has taken an active interest in the wolf pack phenomenon, beginning with Becht et al. (2017). They provide an overview of global hedge fund activism between 2000 and 2010 and document that as many as a fifth of such events involve multiple activists intervening in parallel. They find that wolf packs are associated with a greater probability of successful engagement and with higher announcement returns when stakes are disclosed<sup>51</sup>.

## A complex interaction with institutional investors

As identified by Gantchev (2013), the presence of institutional investors in a company's ownership base can either complement or substitute for the hedge fund activism.

On the one hand, institutional shareholders can be complementary because their presence increases liquidity in the firm's equity (when compared with companies with large blockholders), which lowers the costs of both forming an ownership block and exiting the firm. Several researchers have argued that stock liquidity is an

<sup>51</sup> Other papers include, for instance, Artiga Gonzalez and Caluzzo (2019) and Brav et al. (2019).

important factor in hedge fund activism<sup>52</sup>. Further support for the view that institutional shareholders play a complementary role has been pointed out theoretically by Brav, Dasgupta, and Mathews (2019) and Levit (2019). Brav, Dasgupta and Mathews show that hedge funds partner with investors who can provide support through their “behind-the-scenes” engagements. This partnership lowers coordination costs in achieving the desired intervention outcome. Levit (2019) argues that an activist will have a more credible threat if it is easier to rally support from other shareholders.

On the other hand, a target firm’s institutional shareholders can be substitutes for a hedge fund activist because their presence implies better monitoring of the firm; that is, the positive influence of institutional investor monitoring suggests lesser rewards for the hedge fund activist’s actions, thus, making it less likely that the hedge fund manager will intervene.

In some occurrences, their interests can even be adverse when hedge funds have built short positions and are interested in creating turmoil at the targeted company, for instance by disclosing evidence of wrongdoing. An emblematic example is the release in January 2023 by Hindenburg of a report on alleged stock manipulation, improper use of tax havens, and concerns over debt levels against Adani Group in India. In the aftermath of the disclosure, seven listed Adani Group companies had lost more than \$140 billion in market value combined over a few months.

In most cases, due to their relatively small holdings in target firms, activists typically need the cooperation of institutional shareholders that are willing to influence the activists’ campaign success. Kedia et al. (2021) find that the presence of “activism-friendly” institutions as owners is associated with an increased probability of being a target. Overall, they provide evidence suggesting the composition of a firm’s ownership has significant effects on hedge fund activists’ decisions and outcomes. The Brav, Dasgupta, and Mathews (2019) model confirms that the composition of a firm’s institutional ownership should be a factor in the hedge fund activists’ initial target selection—that is, the activist hedge funds will be more likely to select a target based on the presence of supportive investors.

Using their ever-increasing ownership of public companies as leverage, institutional investors de facto affect the screening operated by activists as well as their methods. Activists are forced to respond, adapt, and alter their thinking and approaches to accommodate institutional investors and get their support when needed. Activist hedge funds have precisely responded by incorporating ESG into their narratives and campaigns as a means to garner voting support.

In short, institutional investors are necessary but no natural allies of hedge fund activists. To function, their parallel or collaborative engagement requires adaptation from both parts.

## Collaborative engagement as the solution?

Collective engagement is often the most resource-efficient method for engagement as every investor is inevitably resource-constrained and pooling those limited resources should enable greater efficiency. Such efficiency has a benefit for the corporate recipient too because it reduces the weight of messages received, which in some cases can feel like a broad spectrum of conflicting opinions of which it is difficult to make much sense.

### Defining collaborative engagement

As defined by PRI, “*collaborative shareholder engagement occurs when a group of institutional investors come together to engage in dialogue with companies on environmental, social and governance (ESG) issues*”.

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<sup>52</sup> Edmans, Fang, and Zur (2013), Norli, Ostergaard, and Schindele (2014), and Gantchev and Jotikasthira (2018).

By definition, collaborative engagement implies coordination among participants. Therefore, we distinguish collaborative behavior from mere (coincidentally) simultaneous behavior as well as from imitative behavior without active cooperation or any kind of consultation between the parties.

By speaking to companies with a unified voice, investors can more effectively communicate their concerns to corporate management. The result is typically a more informed and constructive dialogue. Investors can benefit substantially from engaging collaboratively.

### **An improved net balance**

Considering the disincentives for shareholder engagement exposed in previous sections, collaboration between shareholders is, on a theoretical level at least, a way to overcome or mitigate some of these disincentives.

This is because (i) chances of success are increased as voting rights and the associated informal influence can be bundled through collaborative interaction, (ii) collaboration can reduce information and implementation costs by sharing resources, skills, and expertise and by attributing roles among participants, and (iii) collaboration also contributes to risk sharing among participants.

An additional systemic benefit of collaboration is that it may decrease engagement and questionnaire fatigue among companies when they must only respond to one coherent set of requests instead of multiple (and potentially conflicting) ones.

#### **Enhanced success odds**

Logically, there is evidence that engagement requests are more likely to succeed when the shareholder engaging holds a larger share of the targeted company<sup>53</sup>. As already mentioned, in many cases the engaging shareholders will have to confront insiders that do not share the same incentives and may represent more than 20% of the voting rights. The coordinated voting enhances the chances that the coalition will obtain majority compared to the situation in which each participant drafts a resolution or oppose a management resolution and expects other blockholders to follow suit. Being part of a coalition also increases each participant's chance to be pivotal in the votes and, therefore, reduces the temptation of free riding.

#### **Decreased costs and mitigated risks**

Active shareholder engagement requires financial and human resources. Financial costs relate to information acquisition, strategy implementation and external legal counselling. Intensive activist shareholder campaigns have been estimated to cost millions of euros<sup>54</sup>. For instance, the total cost of the high-profile successful Exxon campaign by Engine n°1 has been estimated for the asset management firm at around \$30 million<sup>55</sup>. In practice, ESG funds may lack the expertise, resources, or stewardship personnel<sup>56</sup> to deliver efficient engagement. Collaboration across multiple investors alleviates the financial burden and enables to tap into heterogeneous resources among participants.

An individual asset manager may also be deterred from engaging individually because of conflicts of interest, such as concerns about jeopardizing other business relationships with the target or its peers for the benefit of the asset manager's competitors.

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<sup>53</sup> Dimson et al. (2015); Dimson et al. (2023).

<sup>54</sup> Gantchev (2013)

<sup>55</sup> Reuters (2021)

<sup>56</sup> Bebchuk and Tallarita (2020)

An academic study found that asset management firms with more business ties with public companies tended to vote more often with corporate management.<sup>57</sup> One report singled out BlackRock's handling of the retirement plan of BP, the oil giant. The report's author, the 50/50 Climate Project, laid out the facts as follows: "BP posted a \$6.5 billion net loss for its FY 2015, including a \$10 billion charge for its liabilities from the Deepwater Horizon disaster. However, BP's proposed executive compensation plan for 2016 would have awarded the CEO a 20 percent pay increase. While a majority of BP's shares were voted against this plan, BlackRock voted in favor of it."<sup>58</sup>

The potential conflict of interest is especially salient for asset management departments of large, diversified banks. Beyond fees associated with corporate saving plans' sponsoring, aggressive engagement could also damage corporate and investment banking revenues or alter relationships for the sell-side analysts of the brokerage unit of the bank. Broader collaboration with other asset managers could therefore reduce this risk by putting competing asset managers on the same line.

### The flipside: collaboration costs

So, collaborative engagements aim to exploit the cooperating partners' resources, skills and expertise to gain advantage, by pooling resources and influence, and sharing research costs and risks among active owners.

Such efforts also face challenges and are costly. First, the free-rider problem is not fully solved. Within the coalition, costs may be borne by a small group of committed and resourceful organizations, while benefits can be shared by all. It happens when there is no mechanism to disclose the specific contributions of each member of the coalition.

Relatedly, competition between institutions makes collaboration and information sharing difficult or unnatural. Moreover, coordination among many investors from diverse geographic and cultural backgrounds is especially difficult and time consuming. It might not be feasible when engagement needs to be quick, for instance when it reacts to a controversy.

Moreover, in some locations, notably the US, there is a regulatory barrier that can dissuade investors from behaving as a "concert party" (see below section on legal constraints).

### Collaborative engagement as a second-best option

Brav et al. (2021) confirm that engagement by moderately-sized blockholders is unlikely, especially when the blocks are held by delegated asset managers who have limited "skin in the game". They present a model in which multiple delegated blockholders engage target management in parallel, a practice they called "wolf-pack activism". Delegation reduces skin in the game, which decreases incentives for engagement but competition for flows across asset managers creates an endogenous set of transfers across agents that (imperfectly) achieves this goal. By undertaking a costly action – activism - to advertise her skill, a fund can attract capital at the expense of other, non-engaging, funds. Additional flows thus endogenously compensate those who undertake costly engagement. Such endogenous, decentralized flows do not, however, perfectly replicate the social optimum that would be generated by a universal policy like a carbon tax. There may still be some underprovision of the social good (i.e., climate stewardship).

Consistent with the model predictions, Dimson et al. (2023) find that PRI signatories that participate in successful engagements experience subsequent increases in fund flows. Among all the participating signatories, those with lead experience enjoy a further increase in annual fund flows. It provides first evidence that supports the view that **institutional investors can discriminate across fund managers based on their real propensity to lead engagement initiatives.**

<sup>57</sup> Cvijanović et al. (2016)

<sup>58</sup> Kamonjoh (2017)

Based on all incentives and disincentives discussed in this section and precedent ones, we subscribe to the point of view of Brav et al. (2021) that **collective engagement should be seen as a second-best option, behind international regulation or taxation, but ahead of individual engagement or divestment.**

## Supportive empirical evidence

### Enhanced success rates

The evidence on the effectiveness of implicit coordination among engaging shareholders is mostly positive.

The pioneering study by Gillan and Starks (2000) dealing with the corporate governance role of institutional investors shows that “*proposals sponsored by institutions or through coordinated activities receive significantly more favorable votes than those sponsored by independent individuals or religious organizations.*”

In the last ten years, a series of studies have confirmed this initial result:

- Dimson, Karakaş, and Li (2015) find that collaboration with other shareholders and/or stakeholders significantly improves the success rate of engagements, especially those on environmental and social topics.
- Studying a sample of international hedge fund activists, Becht, Franks, Grant, Wagner (2017) report that engagements by multiple investors perform better than those by a single organization.
- Crane, Koch, and Michenaud (2019) find that coordination strengthens governance via voice.
- Wong (2020) finds that the presence of a wolf pack is positively associated with the success of hedge fund campaigns.
- Doidge, Dyck, Mahmudi, and Virani (2019) study private engagements on corporate governance issues by Canadian Coalition for Good Governance (CCGG). They find that firms engaged by CCGG are more likely to adopt corporate governance reforms on majority voting, say-on-pay, and compensation structure relative to those not engaged.
- Kedia, Starks and Wang (2020) find that cooperation between hedge funds and like-minded institutions increases the likelihood of success in engagements with investee companies.
- Finally, Dimson et al. (2023) document a high success rate for PRI-coordinated engagement projects, above 50%.

### Positive effects on stock prices

Studies on coordinated engagements have also replicated the findings for individual engagements that successful attempts tend to increase the targets’ share prices.

For instance, Dimson et al. (2023) find that firms targeted through two-tier engagements experience an average increase of 4.7% in annual abnormal buy-and-hold stock returns (ABHRs) and 0.9% in annual return on assets (ROAs) in the first two years following engagement initiation, relative to the pre-engagement levels. In the third year, the increases widen to 9.4% and 2.3%, respectively. The increases are further elevated when the sample is restricted to successful two-tier engagements. Their findings indicate that coordinated engagements are value-enhancing for shareholders and target firms, especially when engagements are headed by a lead investor and/or are successful.

## An institutional push for collaborative engagement

### Stewardship codes

In Europe, a common reference to collective engagement is contained in the EFAMA Stewardship Code. In its current version, EFAMA Principle 4 recommends that asset managers “*should consider acting with other investors, where appropriate*”. Emphasizing that shareholder collaboration may sometimes be “*the most effective manner in which to engage*”, the Guidance to Principle 4 illustrates that collective action with

individual investee companies may in particular be appropriate “*at times of significant corporate or wider economic stress, or when the risks posed threaten to destroy significant value or the ability of the company to continue in operation*”. In addition, the Code also welcomes ongoing collective engagements concerning policy issues<sup>59</sup>.

The EFAMA Code heavily borrows from the UK Stewardship Code, Principle 5 of which is re-stated almost verbatim by the EFAMA. The UK Code also states that institutions’ policies on collective engagement “*should indicate their readiness to work with other investors through formal and informal groups when this is necessary to achieve their objectives and ensure companies are aware of concerns*”, along with the circumstances under which they would consider participating in collective engagement<sup>60</sup>.

The UK code for collective stewardship has also inspired a number of similar initiatives at Member State level. Examples include the 2018 Dutch Stewardship Code, drafted by Eumedion, which emphasizes the potential upsides of shareholder cooperation and joint initiatives, noting that collective discussion with investee companies may sometimes generate “*a wider and deeper range of analysis compared to a one-to-one meeting*”, especially where issues of common interest are concerned. It also suggests that collective engagement may be beneficial to both investee companies and investors, “*because both the board and investors get familiar with each other’s views and perspectives and engagement is made more cost effective*”.<sup>61</sup> The cost consideration is thus explicitly mentioned as a factor in favor of shareholder collaboration.

With respect to legal obstacles, it should be noted that while stewardship codes have recently encouraged collaborative engagement, the legal hurdles have by no means been completely eliminated and are still seen by some actors as an obstacle to effective collaboration (see dedicated section below).

### **Collaborative platforms as coordination tools**

Institutional investors can coordinate their ESG stewardship efforts through various types of platforms.

Institutionalized investor platforms have emerged over recent years as a force for investor empowerment, serving to coordinate investor campaigns and to share the costs of engagement. In particular, the past several years have seen an unprecedented surge in investor-led initiatives steered toward sustainability. Most climate-related investor initiatives have emerged after the 2015’s Paris Agreement<sup>62</sup>.

#### **PRI**

An example of a platform is the one provided by the United Nation’s Principles for Responsible Investment (PRI). By signing up as signatories, institutions pledge to follow PRI’s six principles, one of which is to become active owners and incorporate ESG issues into their stewardship policies and practices. By 2023 PRI reported they had 5,435 signatories from 88 countries, representing over \$121 trillion in AUM. Shortly after PRI was founded in 2006, the PRI Collaboration Platform (then known as the PRI Clearinghouse) was initiated as a forum for shareholder engagements and a vehicle for alliances among institutional investors and their advisors. This facility rapidly became the world’s largest platform for collaborative engagement activities.

The PRI Collaboration Platform exists to help PRI signatories work together on engagements with target companies, and potentially with regulators and other actors on ESG issues across the world. Engagement begins after one or several signatories identify an issue relating to a company or sector and determine that there is a case for change. The signatories may then talk with peers and with PRI to explore the scope for engaging collaboratively. The projects are then interactively posted on the Collaboration Platform<sup>63</sup>.

<sup>59</sup> Balp and Strampelli (2020)

<sup>60</sup> Ibid.

<sup>61</sup> Dutch Stewardship Code

<sup>62</sup> McDonnell (2023)

<sup>63</sup> Dimson et al. (2023)

For selected collaborative engagements, the PRI Secretariat plays an active role in governing and coordinating them (labelled as PRI-coordinated projects). These projects are conducted by PRI signatories, but the PRI Secretariat's roles include providing strategic, organizational and administrative support to the engaging group, using expertise and topical knowledge to assist the group in reaching agreement, and ensuring the engagement adheres to an agreed timeline.<sup>64</sup>

### Climate Action 100+

Another large-scale initiative is Climate Action 100+, which has been joined by more than 600 institutional investors with a total of more than \$65 trillion in assets under management since its launch in 2017 by five global investor networks: Asia Investor Group on Climate Change; Investor Group on Climate Change (Australia and New Zealand); Institutional Investor Group on Climate Change (Europe); Ceres Investor Network in Climate Risk and Sustainability (North America); and the Principles of Responsible Investment (global).

Like PRI, Climate Action 100+ also provides a platform for collaboration. By collaborating with other investors in engaging with the most important emitters, signatories can benefit from a louder collective voice while also pooling engagement resources.

CA100+ aims to engage with the top 166 highest GHG emitting companies to achieve emissions reductions. CA100+ promotes engagement with these target companies to implement a company governance structure which accounts for climate risk, reduce GHG emissions in line with the Paris Agreement, and disclose in line with the TCFD recommendations.

CA100+'s strategy for influencing companies relies on investor engagement. Each participant in the initiative must commit to engage with one of the target companies. CA100+ assigns 6–8 investors to the engagement team for each company, with 1–2 investors acting as the lead engager. While CA100+ and its member initiatives provide training on engagement strategies and sector or engagement topics, the content and process of each engagement is left to each individual engagement team's discretion.

### Other investor forums

The Carbon Disclosure Project (CDP) also provides the opportunity for investors to collaborate through its collective engagement program: the Non-Disclosure Campaign (NDC). The annual campaign is designed to coordinate the efforts of the CDP members who wish to encourage companies to disclose their environmental data on CDP's platform. It works in three steps; first, CDP establishes a list of target companies based on size, sector or country; second, NDC participants are assigned a number of companies for which they wish to lead the engagement effort; last, letters underlining the importance of disclosing this data are drafted by CDP, signed by all interested signatories, and sent by the lead investors to their target companies. Overall, it is an opportunity to join forces with other like-minded investors to reach a common goal.

Researchers have confirmed the importance of established networks to further ESG campaigns. Indeed, several studies have illustrated the role of "investor driven governance networks" as a key component of the infrastructure for private environmental governance. Such IGNs include, among others, the abovementioned CDP, the Interfaith Center for Corporate Responsibility (ICCR), the Coalition for Environmentally Responsible Economies (Ceres), Investors Against Genocide, the Network for Sustainable Financial Markets, and the Institutional Investors Group on Climate Change (IIGCC).

Pertinently, they disseminate information relating to their mission and propose strategies and tactics for action, while they also serve as rallying points for individual and institutional shareholders seeking to influence companies and facilitate cost-sharing for campaigns.

<sup>64</sup> Ibid.

In some countries, investor collaboration is also supported by organizations that specifically seek to facilitate coordination between institutions when engaging with portfolio companies. One prominent example is the UK Investor Forum, a “member-founded not-for-profit organization” which includes many UK and third-country institutional investors. Assogestioni, the Italian non-profit Investment Management Association, which represents most of the Italian and foreign asset managers operating in Italy and, in the Netherlands, Assogestioni’s equivalent, Eumedion, also seek to facilitate cooperation amongst its members.

In addition to institutional forums, there are also NGO-type intermediaries that actively seek to organize ESG-driven collaborations, such as ShareAction.

## Proxy advisors as de facto coordinators

### A bundled product against shareholder apathy

A problem with corporate governance, largely documented in previous sections, is that many shareholders (including institutional investors) are rationally apathetic, unwilling to invest in information that would allow them to effectively monitor and vote (Berle and Means, 1932) in a typical free-rider problem.

Proxy advisory firms hold the promise of solving this issue by exploiting economies of scale in information collection, allowing investors to vote their interests at low cost. In practice, proxy advisory firms are independent service providers who advise institutional investors on how to vote their shares and help them to execute their voting decision. Indeed, an important feature of the market is that proxy advisors sell their voting advice bundled with vote execution services. Because of the sheer number of votes that they must cast, vote execution services are more valuable for some funds than the advice itself. Evidence suggests that the price of vote execution services is as much as twice the price of the proxy advice itself<sup>65</sup>.

While proxy advisors’ research reports are only available to their subscribers, their recommendations are frequently made public, either by the media or by the party supported by the proxy advisor – the company or an activist investor.

Through both these public recommendations and private research reports, proxy advisors have a substantial impact on voting outcomes<sup>66</sup>.

### A highly concentrated industry that raises concerns

Economies of scale, however, have led the industry to consolidate into effectively two firms, Institutional Shareholder Services (ISS) and Glass Lewis, resulting in little diversity of advice. Together, ISS and Glass Lewis own a 90% share of the proxy advisor voting market<sup>67</sup>. Critics of the industry argue that its concentration enables ISS and Glass Lewis to wield significant control over corporate elections.<sup>68</sup> Recommendations by proxy advisors are also often criticized for imposing one-size-fits-all governance structure.<sup>69</sup>

Another key point of contention is that proxy advisors may crowd out shareholders’ incentives to invest in own research, as pointed out by Malenko and Malenko (2019). However, over the past decade, we have seen less direct reliance on proxy advisors, but instead, asset managers pouring resources into in-house stewardship departments.

<sup>65</sup> Matsusaka (2021)

<sup>66</sup> Iliev and Lowry (2015); Malenko and Shen (2016).

<sup>67</sup> Rose (2021); Shu (2024).

<sup>68</sup> Copland et al. (2018)

<sup>69</sup> Levit and Tsoy (2021); Becher et al. (2023).

## Strong prescribers

Academic research has documented the influence proxy advisory firms exert on voting outcomes. Their recommendations are estimated to sway between 13-30% of shareholder votes, depending on the type of proposal.<sup>70</sup>

Iliev and Lowry (2015) show that such correlation is stronger for smaller funds and those with higher turnover, implying that these funds have less incentive or resources to independently assess the issues being voted on.

Malenko and Shen (2016) offer causal interpretations of ISS's influence on say-on-pay proposals in 2010-2011 by employing a cutoff in ISS's voting guidelines. They show that a negative recommendation on a say-on-pay proposal can lead to a 25 percentage point reduction in voting support.

Shu (2024) confirms that when a proxy advisor issues negative recommendations, there is a sizable decrease in support for the proposal among its customers compared to non-customers. For instance, when ISS recommends voting against a director's election, its customers are 20 percentage points more likely to vote against that director than investors who are not ISS subscribers. Similarly, when Glass Lewis recommends voting against a director, its customers are 13 percentage points more likely to oppose that director compared to other investors. He observes a similar pattern for say-on-pay proposals: negative recommendations from ISS or Glass Lewis are associated with decreases of 19 and 17 percentage points, respectively, in support from their customers.

Ertimur et al. (2018) find that a withhold recommendation from ISS regarding a director election is associated with approximately 20% more votes withheld from the director. Cases of high votes withheld absent a negative ISS recommendation are rare.

## The risk of "robovoting"

The influence of proxy advisors' recommendations on their subscribers' votes is even enhanced when the subscriber uses the firm's voting system to cast his vote. Shu (2024) indicates that among investors who subscribe to both proxy advisors for voting advice, those using ISS's voting system exhibit a 13 percentage point higher agreement with ISS's recommendations. Similarly, investors using Glass Lewis's voting platform tend to vote 19 percentage points more consistently with Glass Lewis's advice.

