Norm-setting Divestment:
The World's Largest Investor's Coal Exit and Global Emissions*

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Abstract

This work-in-progress paper evaluates private governance—defined as the establishment and enforcement of norms by a market actor—as a mechanism for environmental regulation. We study the world's largest single investor, Norway's Government Pension Fund Global, which in 2016, introduced a coal criterion for divesting or monitoring companies in its portfolio. We show that targeted firms cut emissions by over 20 percent and reduced coal-related revenues by 7 percentage points, driven by both plant closures and operational improvements. Our analysis of mechanisms is ongoing, but preliminary evidence indicates that while both financial and reputational effects are present, the latter appears to be more important. These findings suggest that private governance can function as a de facto climate policy, particularly where public regulation is absent or ineffective.

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1 Introduction

Classical economic models assign distinct roles within society: consumers maximize utility, firms pursue profits, and governments regulate externalities and correct market failures. Yet, this division of roles has proven inadequate for addressing one of the most complex global challenges of our time: climate change. Despite decades of domestic regulation and multilateral agreements, global greenhouse gas (GHG) emissions continue to rise (United Nations Environment Programme, 2023). The Intergovernmental Panel on Climate Change (IPCC) warns that without deep, rapid, and sustained emissions cuts, global warming is likely to exceed 1.5°Celsius, triggering severe and potentially irreversible consequences (Intergovernmental Panel on Climate Change, 2023).

In the face of this policy gap, firms—and in particular, financial institutions—have begun to incorporate environmental considerations into their objective function (Bénabou & Tirole, 2010). For example, institutional investors increasingly engage in shareholder activism, demanding greater climate-related disclosure and pushing companies to move away from fossil fuels (Financial Times, 2024). This evolution reflects the rise of *private governance*; in the absence of effective and coordinated government policies, market-based institutions are increasingly assuming governance functions traditionally held by the state.

In this paper, we provide new empirical evidence on private governance as a means of environmental regulation. We conceptualize private governance as a process whereby a market actor establishes norms, enforces them through market mechanisms, and ultimately, shapes societal outcomes. We focus on a singularly powerful market actor, namely, Norway's Government Pension Fund Global—commonly referred to as the "Oil Fund." With stakes in more than 8,500 companies across 70 countries, the Oil Fund occupies a unique position in global markets: it is the world's largest single investor (NBIM, 2024).

The Oil Fund provides a compelling case study of private governance for three reasons. First, its sheer size and reach confer considerable market influence: with US$1.7 trillion in assets, the Fund holds, on average, 1.5% of all publicly listed equities worldwide (NBIM, 2024). Second, it is a recognized pioneer in ethical investing, being among the first major institutions to adopt a systematic framework for responsible investment. This framework articulates formal criteria under which companies may be excluded from the Fund, based on issues such as coal production and environmental damage (Clark & Monk, 2010). Third, its actions are closely watched by other investors and receive widespread media attention (Reiche, 2010). Together, these characteristics make the Oil Fund a global norm-setter for responsible investment in financial markets.

In 2016, the Oil Fund implemented a new coal exclusion criterion, mandating exclusion

(i.e., divestment) or observation (i.e., monitoring) of companies that derive a substantial share of their revenues or power production from coal. We examine this policy change using a difference-in-differences design, comparing treated firms—those divested or put under monitoring following the coal criterion in 2016—with a control group of similar firms from the Fund's 2015 portfolio that were not targeted. We find that targeted firms cut emissions by over 20 percent, and reduce their coal-related revenues by approximately 7 percentage points. These outcomes are due to operational changes in both extensive and intensive margins—namely, the early retirement of coal plants, and reductions in pollution at continuing facilities.

Having established that private governance—as exemplified by the Oil Fund's divestment—results in decreased emissions, our next step is to investigate the mechanisms through which private governance influences corporate conduct. We hypothesize three potential mechanisms: 1) signaling effects—whereby the Oil Fund's divestment establishes a new normative benchmark for the environmental behavior of firms; 2) material costs to firms, arising from reduced access to capital; and 3) reputational damage due to negative publicity. Our analysis of these mechanisms is work in progress. In preliminary estimates of the financial and reputational channels, we find that while both are present, the latter appears to be relatively more important.

