



Disentangling the effects of hedge fund activism on firm financial and social performance

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Abstract

Research Summary: We investigate how hedge fund activism affects firms' financial and social performance. So far, research has examined either the impact of hedge fund activism on firms' short-term financial performance, or how other types of shareholder activism affect firms' social performance. Crossing these boundaries with data on 1,324 activist hedge fund campaigns between 2000 and 2016, we find a clear trade-off associated with hedge fund activism: benefits are shareholder-centric and short-lived, reflected in immediate increases in market value and profitability; however, these increases come at a mid- to long-term cost to other stakeholders, captured by decreases in operating cash flow, investment spending, and social performance. We discuss our findings from a multi-stakeholder perspective to move beyond a polarizing debate about the merits of hedge fund activism.

Managerial Summary: With hedge fund activism on the rise, determining the consequences of equity ownership by activist hedge funds on target companies' short-term and long-term financial and social performance takes on central importance. In this study, we find hedge fund campaigns are associated with three broad sets of outcomes for targeted companies: (a) an immediate but

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short-lived increase in market value and profitability, and an immediate and long-lived decline in operating cash flow; (b) decreases in number of employees, operating expenses, R&D spending, and capital expenditures; and (c) the suppression of corporate social performance. By capturing the range of positive and negative effects on target companies, our study presents the competing implications of hedge fund activism on business and society.

KEYWORDS

corporate financial performance, corporate social performance, hedge fund activism, shareholder activism, sustainability

1 | INTRODUCTION

He's proposed some things that could be very dangerous to the short term, which is reorganize the company right now, and he's proposed something very dangerous for the long-term future of this company, and that is eliminating our corporate R&D.

—David Taylor, CEO of Procter & Gamble.

The number of activist hedge fund campaigns has increased steadily over the past two decades, with nearly one campaign launched against a new target company every day in 2018 (Lazard, 2018). Beyond CEOs' reactions, like the one from David Taylor about hedge fund activist Nelson Peltz, intense debates in management and finance rage about the short- and long-term consequences of shareholder activism by hedge funds. While less disagreement surrounds the evident increases in firms' market value immediately after hedge fund campaigns (Brav, Jiang, Partnoy, & Thomas, 2008; Clifford, 2008), questions remain whether the benefits of such interventions by activist hedge funds extend beyond short-term shareholders to also advantage longer-term shareholders and other stakeholders (Ahn & Wiersema, in-press). As hedge fund activism becomes commonplace in business, determining the consequences of activist hedge funds' ownership on firms' short- and long-term financial and social performance takes on central importance.

We define *activist ownership* as an activist hedge fund taking an equity stake in a company with the intention to influence the control or the management of the company (Brav, Jiang, & Kim, 2015; Chen & Feldman, 2018; Gantchev, 2013; Klein & Zur, 2011). A shortcoming in prior research has been to overlook the concurrent effects of ownership by activist hedge funds on target companies': (a) long-term financial performance (as reflected by market performance, accounting performance, and cash flow performance); (b) range of strategic investments; and (c) corporate social performance (CSP).

Studies in one strand of hedge fund activism research reveal a mostly positive effect of activist ownership on short-term financial performance indicators, suggesting that demands from hedge

funds dramatically alter the targeted firm's governance, management structure, and operations to immediately improve bottom line performance (Brav et al., 2008; Chen & Feldman, 2018). Although scholars have focused on stock prices and accounting measures, they have neglected cash flow as an important barometer of financial performance.¹ More importantly, most studies that have claimed to study the long-term financial implications of hedge fund activism have used event study designs with observation windows ranging from 12 to 36 months (Boyson & Mooradian, 2011; Clifford, 2008; Greenwood & Schor, 2009). More consideration needs to be given to how the immediate impacts of hedge fund activism on firms' strategic investments in human resources, innovation, and capital assets may explain changes in firms' longer-term financial performance. Overall, event studies based on analyses of short-term stock price performance fail to provide a holistic view of how hedge fund activism affects the overarching financial sustainability of targeted firms.

In a second strand of literature, management scholars examining the impact of shareholder activism have found that activists can positively impact firms' CSP (Eesley, Decelles, & Lenox, 2016). However, since management researchers have focused primarily on social activism (Briscoe & Gupta, 2016), shareholder proposals, and requests for change (Agrawal, 2012; Clark & Crawford, 2012; David, Bloom, & Hillman, 2007; Neubaum & Zahra, 2006; Perrault & Clark, 2016; Rehbein, Logsdon, & Van Buren, 2013; Reid & Toffel, 2009), little is known about whether and how firms' CSP changes after activist hedge funds acquire ownership stakes in targeted firms. Calling for more research, Ahn and Wiersema (in-press) conclude, "management scholars have largely neglected to investigate the influence that activist hedge funds have on companies, thus ignoring an important constituent that is driving corporate strategy and governance."