This finding raises the possibility that the pre-population of recommendations on proxy advisors' voting platforms could play an additional role in how their customers vote.

For example, such pre-population of votes could potentially encourage investors to vote mechanically in line with proxy advisor recommendations<sup>71</sup>. Many industry participants have indeed expressed concerns about investors potentially voting in lockstep with their proxy advisors' recommendations, a practice known as "robovoting".<sup>72</sup>

According to Shu (2024), the proportion of ISS's customers who vote almost exclusively in line with its recommendations has increased from 7 percent in 2007 to 23 percent in 2021. Additionally, he finds that a proxy advice customer is more likely to engage in robo-voting if it also uses the voting system of the proxy advisor. Moreover, smaller investors and those offering index fund products are even more likely to be robo-voters.

<sup>70</sup> Ertimur et al. (2013); Larcker et al. (2015).

<sup>71</sup> Rose (2021)

<sup>72</sup> Doyle (2018)

### A pro-management or pro-environment bias?

Investors and policymakers are also concerned about potential conflicts of interest inherent in some proxy advisors' business models. As an example, the leading advisory firm, Institutional Shareholder Services, sells both proxy voting services to investors and consulting services to corporate issuers seeking assistance with proposals to be voted on by shareholders. In contrast, Glass Lewis does not sell consulting to companies.

Indeed, researchers have observed that the largest proxy advisors often simply support management and rarely follow shareholder proposals.<sup>73</sup> Using a unique dataset on voting recommendations, Li (2018) finds that for most types of proposals, competition from a new entrant (Glass Lewis) reduces favoritism towards management by the incumbent advisor (ISS). Using a difference-in-differences framework, he finds that after Glass Lewis's initial coverage of a new firm, ISS begins to take a tougher stance on management.

It has emerged that proxy advisors such as ISS, the dominant player, has recently become more supportive of environmental and social resolutions than most traditional asset managers.<sup>74</sup> For example, ISS have adopted a new voting policy relating to so-called "significant greenhouse gas emitters," a set of companies that are accounting for over 80 percent of corporate industrial greenhouse gas emissions and are thus perceived as key to driving the global net-zero emissions transition. Focusing on these companies, ISS guidelines say that it will recommend voting against the incumbent chair of the responsible board committee if it determines the company is not taking the "minimum steps" needed to understand, assess and mitigate climate risks, both for the company and larger economy.<sup>75</sup> ISS has also been found to be more supportive on ESG matters than the second largest proxy firm, Glass Lewis.<sup>76</sup>

Matsusaka and Shu (2021)'s theoretical model can account for such a pro-environmental shift by ISS. Because of heterogeneous demand for advice, a proxy advisor does not necessarily make recommendations that would maximize corporate value, but rather offers the advice that maximizes the financial and nonfinancial outcomes that matter to its customers. Under conditions that seem empirically relevant, a platform monopolist slants its advice toward the preferences of investors with non-value-maximizing goals, thereby steering corporate elections away from value maximization. Intuitively, if return-only funds place little value on how their votes are cast, the advisor designs its recommendation policy to satisfy the ESG funds that do care. Because all investors follow the monopolist's advice, corporate elections are distorted toward the preferences of ESG funds and votes are not representative.

### Influencers that can be influenced

Proxy advisors' recommendations are not set in stone. Shu (2024) observes that both proxy advisors (i.e., ISS and Glass Lewis) are more likely to change their recommendations on specific proposals when more investors disagree with their prior recommendations. Moreover, the likelihood of the proxy advisors supporting a particular broad issue also changes more significantly when there is greater previous investor disagreement with their recommendations. These findings suggest that there may exist a channel from investor preferences to proxy advisor recommendations. Two non-mutually exclusive explanations could account for these findings. On the one hand, shareholders often possess specialized information, and proxy advisors may consider investors' votes as part of their information-gathering process. On the other hand, profit-driven proxy advisors might align their voting policies with the preferences of investors. Shu (2024) finds suggestive evidence supporting both explanations. In support of the second explanation, it is noticeable that ISS conducts annual surveys to assess evolving investor preferences<sup>77</sup>.

<sup>73</sup> Cappucci (2019)

<sup>74</sup> Chuah et al. (2021)

<sup>75</sup> ISS (2021)

<sup>76</sup> Chuah et al. (2021)

<sup>77</sup> Shu (2024)

## Remaining issues

### Free riding within coalitions

McDonnell (2023) identify 41 investor initiatives through a document analysis and use a sectoral governance perspective to analyze initiative strategies and policies. They show that, among other things, a lack of internal accountability threatens to undermine the potential for investor initiatives to be agents of climate action.

Focusing on CA 100+, they note that the initiative does not pay attention to assessment of investor behavior or accountability to upholding the goals of CA100+. Even investor performance in the work of the initiative—their success in leading engagements at the companies they are responsible for—is almost completely unaddressed. CA100+ investor members are asked to submit annual reports on their engagement progress and strategies, but it is not clarified how or if these are evaluated by the initiative. The lack of transparency and seeming lack of accountability has led to accusations of investors using CA100+ to greenwash their image.

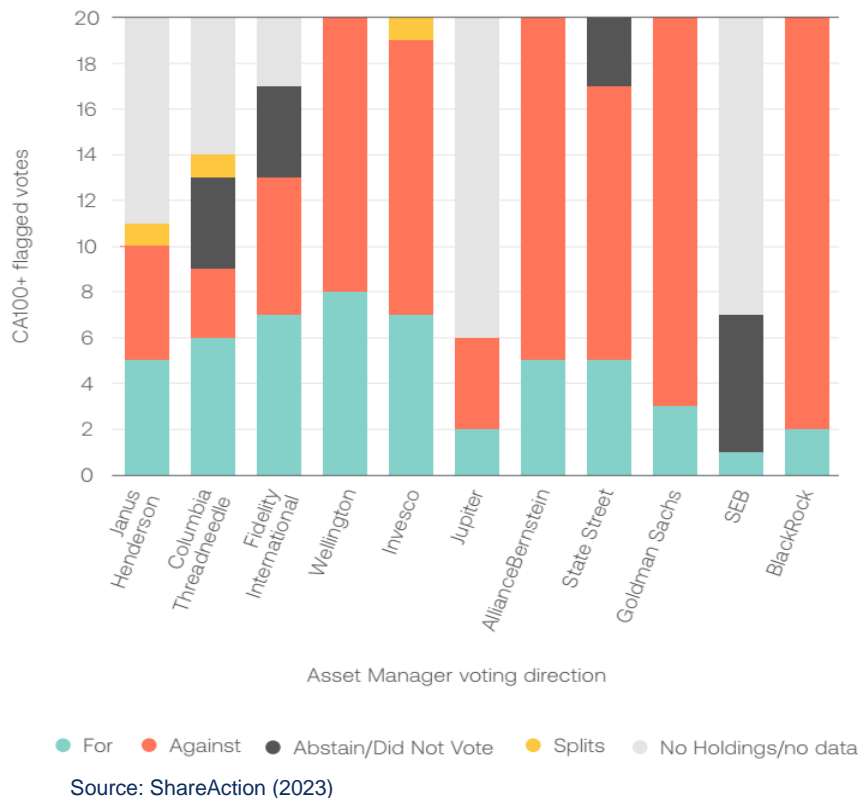
Observations by ShareAction (2023) confirm the lack of accountability within the initiative by checking votes of CA 100+ members on resolutions flagged by the initiative in the 2023 AGM season. While CA100+ makes clear that legally they cannot require members to vote a certain way, they flag resolutions from their investor members on the website, if these are considered to be “consistent with the goals of [CA100+],” “*worded such that the request of management is considered reasonable and not burdensome,*” and “*complementary to existing engagement strategy as set out by the [CA100+] collaborative engagement group for the company affected by the resolution*”. Relevant shareholder resolutions from NGOs or other investors may be shared within some of the CA100+ working groups or member networks, but these will not be posted on the website.

Several members of the initiative (all American asset managers) voted “against” in most of the 20 CA100+ flagged shareholder resolutions (see figure 6). Among those resolutions, five were considered action-oriented resolutions: resolutions which request companies to adopt policies and set targets rather than solely disclose information<sup>78</sup>. Six CA100+ members in their sample voted ‘for’ every one of these resolutions, while five firms voted ‘against’ every one of them.

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<sup>78</sup> ShareAction (2023)

**Figure 8: percentage of support for "flagged" resolution by CA100+ members**



### Free riding of outsiders

From an economic perspective, one should observe that collaboration in its best form would only eliminate the free rider problem among the collaborating investors, but not for the group of collaborators vis-a-vis other investors. The costs of collaboration and engagement are borne by a (potentially small) group while other investors equally benefit from the engagement of that group. This can provide an incentive not to participate in the collaboration in the first place.

### Collaboration among competitors

There is an economic – and potentially also a cultural – barrier to collaboration, especially between directly competing institutional investors.

It is not obvious that such investors should talk to their competitors about how to proceed, with regard to individual portfolio companies, without any clearly measurable prospects of a financial benefit resulting from their efforts. In addition, many investors or their management personnel may have a cultural reservation about working with competitors (as they don't want to play in the same sandbox). This problem is less pronounced when collaboration involves investors with very different business models, such as hedge funds and index funds, who primarily compete within their own category to achieve a better reputation in the market, better performance, and possibly lower costs.

Unlike private asset managers, pension funds do not compete with each other and therefore have less reluctance to collaborate with each other. A pension fund beneficiary cannot move the assets in its pension fund from one country to another, in the same way that individuals and corporations can move their business from BlackRock to Vanguard. These differences may explain why large pension funds, such as CalPERS, have been driving forces behind investor alliances.

# How to make ESG collaborative engagement function

## Documented success factors of individual engagement

Work has been done by regulators, associations and researchers to identify factors that influence the success rate of engagement requests. For instance, FinanceMap has developed a stewardship scoring methodology, to evaluate asset managers' engagement processes and shareholder resolution activities. They grounded their work and updated it based on the substantial progress made on the minimum expectations for investors to be considered credible stewards of investee companies on climate, demonstrated by various investor guidelines released by industry coalitions (e.g., NZAOA Future of Investor Engagement, Institutional Investors Group on Climate Change (IIGCC) Net Zero Stewardship Toolkit).

Looking at those various guidelines and academic research on moderators of engagement effectiveness, we observed that some success factors are widely acknowledged:

- **Size:** there is evidence that engagement requests are more likely to succeed when the shareholder engaging holds a larger share of the targeted company (Dimson et al., 2015, 2021).
- **Resources:** active shareholder engagement also requires financial and human resources. Financial costs relate to information acquisition, strategy implementation and external legal counselling. Activist shareholder campaigns have been estimated to cost millions of euros<sup>79</sup>. For instance, the total cost of the high-profile successful Exxon campaign by Engine n°1 has been estimated for the asset management firm at around \$30 million<sup>80</sup>.
- **Access to management/board:** it has also been convincingly argued that engaging investors benefit from having a strong relationship and/or cultural awareness of the target company. The role of cultural connection has been emphasized by Dimson et al. (2021) who found that a group of investors engaging had more influence when the engagement was spearheaded by an investor who is from the same country as the company being engaged, suggesting that linguistic and cultural elements may play an important role. This is also consistent with the finding in Kim, Wan, Wang, and Yang (2019) that institutional shareholders are especially likely to commit resources to ESG engagement with companies that are located nearby.
- **Specific objectives and clear milestones:** as pointed out by the Investor Forum, objectives should be specific and targeted to enable clarity around delivery and the engagement approach should be bespoke (tailored) to the target company. FinanceMap stresses that engaging investors should use a defined structure for engagement and milestones to measure progress against.
- **Detailed escalation policy:** it is also commonly admitted that engaging investors should have a detailed escalation policy. Escalation is one of the 12 principles of the 2020 UK Stewardship Code while the former UK Code set out a helpful list of escalation measures that can be considered to advance engagements.
- **Full use of shareholder authority:** to be effective, engagement escalation policies should include offensive actions to be used as credible threats in case engagement requests were ignored by engaged companies. Those offensive actions include divesting, putting the company on exclusion list, filing shareholder resolutions, driving anti-management voting campaigns at AGMs, litigation, etc.

Other moderators, unrelated to the engagers' profile or policy, have also been documented. They relate to the profile of engaged companies or to the type of requests. The success rate is especially higher when engaged companies are large<sup>81</sup>, have good financial situation or competitive position, and already good ESG

<sup>79</sup> Gantchev (2013)

<sup>80</sup> Reuters (2021)

<sup>81</sup> Semenova and Hassel (2019)

performance<sup>82</sup>. As for the type of requests, it appears that requests on material issues have a higher success rate<sup>83</sup> compared with requests on non-material issues.

Those success factors apply as much to single investors as to investor coalitions.

## Managing coalitions: the IAD Framework

### The IAD framework

One of the Nobel Prize winner Elizabeth Ostrom's major contributions, the Institutional Analysis and Development Framework (IAD)<sup>84</sup>, has been widely used by social scientists to study the effectiveness of collaborative governance regimes around the world.

Ostrom recognized that individuals cannot collaborate in a systematic or sustainable way without institutions to facilitate communication. Building upon Ostrom's theory, Brett Frischmann introduced the concept of "infrastructure". Just as a road is necessary to transport goods, Frischmann argued that intangible infrastructure, such as the stock market, is necessary to facilitate communication and cooperation. As issues become more complex, they require more intricate institutional infrastructure.<sup>85</sup>

As emphasized by Miazad (2023), Ostrom and Frischmann provide a theoretical framework for understanding investor alliances as a new type of shared institutional infrastructure for managing climate change. Investor alliances like Climate Action 100+ provide a sophisticated and dynamic collection of rules that their members use to organize ongoing investor monitoring, engagement, and voting.

As depicted in table 2, the IAD framework contains the following "design principles" (to be understood as best practices) that support and sustain an efficient collaborative governance.

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<sup>82</sup> Rehbein et al. (2013)

<sup>83</sup> Bauer et al. (2023)

<sup>84</sup> Ostrom (2011)

<sup>85</sup> Miazad (2023)

**Table 2: the IAD framework**

Design Principles	Description
<i>Well-defined user and resource boundaries</i>	1A. User Boundaries: Clear and locally understood boundaries between legitimate users and nonusers are present. 1B. Resource Boundaries: Clear boundaries that separate a specific common-pool resource from a larger social-ecological system are present.
<i>Equivalence between benefits and costs</i>	2A. Congruence with Local Conditions: Appropriation and provision rules are congruent with local social and environmental conditions. 2B. Appropriation and Provision: Appropriation rules are congruent with provision rules; the distribution of costs is proportional to the distribution of benefits.
<i>Collective choice arrangements</i>	3. Most individuals affected by a resource regime are authorized to participate in making and modifying its rules.
<i>Monitoring</i>	4A. Monitoring Users: Individuals who are accountable to or are the users monitor the appropriation and provision levels of the users. 4B. Monitoring the Resource: Individuals who are accountable to or are the users monitor the condition of the resource.
<i>Graduated sanctions</i>	5. Graduated Sanctions: Sanctions for rule violations start very low but become stronger if a user repeatedly violates a rule.
<i>Conflict resolution mechanisms</i>	6. Conflict-Resolution Mechanisms: Rapid, low-cost, local arenas exist for resolving conflicts among users or with officials.
<i>Minimal recognition of rights</i>	7. Minimal Recognition of Rights: The rights of local users to make their own rules are recognized.
<i>Nested enterprises</i>	8. When a common-pool resource is closely connected to a larger social-ecological system, governance activities are organized in multiple nested layers.

### Application of the IAD framework to CA100+

Miazad (2023) applied the IAD framework to CA 100+ to highlight strengths and limitations of the alliance.

Several critical flaws stand out:

- **Proportional allocation of costs and benefits:** when selecting lead investors, the alliance considers applicants' holdings in the target company over the initiative's term. But this does not ensure that the benefits to the lead investor (in case of a positive market reaction to a successful engagement) will compensate for the costs incurred. More generally, there is no mechanism that connects coalition members' efforts to (economic or reputational) rewards.
- **Monitoring:** the alliance tracks the effectiveness of investor engagement. This is particularly valuable for asset owners, who have limited tools to monitor their asset managers' efforts to incorporate climate risk into their engagements. But it leaves open the question whether the alliance itself should require external monitoring (by audit firm, NGO, government agency, or international organization, such as the UN). Unlike self-monitoring, such an external monitoring forum would add legitimacy and transparency to Climate Action 100+ because it would be conducted by external experts. It is nevertheless remarkable that behaviors of the alliance members are de facto tracked by NGOs like ShareAction.
- **Graduated sanctions:** the initiative has introduced a practice of delisting companies, which is a formal mechanism for sanctioning non-compliant members. A minimum requirement for investor participants in Climate Action 100+ is to join a contributing engagement team for at least one focus company, theme, or sector each year or engage at least one focus company as a formal individual engager. Signatories who fail to do this will first be asked to come into compliance and participate by one of the coordinating networks. If, after a genuine attempt to engage the signatory, Climate Action 100+ determines that the signatory's participation in the initiative is not in line with the terms of reference set forth in this signatory handbook, the signatory may be delisted (i.e. removed from the list of signatories named on the website

and from signatory-only communications). In February 2023, index specialist Mellon Investments became first and only CA100+ member to be delisted from the alliance.

In several aspects, the way CA100+ conforms to the IAD principles is minimal only. Critical adjustments would be necessary to create strong incentives for members to significantly contribute and fully align with the coalition's objective. So far, as figure 6 showed regarding voting on flagged resolutions, it leaves too much room for members to continue with a "business-as-usual" attitude.

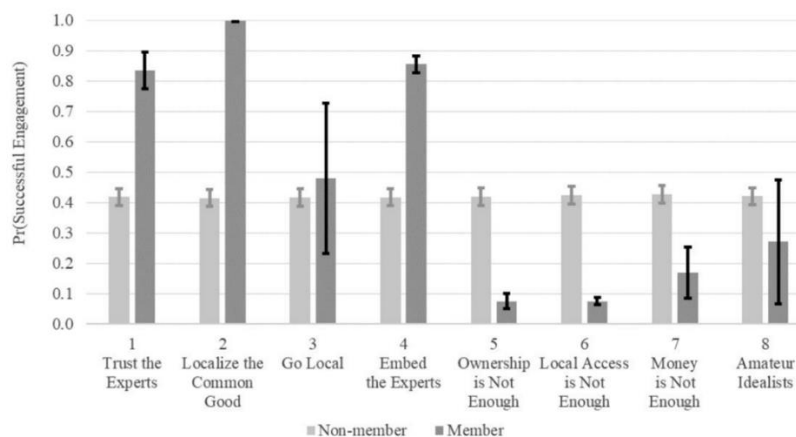
### Practical recommendations: the forming of the coalition

Studies show that successful engagements - those in which investors' ex ante engagement goals are achieved - are associated with several "success factors" that enhance the salience of an investor coalition to firms' managers<sup>86</sup>, such as

- The coalition's size<sup>87</sup>
- The coalition's stake in the target firm<sup>88</sup>
- Local proximity between investors and target firms<sup>89</sup>
- Experienced coalitions are also expected to be more effective in achieving their aims as past experiences of success enable future success<sup>90</sup>.

Slager et al. (2023) investigate how four coalition composition levers (coalition size, shareholding stake, experience, local access) combine to enable or hinder engagement success. They find that four configurations (or "recipes") of coalition composition levers are consistently associated with engagement success, whereas four different configurations consistently relate to failure.

**Figure 9: probability of engagement success across coalition types**



Source: Stager et al. (2023)

Based on these findings, they develop an emerging "tailor-to-target" theory of collaborative shareholder engagement whereby successful engagement involves tailoring specific configurations of coalition composition levers to fit with the financial capacity and environmental predispositions of target firms, that is, the target's receptivity. Drawing on qualitative data, they propose two knowledge-based mechanisms underlying the configurations for engagement success—synchronizing and contextualizing— which point to investor coalitions' differing abilities to align (synchronizing) and translate (contextualizing) their demands with target

<sup>86</sup> Mitchell et al. (1997); Bundy et al. (2013).

<sup>87</sup> Doidge et al. (2019)

<sup>88</sup> Gond and Piani (2013)

<sup>89</sup> Dimson et al. (2023)

<sup>90</sup> Hadani et al. (2019)

firms depending on the composition of the coalition and the target's receptivity. By contrast, failed engagements are characterized by overfocusing (e.g. overemphasizing a single coalition composition lever and not including other relevant levers).

We build on this line of research to issue a series of recommendations regarding the forming of coalitions:

### Recommendation #1: mix global and local investors

Researchers have found that a signatory is more likely to engage when the target is geographically closer, such as being domestic.<sup>91</sup> They interpret this as local investors having more incentives to engage on ESG issues, because they internalize to a greater degree the harms from poor ESG practices and the benefits from reputational gains among local communities. Local investors also incur lower transaction costs during engagements (e.g., easier communication and information gathering), and exert stronger influence over target firms thanks to their local connections and social ties. Dimson et al. (2023) also find that the characteristics of the lead investors is important in determining engagement success: having a domestic lead increases the success rate by 24%–29%, while having a public pension fund as lead reduces the success rate by 21%–24%.

If local participants are key to fluidify communication with targeted companies, large global investors are also required to give more clout to the coalition.

### Recommendation #2: include “the Big Four” when possible

Dimson et al. (2023) also observed an inverse U-shaped relation between signatory size (measured by AuM) and the likelihood of joining a coalition. They attribute this to two contrasting aspects of investor influence on engagements. On the one hand, large signatories may prefer to engage alone if they have sufficient resources and substantial influence over target firms. On the other hand, engagements also require commitment, resources and a certain clout over the target firm, and when the signatory is too small it may not have the means to contribute adequately to the coalition. These opposing forces make collaboration particularly appealing for mid-sized signatories.

If they are more motivated to join alliances, mid-sized investors may be insufficient for the coalition to attain critical size. The joining of several of the Big Four may prove to be necessary for the coalition to reach success. Indeed, the Big Four are often pivotal as they collectively represent 15-20% of the capital base of most listed companies in developed markets. In 2023, only 8 (3%) of the 257 environmental and social shareholder resolutions assessed by ShareAction received majority support. But 69 additional resolutions would have passed if the four largest asset managers had voted for them.

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<sup>91</sup> Dimson et al. (2023)

**Figure 10: number of shareholder resolutions that would have passed if supported by the Big Four**



Source: ShareAction (2023)

### Recommendation #3: team up with green activist funds

A growing – and also financially lucrative – field of activity seems to be opening up for hedge funds that invest specifically in “brown” companies in order to transform them into “green” ones.<sup>92</sup>

Hedge funds and institutional investors have different incentives. While hedge funds want the attention, institutional investors tend to avoid it. For instance, Engine n°1’s Exxon campaign was thought as a marketing tool (see Box #2)

Hedge funds and institutional investors also vary in terms of preferred methods: hedge funds are used to leveraging confrontational techniques while institutional investors prefer relying on collaborative engagement. Due to those differences, a symbiotic relationship could emerge when the two categories team up and stay in their behavioral habitat.