Our paper speaks to several literature strands in economics and related fields, beginning with the theory of the firm. Traditional models posit that firms should maximize shareholder value, leaving externalities to government intervention (Friedman, 2007). But recent work has shown that firms internalize externalities through investor preferences for socially responsible behavior (Bénabou & Tirole, 2010; Hart & Zingales, 2017). In financial economics, a growing literature examines how investors achieve social objectives, whether through impact investing (Barber *et al.*, 2021), active ownership (Dimson *et al.*, 2015), or divestment (Edmans *et al.*, 2022). Prior work also studies the conditions for effective divestment, highlighting the need for a critical mass (Heinkel *et al.*, 2001) and precise targeting of externality-generating, capital-dependent firms (Green & Vallee, 2024).

Our contribution to these literatures lies in bringing investor identity to the foreground. We conduct a case study of a uniquely influential market participant, the Oil Fund—arguably *the* paradigmatic example of a norm-setting institution in global capital markets. In contrast to much of the existing literature, which treats investors in aggregate, our case study demonstrates that *who* divests can matter as much as *whether* divestment occurs. We show that a single prominent investor can induce real changes in firm behavior and catalyze broader market shifts, effectively coordinating other investors around a shared normative standard. Our case study thus contributes more broadly to debates about whether

private governance can serve as an effective tool for climate policy. In this way, our study likewise complements emerging work on the political economy of the green transition (e.g., Besley & Persson (2023)), providing new evidence that market-based institutions can, in some settings, act as substitutes for or complements to public regulation.

2 The Oil Fund

The Oil Fund was established in 1990 by the Norwegian Parliament, to invest government revenues from oil and gas production.[1] These investments aim to shield the economy from fluctuations in oil revenues, and to serve as a long-term savings vehicle for future generations. Capital transfers to the Fund commenced in 1996, and all investments are made in international markets (NBIM, 2024). As of 2024, the Fund's portfolio comprises approximately 71 percent equities, 27 percent fixed-income securities, and the remainder in unlisted real estate and renewable energy infrastructure.

Norges Bank Investment Management (NBIM), a division of Norway's central bank, manages the Fund with objective of achieving "the highest possible return in a responsible manner" (NBIM, 2024). NBIM's management mandate from the Ministry of Finance (MF) emphasizes that responsible investment is essential for long-term value creation (NBIM, 2023). Accordingly, environmental, social, and governance considerations are deeply integrated throughout the Fund's investment activities.

Investment, policy, and academic circles have regarded the Fund as a global benchmark for responsible investing. For instance, Chambers *et al.* (2012) describe it as "an exemplar for investors around the world," underscoring its "formidable reputation in terms of structure, governance, transparency, and responsible investing." The Fund advances its responsible investment agenda through several strategies, including exclusion (divestment) and observation (monitoring). It applies systematic guidelines to determine when companies should be divested or monitored, based on criteria such as severe corruption, human rights violations, and other breaches of fundamental ethical norms.

Of particular relevance to our study is the Fund's implementation of a coal exclusion criterion, beginning in 2016, to guide divestment decisions. The guideline states: "Observation or exclusion may be decided for mining companies and power producers which themselves, or through entities they control, derive 30 percent or more of their income from thermal coal or base 30 percent or more of their operations on thermal coal."[2] The

[1] Norway's transformation into a major oil-producing nation began in 1969, when the Ekofisk oil field was discovered in the North Sea. Oil production started in 1971.

[2] Screening is conducted internally by NBIM, with support from third-party data providers to identify

introduction of this coal criterion provides the natural experiment we exploit in this paper.

3 Data

Our paper draws on the following five data sources, encompassing both firm- and coal plant-level information.

NBIM. From NBIM's website, we obtain two key pieces of information that we use to construct our treatment and control groups. First, we collect data from NBIM press releases, which identify firms that were either divested from or placed under observation by the Oil Fund, along with the dates these decisions were publicly announced. Second, we collect the lists of the Oil Fund's holdings as of December 31 for each year from 2011 to 2023. These lists report the market value of the Fund's investment in each company, as well as its equity ownership and voting rights.