To make symbiosis happen, various types of investors should first connect with each other. He and Li (2022) observe that actively managed funds whose managers are socially connected to activists are more likely than unconnected managers to invest in target stocks; their investment decisions are profitable. Importantly, such effects are greater for funds facing more severe information asymmetry. Connected funds are 14.2 percentage points more likely to support activists in proxy contests and contribute to reducing proxy contest costs. Their evidence shows that social ties benefit both connected investors and activists. It also suggests that social networks reduce information asymmetry around activist campaigns by facilitating information exchange and increasing trust.

#### Practical recommendations: the functioning of the coalition

### Recommendation #4: align objectives across participants

A good practice is to make sure that the coalition sends clear, unique requests shared across all coalition participants to avoid multiple and conflicting messages to targeted firms.

### Recommendation #5: adapt requests to the target

The current inertia of firms vis-a-vis climate change indicates that many are either unwilling or unable to comply with investors’ demands (Durand et al. 2019). Good knowledge of companies is crucial to identify which reforms can be reasonably implemented and which ones cannot. Therefore, coalitions should

<sup>92</sup> Financial Times (2022)

encompass at least one institution with an expert sectoral knowledge with regard to targets. Building on this knowledge, the coalition then can issue a request both adapted and achievable for the target.

In the case of the Exxon campaign, Engine n°1 paid a special attention to the profile of board candidates he proposed with a focus on energy experts instead of green activists to gather support by institutional investors.

#### Recommendation #6: organize roles with a multi-tier system

While the lead investor incurs most of the engagement costs, the potential benefits of the engagement efforts are shared among all collaborating investors. To overcome the free-riding concerns within the coalition, lead investors need to be sufficiently incentivized. Consistent with this conjecture, Dimson et al. (2023) find that an investor is more likely to lead the collaboration when its stakes in and exposure to the target firm is higher. In other words, having more “skin in the game” provides an investor with more incentive to exert effort.

In addition, they find an investor is more likely to lead when the target firm is domestic. Further investigating this finding, they find that both the geographic distance and the cultural distance between the investor and the target firm diminish the likelihood to lead. These findings lend further support to the local preference argument where, due to the high costs and extra effort required for leading a collaborating engagement, engaging with a target that is geographically/culturally close enhances potential benefits (e.g., reputational gains in the local community and superior local knowledge) while mitigating logistical costs (e.g., transaction costs and information acquisition costs).

Therefore, a relevant coalition architecture would rely on a local or high-stake lead investor backed by a second tier of foreign or smaller investors.

#### Recommendation #7: make members accountable

As mentioned for CA100+, existing coalitions too often suffer from a lack of accountability. Beyond high-level information (e.g., the identity of the lead investor and the state of progress of engagements), there is no public mention of the specific roles and deployed resources by each investor participating to a collaborative engagement. Therefore, it is impossible to connect success/failure to a solid/loose implication of investors.

Coalitions would increase both transparency and accountability by ascribing specific roles to members and providing individualized engagement metrics (related to inputs, activities and outcomes).

#### Recommendation #8: make good use of advisory votes

In a binding vote, the company is legally obligated to implement the decision reached by the shareholders in their vote. But with an advisory vote, the company's board of directors is not legally required to follow the collective decision of shareholders. However, willfully ignoring a strong vote on a non-binding resolution is a signal of poor shareholder relations. It carries reputational risks for the company and can result in investors and stakeholders deploying escalation measures in the following proxy season.

## Say on Climate

Shareholders can influence how companies develop their net-zero transition plans and implement them. They can be particularly opposed to plans that are not aligned with Paris Agreement or that depend on the divestment of brown assets (a practice known as “brown-spinning”, see following recommendation) unless certain conditions are complied with.

This is possible through increasingly popular “say on climate” proposals where shareholders demand corporate management put a net-zero transition plan up to a shareholder advisory vote or where shareholders vote on similar management-sponsored resolutions. The Say on Climate initiative was launched in 2020 by the Californian NGO As You Sow with the aim to get companies to disclose credible climate transition plans and be held accountable for delivering them. Since its inception, it has gathered a rapid momentum in many jurisdictions.

## Say on Pay

Since the 2008 financial crisis, much attention has been paid to the governance of the remuneration of board members and key executives. Nearly all OECD jurisdictions have introduced mechanisms for normative controls on remuneration. Most jurisdictions now give shareholders a say on i) ex ante remuneration policy and ii) ex post pay levels.

Regarding remuneration policy, 88% of OECD jurisdictions have provisions for binding or advisory shareholder votes on remuneration policy. Regarding ex-post remuneration levels, binding votes are a requirement in 51% of jurisdictions (including France, Spain, Portugal and also Sweden and Italy for directors only), with another 27% requiring or recommending advisory votes.

Therefore, climate-concerned investors can use that tool when management or board are not reactive to engagement requests.

**Recommendation #9: exercise your full shareholder authority**

## Require votes on M&A

An important lever for investors willing to influence the decarbonization of companies is voting on M&A issues. As M&As are fundamental changes for involved companies, shareholders are generally granted voting rights. For mergers, jurisdictions generally require supermajority or majority shareholder authorization. Some jurisdictions also grant shareholders voting power over “significant transactions”<sup>93</sup> that can be used for cessions and spinoff projects. Therefore, shareholders often have their say on transactions that may be consequential for the companies’ carbon footprint. Otherwise, they may ask for an extraordinary meeting to discuss and vote about the project.

As emissions reduction can require costly operational improvements, early retirements of some assets, or scaling down supply, some firms are looking for more convenient alternatives, especially the divestment of some of their legacy assets (oil, gas, and coal) and related businesses, especially if they attract high-valuations from other firms and their investors<sup>94</sup>.

If it helps the seller to improve its carbon footprint, such a transfer of brown assets does not mechanically lead to a decrease in overall carbon emissions. The net effect depends on the way the assets will be operated by the acquirer. In many cases, the operation will be neutral but, in some cases, it can lead to increased emissions.

<sup>93</sup> For the EU, see Directive (EU) 2017/1132 of the European Parliament and of the Council of 14 June 2017 Relating to Certain Aspects of Company Law.

<sup>94</sup> Gözlügöl and Ringe (2023)

The most concerning transactions are those involving high-emitting assets sold to privately held companies or state-owned entities. Privately held companies are generally less subject to investor pressure as they do not operate on capital markets. Regulatory rules on disclosure or adoption of net-zero transition plans and targets might only apply to publicly held companies in some jurisdictions (to protect individual shareholders), which leaves the activities of private companies in the dark. Similarly, stakeholder pressure groups might primarily target publicly held companies, as there is more transparency in public markets.<sup>95</sup>

Gözlügöl and Ringe (2023) mentioned one case of shareholder opposition to a spinoff concerning Australia's biggest carbon emitter, AGL Energy. The management put into action a demerger plan, spinning off the company's coal-fired power plants that required a supermajority of 75 percent of shareholder votes. A billionaire climate activist built an 11.3 percent stake in the company to oppose the breakup and persuade other shareholders to support him to achieve the 25 percent threshold. In the end, the plan could not get the supermajority vote and failed as opposing shareholders, including the activist and Australia's largest pension fund (Hesta), considered that demerger was not the right option on environmental grounds.

This approach, even if it turns to be highly effective, might nevertheless be disfavored by some asset managers as micromanagement (see Box #1 on Blackrock's stewardship philosophy).

### Co-file shareholder resolutions

Shareholder proposals are an important and powerful corporate engagement mechanism. They allow investors to use their formal rights as owners to publicly and transparently escalate important matters, and directly interact with a company's board. The number of shareholder proposals focused on ESG issues has grown dramatically in the last ten years.

It is well documented that ESG-focused shareholder proposals rarely pass<sup>96</sup> mostly because they are almost always opposed by management<sup>97</sup>. Even if majority-supported shareholder proposals are rare, the successful ones are not always acted upon by management<sup>98</sup>. Figures gathered by PWC show that one year after the end of the 2022 proxy season, companies were acting on – and implementing – less than two out of every five of those shareholder proposals, according to their proponents. From the perspective of companies, only half said they have implemented or will be implementing the proposals their shareholders passed, in part or in full.

This lack of response by companies is opposite to governance good practices as recommended by investor forums. Many in the stewardship ecosystem are starting to converge around the idea that 50% should not be the threshold for when boards and management teams are responsive to shareholders. For example, proxy advisor Glass Lewis, the UK Investment Association, and the International Corporate Governance Network have all signaled that they expect boards to engage with their shareholders and demonstrate some level of responsiveness when 20% or more of shareholders vote contrary to board recommendations.

This lack of response could conflict with the fiduciary duty of boards. In most jurisdictions, board directors of publicly listed companies are tasked with looking out for shareholders' interests. When a substantial number of voting shares indicate they are in favor of a particular action, not taking such action can be seen as a governance failure on the part of the board.

There is also a growing trend of several institutions simultaneously "co-filing" shareholder resolutions. Co-filing involves shareholders working together to file a proposal. Reasons to co-file can include to meet the legal threshold for filing a proposal; to reduce liquidity constraints where share ownership or share-blocking rules exist; to help first-time filers navigate the challenges of drafting and filing a proposal; and to demonstrate that a proposal has widescale support, and possibly endow the proposal with more legitimacy.<sup>99</sup>

<sup>95</sup> Ibid.

<sup>96</sup> Flammer (2015); Cao, Liang, and Zhan, (2019); He, Kahraman, and Lowry (2021).

<sup>97</sup> Cvijanovic et al. (2016); Bolton et al. (2020).

<sup>98</sup> PRI (2023a)

<sup>99</sup> PRI (2023b)

PRI and other initiatives offer guidelines to draft, file and gather support for resolutions.<sup>100</sup> Furthermore, a broad range of international investor advocacy groups, like As You Sow, Follow This, Majority Action, the Shareholder Association for Research and Education, the Shareholder Commons, ShareAction, and Investor Advocates for Social Justice, represent both individual and institutional investors by filing shareholder resolutions on their behalf, tracking campaigns, and defending them against legal challenges that typically come from the corporate management of the investee company.

### Initiate proxy contests

As already explained, a proxy contest refers to the act of a group of shareholders joining forces and attempting to gather enough shareholder proxy votes to win a corporate vote. The voting bids in a proxy vote could include replacing incumbent directors from the board to highlight dissatisfaction with the current management of affairs.

Proxy contests are used by (groups of) shareholders to obtain board change or reach a settlement with the company's management. Indeed, many studies have found that managements tend to accept concessions prior to AGMs if they fear losing votes.

For instance, Bebchuck et al. (2020) show that settlements before an AGM are more likely when the activist has a credible threat to win board seats in a proxy fight and when incumbents' reputation concerns are stronger. Settlements commonly do not contract directly on operational or leadership changes sought by the contestant shareholders but rather on board composition changes. Settlements tend to be subsequently followed by changes of the type sought by contestants, including CEO turnover.

Huang et al. (2020) examine corporate policy decisions made in anticipation of and subsequent to a proxy contest. Their results confirm policy concessions to dissidents that are not reversed in the year after the proxy contest. Conversely, managers do not change corporate policies prior to the contest when they expect to prevail over dissidents. They even take advantage of winning the contest to pursue policies that reduce the extent of discipline imposed on them. The study suggests that proxy contests play a disciplinary role only when incumbents anticipate a loss in the contest and are therefore forced to pursue policy choices preferred by dissidents. Chen et al. (2020) also finds that the threat of proxy fights is responded to differently based on its credibility. Only credible threats are associated with positive responses by the management.

Proxy contests also enable institutional investors to show mild opposition to the management, as they are not forced to fully oppose or endorse the management choices. Brav et al. (2024) obtain that funds are less likely to mechanically follow proxy advisors' voting recommendations when voting in proxy contests. They show that funds whose votes on management proposals correlate strongly with ISS's recommendations exhibit significantly lower sensitivity when voting in proxy contests.

The flexibility proposed during proxy contests is especially appreciated by passive funds. While passive funds are more likely to support an entire slate of management nominees and less likely to support the entire slate of dissident nominees, they are as likely as active funds to make use of the intermediate options of withholding support from a subset of management nominees, abstaining, or withholding support from certain dissident nominees. In other words, passive funds are more likely to express dissent in a milder form instead of explicitly voting against incumbent management. Importantly, Brav et al. (2024) show that partial withholding is implicitly coordinated between passive investors and it can therefore have a material impact on voting outcomes and their subsequent managerial concessions.

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<sup>100</sup> Ibid.

### Consider litigation in last resort

Finally, if all previous techniques have failed, investor coalitions can go to court. Litigation is already a well-established escalation strategy for shareholders in the US but has been little used in Europe.

Shareholders of various types are starting ESG-based legal disputes against companies over various motives. If the chosen motives are very jurisdiction-specific, several cross-country trends do emerge, especially disputes over the provision of misleading or insufficient information, the breach of fiduciary duty (i.e., in case companies fail to take adequate actions to mitigate their impact on climate change) and ESG liabilities (i.e., when companies are considered to be responsible for the ESG wrongdoings of their, potentially foreign, subsidiaries).

Should funds wish to litigate on those bases or others, specialist third-party funders are likely to accept to underwrite the claims.

# Collective impact mechanism #2: coordinated price signaling

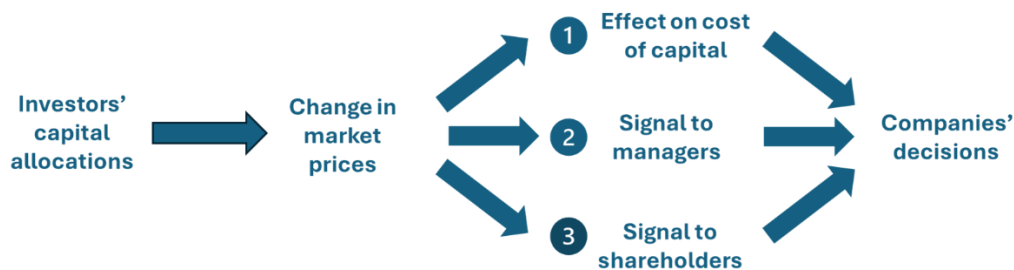
## Price signaling as a major (collective) impact mechanism

Investors can send market and non-market signals that they are committed to impact. Market signals through investments and divestments based on sustainable screening are supposed to change the conditions to access capital in financial markets for companies.

Market signaling builds on the idea that investors can modify companies' behaviors by affecting asset prices in financial markets via their own capital allocation. The transmission from asset prices to companies' behaviors and outcomes in the real economy operates through two pathways, as explained by Kölbl et al. (2020): “*first by creating incentives to improve ESG practices and therefore the quality of company activities, and second by affecting growth and therefore the level of company activities.*”

While the “**growth channel**” is mediated by the effect of market prices on cost of capital (pathway #1), the “**reform channel**” operates via the sending of signals to both corporate managers (pathway #2) and shareholders (pathway #3).

**Figure 11: the three pathways of market signaling**



Source: Own illustration

While there are large doubts that (even institutional) investors can generate efficient price signals when acting alone, the narrative might be more credible when capital allocations are performed in a coordinated way.

### The growth channel

The first channel builds on the need of companies to raise (equity or debt) capital to grow. By affecting prices in the primary or the secondary market, investors can increase the cost of capital for, respectively, present or future issuances. When cost of capital is higher, firms will be forced to abandon some investment projects. So, if ESG-concerned investors are successful in raising the cost of capital for low-ESG firms vs high-ESG firms, they will de facto lower the growth rate of the sooner vs the latter.

Investors can also send volume signals to companies. If an issuance is widely oversubscribed, it signals that the company has room to implement larger issuances in the future.

To summarize, through secondary markets investors send price and volume signals that are prone to affect the price and size of future issuances and, consequently, influence the capacity of companies to grow.

### The reform channel

The reform channel is mostly grounded on the financial interest of asset owners. Capital allocation decisions by investors can increase or decrease asset prices and therefore increase or decrease the financial wealth of asset owners. If those are concerned with their financial wealth, they would logically be responsive to price changes and try to influence the company's decisions. This is true for stockholders and for bondholders. But the influence of stockholders is obviously larger thanks to their right to vote in general assemblies.

Within the group of shareholders, there is a specific subgroup with an even increased capacity to affect companies' decisions: companies' managers. Many of them are endowed with stocks as part of their compensation package. This could make them very responsive to the fluctuations of the stock price. This is in accordance with Edmans et al. (2012), who argue that when managerial incentives are tied to stock market value, managers will be sensitive to nonfundamental shifts in the share price of their corporation.

Additionally, price signals can orient managers' decisions through a feedback effect if managers consider price changes to reflect valuable information owned by market participants.

## The theory behind the narrative

Many theoretical models have been developed by academic researchers to investigate the effects of various capital allocation strategies on i) asset prices and ii) real-life outcomes, as well in primary as in secondary markets.

### Effects of capital allocation in primary markets

Several theoretical models have obtained that responsible capital allocation in primary markets led to real-world reductions in negative externalities<sup>101</sup>. For instance, Barnea et al. (2005) claim that green investors can induce polluting firms to reform and that non-responsible industries receive less capital thereby inducing a lower level of investments from them.

In a more nuanced way, Moisson (2020) questions the effectiveness of various sustainable financial approaches to lead to real achievements for impact-driven ("direct consequentialist") social investors. In his model, the economy is made of two competitive sectors, green and brown. Each sector is characterized by an installed base of plants and by an investment function for new plants. New investment reflects the price that investors are willing to pay for shares. He notably finds that the positive impact of divestment on the pollution level is partially mitigated by the endogeneity of prices: as the financial returns on the brown technology rise following the divestment decision, additional brown investments from non-divestors partially offset the divested ones.

In a similar vein, Green and Roth (2020) argue that the folk wisdom justifying "value-aligned" investing is misguided, and such investment strategies are an inefficient way to use asset allocation decisions to influence social value creation. To them, investors in search for real-life impact would be making a mistake in adopting values-aligned investment strategies (i.e., negative or positive screenings). Their framework builds on the insight that an investor's true contribution to social value is not reflected in the social value of the companies in their portfolio, but rather by the additional social value created relative to if the investor did not exist at all. The distinction between these perspectives is driven by the fact that many companies that have high social value

<sup>101</sup> Hakenes and Schliephake (2022), Landier and Lovo (2020)

could attract investors with a purely financial objective. Therefore, socially motivated investors who finance these companies may not be contributing to social value creation. In fact, their behavior could even result in social value destruction if it displaces investors unconstrained by social considerations into financing socially harmful projects. They formalize this critique in an equilibrium model of capital allocation.

### **Effects of capital allocation in secondary markets**

There are even more models addressing the effects of capital allocation in secondary markets on asset prices and real-world outcomes.

**A great majority of theoretical models confirm that responsible strategies should lead to the targeted variations in asset prices** (see table 3 on p. 55).

Exceptions include Gollier and Pauget (2014) who examine the conditions under which socially responsible investors (hereafter, SR investors) could induce corporations to behave more responsibly, i.e., choosing a responsible vs a non-responsible strategy. They show that the firm's share price is higher when the socially responsible strategy is adopted if and only if the proportion of responsible investors and the size of the externality are sufficiently high, and if the cost of implementing the pro-social strategy is low enough. Otherwise, the market value of the responsible firm is smaller.

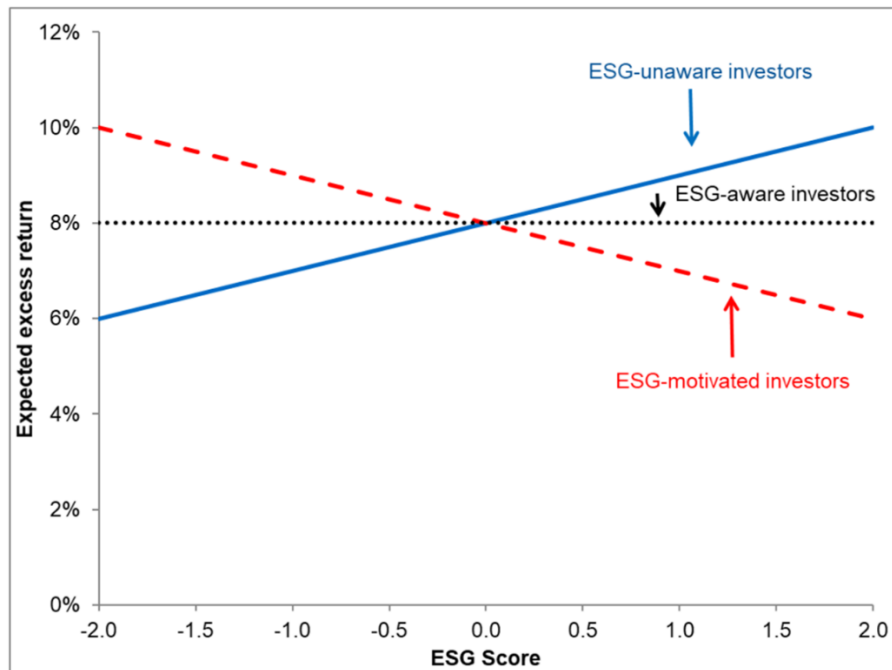
In an often-cited paper, Pedersen et al. (2020) show how ESG might change investor portfolio optimization problem and equilibrium market prices. They consider three types of investors:

- “ESG-unaware” investors are unaware of ESG scores and simply seek to maximize their unconditional mean–variance utility.
- “ESG-aware” investors also have mean–variance preferences, but they use assets’ ESG scores to update their views on risk and expected return.
- “ESG-motivated” investors use ESG information and also have preferences for high ESG scores. In other words, such investors seek a portfolio with an optimal tradeoff between a high expected return, low risk, and high average ESG score.

They derive the equilibrium security prices and returns. They show that expected returns are given by an ESG-adjusted CAPM, as seen in figure 12. When there are many ESG-unaware investors and when high ESG predicts high future profits, they show that high-ESG stocks deliver high expected returns. This is because high-ESG stocks are profitable, yet their prices are not bid up by ESG-unaware investors, leading to high future returns. In contrast, when the economy has many type-A investors, then these investors bid up the prices of high ESG stocks to exactly reflect their expected profits, thus eliminating the connection between ESG and expected returns. In other words, when a large fraction of investors is doing ESG integration with no other objective than maximizing their future risk-adjusted return through the use of ESG information, ESG information is fully integrated into prices and there is no more connection between expected returns and ESG profile. Alternatively, if the economy has many ESG-motivated investors, then high-ESG stocks actually deliver low expected returns, because ESG-motivated investors are willing to accept a lower return for a higher ESG portfolio.

**A wrap-up message is that, in secondary markets, equilibrium prices and returns ultimately depend on the relative sizes of the various types of investors.**

**Figure 2: the ESG-CAPM**



Source: Pedersen et al. (2020)

**The theoretical conclusions regarding real-world effects of sustainable capital allocations are also mostly positive.** For instance, Broccardo et al. (2020) obtain that investor divestment like consumer boycotts cause the market value of a dirty firm to fall, leading some value-maximizing managers to switch to the clean technology. However, both exit strategies will curb pollution in a less than proportional way: if ten percent of agents divest/boycott, less than ten percent of firms become clean (a theoretical observation already made by Heinkel et al. (2001) in the divestment context). The reason is that purely selfish agents will partially offset the effects of divestment/boycotting by increasing their investment/purchases in companies shunned by socially responsible agents. In both cases the magnitude of the response depends on the slope of the demand curve, which is driven by agents' risk tolerance for investors and by the utility of the good for consumers.

De Angelis et al. (2020) draw a model where green investing raises the cost of capital of polluting companies, yet uncertainty about future environmental externalities might mitigate the latter's incentives to clean their production process, thus potentially driving pollution from the most polluting firms upwards. This paper shows how green investing spurs companies to mitigate their carbon emissions by raising the cost of capital of the most carbon-intensive companies. The authors also provide empirical evidence supporting their results by focusing on United States stocks between 2004 and 2018 and using green fund holdings as a proxy for green investors' beliefs.

**Table 3: overview of academic models predicting effects of screening strategies on asset prices (AP) and on real-world outcomes (RW)**

Name	Date	Markets	ESG Integration		Divestment		Exclusion		Best-in-class		Tilts		Thematic	
			AP	RW	AP	RW	AP	RW	AP	RW	AP	RW	AP	RW
Hakenes and Schliephake	2022	Primary												
Landier and Lovo	2020	Primary												
Green and Roth	2020	Primary												
Moisson	2020	Primary												
Barnea et al.	2005	Primary												
Berk and van Binsbergen	2022	Secondary												
Pedersen et al.	2020	Secondary												
Zerbib	2020	Secondary												
Fama and French	2007	Secondary												
Pastor et al.	2020	Secondary												
Broccardo et al.	2020	Secondary												
De Angelis et al.	2020	Secondary												
Luo and Balvers	2017	Secondary												
Gollier and Pauget	2014	Secondary												
Heinkel et al.	2001	Secondary												

**Reading:** cells in green represent positive results (i.e., an increase in price for green assets or a decrease in price for brown assets in AP columns, a real-life improvement for RW columns) while cells in red are for negative results (i.e., opposite to what was expected by sustainable investors). Cells in yellow display null or uncertain results.

## Do flows really affect market prices?

### Different views of the market

Two opposite logics prevalent in financial markets compete with each other to account for the effect of financial flows on market prices.

On the one hand, **the Equilibrium Logic** consider that market operators are rational and financial markets are efficient to incorporate fundamental information into prices. Therefore, market prices always reflect fundamental information. That being said, the effect on non-fundamental demand on prices is not consensual across advocates of the equilibrium logic. According to one view (**the market efficiency view**), uninformed shocks cannot have a long-lasting impact on prices due to the actions of arbitrageurs. It is the presence of highly reactive profit-maximizing arbitrageurs (like hedge funds) that is supposed to maintain market prices at their correct fundamental value.

According to another view within the Equilibrium logic, capital inflows from sustainable investors do affect prices as rational investors are asking for a compensation to hold a portfolio different from the market portfolio. The **portfolio-balance channel**, first discussed in the 1970s-80s, has been advocated in recent standard asset pricing models of Fama and French (2007) and Luo and Balvers (2017), which have confirmed that preference-neutral investors require a premium for balancing out the portfolio choices of investors who share a particular non-financial preference because this forces the preference-neutral investors to deviate from the market portfolio.

On the other hand, **the Flow Logic** considers that market prices are just the reflection of capital flows. They increase in presence of strong capital inflows and decrease in case of significant capital outflows. Arbitrageurs can limit this mechanical link but not offset it. Therefore, a massive demand of sustainable securities by sustainable investors would mechanically lead to an increase in prices for those securities. The effect on prices of sustainable demand could even be augmented and prolonged via the decisions of non-sustainable **noise traders** acting on behavioral determinants, for instance if they buy winning stocks upon the beliefs that past market movements would tend to continue (i.e., displaying momentum expectations).

### Elastic or inelastic markets?

In textbook theory, the micro elasticity of market prices is supposed to be very large, of the order of 1000 or above. It means that demand is super sensitive to changes in individual prices. This implies that the micro

multiplier (the inverse of the micro elasticity) is essentially zero and demand curves are virtually flat. Demand curves for stocks are kept flat by (quasi-)riskless arbitrage between perfect substitutes. It is the presence of highly reactive profit-maximizing arbitrageurs (like hedge funds) that is supposed to maintain nearly infinite price elasticity of financial markets.

If demand is highly elastic, as implied by many standard models of beliefs and preferences, then the demand of a group of investors for a particular stock would only have a modest impact on prices, as other investors would quickly substitute from one stock to another.

In reality, individual stocks do not have perfect substitutes and the actual micro elasticity is most probably smaller than the most theoretical predictions. It is even more true for macro elasticity as entire asset classes have even less close substitutes. Therefore, in traditional *elastic* asset pricing models the macro elasticity is around 10 to 20, leading to a multiplier around 0.1 to 0.05. A multiplier of 0.05 implies that if a sovereign wealth fund, for instance, were to buy 10% of the US aggregate stock market, prices would rise by only 50bp.

Conversely, in *inelastic* financial markets, differences in demand are reflected much more intensely in asset prices. In inelastic financial markets, more people attempting to buy a stock (or the market) will lead to price increases, and more people attempting to sell a stock will lead to price decreases. Second, the magnitude of these effects will increase with the desired amount of stock being purchased or sold. Finally, because price pressure is fundamentally about limited liquidity, **the inelastic financial markets theory** predicts that the effects on prices of a given amount of buying or selling will be greater in periods of lower liquidity.

In such a theory, price pressure is a general and largely mechanical prediction. It is to be confronted to the conceptual offsetting trades which are an economic prediction arising from particular models of how (rational) investors trade.

As for the logic that accounts for market prices, the beliefs regarding market elasticity are not consensual. Various views coexist and empirical tests are required. Two interesting surveys quoted by Gabaix and Koijen (2020) questioned academic researchers on the topic, asking for an estimate of the macro multiplier  $M$ . The survey question was the following: “*If a fund buys \$1 billion worth of US equities (permanently; it sells bonds to finance that position), slowly over a quarter, how much does the aggregate market value of equities change?*” In both surveys, the median answer was  $M = 0$ . It appears that surveyed economists rely on the traditional asset pricing model in which prices are unperturbed by flows.

### Evidence of price reactions to flows

What can empirical tests say about the price reactions to capital flows? The question whether demand curves for stocks actually slope down has a long tradition in the asset pricing literature. The empirical evidence so far comes from various event studies around index redefinitions (listings and delistings), dividend payments, changes in fund ratings, and fire sales by institutional investors<sup>102</sup>.

As a recent example, Hartzmark and Solomon (2022) demonstrate that buying pressure from dividend payments predicts higher market returns (as dividend payments provide extra cash to investors that reinvest it in the market), with the returns on the top quintile of payment days four times higher than the lowest. Brutal price changes like the 2007 quant crunch and other recurrent deleveraging spirals are also extreme consequences of the impact of order flow on prices<sup>103</sup>, as well as the effect of governmental or Central Banks’ interventions<sup>104</sup>.

**The general finding is that large non-fundamental trades have a significant but temporary price impact**, even though there is considerably heterogeneous evidence on the speed and the extent of reversal. Hence, it

<sup>102</sup> Coval and Stafford (2007); Petajisto (2009); Schnitzler (2018).

<sup>103</sup> Khandani and Lo (2011), Brunnermeier and Pedersen (2009), Kyle and Obizhaeva (2016).

<sup>104</sup> Barbon and Gianinazzi (2019)

is probable that preference-based demand for sustainable assets would also impact prices, at least in the short run.

### Estimates of price elasticities and multipliers

Gabaix and Koijen (2020) provide an interesting summary of recent estimates of the micro multiplier, which is the percent change in prices when an investor purchases a certain fraction of the shares outstanding in a particular company, while controlling for movements in the aggregate market. While there is a range of estimates, the order of magnitude of the multiplier is around 1. That is, buying 1% of the shares outstanding of a given stock results makes its price increase by around 1%. In addition, other studies have looked at the “factor-level” multiplier, which is the price impact if an investor buys a fraction of the shares outstanding of a cross-sectional factor such as size or value (i.e., a whole market segment selected using one of the various market factors highlighted by academic research for having an effect on returns). The studies report a multiplier that is substantially above 1 and closer to 5. They finally report estimates of the “macro multiplier” that applies at market level. Once again, the multiplier estimates are between 2 and 6. Equivalently, the macro elasticity, which is the inverse of the multiplier, is well below 1.

**Table 4: overview of estimates of the multiplier**

Panel A: Micro multiplier		
	Methodology	Multiplier
Chang, Hong and Liskovich (2014)	Index inclusion	0.7 to 2.5
Pavlova and Sikorskaya (2020)	Index inclusion	1.5
Schmickler (2020)	Dividend payouts	0.8
Frazzini et al. (2018), Bouchaud et al. (2018)	Trade-level permanent price impact	15
Panel B: Factor-level multiplier		
Ben-David, Li, Rossi and Song (2020a)	Morningstar ratings change	5.3
Peng and Wang (2021)	Fund flows	4.8
Li (2021)	Fund flows+SVAR	5.7
Panel C: Macro multiplier		
Da, Larrain, Sialm and Tessada (2018)	Pension fund rebalancing Chile	2.2
Li, Pearson and Zhang (2020b)	IPO restrictions in China	2.6-6.5

Source: Gabaix and Koijen (2020)

Using the recent method of granular instrumental variables, they themselves find that investing \$1 in the stock market increases the market's aggregate value by about \$5. If investors create a flow of 1% as a fraction of the total value of equities, the model implies that the value of the equity market goes up by 5%. In contrast, most rational or behavioral models would predict a very small impact, about 100 times smaller, and a price elasticity about 100 times larger.

The authors provide several explanations for such a rather high multiplier. First, asset class-specific mandates prevent market participants from being macro arbitrageurs. Second, even if a fund isn't formally tied to a benchmark, its manager may be compensated in part for performance relative to one and is likely to buy shares of the same underlying companies. These positions are often in large part passive and price insensitive.

**Taken together, the existing evidence in the literature suggests a micro multiplier around 1 and a factor or macro multiplier that is between 2 and 6. Such estimates imply that a 1-billion-euro green equity fund that would only invest in listed stocks of green companies would lead to an increase in the segment market cap by 2 to 6 billion euros.**

Focusing on the corporate bond market, Bretscher et al. (2022) find that the market-wide elasticity for the corporate bond market as a whole is around 3.7 (which translates into a multiplier of 0,27), much larger than the elasticity of the U.S. stock market (which was found to be around 0,4), suggesting that bonds are closer

substitute to each other than stocks. Consistent with their estimates, the elasticity for the EU government bond market is estimated to be about 3.2 (Kojien et al., 2020).

### A time-varying price elasticity?

As said before, there is ongoing debate between researchers about the long-term effects of flows on market prices. Some consider the effect on prices to be transitory (reversible) while others expect it to be permanent.

If the price changes were due to flow effects only, no additional changes should be expected when non-fundamental flows stop. Arbitrageurs and diversified rational investors would even collude to reverse price changes as they would trade the price-inflated securities for cheaper substitutes. If the price changes were due to portfolio-balance effects, then the price reversal would also occur for the same exact reasons.

A partial permanent effect is nevertheless possible in case arbitrageurs are too small or diversified rational investors are too passive or noise traders offset part of their actions.

Empirical studies generally obtain that it is only over very long-time scales (several years) that some mean reversion around the fundamental value can be observed, as already suggested by the very famous paper by Black (1986) and substantiated in more recent contributions<sup>105</sup>. Gabaix and Kojien (2020) find no evidence of price reversal over one year. Looking at long-term effects of Bank of Japan's interventions, Barbon and Gianinazzi (2019) also find that price pressure effects are positive and persistent. They find no evidence of reversal over a 1-year window after policy announcements.

But this observation is not consensual. Looking at index inclusions and removals in the US, Patel and Welch (2016) find evidence of full reversals within six months for short-run price pressures; that is, long-run price elasticities are infinite.

Another ongoing discussion is about the long-term change in market elasticity in relation with the changing profile of market investors. Are markets becoming more or less elastic due to the rise of passive index investing?

It is true that not all investors are similarly reactive to price changes. By definition, passive investors are less responsive than active investors. Truly passive investors have a "demand elasticity" of zero, that is they do not buy more of a stock if it becomes cheaper or less as it becomes more expensive.

Kojien et al. (2020) investigate the price elasticities of demand by various market participants as well as their impact on valuations. They find that hedge funds are the most elastic institutional investors, while long-term investors (pension funds and insurance companies) and large, passive investment advisors are the least elastic investors in both countries. They also obtain that large, passive investment advisors and long-term investors, such as pension funds and insurance companies, have a relatively small impact on valuations with a multiplier below 0.5. Per dollar of assets managed, hedge funds and small, active investment advisors have the largest impact on valuations, with a ratio of repricing to AUM share of over 1.25. The impact on asset prices of certain type of investors is determined by: (i) their relative size, (ii) how different their demand curve is from the other investors, and (iii) how price sensitive the other investors are, that is, how much do prices need to move for other investors to absorb the demand, as so far as it deviated from the market portfolio. If hedge funds have such a strong impact on prices, it is because their deviations from market weights are large and because other investors are much less price sensitive, notable large passive investors. Consequently, an increase in the share of passive investment tends to push the market's aggregate elasticity down.

Looking at long-term variations, Haddad et al. (2022) obtains that the entire cross-sectional distribution of stock-level elasticity has decreased in the last 20 years, by 40%. Interestingly, the model attributes about equally this drop to two investor-specific sources of change. First, the fraction of passive investors has

<sup>105</sup> Bouchaud, J. P. et al. (2018), Majewski et al. (2020).

increased. Second, the investor-specific component of the elasticity of active investors has decreased. Markets are turning more inelastic due to the increasing weight of passive investors and less arbitrage by active investors. Therefore, there seems to be more room for sustainable investors to influence prices<sup>106</sup>.

### The price impact of ESG flows

The empirical evidence regarding the realized returns to ESG investing over the past two decades is dramatically mixed and tends to depend on the sustainability measure, time horizon, controls and asset universe under investigation.

#### Price impact of ESG flows in the stock market

#### **There is no consensus that sustainable companies already benefit from a lower cost of equity.**

On the one hand, In et al. (2020) find that an ESG portfolio, which longs low emission and shorts high emission stocks earns a significantly positive annualized alpha of 3.5-5.4%. Gorgen et al. (2020) find that from 2010 to 2017 brown (high carbon) firms performed worse than green firms on average.

On the other hand, Bolton and Kacperczyk (2021) find that US firms with larger absolute emissions display higher realized stock returns. Extending their analysis to stock markets around the world, they find that the carbon premium arises for all sectors and almost all countries in their sample (Bolton and Kacperczyk, 2023). Similarly, Hsu et al. (2022) find significant outperformance of high chemical emission stocks versus low ones. Those observations are in line with equilibrium models where market prices reflect higher (transition) risks for polluting companies. Using implied cost of capital as a proxy for expected returns, Pastor, Stambaugh, and Taylor (2022) also find higher stock returns for firms with lower environmental performances.

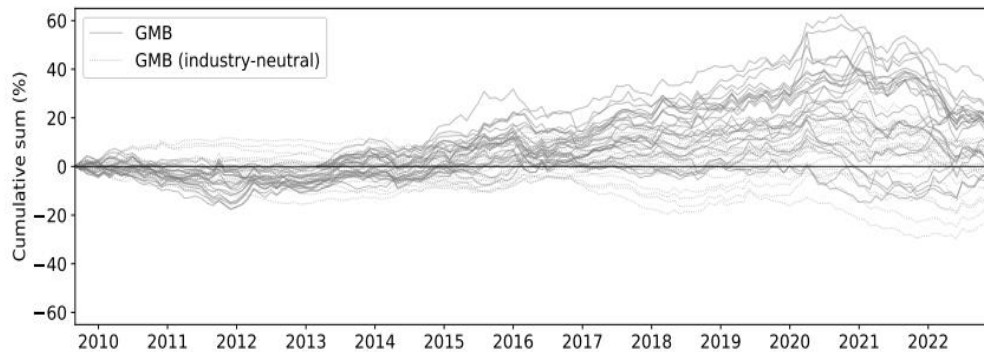
#### **The conclusions seem to be highly dependent on the measure of sustainability, the measure of cost of equity<sup>107</sup>, the geographical zone and the time period.**

A very recent paper shows how the greenium estimates across papers based on realized returns in the equity market are highly sensitive to multiple parameters. To analyze the greenium in equity markets, Eskildsen et al. (2024) estimate it using 23 different greenness measures in the US. For each measure, they compute the return of a Green-minus-Brown (GMB) portfolio, either industry-neutral (used by some papers) or industry-agnostic (used by other papers). These 46 GMB portfolio returns are plotted in Figure 13. Cumulative returns show a large dispersion, from negative to largely positive.

<sup>106</sup> But, here again, observations by Patel and Welch (2016) are contrarian. Over the decades, the six-month portfolio response to being added into the S&P 500 seems to have declined. Nowadays, there seems to be no or very little permanent six-month effect. The prevailing two-day 2% announcement response seems to revert (almost) fully. Same is obtained for index removals. Solid evidence for reversion started to appear in the 2000s.

<sup>107</sup> In a nutshell, there are three families of methods to assess cost of equity: backward-looking methods (i.e., based on realized returns), model-based methods (i.e., based on CAPM or multifactor models) or implied cost of equity (i.e., derived from analyst forecasts or option prices).

**Figure 12: Realized returns of green-minus-brown portfolios using 46 different methods**



Source: Eskildsen et al. (2024)

To further account for the variation across papers, the authors compute the realized GMB performance in five different ways for each measure by varying the risk controls (excess returns, CAPM alphas, Fama-French three-factor alphas, etc.). Looking across these  $23 \times 2 \times 5$  estimates of the US equity greenium, they show that none of these is statistically significant when controlling for multiple testing effects.

They also consider global estimates of the greenium. Specifically, they estimate the greenium in each of 48 countries using each of the available greenness measures and each way to control for risk. Across all these specifications, the realized GMB performance is globally insignificant. In fact, the distribution of these greenium estimates is bell-shaped with a center near zero.

To overcome the problem of inconsistent findings across greenness measures, Eskildsen et al. (2024) construct a robust green score. The robust green score is the average of the key greenness measures from several leading data providers. The robust green score appears to capture each firm's greenness with less noise. Indeed, the average correlation between the robust green score and each individual greenness measure is much higher than the average pairwise correlation of the underlying measures. The authors have also tried to avoid the problems of estimating expected returns out of realized returns. Estimating expected returns from realized returns requires an exceedingly long sample, but most greenness measures have only been available for about fifteen years. Moreover, concerns about the environment have arguably intensified over recent years and a resulting potential repricing of green versus brown stocks makes it even more challenging to infer expected returns from realized returns. To address these issues, they use forward-looking measures of expected returns. They compute each stock's implied cost of capital (ICC) using the method of Mohanram and Gode (2013) who take an average of four different measures from the accounting literature. Using the green score (instead of individual greenness measures) and ICC (instead of realized returns), their estimated equity greenium is  $-25$  basis points (bps) annualized per standard deviation increase in the robust green score and is statistically significant. This greenium corresponds to an expected return of  $-50$  bps per year for a green-minus-brown (GMB) tercile portfolio due to the portfolio's two-standard-deviation spread in greenness.

The authors show that a GMB factor based on the robust green score has a low predicted annual Sharpe ratio of  $-0.10$ , computed as the ratio of the modest greenium (estimated using forward-looking returns) to the high realized GMB volatility—implying that one needs more than 300 years of realized returns to identify the greenium. Hence, a lack of robustness across studies is not surprising given that the literature is generally based on less than 20 years of data. Eskildsen et al. (2024) also observed that the equity greenium has become more negative over time and that the greenium is more negative in greener countries.

In short, the very comprehensive study by Eskildsen et al. (2024) shows that, based on realized returns or forward-looking measures of expected returns, the greenium in the equity market ranges from insignificant to slightly negative.

Therefore, **we can reasonably conclude that the collective actions of environmentally-concerned investors have not so far resulted in a significantly decreased cost of equity for green firms.**

## Price impact in the bond market

The evidence for ESG investors' effect on the cost of debt is also mixed, as shown by Halling et al. (2021). The literature contains a range of greenium estimates for green corporate bonds compared with regular corporate bonds, mostly negative (in a range between – 20bp and 0). However, the literature is rather silent on the more basic question of the greenium of regular corporate bonds across green versus brown firms, which is more comparable to the analysis of the equity greenium.

A study by La Rosa et al. (2018) reports a negative relationship between a firm's corporate sustainability performance and cost of debt in a sample of firms included in the S&P Europe 350 index from 2005 to 2012. The authors further conclude that improved corporate sustainability performance is associated with higher credit ratings.

Using their green score, Eskildsen et al. (2024) find a meaningful greenium of –13 bps for regular corporate bonds. Aggregating each firm's equity and bonds, they find a greenium for the weighted average cost of capital (WACC) of –13 bps. They note that such a spread is much too small to have a significant impact on carbon emissions. They compare it to Pedersen' (2023) results that suggest that the cost of capital of the brownest firms must be raised by more than 400 bps relative to green to implement the carbon tax of Nordhaus (2019), a number that must subsequently grow more than fivefold over time to transition to a net-zero economy.

Kim et al. (2023) empirically study whether carbon emissions affect US firms' cost of debt in the primary and secondary markets. They show that firms with higher carbon emissions tend to face higher cost of capital on the primary market. However, this carbon premium represents less than 15% of the one prevailing on the secondary market. They estimate a difference in yield of 2.4 basis points between green and brown firms, i.e., firms with Scope 1, 2, and 3 carbon intensity one standard deviation below and above average, respectively. On the secondary market, the difference in yield between green and brown firms is around 17 basis points. A simple model attributes this gap to uncertainty about future climate preferences of investors and limited competition among primary market dealers. Indeed, the allocation and pricing of corporate bonds on the primary market is not determined by an auction, as in the case of treasuries, but by underwriting dealers who act as intermediaries between issuing firms and investors, similar to the standard practice for Initial Public Offerings (IPO) on equity markets. Their findings imply that market imperfections reduce the effectiveness of the cost of capital channel in inducing firms to reduce their carbon emissions.