Orbis. We collect financial data from Bureau van Dijk's Orbis database. For each company, we extract yearly information on a wide range of variables, including sector of economic activity, age, revenues, equity, assets. We also extract various measures of profitability, such as earnings before interest, taxes, amortization and depreciation (EBITDA).

Trucost. We obtain firm-level data on environmental conduct from Trucost, the provider with broadest coverage of CO2 emissions data (Busch *et al.*, 2022). In line with the GHG Protocol, Trucost estimates corporate emissions by integrating data from company financial reports, environmental disclosures, and publicly available sources. The dataset covers multiple environmental metrics and has expanded over time. While coverage in 2015, the year prior to the introduction of the Fund's coal criterion, is not complete, it remains high in the sectors most relevant to our analysis (e.g., utilities). Our primary variables of interest are total GHG emissions (expressed in CO_2 equivalents) and emission intensity, computed as the ratio of emissions and turnover (in millions of $).

Global Energy Monitor. We use the 2024 release of Global Coal Plant Tracker (GCPT) from Global Energy Monitor (GEM).[3] This plant-level dataset includes information on operating status over time, generation capacity, facility characteristics, GPS coordinates,

companies that may not meet this criterion.

[3]The GCPT provides global data on coal-fired power units of 30 megawatts or more. It includes every unit currently operating, every proposed unit since 2010, and every unit retired since 2000.

and ownership (current or as of the last year before retirement) (Global Energy Monitor, 2024a). We also use GEM's Global Ownership Tracker to map the full ownership structure of each plant (Global Energy Monitor, 2024b). We link power plants to companies in our dataset using international financial identifiers[4] where available, or via name matching. To identify the owners of a given plant, we consider both the direct owners (i.e., those at the first level of the ownership structure) as well as every company that indirectly controls more than 10% of a plant.

Satellite Data. We construct satellite-based measures of pollution at the GPS location of coal plants. We use global annual $PM_{2.5}$ data at a 0.1° x 0.1° resolution from van Donkelaar *et al.* (2016), along with annual NO_2 data from NASA. Where available, we also retrieve CO_2, SO_2, and NO_2 emissions data from US and EU administrative sources: EPA's Clean Air Markets Program Data (CAMPD) and the Europe Beyond Coal: European Coal Plant Database. We also use satellite precipitation data as a control variables, obtained from the reanalysis Essential Climate Variables (ECVs) by Hersbach *et al.* (2018).

Our final sample comprises 3,780 unique firms that were part of the Oil Fund portfolio as of December 31, 2015—the year prior to the introduction of the coal exclusion criterion—and for which we have consistent financial data from 2012 to 2023. We have firm-level environmental data for roughly half of this sample. These firms operate exclusively in sectors where the coal criterion is relevant, defined as sectors with at least one company treated under the criterion. These include Mining (NAICS industry code 21), Utilities (22), Construction (23), Manufacturing (32–33), Wholesale & Retail Trade (42), Information (51), and Management of Companies and Enterprises (55).

4 Empirical Strategy

To estimate the causal effects of coal exit, we exploit the quasi-experimental setting created by the introduction of the coal exclusion criterion in 2016. Specifically, we compare firms that were divested from or put under observation that year due to the new guideline (treated group) with firms that remained in the portfolio and were not targeted (control group). While some additional coal-related targeting occurred in subsequent years, we focus on the initial 2016 cohort to ensure a cleaner identification strategy. This focus also

[4]In particular, we use the International Securities Identification Number (ISIN) or the Legal Entity Identifier (LEI). The ISIN uniquely identifies a specific security, such as a stock or bond. It is used globally to facilitate cross-border trading and settlement. The LEI is a code that uniquely identifies legal entities participating in financial transactions.

aligns with our broader research objective of examining private governance as a form of public policy: it is the first wave of divestments that will most clearly demonstrate if a high-profile investor can signal new standards of corporate environmental conduct.