**In conclusion, as for equity, the greenium in the corporate bond market appears to be very small, if not statistically insignificant.**

## Making sense of conflicting results

Several scholars have tried to provide explanations for conflicting results by decomposing observed returns into several components and/or checking the robustness of results to various specifications of the sustainability profile of firms.

### Methodological issues

Focusing on methodological issues, Aswani et al. (2023) reexamine data from Bolton and Kacperczyk (2021) and conclude that the negative relationship between sustainability and realized returns was driven by two factors. First, stock returns are correlated only with unscaled emissions estimated by data vendors, but not with unscaled emissions actually disclosed by firms. Vendor-estimated emissions systematically differ from firm-disclosed emissions and are highly correlated with financial fundamentals, suggesting that prior findings primarily also captured the association between such fundamentals and returns. Second, while unscaled emissions are correlated with stock returns, emissions intensity (emissions scaled by firm size), are not.

Zhang (2023) also took a methodological approach to revisit the carbon return - the equity return spread between brown and green firms. His results are in support of Aswani et al. (2023)'s view. The previously

documented carbon premium partly arises from the forward-looking sales information contained in emissions instead of the carbon risk premium per se. Indeed, due to an incompressible lag in observation of actual emissions (around 10 months), emissions reported by firms through CDP to emissions estimated by data vendors, such as Trucost and MSCI are derived from the accounting information and, therefore, a high level or a sustained increase in emissions often implies an ongoing rapid growth of sales. After accounting for the data release lag, the realized carbon return becomes significantly negative in the U.S. (i.e. high-carbon stocks exhibit lower returns) and varies significantly across countries following cash flow shocks, climate preference shifts, and variations in climate policy tightness.

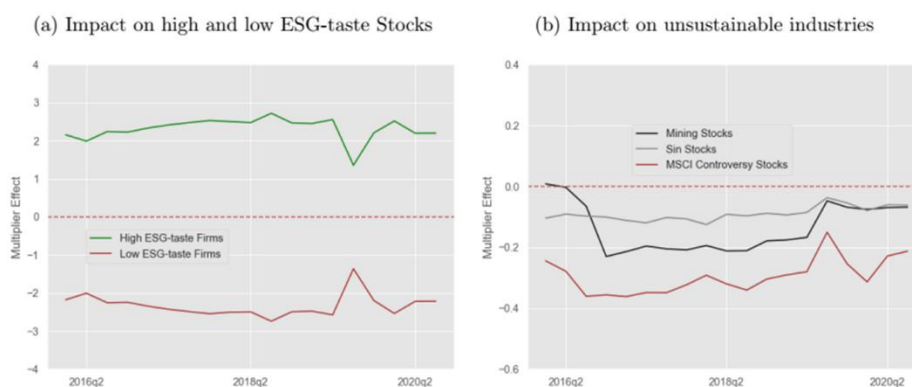
### Expected returns vs flows

To help understand the past relative performance of high ESG vs low ESG stocks, Van der Beck (2023) took a different approach. He performed a decomposition of observed ESG returns into fundamental and demand-driven components. He shows that the performance of ESG investments is strongly driven by price-pressure arising from flows towards sustainable funds, causing high realized returns that do not reflect high expected returns. The coefficient linking ESG flows and realized returns is the product of two factors: i) the deviation of green funds' portfolios from the market portfolio and ii) a flow multiplier matrix that is the inverse of the market's demand elasticity of substitution between stocks. Empirically, **withdrawing 1 dollar from the market portfolio and investing it in the representative ESG fund increases the aggregate value of high ESG stocks by 2-2.5 dollars.** Under the absence of flow-driven price pressure, the aggregate ESG industry would have strongly underperformed the market from 2016 to 2021. Furthermore, the positive alpha of a long-short ESG portfolio becomes significantly negative.

The price pressure arising from quarterly flows of only \$5 bn would have been sufficient to offset the fundamental underperformance of high ESG stocks vs the market portfolio in recent years. Thanks to an average of \$20 bn of quarterly inflows, ESG funds significantly outperformed.

Van der Beck (2023) rightfully concluded that **one should be careful when using the realized outperformance of sustainable investments in recent years to judge their expected outperformance going forward.** Past performance of high ESG stocks was due to massive capital inflows and should not be interpreted as a long-term fundamental superiority.

**Figure 13: multiplier effects of ESG flows**



Source: Van der Beck (2023)

While the low aggregate elasticity of substitution is worrying for the overall stability and efficiency of equity markets, it supports the effectiveness of sustainable investing to affect prices and, potentially, companies' behavior. Flows towards green funds, that invest in inelastic stocks, may substantially reduce the cost of capital of the firms in the fund's portfolio.

Van der Beck (2023)'s framework allows differentiating sustainable funds according to their effect on market prices. A fund's multiplier is driven by its deviation from the market portfolio and by the extent to which the

deviations are concentrated towards inelastic stocks. Flows towards funds with a large flow multiplier contribute positively (negatively) to green (brown) firms' realized returns and their cost of capital.

It appears that there is substantial heterogeneity in the price effect of different ESG mutual funds - both in terms of magnitude and even direction, as shown by table 5.

***Table 5: multiplier effects of flows in various ESG funds***

	Deviation from S&P500	Impact of 1\$ Flow onto...			
		High Taste Stocks	Sin Stocks	MSCI Contr. Stocks	Mining Stocks
PARNASSUS CORE EQUITY	0.72	4.92	-0.07	-0.56	-0.14
VANGUARD FTSE SOCIAL	0.16	0.83	-0.07	-0.22	-0.11
ISHARES MSCI USA ESG	0.17	0.87	-0.06	0.03	-0.03
PARNASSUS MID-CAP FUND	0.98	5.56	-0.05	-0.47	-0.09
TIAA-CREF SOCIAL CHOICE	0.48	2.20	-0.07	-0.02	0.04
ISHARES MSCI USA SRI	0.77	5.01	-0.07	-0.39	-0.05
BROWN ADVISORY SUSTAINABLE	0.79	4.30	-0.06	-0.28	-0.10
DFA U.S.SUSTAINABILITY CORE	0.32	0.28	-0.05	-0.19	-0.12

Source: Van der Beck (2023)

A 1\$ dollar flow to the iShares MSCI USA SRI fund raises the aggregate market equity of high ESG-taste stocks by 5 dollars and lowers the valuation of mining stocks by 5 cents. The same flow towards the DFA U.S. Sustainability Core Equity Portfolio would lead to a value increase of high taste stocks of only 28 cents. The higher the deviation vs the S&P500, the higher the effect on prices.

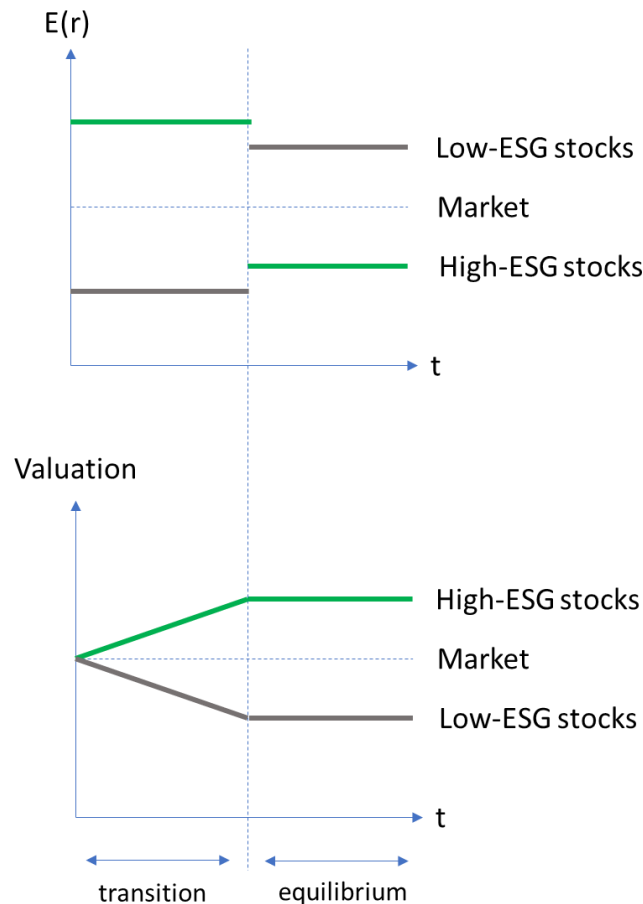
Pastor et al (2022) show that the recent performance of green assets reflects unexpectedly strong increases in environmental concerns, not high expected returns. They construct a green factor (a return spread between environmentally friendly and unfriendly stocks) and find that its positive performance disappears without climate-concern shocks. To reach this conclusion, they compute a measure of concerns about climate change, using the media index constructed by Ardia et al. (2021). They observe a steady increase in climate concerns during the last decade. They find that shocks to climate concerns exhibit a significant positive relation to the green factor. In other words, green stocks tend to outperform brown when there is bad news about climate change. They also find that green stocks would not have outperformed brown without strengthened climate concerns.

Zhang (2023) explains how various and seemingly conflicting empirical findings can fit with the theory: "Theoretically, brown firms are more exposed to policy risk during the transition to net zero and should earn higher expected returns in equilibrium (Hsu, Li and Tsou, 2022). However, green firms can outperform when policy shocks kick in, consumer attention turns, and investor tastes shift in transition to net-zero (Pastor, Stambaugh and Taylor, 2021)".

Beyond confounding factors related to methodological issues, **a reasonable conclusion to that debate around the relationship between sustainability and cost of capital is that sustainability (especially carbon) risk is now significantly priced in the market causing brown stocks to have higher equilibrium expected returns but, due to capital flows, climate news and changing tastes or expectations, green stocks can - on a temporary basis - outperform brown stocks.**

Figure 15 represents those conclusions by highlighting differential returns for high-ESG (or green) and low-ESG stocks (brown) when market prices are transitioning to new equilibria and when they have reached the new equilibria.

**Figure 14: a stylized representation of valuation and expected returns at equilibrium and during transition**



## Pathway #1: is it possible to affect cost of capital enough to alter companies' strategic decisions?

### From market prices to actual cost of capital

Do changes in cost of capital rapidly affect corporate investment decision-making? In this section, we build on corporate finance literature to understand how firms make their investment decisions and how their investments react to changes in market conditions.

The standard view in economics is that changes in firms' cost of capital directly impact firm investment. According to that view, firms should take on any investment project that offers returns above the cost of capital. As a result, firms should adjust their required returns on new investments (their so-called "discount rates") one-to-one with the cost of capital in financial markets. Firms' discount rates should, for example, have dropped substantially since the early 2000s, in line with the cost of capital, leading to a corporate investment boom.

In practice, it is considered rational for firms to set their discount rates by adding a spread to the cost of capital to account for project risk and indirect (overhead) costs.

By definition, cost of capital is a company's calculation of the minimum return that would be necessary in order to justify undertaking a capital budgeting project, such as building a new factory. On paper, it makes total sense to consider that the lower it is, the more projects can be undertaken. Economic textbooks tell us that

business investment is negatively related to interest rates. Therefore, decreasing cost-of-capital through financial investments in secondary (debt or equity) markets in favor of green or virtuous companies should help them to expand their activities. Indeed, prices in secondary markets form reference points that are used by companies to price newly issued securities.

In practice, the effectiveness of capital allocation decisions to affect companies' behaviors via the cost-of-capital channel depends on the needs of invested companies to issue (debt or equity) capital to sustain their growth.

Regarding equity capital, it is clear that the harm from a higher cost of equity capital is limited by the frequency with which firms tap external equity markets. This frequency is actually low, especially for large mature companies. Most of the new equity sold by large firms is via manager or employee stock purchase or stock option plans, not to finance development projects (excluding acquisitions). Debt issues are more frequent though.

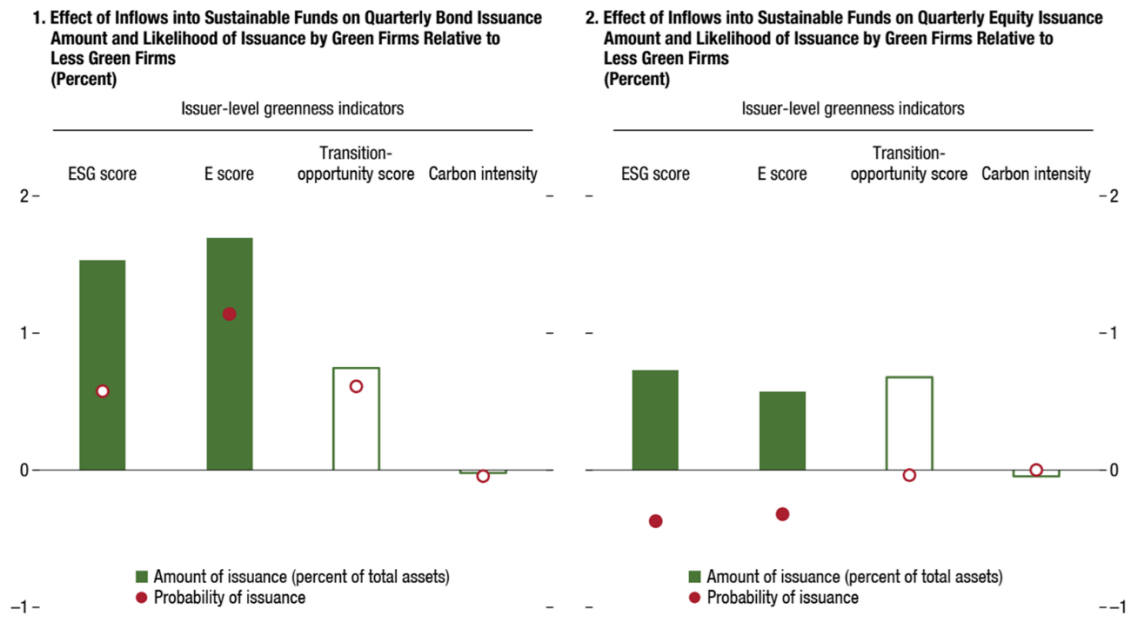
Work by the IMF documents that flows into sustainable investment funds increase the availability of fresh private capital to firms with a more favorable sustainability rating. They analyzed securities issuance of a sample of 6,449 firms during the period 2010-2021. To establish a direct link between flows into sustainable funds and further security issuance, they considered issuance as a function of flow-driven buying pressure, building on Zhu (2021). Considering the stylized fact that mutual funds that hold a firm's existing bonds have a high propensity to acquire additional new issuances from the same firm, Zhu (2021) had investigated the issuance behavior of companies in relation with the flow-driven buying pressure. He obtained that firms that already have a solid base of existing bond investors are more likely to issue new bonds, enjoy lower yields, and substitute away from equity financing and bank loans.

Focusing on sustainable investment flows, the follow-up study by the IMF found that firms in transition-sensitive sectors with high ESG or environmental scores are more likely (relative to other firms) to issue bonds and in larger amounts when inflows into sustainable funds increase during a quarter. Similar results are true for equity issuance, where the amount of equity issued by firms with high ESG or environmental scores increases, even though they issue equity somewhat less frequently.<sup>108</sup>

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<sup>108</sup> Interestingly, similar effects are not evident in objective variables more closely aligned with the transition, such as the transition-opportunity score or carbon intensity. Taken together, this suggests that while sustainable funds have been boosting issuance of firms aligned with the funds' sustainability objective, they may lack the size or focus to foster issuance by firms actually supporting the transition.

**Figure 15: effects of ESG inflows on securities issuance by green firms**



Unfortunately, the IMF study does not document whether the increased (amount of the) issuances by firms with high ESG or environmental scores is associated with a higher pace in decarbonization.

**In terms of magnitude, change in asset prices in secondary markets may turn to be insufficient to affect companies' cost-of-capital enough to alter their investment plans.**

Any market impact that would lead to a decrease in the cost of capital by less than 1 percentage point would most probably be insufficient to alter the course of investment plans and would look pale in comparison to yield movements associated to variations in central banks' policies or agents' risk appetite. Reaching such a (low) threshold is not an easy task.

**Example #1:** let's consider a mature company with a cost of debt at 4% (i.e., the yield on its 10Y bonds) and a cost of equity at 8% (as given by the Dividend Capitalization Model<sup>109</sup>). An increase of market prices by 10%, due to the mobilization by responsible investors of adequate capital, would cause a reduction by 117bp and 27bp respectively for its cost of debt and equity (to respectively 2,83% and 7,73%). In this example, cost of debt is four times more sensitive to market prices than cost of equity. It requires an increase by 40% of equity prices to reduce cost of equity by 1 percentage point.

**Example #2:** let's now consider a young and fast-growing company with a cost of debt at 6% (i.e., the yield on its 10Y bonds) and a cost of equity at 11% (as given by the Dividend Capitalization Model<sup>110</sup>). An increase of market prices by 10%, due to the mobilization by responsible investors, would cause a reduction by 128bp and 10bp respectively for its cost of debt and equity (to respectively 4,72% and 10,9%). In this second example, cost of debt is 13 times more sensitive to market prices than cost of equity. It requires an increase by 100% of equity prices to reduce cost of equity by 1 percentage point.

<sup>109</sup> We consider here that the company pays a 3% dividend yield and that the expected annual growth rate of the dividend is 5%.

<sup>110</sup> We consider here that the company pays a 1% dividend yield and that the expected annual growth rate of the dividend is 10%.

The sensitivity of cost of capital to market prices being much higher for (finite maturity) debt than for (infinite maturity) equity, it would sound reasonable to conclude that mobilizing capital in the bond market is more impactful. Such a conclusion would nevertheless be too hasty as the multiplier effect is much smaller in the bond market than in the equity market due to the existence of closer substitutes for bond securities. For instance, some empirical studies in the bond market positioned multiplier effects between 0,003 and 0,03<sup>111</sup> only, which amounts between 3% and 3 thousandths of what has been observed for (individual) equity. As there are plenty of other bonds with the same characteristics (maturity and credit rating), sellers would rush to sell their bonds of targeted companies at higher prices. Therefore, it would require impact-motivated investors to deploy massive capital to be successful in raising bond prices of targeted companies.

Examples of massive interventions on the bond market come from asset purchases by central banks. Their effects on bond prices have drawn researchers' attention since they became a central component of monetary policy after the Great Financial Crisis. For instance, Arrata and Nguyen (2017) studied the impact of the Eurosystem's Public Sector Purchase Program (PSPP) on bond yields in the French bond market. Their results show that having purchased 10% of a bond outstanding correlates with a decrease in yield of about -13 bps to -26 bps on average in the first year of implementation of the program, with bigger effects in the most illiquid segments. They also provided a comparison table with other similar studies in the UK and the US.

***Table 6: Overview of estimates of effects on bond yields of central banks' purchase programs***

Authors	Prog.	Results (Stock effects rescaled for 10% of outstanding purchased)
D'Amico and King (2013)	US LSAP1	Stock effects: -100 bps Flow: -3.5 bps
Meaning and Zhu (2011)	US LSAP1&2	Stock effects: -32 bps Flow: -3.5 bps (LSAP1) -4.7 bps (LSAP2)
Meaning and Zhu (2011)	UK APF	Stock effects: -9.3 bps Flow: -1.5 bps
Joyce et al. (2010)	UK APF	Stock effects: -40 bps Flow: -2.5 bps
Andrade et al. (2016)	PSPP	Flow: no significant effect Stock (event study on announcement and implementation dates) -27 bps
Koijen et al. (2016)	PSPP	Stock (estimated on country-level purchases predicted by capital key): -35bps
Arrata and Nguyen	PSPP FR	Stock effects: -13 bps (average, OLS) -26 bps (IV) Flow effects: mostly inexistant

Source: Arrata and Nguyen (2017)

Effects of a cumulated purchase of 10% of the outstanding debt range from -9 to -100 bps for the different asset purchase programmes in the US and in UK while short-term supplemental flow effects prove to be very small at best.

Across zones, most studies obtain estimates between 10bp and 40bp for stock effects. Those estimates tell us that **reducing yields on bonds by just 1 percentage point would most probably require purchasing between 25% and all of the outstanding debt targeted.**

<sup>111</sup> Albuquerque et al. (2022)

## From actual to perceived cost of capital

The standard theory does not question how firms perceive their cost of capital in order to inform their discount rate (also called “hurdle rate”). Does the perceived cost of capital perfectly replicate the actual cost of capital inferred from conditions in the equity and debt markets?

Gormsen and Huber (2023a) measure firms’ perceived cost of capital using data from corporate conference calls between firm managers, financial investors, and analysts. During these calls, managers occasionally share their perceptions of their cost of debt, equity, and total capital. They have collected the data through manual reading of call transcripts. Their database contains around 2,500 large firms from 2002 to 2022 across 20 countries.

They obtain that perceived cost of capital incorporates large errors. Firms correctly incorporate time variation in interest rates and risk premia as well as some cross-sectional factors into their perceived cost of capital. But firms also incorporate large errors that cannot be justified by risk premia and interest rates. In total, 80% of the variation in the perceived cost of capital in time series reflects mistakes in firms’ perceptions.

One can question whether such a divergence of perceived cost of capital from financial cost of capital (i.e., based on market prices) may be a rational response to short-term market inefficiencies. They may want to abstain from incorporating risk premia that they believe constitute temporary mispricing into their perceived cost of capital. While this argument could lead firms to only partially incorporate risk premia in their perceived cost of capital, it would not lead to a large excess volatility in the perceived cost of capital. The results on excess volatility are thus difficult to reconcile with rational behavior by managers.

The authors offer another explanation: firms have hard times assessing their “true” cost of capital from market prices, especially from equity prices. Indeed, there are many different methods to assess cost of equity that would lead to conflicting results. Surveys<sup>112</sup> show a heterogeneity in approaches used by firms and a preference for the most basic method, using CAPM, even if academia consider this method to be highly flawed.

The mistakes in the perceived cost of capital lead to misallocation of capital in standard models. Firms that underestimate their cost of capital invest too much and firms that overestimate the cost of capital invest too little, relative to the optimal allocation.

## From perceived cost of capital to discount rates

### A sticky discount rate far above perceived cost of capital

Standard theory implies that the cost of capital presents the lower bar for discount rates used by firms in investment decisions (i.e., their required return to capital that makes an investment profitable), determines investment and transmits financial shocks to the real economy.