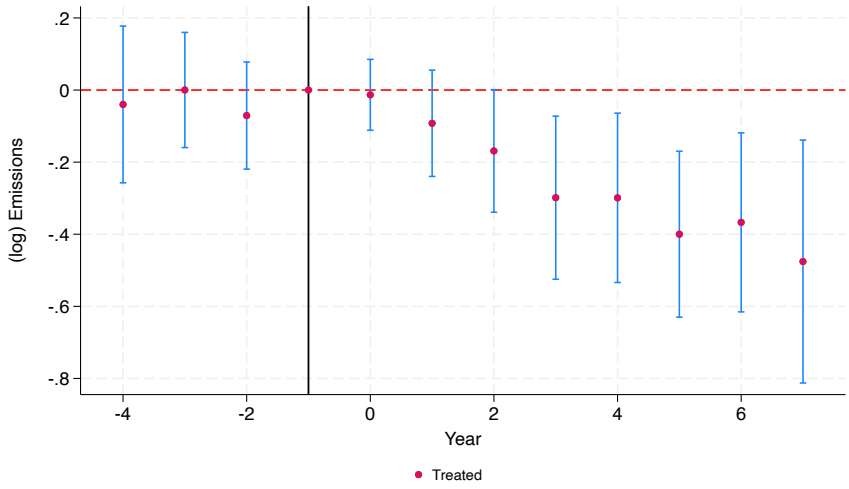
Our baseline estimating equation is

$$Y_{ijlt} = \alpha + \beta \cdot Post_t \cdot Treated_i + \gamma_i + \delta_{jt} + \zeta_{lt} + \epsilon_{ijlt} \tag{1}$$

where Y_{ijlt} is the outcome variable for company i, operating in sector j and country l in period t. γ_i captures company fixed effects, δ_{jt} are 2-digit industry by year fixed effects and ζ_{lt} are country by year fixed effects. These fixed effects absorb unobservable and time-invariant firm characteristics, as well as sector- and country-level shocks in each year.

For β to have a causal interpretation, two key assumptions must hold: parallel trends and no anticipation. We investigate the plausbility of parallel trends by estimating an event study using firm-level emissions data. Figure 1 plots the estimated coefficients for the years leading up to and following 2016. As shown, treated and control firms exhibit similar emission trajectories prior to the introduction of the coal criterion, supporting the identifying assumption. Following the treatment, however, emissions among treated firms decline sharply, falling by more than 15% relative to baseline within two years, with continued reductions thereafter.

Figure 1: Event Study



Notes: This figure presents results from an event study regression, where the outcome variable is Log Emissions at the firm level. Year = 0 refers to 2016, the year in which the coal criterion was first implemented. Coefficient estimates are shown (red dot) together with the 95 percent confidence interval.

The no anticipation assumption is also critical: firms should not adjust their behavior in expectation of future treatment. This condition is likely satisfied in our context, as

the coal divestments occured without prior public disclosure. In general, NBIM does not publicize divestments until after the shares are sold, to prevent market manipulation and preserve the integrity of the Fund's investment decisions. Moreover, Figure 1 does not show evidence of anticipation, given the null pre-treatment estimates.

5 Results

We examine three sets of variables that capture firms' polluting activities: 1) firm-level reported emissions and involvement in coal-based operations; 2) the number of coal-fired plants owned by each company—providing a direct account of their coal asset holdings; and 3) satellite-based estimates of plant-level emissions—offering granular measures of actual pollution over time, as well as a validation of reported data.

Our analysis is ongoing, and any results presented henceforth should be viewed as preliminary.

5.1 Oil Fund coal exit reduces firm-level emissions & coal exposure

Table 1 reports the DD estimates for our first set of outcomes. Across all response variables, we find that the Oil Fund's divestment leads to meaningful reductions in firms' environmental footprint and coal reliance. Our analysis reveals three key findings.

First, divested companies cut their reported emissions. This effect is large, with a point estimate of 22 percent relative to pre-treatment levels (column 1). Importantly, the decline is not purely a mechanical byproduct of shrinking firm size. Indeed, emissions normalized by turnover fall by a similar proportion, at 20 percent (column 2).

Second, treated firms scale back their engagement in coal-related activities. The share of revenues derived from coal-related operations falls by 7 percentage points (column 3), and the share of electricity generated from coal-fired plants drops by 4 percentage points (column 4). Due to limited sample coverage, this latter estimate is not statistically significant.[5] Nevertheless, the direction and magnitude are consistent with a broader pattern of decarbonization following divestment.

Third, divestment changes the composition of firms' emissions. Preliminary analysis (not shown) indicates that the emissions abatement is concentrated in direct and value-chain emissions (Scope 1 and 3), rather than in indirect emissions (Scope 2).[6] Companies

[5] Trucost reports missing values when firms either lack relevant data or are unable to report it with sufficient confidence.

[6] Scope 1 emissions arise from sources owned or controlled by the firm (e.g., on-site fuel combustion).

Table 1: Effects on Firm-level Emissions and Coal Exposure

	(1) Log Emissions	(2) Log Emission Intensity	(3) Share Coal Revenues	(4) Share of Coal Power Generation
Treated $*$ Post	-0.222**	-0.203**	-7.125***	-4.056
	(0.111)	(0.0878)	(1.492)	(3.306)
N	17678	17445	17678	831
Adj R^2	0.962	0.935	0.970	0.954
Mean Baseline Outcome			51.58	63.44
Firm FE	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes

Notes: Industry-Year fixed effects are at NAICS 2 digit level. *Mean Baseline Outcome* refers to the baseline value (2015) for treated companies. Robust standard errors clustered at the firm level in parentheses. ***, **, and * indicate significance at 1, 5, and 10 percent levels, respectively.

thus appear to be adopting cleaner production technologies or shifting toward less polluting partners, rather than simply outsourcing emissions.

5.2 How do firms reduce emissions?

Building on the firm-level results, we next examine how companies achieve the observed emissions reductions resulting from the Oil Fund's exit. We investigate two channels of adjustment: the extensive margin (closure of coal-fired plants) and the intensive margin (emissions at continuing facilities). Table 2 presents the results. Here, the outcome variables are the number of (large) coal plants owned by the firm (columns 1–2) and satellite-based measures of plant-level emissions of surviving plants (columns 3–5), all expressed in natural logarithm. Throughout the analysis, we define "large plants" as those with above-median capacity in the pre-treatment period.

The results show significant adjustments across both margins. At the extensive margin, companies respond to Oil Fund divestment by actively shedding their coal facilities, particularly the most carbon-intensive ones. Treated firms reduce their coal plant portfolio by nearly 12 percent (column 1). Notably, this is driven primarily by the closure of larger

Scope 2 covers emissions from externally sourced electricity and heat, and Scope 3 encompasses all other indirect emissions across the value chain, such as those generated by suppliers or customers.

plants (column 2). Both of these effects are statistically significant at the 1 percent level.

Table 2: Effects on Firm-level Plant Ownership and Plant-level Emissions

	Extensive Margin		Intensive Margin			
	(1)	(2)	(3)	(4)	(5)	(6)
	Log Coal Plants	Log Large Coal Plants	Log NO_2	Log NO_2	Log $PM_{2.5}$	Log $PM_{2.5}$
Treated $*$ Post	-0.119***	-0.123***	-0.0150***	-0.00584	-0.000667	0.00572
	(0.0313)	(0.0269)	(0.00582)	(0.00785)	(0.00680)	(0.00965)
Treated $*$ Large Plant $*$ Post				-0.0181*		-0.00390
				(0.00936)		(0.0115)
N	1152	1152	4771	4771	5172	5172
Plant FE			Yes	Yes	Yes	Yes
Firm FE	Yes	Yes				Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country HQ-Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Columns (1)–(2) report OLS coefficients of a firm-level specification where the outcome variable is the logarithm of coal plants owned by a firm, or the logarithm of large coal plants owned by a firm. Large plants are defined as those with capacity above the sample median. Columns (3)–(5) report OLS regressions at the plant level (conditional on survival) and control for precipitation. Industry fixed effects are at NAICS 2 digit level. Robust standard errors in parentheses. ***, **, and * indicate significance at 1, 5, and 10 percent critical level.

At the intensive margin, we find that, conditional on survival, Oil Fund targeting results in a significant reduction in NO_2 emissions (column 3). Similar to the extensive margin results, this pattern is especially true for large plants (column 4). Surviving facilities therefore appear to be operating more cleanly. We do not detect a statistically significant impact on $PM_{2.5}$ emissions (columns 5–6).