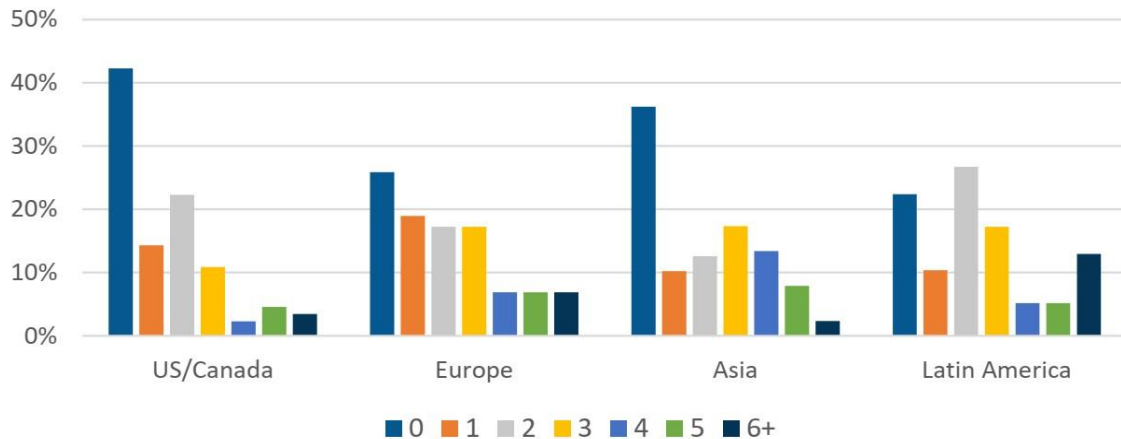
A remarkable stylized view is that firms’ reported discount rates are i) often very stable and ii) well above their perceived cost of capital, which has been a puzzle for academia for decades<sup>113</sup>. Standard textbook logic is that setting a hurdle rate higher than the actual cost of capital may cause firms to pass up value-creating projects and, therefore, degrade shareholders’ welfare.

Based on a survey of CFOs, Graham (2022) shows that changes of the hurdle rate are very infrequent at firm-level. In the US/Canada like in Europe, around 80% of firms do not adapt their hurdle rates more than three times per decade.

<sup>112</sup> Jacobs and Shivdasani (2012); Graham (2022).

<sup>113</sup> Poterba and Summers (1995); Graham (2022).

**Figure 16: frequency of changes of hurdle rates by global firms over 10 years**



Source: Graham (2022). Reading: the figure presents answers to the following question: *Over the past 10 years, how many times has your firm changed your hurdle rate by 1% or more?*

The fact that companies base investment decisions on nearly static hurdle rates suggests that investment may be market price insensitive, which implies that (conventional or unconventional) monetary policy will struggle to spur corporate investment. **In the same vein, any attempt by private actors to influence corporate investment through affecting market prices may prove to be very ineffective.**

Sharpe and Suarez (2015) examine the sensitivity of investment plans to interest rates based on surveys of CFOs. They find that most firms claim their investment plans to be quite insensitive to decreases in interest rates, and only somewhat more responsive to interest rate increases. CFOs most frequently cited either ample cash or the low level of interest rates as reasons for lack of sensitivity. In the cross-section, they find that insensitivity to interest rate changes tends to be most pronounced among firms that do not indicate financial constraints as a top concern and firms with no near-term plans to borrow. More surprisingly, investment is also less interest-rate sensitive at firms expecting higher year-ahead growth. In fact, firms expecting to grow more tend to have higher hurdle rates, suggesting a probable connection between interest rate insensitivity and high hurdle rates. Consequently, **it appears misguided to assume that decreasing interest rates on debt of rapidly growing green firms would be effective to accelerate their growth even more.**

Gormsen and Huber (2023b) tested and validated several explanations for the large wedge between the perceived cost of capital and the discount rate:

- **Overhead costs:** they find that many firms use discount rates that are adjusted upward to compensate for the fact that some overhead costs, such as the costs to the headquarters of administering new projects, are omitted from the cash flow analyses. When they identify firms that include all overhead in their cash flow analyses, they find that average reported discount rates are substantially closer to, but still greater than, the perceived cost of capital.
- **Beliefs about value creation:** in conference calls, many managers' statements imply they believe that high discount rates raise shareholder value. High discount rates may signal high profitability or managerial prudence, consistent with models where investors worry about the risk of overinvestment by managers<sup>114</sup>
- **Market power:** while the benefits of wedges may accrue to firms independent of market power, they show that firms with market power are able to maintain large wedges at a lower cost to their profitability.
- **Risk aversion:** firms with high idiosyncratic risk or irreversible assets postpone investments in the face of increased risk, which can lead riskier firms to use higher discount rates.
- **Financial constraints:** financial constraints may generate discount rate wedges if the company expects difficulty to get financing or refinancing.

Graham (2022) confirms the belief and risk-based explanations. Some firms indicate that setting a high hurdle rate helps them focus on the “best” projects. Adding a buffer is also a conservative management practice for companies (and managers) that fear negative surprises.

Jagannathan et al. (2017) provide even another explanation. They find that operational constraints lead firms to use high discount rates that exceed their cost of financial capital, based on an original survey of CFOs with firm identifiers linked to responses. Firms with abundant access to capital but limited qualified management or manpower appear to forgo profitable projects in preparation for more profitable future investment opportunities. Consistent with this explanation, firms using high discount rates have strong balance sheets, low leverage, and large cash holdings. They conclude that operational constraints rather than financial constraints explain why firms use discount rates that are on average twice their cost of financial capital.

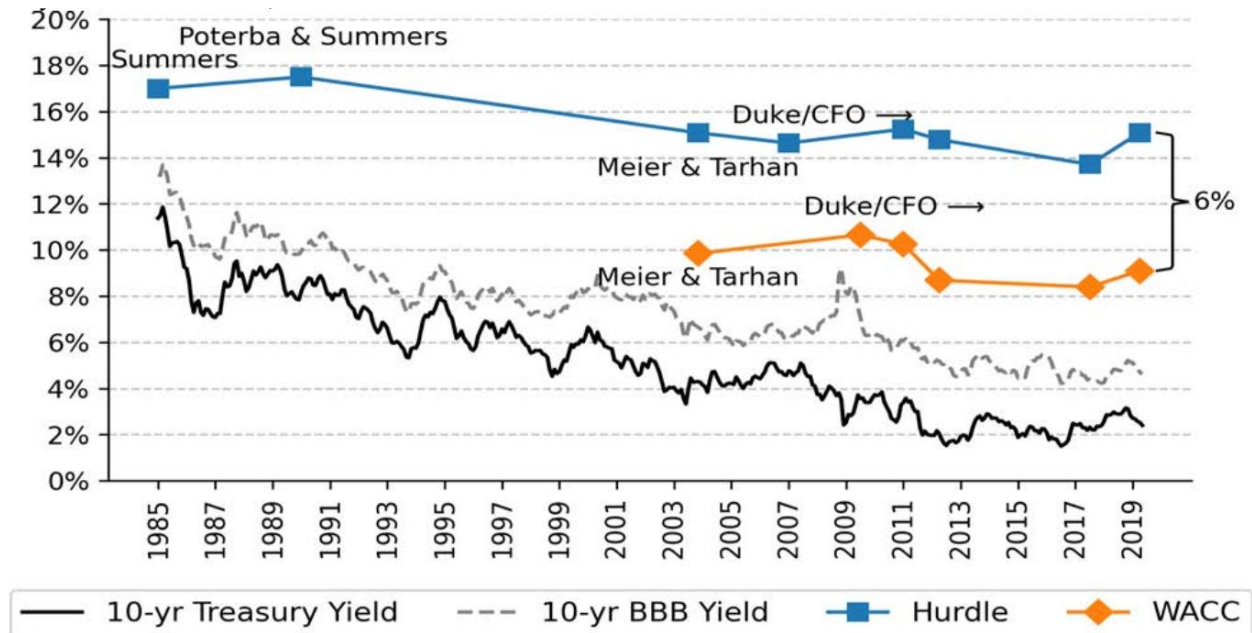
### An increasing wedge between perceived cost of capital and discount rate

Gormsen and Huber (2023b) show that, on average, firms move their discount rates with the cost of capital, but the relation is far below the one-to-one mapping assumed by standard theory, with substantial heterogeneity across firms. Using within-firm variation, they show that, on average, **a 1 percentage point increase in the perceived cost of capital leads to a 0.3 percentage point increase in the discount rate.** Many firms rarely change discount rates, so the relation becomes stronger over longer horizons. However, even at the 10-year horizon, 40 percent of firms maintain unchanged discount rates and, even if they change, adjust less than one-to-one with the perceived cost of capital. In addition, they find substantial variation in discount rates that is unrelated to the perceived cost of capital. These results suggest that discount rates have “a life of their own,” beyond the perceived cost of capital.

This pattern leads to time-varying wedges between discount rates and the cost of capital. The average wedge has increased substantially since 2002, as firms have incorporated the declining financial cost of capital into their perceived cost of capital but only weakly into their discount rates. Using within-firm variation, Gormsen and Huber (2023b) find that the average wedge in the US has increased by around 2.5 percentage points between 2002 and 2021, as the perceived cost of capital has decreased while discount rates have remained more stable. This increase is large relative to typical movements in financial prices, for example, those due to secular interest rate trends and monetary policy.

Their findings replicate observations by Graham (2022) from three decades of surveys of CFOs. Hurdle rates have been very sticky, having changed only about two or three percentage points over the past 35 years while, over the period, market interest rates, a key component of cost of capital calculations, have fallen by about 1000 basis points.

**Figure 17: average hurdle rates and cost of capital in various surveys**



Source: Graham (2022)

Gormsen and Huber (2023b) show that beliefs about value creation combined with increasing market power, along with fluctuations in risk, have contributed to higher discount rate wedges among US firms. They notably find a strong role for market power. Firms with high market power (measured at the start of the sample) have kept their discount rates stable since 2002, despite the falling financial cost of capital. Firms with low market power have, in contrast, decreased their discount rates almost one-to-one with the financial cost of capital. This pattern is consistent with the idea that many managers are averse to lowering their discount rates and only do so in response to competitive pressures. Market power has therefore limited the extent to which the secular decline in the financial cost of capital has been incorporated into firms' discount rates.

Graham (2022) emphasizes that maintaining stable discount rate despite changing financing conditions may be a "behavioral" tactic. Doing so, the hurdle rate is considered as "sacred" in the company, providing a clear benchmark to facilitate decisions by mid-level employees (e.g., a coordinating device). Oppositely, changing the hurdle frequently would make it less sacred and could lead to less unified decision-making across the firm.

Such a view matches with another common "behavioral" observation in capital budgeting decisions: the common use of a single WACC for all projects to be financed by the firm, neglecting differences in project, country or division risks<sup>115</sup>.

Within the context of the low-carbon transition, Helms et al. (2020) outline how the use of a firm-level WACC to evaluate projects could reduce corporate investment in low-carbon energy. If firms with a high cost of capital (i.e., high emitters) use their WACC to evaluate potential green investments that should require a lower cost of capital, this would lead to underinvestment in low-carbon energy.

### From discount rates to investment decisions

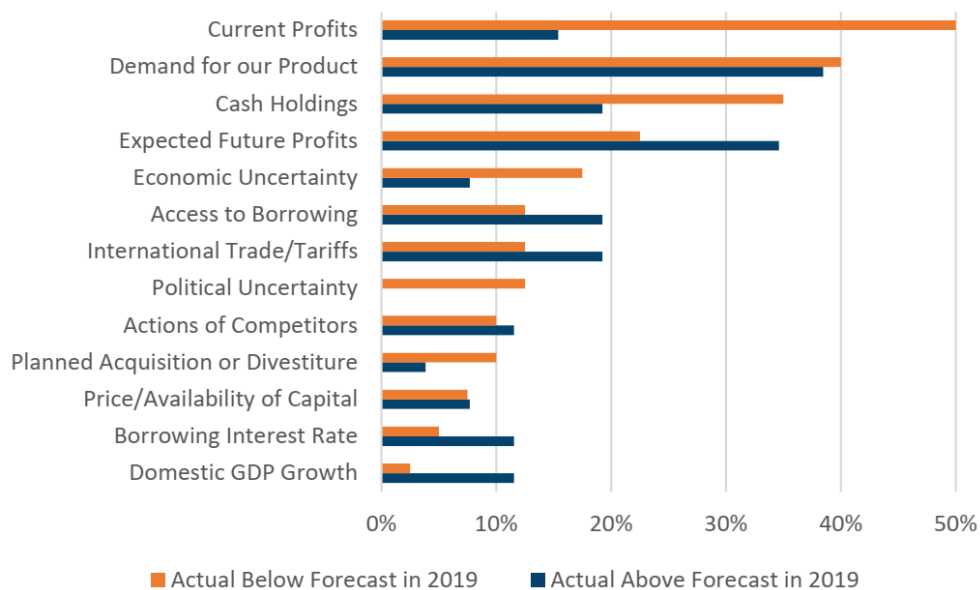
Future investment is negatively related to discount rate wedges. Gormsen and Huber (2023b) find that **a 1 percentage point increase in the wedge lowers the investment rate by 0.9 points**. They also obtain that, in a standard model, discount rate wedges reduce the sensitivity of investment to the financial cost of capital

<sup>115</sup> Graham and Harvey (2001); Krüger, Landier, and Thesmar (2015).

by a factor of ten. They conclude that the large and growing discount rate wedges can account for most of the puzzle of “missing investment” (relative to the low interest rates) in recent decades in the US<sup>116</sup>.

But investment decisions do not only depend on the chosen discount rate. Investment projects above the hurdle may still be refused by firms. Graham (2022) asked CFOs which economic shocks are most important in terms of causing corporate investment to deviate from plan. CFOs indicate that shocks to demand and profits are important investment drivers. Cash and current profits are particularly important for firms whose actual capital spending falls short of plan, which is consistent with a stylized fact of a high cash flow sensitivity of investment. More broadly, the impact of current profits on investment spending is consistent with a near-term focus by managers that has been often documented. Conversely, borrowing interest rates are positioned very low in the list of reasons that could derail investment.

**Figure 18: reasons that capital spending differs from forecasts**



Source: Graham (2022)

In the Graham (2022) survey, CFOs also declare that maintaining dividend is a top priority, on par with financing ongoing or future investments. In some instances, the two objectives may conflict with each other. According to CFOs, repurchases are somewhat less likely to crowd out investment than are dividends.

### Heterogeneous sensitivity to cost of capital

Research across decades has investigated the empirical relationship between cost of capital and corporate investment. Researchers have produced several estimates of corporate investment sensitivity to cost of capital. They confirm a larger sensitivity of investment to cost of debt than to cost of equity. By construction, WACC stands in the middle.

Gilchrist and Zakrajsek (2007) study the effect of variation in interest rates on investment spending. According to their estimates, a 1 percentage point increase in the firm’s cost of capital implies a reduction in the investment rate (i.e., the ratio of capital expenditures in period to the existing capital stock) of 50 to 75 basis points.

<sup>116</sup> Philippon (2019)

Empirically, Frank and Shen (2015) confirm that the weighted average cost of capital matters for corporate investment. But the overall effect depends on how the cost of equity is measured. As predicted by standard models, firms with a high cost of debt invest less. The impact of the cost of equity is more complex. It depends on how it is measured. When the capital asset pricing model is used, firms with a high cost of equity invest more. When the implied cost of capital is used, firms with a high cost of equity invest less.

Carluccio et al. (2018) exploit a dataset of consolidated balance sheets for some 1,850 mostly non-listed, French firms, in order to investigate the relationship between corporate investment and the cost of capital. They construct firm-level measures of the weighted average cost of capital (WACC) that account for industry-specific values of the cost of equity and reflect the actual capital structure of firms. They confirm that a high WACC drags down investment: a one SD increase in the real WACC (+2 pp) is associated on average with a reduction by 0.65 pp in the investment rate (5% of its average value). The effect is somewhat larger for manufacturing firms and when firms are highly leveraged or more dependent on external finance.

Hambur and La Cava (2018) examine the distribution of borrowing rates paid by companies, and the relationship between corporate borrowing rates and capital investment in Australia. They find a significant inverse relationship between the cost of debt and corporate investment, which is generally not evident in aggregate data. However, they find no evidence of a significant negative relationship between the WACC and investment, for either sectoral or company-specific measures of the cost of equity.

Cloyne et al. (2019) provide evidence on how monetary policy affects investment and corporate finance in the United States and the United Kingdom. Younger firms paying no dividends exhibit the largest and most significant change in capital expenditure and drive the response of aggregate investment. Older companies, in contrast, hardly react at all. Following a 25 basis points unanticipated increase in the interest rate, the investment rate of younger firms falls by around 1% two-three years after the shock, before returning to zero. Middle-aged firms and especially older firms reduce their capital expenditure by a far smaller amount, around 0.25%.

Finally, the findings on perceived cost of capital and discount rates in the abovementioned papers of Gromsen and Huber (2023 a,b) enable us to compute another estimate of the CoC elasticity of investment in their US sample, which stands at -0,27.

The table 7 gathers the estimates across studies, looking at the CoC elasticity of corporate investment (i.e., the effect on the investment rate of a 1% increase in the cost of capital).

***Table 7: Estimates of CoC elasticity of corporate investment***

Type of financing	Studies	CoC elasticity - range of estimates	Method to calculate CoE
Debt	Gilchrist and Zakrajsek (2007)	from -0,75 to -0,5	
	Frank and Shen (2015)	from -0,7 to -0,6	
	Hambur and La Cava (2018)	-0,5	
	Cloyne et al. (2019)	from -4 to -1	
Equity	Frank and Shen (2015)	from +0,04 to +0,22	CAPM/Multifactor
		from -0,27 to -0,11	Implied CoE
WACC	Frank and Shen (2015)	from +0,14 to +0,37	CAPM/Multifactor
		from -0,57 to -0,22	Implied CoE
	Carluccio et al. (2018)	-0,32	Implied CoE
	Hambur and La Cava (2018)	0	CAPM/Implied CoE
	Gromsen and Huber (2023a,b)	-0,27	Perceived CoC

Emphasizing a general lower sensitivity to cost of equity, scholars also highlight that the reaction of firms' investment to cost of debt is heterogeneous across companies. In particular, small, young and financially constrained (or stretched) firms display an investment policy much more sensitive to changes in their cost of debt than larger, older and cash-rich firms.

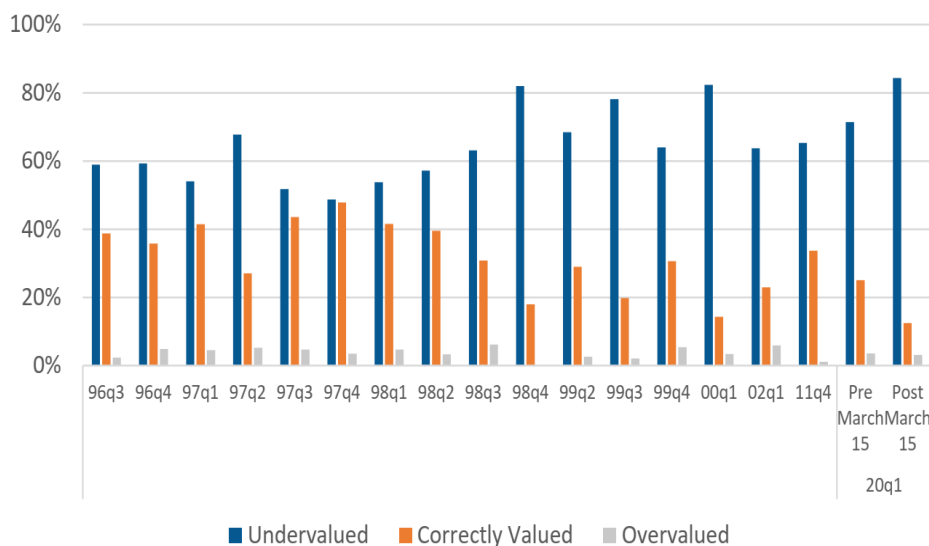
For instance, Sharpe and Suarez (2015) examine the sensitivity of investment plans to interest rates based on surveys of CFOs. They find that most firms claim their investment plans to be quite insensitive to decreases in interest rates, and only somewhat more responsive to interest rate increases. CFOs most frequently cited either ample cash or the low level of interest rates as reasons for lack of sensitivity. In the cross-section, they find that insensitivity to interest rate changes tends to be most pronounced among firms that do not indicate financial constraints as a top concern and firms with no near-term plans to borrow. Perhaps more surprisingly, investment is also less interest-rate sensitive at firms expecting higher year-ahead growth, in relation to higher and rather fixed hurdle rates.

### The building of slack

If investment is only very loosely influenced by the cost of capital through the discount rate, it still might be affected indirectly through issuances. Graham (2022) made several observations that converge to show that the *possibility to invest* is not unrelated to financing conditions. He observed that debt issuance decisions rely on market timing. When interest rates are low, companies raise debt, even if it is not directly related to project financing. The main purpose then is to build up room for flexibility. But flexibility is mostly searched for to pursue potential investment opportunities. Consequently, a decrease in interest rates creates room for future investment through higher debt issuance.

Oppositely, equity issues are much less frequent and do not time market as much. In a typical year, secondary equity issuance represents about 12% of corporate bond issuance in the US<sup>117</sup>. There are around 600 secondary equity offering deals per year in a US market that comprises more than 4,000 listed companies. Based on a four-decade dataset, Huang and Ritter (2020) show that 75% of companies do not make any significant equity issuance over a three-year period. The reluctance to raise equity may be related to the fact that managers quasi systematically consider the firm's stock to be undervalued, even in market bubbles<sup>118</sup>.

**Figure 19: perception of the company's stock valuation by CFOs in various surveys**



Source: Graham (2022)

<sup>117</sup> SIFMA (2023)

<sup>118</sup> Graham (2022)

### Discount rates for brown and green firms

Continuing their research, Gormsen et al. (2023) have tracked changes in perceived cost of capital and discount rates for green and brown firms respectively. They observed different patterns for both groups. They found that the average perceived cost of capital was significantly lower for greener firms in the last 20 years. The effect is economically large as the perceived cost of capital of the greenest firms was on average 1.5 percentage points lower than that of the brownest firms. The result is stronger in the US but also holds in their global sample. They also obtained that the relation between greenness and cost of capital has strengthened over time. They found that the average difference in the perceived cost of capital between the greenest and the brownest firms in the US was close to zero before 2016 but has fallen to -2.6 percentage points in the years since 2016, concurrent with the rise of green investing. Similarly, the difference in discount rates was small before 2016 and has fallen to -5.8 percentage points since 2016.

Taken together, these findings suggest that green firms have incorporated recent decreases in their perceived cost of capital into their discount rates fully. If anything, green firms seem to have adjusted discount rates downward by more than the perceived cost of capital.