Taken together, our preliminary evidence suggests that firms facing divestment pursue a two-pronged strategy: they retire their dirtiest plants and improve the environmental performance of their remaining assets. In future work, we will examine these extensive and intensive margin adjustments in more detail.

5.3 Heterogeneity by baseline coal exposure

The previous sections documented that following Oil Fund targeting, firms reduce emissions and coal reliance—both by closing plants and by operating remaining plants more cleanly. We next ask whether these average effects mask important heterogeneity across firms with different initial exposures to coal.

Intuitively, firms with limited baseline coal exposure may find it easier, or more attractive, to transition away from coal, while heavily coal-intensive firms may face higher adjustment costs or weaker incentives to do so. To explore this possibility, we augment our baseline specification as follows

$$Y_{ijlt} = \alpha + \beta_1 \cdot Post_t * High_i + \beta_2 \cdot Post_t * Treat_i + \beta_3 \cdot Post_t * Treat_i * High_i + \gamma_i + \delta_{jt} + \zeta_{lt} + \epsilon_{ijlt}, \quad (2)$$

where $High_i$ is an indicator equal to one if a firm is heavily coal-intensive. We define "heavily coal-intensive firms" as those firms that either derive 70 percent or more of their revenues from coal, or base 70 percent or more of their power production from coal. This definition is similar to the Oil Fund's coal exclusion criterion, though with a higher threshold (i.e., 70 percent is the median among treated firms in 2015).

Table 3 shows the regression estimates. We find that the treatment effects are concentrated among *marginal* (i.e., not coal-intensive) firms. In response to Oil Fund targeting, these firms significantly decrease emissions (columns 1–2) and coal activities (columns 3–4), consistent with the view that firms with lower sunk costs or greater flexibility are more responsive to private governance. In contrast, heavily coal-intensive firms do not exhibit the same patterns: coefficients on the triple interaction terms are either statistically insignificant or exhibit the opposite sign, suggesting limited adjustment among firms most embedded in coal-related operations.

6 Exploring the mechanisms of private governance

We have so far established that the Oil Fund's coal exit leads to improvements in firms' environmental conduct. Our overarching goal, however, is not only to document these effects, but to evaluate how private governance can serve as a mechanism of environmental policy. Indeed, as the world's largest investor, the Oil Fund does more than financial divestments: it establishes *de facto* standards for responsible corporate behavior.

In this section, we examine the channels through which private governance by a single institution, such as the Oil Fund, can effectively substitute for government regulation. We focus on three potential mechanisms: signaling effects that reshape market norms, financial pressure that imposes material costs on firms, and reputational effects that leverage public scrutiny to induce corporate change. While all three mechanisms may be at play, our aim is to assess their relative significance in our study context.

Table 3: Heterogeneity by Baseline Coal Exposure

	(1) Log Emissions	(2) Log Emission Intensity	(3) Share of Coal Revenues	(4) Share of Coal Power Generation
Treated $*$ Post	-0.310**	-0.283**	-6.850***	-3.722
	(0.129)	(0.111)	(2.487)	(3.630)
Treated $*$ Post $*$ High	0.260	0.163	-1.268	-1.552
	(0.247)	(0.229)	(3.026)	(7.569)
N	17678	17445	17678	831
Adj R^2	0.962	0.935	0.970	0.954
Mean Baseline Outcome			51.58	63.44
Firm FE	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes

Notes: $High$ is an indicator equal to one if a firm is heavily coal-intensive. "Heavily coal-intensive firms" are those firms that either derive 70 percent or more of their revenues from coal, or base 70 percent or more of their power production from coal. Industry-Year fixed effects are at NAICS 2 digit level. *Mean Baseline Outcome* refers to the baseline value (2015) for treated companies. Robust standard errors clustered at the firm level in parentheses. ***, **, and * indicate significance at 1, 5, and 10 percent levels, respectively.

Our analysis is ongoing, and any results presented henceforth should be viewed as preliminary.

6.1 Signaling

The first mechanism we consider is signaling. Given the Oil Fund's scale, reputation, and prominence, the introduction of the coal criterion may act as a market-wide signal of shifting norms and investor priorities. Under this mechanism, firms react not because they were directly targeted by the Fund, but because the Fund's decisions publicly redefine what constitutes acceptable corporate conduct. In this sense, the Oil Fund's action establishes new benchmarks and results in coordinated responses across firms—much like the effect of government regulation.

We plan to test this mechanism by examining spillover effects. In particular, we will analyze the behavior of firms outside the Fund's holdings that would have been subject to divestment had they been included in the portfolio. If these firms exhibit changes similar to those of directly affected portfolio companies, it would provide evidence that private governance can operate through standard-setting: a high-profile market actor can influ-

ence practices across the broader economy by shifting expectations.

6.2 Material costs

The second channel we explore concerns the material and financial costs that targeting brings to firms, including increased cost of capital and heightened financing constraints. To investigate this mechanism, we examine the effects of Oil Fund targeting on the companies' balance sheet outcomes.

Table 4 shows the results. We find evidence consistent with a financial shock: turnover falls by 10 percent (column 1), EBITDA shrinks by 13 percent (column 3), and equity declines by 21 percent due to targeting (column 4). Firms also reduce capital intensity by liquidating non-current assets such as plants and equipment (column 5). Thus, private governance can decrease emissions through market discipline, imposing financial costs on firms that fail to meet new environmental norms.

Table 4: Effects on Firms' Balance Sheet

	(1) Log Turnover	(2) Log EBITDA	(3) Log Equity	(4) Log Total Assets	(5) Log Non-Current Assets
Treated $*$ Post	-0.108*	-0.129*	-0.211***	-0.191***	-0.207***
	(0.0560)	(0.0683)	(0.0513)	(0.0467)	(0.0583)
N	45003	40726	44270	45007	42662
Adj R^2	0.957	0.919	0.948	0.971	0.959
Firm FE	Yes	Yes	Yes	Yes	Yes
Country-Year FE	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes

Notes: Industry-Year fixed effects are at NAICS 2 digit level. Robust standard errors clustered at the firm level in parentheses. ***, **, and * indicate significance at 1, 5, and 10 percent levels, respectively.

6.3 Reputation

Finally, we consider reputation. Beyond direct signaling and financial effects, being publicly labeled as a "dirty firm"—particularly by a market leader—may carry reputation costs that prompt firms to adjust.

To assess this mechanism, we plan to compare the consequences of Oil Fund divestments versus monitoring. The latter, which the Fund refers to as *observation*, is a tool that

they use when they have serious concerns about a company's conduct, but exclusion is not yet deemed appropriate. Like exclusions, observation decisions are publicly announced,[7] thereby exposing firms to potential reputational damage.

Our premise is that for companies placed under observation, any adverse effects are likely driven primarily by reputational concerns. In contrast, divested firms face both reputational and financial pressures. Thus, comparing the impacts of these two actions allows us to gauge the relative importance of reputational versus financial mechanisms.

Our preliminary findings (not shown) support the existence of the reputational channel. We find that financial outcomes for divested and monitored firms are remarkably similar, despite the fact that divested firms could plausibly face greater capital market consequences. If anything, our estimates show that divested firms experience a smaller decline in turnover than monitored firms. This suggests that reputational effects may be a more powerful driver of firm behavior than material impacts in our study context.

7 Conclusion

This paper contributes to the growing literature on the role of private actors in climate governance—by providing new empirical evidence on how a single, prominent investor can influence firm behavior. We show that the Oil Fund's coal divestment policy led to substantial reductions in emissions and coal exposure among targeted firms, underscoring the real-world impact of norm-setting by the world's largest equity investor. Future work will examine in greater detail how firms adjust along both extensive and intensive margins, and investigate the underlying mechanisms more closely. More broadly, this research speaks to the potential for private governance to function as a form of de facto public policy, particularly in addressing environmental externalities where government regulation has fallen short.

[7] In very few exceptions, the Oil Fund keeps their decisions to monitor a company confidential, e.g., if public announcement would compromise the effectiveness of monitoring.

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