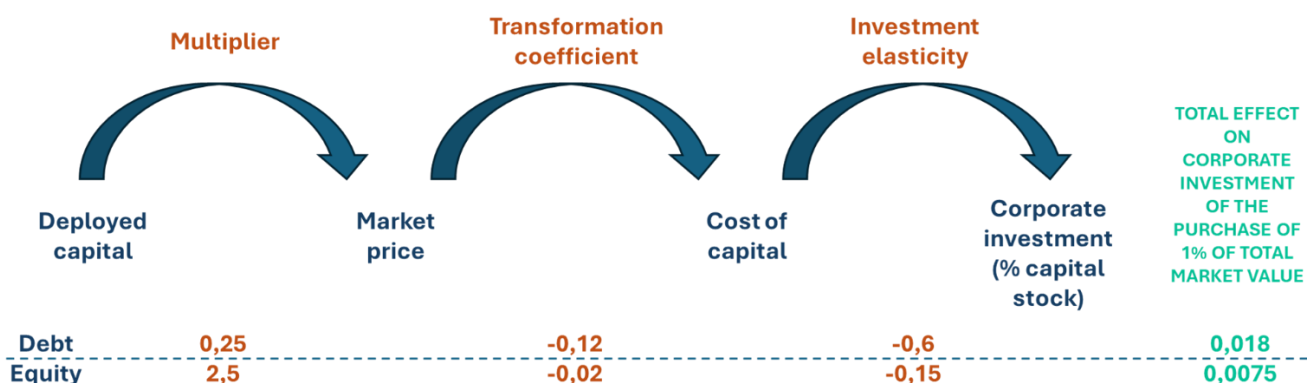
The authors found that green firms have been capable of decreasing their discount rates faster than brown firms in part due to increasing company size and decreasing risk. Oppositely, brown firms may have maintained (or broadened) their wedge to account for increasing risks (e.g., in relation with expected regulation or upcoming financial constraints). The process may have taken place through an informal and subjective adjustment process by the firms’ managers.

This would fit with results from other studies about the importance of “gut feels” by firm managers. Using a survey on more than 1,000 CEOs and CFOs around the world, Graham, Harvey, and Puri (2015) find that companies rely on several decision rules when allocating capital, including net present value (NPV) ranking, the timing of cash flows and financial constraints, as well as some rules tied closely to the people involved, such as the divisional manager’s reputation and senior management’s “gut feel.” Approximately half of CEOs list their “gut feel” as an important factor affecting how to allocate capital across divisions. This **highlights the subjective nature of corporate investment and emphasizes that executives rely on their personal judgment when making decisions.**

### Pathway #1: a summary

We use estimates disseminated across the section to infer the plausible effect of a purchase of 1% of the capital (equity or debt) base on the investment rate of a company. For each step, we consider median values out of the range of existing estimates. Figure 21 displays the aggregated results.

**Figure 20: disentangled effects of capital deployment in secondary markets on corporate investment**



**The estimations show that capital deployment in the bond market might be 2,4 times as effective as capital deployment in the stock market.** This is due to both a transformation coefficient that is 6 times larger than for equity and an investment elasticity that is 4 times larger. Those two features do more than offset the effect of the smaller multiplier in the debt market by one order of magnitude.

Based on our estimates, a purchase of 1% of the outstanding debt could likely translate into an average decrease of the cost of debt by 0,03 percentage point ( $0,25 \cdot 0,12$ ) that leads to an increase of the investment rate of the invested company by 0,018 pp ( $0,03 \cdot 0,6$ ). If the investment rate was initially at 15% of the total stock of capital, it then might increase to 15,018%.

Alternatively, a purchase of 1% of the equity base could likely translate into an increase of 2,5% of the market cap that decreases the invested company's cost of equity by 0,05 pp ( $2,5\% \cdot 0,02$ ) and finally increases the investment rate of the invested company by 0,0075 pp ( $0,05 \cdot 0,15$ ). If the investment rate was initially at 15% of the total stock of capital, it therefore might increase to 15,0075%.

**To achieve a noticeable (albeit small) increase of 50 pp on the investment rate, one should purchase 27,7% of the outstanding debt or 66,7% of the equity base. Those figures, especially for equity, are clearly out of reach for most investor coalitions, whether formal or informal.**

## Pathway #2: are managers sensitive to stock price movements?

In this section, we investigate the possibility for investor coalitions to send clear price signals to managers that will make them take appropriate steps via i) a feedback effect and ii) a financial incentive through managerial compensation.

### Do company managers learn from market prices?

#### Prices as informants

Managers do not operate in a vacuum and feedback effects from market prices have been observed around various specific events. Nevertheless, several questions are yet to be answered to infer whether ESG asset allocation could affect companies' decisions through a feedback effect. First, do managers constantly learn from markets or only proceed to punctual event-related learning? And second, is learning by managers mostly rational (i.e., able to discriminate between information and noise) or naïve (i.e., blind to mispricing)?

Research has long discussed a feedback effect of market prices on companies' real decisions<sup>119</sup>. The core idea is that outsiders may have some incremental information that is useful to company managers (e.g., state of the economy, position of competitors, consumers' demand). Although the relevance of prices as source of information ultimately goes back to Hayek (1945), the theoretical models of Dow and Gorton (1997) and Subrahmanyam and Titman (1999) were the first to formalize the assertion that market prices constitute a learning source for firms' managers. Moreover, over the years, financial markets have become more liquid, market participants more sophisticated, and information around financial markets more widely available. A natural conjecture then is that market prices should have become even more informative.<sup>120</sup>

This hypothesis has been largely supported. For instance, companies' decisions have been found to be influenced around major company life events, including M&A, earnings forecasts, or CAPEX investment announcements. Luo (2005) provides a systematic study to document the managerial learning from the market on acquisition decisions. He shows that acquisitions are more likely to be canceled when prices react more negatively to their announcements. Zuo (2016) shows that firms revise their earnings forecasts in response to price movement after the original forecast, and they do so more when the price contains more information.

<sup>119</sup> Goldstein (2023)

<sup>120</sup> Pereira Silva (2018)

Finally, Jayaraman and Wu (2020) show how firms utilize voluntary disclosure on capital expenditure as a tool to elicit information from the market. They show that firms adjust their capital expenditures based on the market reaction to the forecasts, and that they do so more strongly when it is more likely that the price contains new information.

In a similar vein, many papers have observed a sensitivity of investment decisions to stock prices that goes beyond the cost-of-capital channel. To test whether managers learn from the price, they ask how this sensitivity is related to measures of price informativeness. The idea is that if investments are more sensitive to prices when prices are more informative, then this indicates that the information in the price is used for the investment decisions. Their empirical tests confirm that hypothesis<sup>121</sup>.

Given the challenges in disentangling the feedback effect in market data from other potential channels (especially cost-of-capital), it is useful to consider a direct approach and ask corporate managers themselves whether they care about stock prices, and if so, then why. Goldstein, Liu, and Yang (2022) study the results of such a survey in China. 91.6% of the firms listed on the Shanghai and Shenzhen stock exchanges reported that they care about their own stock price. Firms in this group were then given a few non-exclusive options as to why they care about their stock prices. The most common reason, chosen by 75.2% of those firms, points to an informational channel, as the firms say that the stock price contains information that is new for investment decisions. The second most common channel, chosen by 66.1% of the firms, points to a financing channel, where firms are saying that the stock price would impact refinancing (in the form of seasonal equity offering, bond issuance or bank loan).

In another attempt to separate the information channel from the financing channel, several researchers have investigated whether firms also learn from their peers' stock prices<sup>122</sup>. They show that firms' investments are more sensitive to the peers' stock prices when those prices are more informative and when their own stock prices are less informative. They also show that the sensitivity of the firm's investment to its own prices decreases when the peers' prices are more informative.

### Prices as faulty informants

Unfortunately, stock prices respond to fundamental shocks (news) as well as non-fundamental shocks (noise). While there is certainly noise in prices, the idea of the feedback effect is that, after taking the noise into account, prices are still informative. Rational economic agents will update, fully aware of the possibility of noise, and still find the price informative.

In practice, are managers capable of discriminating news from noise in stock prices? Researchers have tried to answer that question by looking at how non-fundamental shocks to stock prices influence companies' decisions.

They obtain that those non-informative shocks do affect companies' investments. For instance, Hau and Lai (2013) show that firms respond to severe drop in their stock price due to mutual fund fire sales during the 2007-2009 crisis by cutting investment. Lou and Wang (2014) show that this finding holds in normal times as well. Another paper by Tubaldi (2021) follows up on this research with a more direct approach to identify non-fundamental mutual-fund outflows and their real effects. He shows that liquidity needs driven by hurricanes cause significant outflows by affected investors from mutual funds and lead to fire sales of the stocks that the mutual funds hold. These fire sales generate price drops for affected stocks of 7%, which revert within 10 months. Tracking the effect on the real economy, he shows that affected firms reduce the companies' investments by 4%.

However, these observations are consistent with all possible channels through which noise in stock prices might affect investment, including "opportunistic channels" or a "faulty informant" channel.

<sup>121</sup> Chen, Goldstein, and Jiang (2007), Bakke and Whited (2010), Pereira Silva (2023).

<sup>122</sup> Foucault and Fresard (2014); Dessaint et al. (2019); Ozoguz and Rebello (2013).

Existing research has proposed two “opportunistic” channels through which non-fundamental shocks to a firm’s own stock price can have real effects. First, investors might have incorrect beliefs regarding a firm’s growth opportunities, pushing its market valuation away from fundamentals. This distortion might then lead to inefficient investment decisions (e.g., over-investment when market valuations are excessively high) if managers maximize their stock price (i.e., follow investors’ distorted beliefs) rather than the actual value of the firm given its true prospects. Second, when their stock price deviates from fundamentals, managers of financially constrained firms might opportunistically issue new shares and undertake investments that could not be funded otherwise.

Importantly, these channels do not predict that managers should react to the noise in peers’ stock prices (after controlling for their own stock price) since these do not matter for financing and are not relevant for their shareholders. In contrast, the faulty informant channel does. To isolate the learning effect of noise, Dessaint et al. (2019) look at how firms’ investments are affected by non-fundamental changes to the prices of their peers. Indeed, the two opportunistic channels do not predict that managers should react to the noise in peers’ stock prices (after controlling for their own stock price) since these are not relevant for shareholders or managers’ compensation and they do not matter for financing. The authors find that firms decrease their investments in response to a negative non-fundamental price shock to peers’ stock prices. Since there is no direct reason for managers to be affected by peers’ prices, they conclude that the effect must be informational. Managers end up extracting the wrong information from prices. As suggested by Morck, Shleifer and Vishny (1990), stock prices are “faulty informant” for corporate managers.

Beyond being noisy, stock prices are also excessively volatile, and this volatility implies real costs for companies. Using volatile and correlated liquidity shocks to investors as a source of noise trading, Xiao (2020) shows that noise in stock prices impedes real efficiency. A one-standard-deviation increase in mutual fund flow-driven volatility pressure leads to a 2.6pp (4.0%) decline in ROA in the subsequent 2 years. He obtains that volatility in stock prices does not affect product market demand, but it reduces firms’ total factor productivity, profit margin, and performance in R&D and acquisitions.

Xiao (2020) explores and finds supporting evidence for several mutually nonexclusive mechanisms (namely learning, financing, and managers’ compensation) that may explain the empirical relation between noise in stock prices and real performance.

- The first potential channel is that stock prices affect firms’ policies, because managers may perceive stock prices as an informative signal. Managers with more information from internal sources may rely less on external information while overconfident CEOs also may be less reliant on stock price information because of the biased views they have about the firms’ economic prospects. Measuring insider information based on insider trading and CEOs’ overconfidence using CEOs’ holdings of vested in-the-money options, he finds that firms with more insider information or with overconfident CEOs are indeed less sensitive to stock prices when making investment decisions. Mutual fund flow volatility pressure also appears to have a weaker effect on profitability for these firms. Thus, firms that are less reliant on market signals are also less susceptible to noise in stock prices, consistent with the learning channel.
- The second potential channel is that noise in stock prices may constrain firms from raising capital. In support of this mechanism, he finds that the higher mutual fund flow volatility pressure is associated with a higher implied cost of equity estimated based on current market prices and projected future cash flows, inferred from analysts’ forecasts. The higher fund flow volatility is also related to the higher cost of bank loans and bonds, suggesting that lenders also perceive a higher risk when observing higher price volatility due to mutual fund flow-driven trades.
- The third potential mechanism is that noise in stock prices may create contracting frictions for corporate governance. As stock price becomes noisier and does not accurately reflect managers’ performance, stock-based incentive contracts become a less effective tool for motivating managers to exert effort. Consistent with the less effective equity-based incentives, he shows that firms subsequently reduce stock-based compensation to CEOs after an increase in mutual fund flow volatility pressure.

In conclusion, there is now **ample evidence that managers do learn from market prices and that they are not equipped to distinguish between noise and information within stock prices.**

In relation to ESG (green) investing, it implies that there is no certainty that managers would learn the right lessons from observing diverging price signals between high ESG (or green) companies and low ESG (brown) companies.

### **Do stock prices provide clear incentives to managers?**

Part of the impact narrative of price signaling goes through providing right incentives to company managers. The effectiveness of such a channel is de facto highly dependent on the structure of the managers' compensation. If company managers have no stock-based compensation, then the incentive is pointless. If part of their compensation is stock-based, then affecting stock prices through capital allocations may turn effective... or counter-effective.

#### Managers' own interests: beyond the stock price

To correct potential agency problems (i.e., misalignment between shareholders and managers' interests), companies have resorted more and more to stock-based compensation for their top managers in the last decades.

For instance, Davis and Hausman (2020) found that, from the 1990s onwards an increasing portion of oil and gas executives' compensation was non-salary. By 2016, over 70% on average was from stock options and stocks, long-term incentive programs, bonuses, and other benefits.

In a world in which financial, labor, and product markets all operate efficiently, linking incentive pay to the stock price would be enough to align the interests of shareholders and management. In practice, additional performance measures are useful insofar as they contain extra information about management's value-added. One reason is that stock markets can be noisy, as already mentioned, and short-termist too. So a company should also rely on other metrics for a holistic perspective on its managers' performance. Indeed, top managers' compensation packages are increasingly connected to a multitude of KPIs, both financial and non-financial.

More recent evidence by Ritz (2022) shows that the five largest western oil & gas companies—BP, Shell, and Total in Europe and Chevron and ExxonMobil in the United States— incorporate KPIs related to financial performance, operating performance, strategic objectives and sustainability into CEO pay. In his study, Ritz (2022) distinguishes between two types of incentive pay: the short-term incentive plan (STIP) underlying annual bonus payments and the long-term incentive plan (LTIP) typically paid out as stock-based compensation. He observes that, despite their superficial similarities as oil majors, there is large variation in compensation practices across these companies. Traditional financial metrics dominate short-term and, especially, long-term incentives. If all companies use total shareholder return (TSR) as a key performance indicator in their LTIPs, its weight, however, varies widely from 100% at Chevron, over an undisclosed weight at ExxonMobil, to 22.5% at Shell. On average, financial metrics such as TSR and return on average capital employed (ROACE) account for 62% in STIPs and 90% across LTIPs. Against this background, each company has a CEO incentive plan that is, in quite different ways, linked to climate performance. For short-term incentives, most use a metric on the reduction of greenhouse gas (GHG) emissions, with weights up to 10%, while ExxonMobil is the only company that relies solely on financial performance. Total is the only company with a performance measure on “corporate social responsibility” that includes its climate performance. Overall, climate-related metrics make up 8% of CEO bonus pay plans on average across the five companies.

Therefore, **the potential effectiveness of price signaling through managers' compensation is being progressively reduced as firms are decoupling their managers' pay to the stock price.**

#### Devil in the details

Leaving aside other KPIs, attributing the largest chunk of managers' pay in the form of stocks does not ensure that managers will be interested into maximizing the stock price at all times and, therefore, will do their best to avoid investors' divestment.

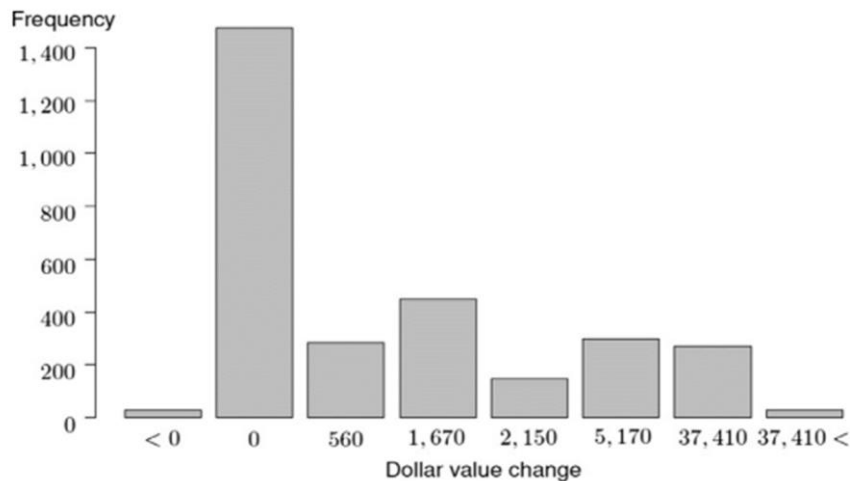
Against intuition, Davies and Van Wesep (2018) show that, as most managerial compensation contracts reward long-run profitability and stock returns, divestment can be ineffective at best, and perhaps counterproductive, even rewarding managers who attract divestment campaigns.

In particular, divestment is...

- **ineffective in case of performance bonuses.** Cash or equity bonuses that depend upon profitability measures such as return on assets, return on equity, or profit incent managers not to mitigate any negative externality
- **counterproductive in case of (some) stock grants.** Share grants usually specify a fixed number of shares. Increases or decreases in the share price have no direct effect on the number of shares that the manager receives. Other share grants specify a fixed value, which is divided by the share price on or near the grant date to determine the number of shares granted. For fixed-value grants, therefore, a lower share price has a positive effect on the number of shares granted.
- **counterproductive in case of stock options.** Stock options are typically granted at par and are most often offered either in fixed-value or fixed number plans. In either case, CEOs prefer low interim share prices. If executives instead receive a fixed value of options, then they benefit even more from divestment than under a fixed number plan. Not only does the value of each option increase with divestment, but the number granted increases as well.

In a quantification exercise, they show that the wealth of most executives running likely divestment targets would be unaffected by even large movements in share prices. Of those affected, a substantial majority would even benefit from divestment (see figure 22).

**Figure 21: distribution of companies' managers wealth changes in case of a divestment campaign (of 1% of shares outstanding)**



Source: Davies and Van Wesep (2018)

The only compensation plans that align the interests of managers and campaigners are those that heavily emphasize near-term stock prices, not other performance measures such as long-run prices, profitability, or stock returns. This sort of plan is not common. Practice is moving in the other direction, with more restricted and long-vesting equity grants as a short-term focus on current prices is often viewed as myopic and contrary to long-run company success. In a latter study, Shrivastava et al. (2022) show that linking sustainability performance targets to executive remuneration alone is not adequate to bring about greener organizational

behaviors. Instead, or rather in addition, implementing longer stock-vesting periods (3 years or more) for executives is a critical part of the environmental performance equation.

As Davies and Van Wesep (2018) conclude, this is bad news for proponents of ESG capital allocation, especially divestment. Still, they admit that managers of firms targeted in divestment campaigns are stigmatized, and social pressure can be as effective as financial pressure to make them choose a more sustainable course. This mechanism, however, suggests that making noise (i.e., a form of non-market signaling) is more important than sending price signals.

Finally, it is no be noted that aligning corporate objectives with climate/ESG issues can be more directly and more effectively achieved via sustainability-related incentive mechanisms in managers' compensation schemes as suggested by various authors<sup>123</sup>.

### Managers' compensation and the threat of exit

If managers may temporarily interested into having a low stock price (when they are close to receiving stocks or options), they may also be interested into the maximization of the stock price in the future (to sell their stocks). Consequently, they may appreciate current exits but fear future ones. For ESG activists, it means threats of future exit would be more effective than immediate exits.

Gantchev et al. (2023) provides evidence that confirms such an intuition. They show that environmental or social incidents at listed firms are followed by some, but relatively small, divestitures. Nevertheless, following those incidents, firms with a one-standard-deviation higher ESG-focused institutional ownership decrease their greenhouse gas emissions by 36.5% and improve their ESG scores by 7.2% more than other firms if their managers receive equity compensation.

Their results instruct that **managers' compensation interacts with investors' preferences to affect managers' decisions**. Stock-based compensation works better to make managers pay attention to the firm's ESG performance when ESG-focused investors own a large fraction of the equity capital and threat of exit by ESG-focused investors is more effective when managers have a high fraction of their compensation in the form of stocks.

The findings by Gantchev et al. (2023) confirm that **the ongoing trend of decoupling managers' compensation from the immediate stock price (through the inclusion of other performance metrics, including sustainability-related ones, and longer vesting periods for stock-options) de facto plays against the effectiveness of price signaling through managers' compensation**.

## Pathway #3: do shareholders receive and act upon the signal?

A final channel that could connect market prices to companies' real-world decisions leverages the response by shareholders to abnormal equity returns. Here, the theory of change states that shareholders of low ESG/brown companies would react to disappointing returns (in case of sufficient market impact) by pressing the companies' management to opt for a more sustainable strategy using engagement and voting. So, the narrative implies that i) shareholders notice an abnormal return and investigate for understanding the reasons behind it, ii) shareholders get the right message from the price effect and iii) they react by engaging with the targeted companies and not by exiting.

The first step is rather credible since investors pay a great attention to their investments' returns. This is even central to institutional investors' fiduciary duty. What is unsure is the magnitude of return abnormality (that goes beyond typical price volatility) that would require a proper investigation. **If we assume that a valuation**

<sup>123</sup> Edmans et al. (2012), Aggarwal et al. (2020).

**gap by 25% versus competitors is a reasonable threshold, then it would require ESG investors to purchase 10% of the market cap (considering a multiplier of 2.5).**

The other two steps are even less straightforward. First, there could be many conflicting interpretations for disappointing returns leading some shareholders to push in favor of more sustainability and others towards less. Second, for shareholders engagement is a costlier response to disappointing returns than just selling stocks or bonds to redirect capital towards other securities with a better momentum. As discussed in the previous chapter, engagement is by nature subject to a major free-rider problem.

When tapped in isolation, the shareholder channel of market signaling thus relies on uncontrollable factors. At least, a way to maximize its probable effect would be to combine it with explicit non-market signals. If media interventions make it clear that the price decrease is connected to a targeted campaign by market activists, then the shareholders can get the message right and, potentially, act upon it.

## The observed outcomes of market signaling

Several empirical studies, at micro or macro level, have investigated whether green or sustainable investment strategies in secondary equity markets had a real-world effect. Results are ambivalent.

### Micro-level studies

At micro level, Roehleder et al. (2021) used an original methodology to identify decarbonization trades of mutual funds and associate them to firm-level carbon emissions. They calculated a metric of funds' decarbonization sell pressure (DSP) on stocks. They find that i) high DSP sustainably pressures stock prices downwards and ii) divested firms experiencing a stock price decline subsequently reduce their carbon emissions compared to non-divested firms.

In another micro-level study, Heath et al. (2022) found that SRI funds do not significantly change firm behavior. They developed an empirical design that exploits plausibly exogenous variation in the amount of capital allocated to SRI funds in relation to the obtention of Morningstar Globes. They found no evidence that SRI funds change the environmental behavior of firms (i.e., total pollution or investment in pollution abatement technologies) or their social behavior (i.e., employee well-being or board diversity). Their results show that SRI funds do select companies that behave in a relatively more environmentally and socially responsible manner, but they do not significantly improve the environmental or social conduct of their portfolio firms. The authors conclude that SRI funds operate primarily as stock selectors, not as impact generators.

Berk and van Binsbergen (2022) studied the effect of a firm either being included or excluded from the FTSE USA 4 Good Select Index which is replicated by several index funds, especially the Vanguard FTSE Social Index Fund (the largest ESG index fund by market cap) to infer the impact of SRI funds on cost of capital. They find that the difference in the cost of capital between firms that are targeted by SRI funds for their social or environmental costs and firms that are not is too small to meaningfully affect real investment decisions. They estimate that to affect by more than 1 pp the cost of equity capital of targeted firms, impact investors would need to make up more than 80% of all investable wealth.

Hartzmark and Shue (2023) develop a new measure of impact elasticity, defined as the change in environmental impact of a firm due to a change in its cost of capital. They show empirically that a reduction in financing costs for firms that are already green leads to small improvements in impact at best. In contrast, increasing financing costs for brown firms leads to large *negative* changes in firm impact. Thus, **sustainable investing that directs capital away from brown firms and toward green firms (through a negative screening strategy or a best-in-universe strategy) may be counterproductive**. Across a variety of tests, they find that brown firms have large negative impact elasticities, while green firms have impact elasticities closer to zero. First, brown firms show greater reductions in their emissions after improvements in their financial performance. Stronger past returns ease financial constraints and lower the firm's cost of capital. To establish causality, the authors examine the relation between firm emissions and the firm's industry return in

the previous year, calculated excluding the focal firm<sup>124</sup>. They find that brown firms are much more elastic to industry shocks on cost of capital than green firms. Brown firms react to financial distress by increasing their emissions, whereas green firms exhibit a much smaller response, sometimes in the opposite direction. The authors emphasize that their findings of a large negative impact elasticity for brown firms and a close-to-zero one for green firms are consistent with basic corporate finance theory. Brown firms likely face a choice between dark-brown investment projects (e.g., continuing existing high-pollution production, or cutting corners on pollution abatement) and light-brown investments (e.g., shifting to cleaner production or green energy). Because the light-brown project entails a departure from existing production methods, it likely requires investment in new capital which costs more upfront and delivers back-loaded cash flows compared to the dark-brown project. Financial distress or an increase in the cost of capital will make short-term cash flows more attractive relative to long-run cash flows. Intuitively, an increase in the cost of capital is equivalent to a higher discount rate for the future. Thus, an increase in the cost of capital causes the dark-brown project to look relatively more attractive, leading brown firms to have a negative impact elasticity. An increase in the cost of capital will similarly cause green firms to prefer projects that generate short-term cash flows. However, green firms operate in industry sectors (e.g., in services like insurance) where they cannot generate substantial environmental externalities regardless of which projects they choose to pursue, leading green firms to have impact elasticities close to zero.

Using asset-level data from the S&P World Electric Power Plant database, Wilson et al. (2023) tracked firm-level low-carbon (green) investments and high-carbon (brown) investments for publicly listed electric utilities firms from 2012-2021. They find that a reduction in the firm-level cost of debt *directly* increases both firm-level green and brown investments (through the discount rate), and also *indirectly* increases investment by enabling debt capital raising. Therefore, an indiscriminate increase in cost of debt for brown issuers would not mechanically increase their ratio of green-to-brown investments.

When controlling for climate policy using the OECD Environmental Policy Stringency Index, the authors obtain that market-based policies, such as carbon prices and taxes, directly increase domestic green investments and act as a moderator, strengthening the relationship between debt capital raising and green investments, while doing the opposite for brown investments. **It is the combination of market forces (who drive interest rates) and regulations that orients firms' investment decisions towards the low-carbon transition.**

#### Macro-level studies

At macro level, De Angelis et al. (2020) provide empirical evidence of real-world impact of allocations to green funds by focusing on United States stocks between 2004 and 2018. They obtain that when the fraction of assets managed by green investors doubles, companies' overall carbon intensity drops by 4.9% over one year.

In another macro study, Choi et al. (2020) find that financial institutions around the world reduced their exposure to stocks of high-emission industries after 2015, especially for those located in high climate-awareness countries. In the presence of divestment, public high-emission firms in the same countries tend to experience lower price valuation ratios. They also increase capital expenditure, research and development (R&D) expenses, and green innovation activities, and reduce emissions resulting from their operations. They do not obtain the same results for private firms, opening the door to **a potential leakage effect of green capital allocations where polluting companies or assets turn private.**

Medias<sup>125</sup> and researchers<sup>126</sup> have warned against the risk caused by screening strategies of a massive transfer of unsustainable assets into private funds or sold into jurisdictions with, for example, lower environmental standards. In this way, "pure" portfolios become widespread in sustainability-concerned countries, but they have no real-life effect, and one could even argue that this approach worsens the situation.

<sup>124</sup> The intuition is that industry return shocks strongly affect firm financing costs, but individual firm choices of emissions should not affect industry returns.

<sup>125</sup> The Economist (2022)

<sup>126</sup> Gözlügöl and Ringe (2023)

Another leakage effect is presented by Cojoianu et al. (2020). On the one hand, they find that increasing oil & gas divestment pledges in a country are negatively related with new capital flows to domestic oil & gas companies. On the other hand, the divestment movement may have an unintended effect, insofar as domestic banks situated in countries with high divestment commitments and stringent environmental policies provide more finance to oil & gas companies abroad.

## Success factors of market signaling

### Moderators of the effect of capital allocations to market prices

Research has shown that effects on market prices of allocating capital using sustainable screenings is highly context-dependent.

In particular, effects will depend on:

- **the deviation from conventional index of the sustainable allocations**<sup>127</sup>: sustainable funds can significantly affect prices only when their allocation significantly vary from the conventional benchmark,
- **the elasticity of stocks**: the more inelastic the stocks are, the more possible it is to influence prices. All else being equal, it is more effective for large stocks that are more inelastic than small caps (because passive investors hold them whatever happens)<sup>128</sup> and for stocks that lack substitutes. The effect of investors' screening approaches is likely to be higher for companies whose assets are not easily substitutable. The models of Heinkel et al. (2001) and Fama and French (2007) show that the capital allocation of sustainable investors has a stronger effect on the prices of assets whose returns are only weakly correlated with the market portfolio - that is, assets that are not easily substitutable. Counterbalancing sustainable investors' demand for those assets requires a higher deviation from an optimally diversified portfolio from neutral investors than is the case for stocks that have very close substitutes<sup>129</sup>.
- **the size of the sustainable inflows or outflows vs the investment universe**: the effect is larger when capital is deployed/withdrawn on smaller segments of the market,
- **the concentration of trades by sustainable investment funds**: the more investment funds concentrate on a few holdings, the stronger the effect they can have on market prices.
- **the similarity of screening filters across sustainable funds**: the more homogeneous the screenings are, the more effective are investments/divestments of each fund in affecting market prices. If not homogeneous, the signals sent by individual funds have a high change to get lost. This advocates for a harmonization in screening criteria, as permitted by the introduction of regulations (like the EU taxonomy) or by the reliance on ETFs tracking the same sustainable indices.
- **the fraction of wealth commanded by sustainable investors**: equilibrium models<sup>130</sup> indicate that the total effect of screening approaches on asset prices, as well as the marginal effect per additional dollar involved, increases with the fraction of wealth commanded by investors that apply the same screening approach.

### Moderators of the effect of market prices on companies' behaviors

We start by highlighting a common moderator to all pathways studied in this chapter. A change in market prices due to a sustainable screening approach is more likely to cause companies to improve their ESG practices if **the costs for a company to implement the reforms required** (to conform to the requirements

<sup>127</sup> Van der Beck (2021)

<sup>128</sup> See Haddad et al. (2022). It is noticeable that investing in small cap stocks suffers from the opposite pros and cons of investing in large caps. On the one hand, the lower market cap and daily volumes creates possibilities for stronger effects. On the other hand, the higher elasticity of demand to prices in the case of small cap stocks reduces the potential effect.

<sup>129</sup> Accordingly, both Wurgler and Zhuravskaya (2002) and Ahern (2014) find empirical evidence that stocks with low substitutability exhibit a lower price elasticity.

<sup>130</sup> Such as those of Heinkel et al. (2001), Fama and French (2007), Gollier and Pouget (2014), and Luo and Balvers (2017)

embodied in the screening) are low. The models of Heinkel et al. (2001) and Gollier and Pouget (2014) point out that whether changes in asset prices induced by sustainable investing provide an incentive for companies to improve their ESG practices depends on the cost of the necessary reforms.

We add to that common preliminary some specific moderators to the last two pathways.

In both pathways #2 (i.e., signal to managers) and #3 (i.e., signal to shareholders), the risk is that managers and shareholders don't get the message right because stock prices are, by nature, very noisy. The clarity of signaling would be enhanced if combined with explicit non-market signals. If media interventions make it clear that the price decrease is connected to a targeted campaign by market activists, then the odds are increased that managers and shareholders understand the need for a strategic reorientation.

An additional moderator of pathway #1 is the need to issue debt or equity to finance company's growth or reform.

Finally, specific moderators of pathway #2 include:

- a CEO who is a net-seller of stocks: when CEOs are in a net-buying situation, they de facto are interested in low stock prices (to receive more stocks from their compensation package).
- a CEO with an experience in ESG-related stock price movements: as shown by Gantchev et al. (2022), previous observations of price declines after ESG incidents seem to operate as reminders that ESG performance can hurt stock prices.
- a large ESG-focused investor base: the fraction of ownership captured by ESG-focused investors influences both the price impact of divestments after ESG incidents and the credibility of the threat of further exits in the future.

## Multiple ways to coordinate market signaling

All pathways require price signals to be loud to have a credible chance to influence corporate decisions. Simulations that this cannot be achieved by single investors, even large institutional ones. Therefore, critical size can only be reached if investors de facto coordinate. **We have identified four devices (ratings, indices, labels and regulations) that exist to facilitate such a coordination.** Not all appear to be equally effective.

Based on abovementioned research, we consider that efficient coordination devices should:

- 1) send clear signals to managers and shareholders about the reasons for an abnormal price reaction,
- 2) foster significant deviations of portfolio weights from market weights,
- 3) lead to a high portfolio homogeneity across investors using the same device,
- 4) be followed by a large fraction of investors and reach a critical size in terms of AuM relative to their investment universe.

## Signal clarity

Considering signal clarity, ESG ratings perform poorly due to the tendency to aggregate multiple dimensions and the well-documented variability across rating providers<sup>131</sup>.

Similarly, ESG indices often rely on a complex methodology that does not facilitate interpretation and they tend to place an excessive weight on market cap<sup>132</sup>. Their number is also inflating at a fast speed. In 2022, the Index Industry Association estimated that the total number of ESG indexes grew 55% over one year and surpassed 50,000 worldwide across all asset classes.<sup>133</sup> For instance, the market leader MSCI alone offers over 3,900 equity and fixed income ESG indexes.<sup>134</sup>

If ESG/green labels and sustainable finance regulations (like SFDR, Green Taxonomy or Climate Benchmarks) are in much smaller numbers, they unfortunately do not provide security screening rules to be applied strictly by investors (beyond exclusion rules). Instead, they impose general portfolio-level rules (a green share, an improved ESG score vs the investment universe, a decreased carbon intensity vs the parent index, etc.) that also leave a large leeway to complying investors.

In their investigation to understand an abnormal return, corporate managers and shareholders will have trouble making sense of conflicting ratings, index compositions or holdings across labelled or regulation-compliant funds. **For all coordination devices, signal clarity appears to us to be critically low.**

## Market deviation

For all devices, market deviation will depend on either the discretionary portfolio allocation choices made by investors (in the case of ratings, labels and regulations) or the indices' methodologies. In practice, even active investors tend to avoid deviating much from their benchmark (index hugging).

Excluding thematic funds, diversified ESG portfolios tend to be benchmarked against conventional indices. Fichter et al. (2023) report that 87.9% of active ESG funds use non-ESG indices as benchmarks for their investment, while only 3.7% use ESG indices and 8.4% do not disclose their benchmarks.

## Portfolio homogeneity

As said already, indices put aside, it appears that ratings, labels and regulations (like SFDR, Green Taxonomy or Climate Benchmarks) all suffer from a similar flaw: they do not set strict portfolio building rules (except, in some cases, exclusion rules). Therefore, it leaves investors ample leeway for forming their portfolio. A direct consequence is that there is a low level of homogeneity across portfolios of investors using the same coordination device and capital is dispersed across many companies and sectors, degrading the capacity to influence market prices.

Unlike other devices, indices do not suffer from that limitation. But their collective clout is dampened by the large dispersion of capital across an ever-growing number of (often tailor-made) indices.

## Critical size

Here, we provide a series of figures to assess whether coordination devices have already reached the critical size to significantly influence cost of capital or, more achievably, send clear signals to shareholders:

<sup>131</sup> Berg et al. (2022)

<sup>132</sup> 2DII (2024)

<sup>133</sup> IIA (2023)

<sup>134</sup> According to msci.com

- **ESG ratings:** according to the Global Sustainable Investment Alliance<sup>135</sup>, global AuM using ESG information in a way or another amount to \$30tn, representing 24% of the relevant investment universe.
- **ESG indices:** according to Morningstar, passive ESG funds manage a total of \$0.67tn in Europe<sup>136</sup> and \$0.12tn in the US<sup>137</sup>.
- **ESG labels:** the French Label ISR, which is the largest ESG/green label in Europe by AuM, has validated a total of 1.174 funds with total AuM of \$0.77tn<sup>138</sup>.
- **Regulation:** estimates of total AuM of Article 8/9 funds range between \$3tn and \$6tn<sup>139</sup> while PAB/CTB funds manage around \$0.1tn<sup>140</sup>.

Figures may be compared with the global market cap of equity markets (\$106tn) and the size of global bond markets (\$139tn), resulting in a combined value of \$245tn. Only the highest estimate, provided by the GSIA, is in the right order of magnitude to significantly affect prices. It means that if all those assets were following the same exact strategy, shareholders would clearly observe large variations in returns between selected and excluded investments. Unfortunately, this upper-bound estimate includes all possible “sustainable” strategies that rely in one way or another on ESG data, including strategies that may not significantly diverge from the market index (ESG integration and active ownership strategies). Therefore, one cannot assume that the aggregation of them channels capital towards specific issuers in a coordinated way.

Putting aside the insignificant market uptake of ESG passive funds and the inflated offering of ESG benchmarks, **we consider that indices represent the most promising avenue for coordinating capital allocations of impact-motivated investors.**

## Practical conclusions

In conclusion, our detailed investigation shows that achieving real-life impact through the altering of security prices in secondary markets via a coordinated action proves to be very hypothetical, at best. Indeed, many obstacles do obstruct the way of impact investors opting for market signaling in secondary markets, namely:

- the very large size of “sustainable” investment segments within equity and bond markets,
- the high price elasticity of demand for stocks and bonds, requiring very large amount of capital to influence market prices,
- the poor responsiveness of firms’ investment decisions to actual cost of capital (especially cost of equity),
- the difficult interpretation of market returns by shareholders and managers,
- the current trend of decoupling managers’ pay from the stock price,
- the poor effectiveness of most coordination devices.

**We consider that any narrative of a collective impact through market signaling in bond or equity secondary markets is therefore highly dubious and would require a strong argumentation.**

This mirrors the conclusions of a paper about greenwashing in sustainable finance by the Swiss Asset Management Association (2021) that concluded that products using ESG integration, exclusion or positive screening were contributing to a minor extent or not at all to the impact goal of investors, unlike stewardship (engagement) or impact investing products (operating in private markets). Regarding thematic investing, they varied their conclusions based on the asset class in which the strategy is implemented. They consider the potential of thematic investing to deliver impact to be minor in public markets but more significant in private markets, where private equity or private debt investors can encourage young companies with sustainable

<sup>135</sup> GSIA (2023)

<sup>136</sup> Morningstar (2023a)

<sup>137</sup> Morningstar (2023b)

<sup>138</sup> Les Echos (2023)

<sup>139</sup> PWC (2024); Goldman Sachs (2023).

<sup>140</sup> IIGCC (2024)

solutions to grow by providing fresh capital. Said differently, in private markets thematic investment often grows undersupplied markets aside of sending market (and non-market) signals.

If anything, the pathway to collective impact through market signaling requires adopting *sine qua non* rules. They constitute our (positively-toned) recommendations for this chapter:

#### **Recommendation #1: choose a “pure” selection criterion**

- By definition, broad ESG scores aggregate performance across many dimensions and subdimensions. Investors interested in affecting corporate dimensions in one subdimension only would send a very noisy signal to companies by selecting companies using broad ESG scores.
- Investors motivated by sustainability impact should also rely on inside-out metrics (impact materiality) instead of outside-in metrics (financial materiality).

#### **Recommendation #2: follow the exact same strategy**

- Tracking the same (impact-focused) index is the best way to ensure effective coordination.
- Active funds using different (and poorly correlated) ESG ratings and/or different investment decision rules will de facto own very diverse portfolios that would noise the signal sent to issuers.

#### **Recommendation #3: restrict to (very) narrow market segments**

- Relative size of AuM to the total market cap of the investment universe is crucial. The AuM mobilized by passive funds tracking the same index should represent at minimum 10% (27% or 67%) of total market value of the investment universe to credibly motivate shareholders to act (significantly affect corporate investment through cost of debt or cost of equity, respectively).
- Therefore, thematic funds that restrict to specific (sub)sectors have an edge compared with broad ESG funds.

#### **Recommendation #4: opt for strategies that incentivize brown firms to go green**

- A major flaw of exclusion, best-in-universe and some low carbon strategies is that they de facto influence a sector’s cost of capital without discrimination across companies within the sector.
- Therefore, when successful, they increase the cost of capital for all firms within the targeted sector and for all projects of those firms, whether green or brown. Empirical observations show that this may lead to an increase in carbon emissions by targeted firms.
- Conversely, best-in-class and green bond strategies enable discrimination across firms or projects.

#### **Recommendation #5: favor bonds over equity**

- Firms’ investments are more responsive to changes in cost of debt than to cost of equity as the cost of debt affects bond issuance and the hurdle rate more than the (difficult to calculate) cost of equity.
- Much less capital is also required to decrease cost of debt than cost of equity by 1 percentage point (due to different maturities).
- Firms raise debt via the bond market much more often than equity.
- Passive bond funds actively participate in bond issuances and therefore also directly affect costs of debt in the primary market.

#### **Recommendation #6: focus on financially constrained firms**

- Small, young and basically all firms that cannot rely on large retained earnings display an investment policy much more sensitive to changes in their cost of debt than larger, older and cash-rich firms.
- They also tend to issue equity more often to finance their growth.

# Conclusion

In this report, we have conducted a thorough analysis of the impact potential of two collective approaches in public markets, namely collaborative engagement and coordinated price signaling.

Those two approaches are philosophically opposed. While coordinated signaling considers disciplining companies through prices and therefore requires the purchase of securities from the “good students”, collaborative engagement implies the purchase of securities from the “bad students” to make an effective use of “voice”.

Our in-depth analysis of both mechanisms shows that **claiming impact potential through collaborative engagement is more credible than through coordinated market signaling**. Collective market signaling most plausibly requires a large amount of capital to be deployed in the strategy or a focus on very narrow market segments. The latter strategy would imply a high sector risk that would prove to be very repulsive to many investors.

Effective collective engagement seems to be more feasible but also depends on the forming and organization of effective coalitions despite the incentives for participants to free ride.

In any way, collective engagement, even in its most effective form, should be seen as **a second-best option** compared with universal regulations or taxations as shareholder engagement can only influence behaviors of public firms with no majority blockholders. Those are responsible for only a fraction of total global emissions<sup>141</sup>.

For both mechanisms, research has made a lot of advances in the most recent years. We nevertheless observe some **residual gaps in the literature**. Regarding signaling, research is still nascent on how shareholders and managers respond to price signals. About engagement, we need more granular data that would differentiate between requests for cheap vs costly reforms. The green transition requires very costly reforms in some high-emitting sectors that would be more difficult to accept by corporate managements and their shareholders compared with lighter reforms or mere disclosure.

We consider that a promising avenue would be to consider the combination of the two approaches into **mixed strategies**. To fuel further discussion, we follow on original research to propose three sophisticated strategies that could be used by institutional investors in their interaction with brown companies:

- A “**deny debt and engage equity**” strategy that accounts for the specific role of debt in primary financing of brown issuers and the multiple voice channels at disposal of shareholders<sup>142</sup> or alternatively an “**engage equity and threat to deny debt**”<sup>143</sup>,
- An “**engage and gradually exit**” strategy that makes use of the specific attention of corporate managers to market prices around major corporate announcements (earnings, M&A, large investment projects, etc.) to show the cost of exits when announcements disappoint and wave the threat of future exits in case of further failure to comply with the requests carried by engaging shareholders<sup>144</sup>.

As a final word, we would like to draw the reader’s attention to our choice to use an “impact lens” throughout the paper to investigate the real-life effects of collective actions. It implies we have focused on the collective capability - through engagement and price signaling - to make an additional, measurable change, *all else being equal*. These conditions pertain to the definition of impact investing. When collective efforts fail to deliver

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<sup>141</sup> According to the *Carbon Majors Report*, investor-owned companies account for 31% of all emissions tracked by the database (440 GtCO<sub>2</sub>e).

<sup>142</sup> Such a strategy has also been suggested by Wilson et al. (2023).

<sup>143</sup> As suggested by Hoepner and Schneider (2022).

<sup>144</sup> That strategy builds on findings by Gantchev et al. (2023).

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positive outcomes under such a strict definition, they may still participate in an overall macro atmosphere that pressures companies to transition to a low-carbon economy (creating “a background noise”). Such an informal effect is nevertheless impossible to trace, identify or measure.

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