In this paper, we connect these two strands of literature for the first time to jointly study the effects of ownership by activist hedge funds on firms' short- and long-term financial and social performance. We view ownership by activist hedge funds as the manifestation of these actors to reappropriate value among stakeholders. One expert reported to us: "Activist hedge funds represent an extreme in the distribution of shareholders in that they discount future cash flows much more than the average shareholder." Based on the interviews we conducted and extant literature, we investigate whether activist hedge funds drive short-term changes in targeted firms that do not align with other stakeholders' longer-term interests.

Collecting regulatory filings from the U.S. Securities and Exchange Commission (SEC) and data from Activist Insight, we identify 1,324 unique firms that were targeted by activist hedge funds between 2000 and 2016. Using matched and unmatched samples, we estimate the impact of ownership by activist hedge funds on firms' short- and long-term financial performance, strategic investments, and CSP in the one to five years after being targeted. Our study reveals a clear trade-off associated with activist ownership by hedge funds: benefits appear to be shareholder-centric and short-lived, reflected in immediate increases in market value and profitability; however, these increases come at a mid- to long-term cost to other stakeholders, captured by decreases in operating cash flow, investment spending, and CSP.

¹Operating cash flow, or cash flow from operations (CFO), represents an important financial performance indicator because it reflects a firm's solvency and actual operations. In addition, CFO cannot be as easily managed as accounting measures of profitability (e.g., return on earnings [ROE], return on assets [ROA], and earnings per share [EPS]), which can be obfuscated using standard accounting practices. For instance, taking on more debt to reduce stockholders' equity can increase a firm's ROE; divesting assets can increase ROA; and buying back shares increases EPS. See Rappaport (1999) for a detailed discussion of problems associated with profitability measures.

First, using an unmatched sample, we find the market value of targeted firms increases 7.66% one year after activist ownership, but decreases by 4.92 and 9.71% in years four and five. The profitability of targeted firms also increases, rising between 1.10 and 1.50 percentage points, but only in the first and second year after activist ownership; however, in years two through five after activist ownership, operating cash flow steadily and increasingly decreases by 15.82% (in year two) to 27.12% (in year five). Second, accounting for changes in asset allocation, such as mergers or divestitures, firms decrease the size of their workforces, operating expenses, R&D spending, and capital expenditures during the one- to five-year period after being targeted. In year one, these spending cutbacks increase investing cash flow more than the decreases in operating cash flow, resulting in targeted firms having an average cash surplus of \$53 million. Yet, after year one, investing cash flow does not increase to an extent that offsets losses in operating cash flow, climaxing in an average cash deficit of \$61 million by year three. Third, the CSP of targeted firms is suppressed, decreasing between 18.56 and 24.79% during the two- to five-year period following activist ownership. We conclude with a series of robustness tests whereby we replicate and confirm the main results by: (a) using a matched sample design; (b) substituting multiple variations of key variables; (c) comparing differences in the corporate governance quality of targeted and non-targeted firms; and (d) employing alternative data sources and observation windows.

We discuss our findings with the aim of providing a more complete picture of how ownership by activist hedge funds affects both the financial and social sustainability of targeted firms (Bansal & DesJardine, 2014). By highlighting both the positive and negative impacts that activist hedge funds have on multiple dimensions of firm performance, we aim to overcome a polarized perspective on hedge fund activism, whereby scholars express either outright support or rejection of activism myopia. We propose shifting the conversation toward better understanding the holistic effects of activist ownership from a multi-stakeholder perspective. In other words, what are the net benefits from ownership by activist hedge funds for various types of shareholders and stakeholders, and over what timeframe do these benefits arise?

2 | BACKGROUND

2.1 | Ownership by activist hedge funds

An activist hedge fund explicitly seeks to influence the control or management of a targeted firm. A hedge fund is a limited partnership consisting of private investors whose money is managed by a professional fund manager (de Figueiredo Jr, Feldman, & Rawley, 2019). Hedge funds typically use high-risk investment methods, such as investing with borrowed money, in hopes of quickly realizing substantial capital gains.

Typically, an activist hedge fund aims to improve a targeted firm's market value. Extensive findings reveal financial underperformance to be the primary motivator for activist hedge funds acquiring ownership (see reviews: Denes, Karpoff, & McWilliams, 2017; Goranova & Ryan, 2014). To improve financial performance, activist hedge funds may demand that firms implement substantial cost-cutting measures (Gillan & Starks, 2007; Westphal & Bednar, 2008), scale back investment (Bebchuk, Brav, & Jiang, 2015), restructure assets and redistribute cash to shareholders (Chen & Feldman, 2018), or replace board members (Gantchev, 2013). Activist hedge funds generally seek to improve the targeted firm's stock price so they can sell their shares at a profit.

Activist hedge funds exert their influence over the managers of a targeted firm by acquiring a meaningful percentage of the firm's shares and rallying support from other shareholders to back their agendas. Liekefett (2018) explains, "In virtually every activism campaign, activist hedge funds don the mantle of the shareholders' champion and accuse the target company's board and management of subpar corporate governance." Activist hedge funds require support from other shareholders because they rarely acquire enough shares to singlehandedly overpower management in a proxy vote (Wong, 2019). Therefore, after activists purchase a firm's stock, an aggressive and often public battle ensues for control of the company. Activist hedge funds employ an array of tactics to undermine management and win over shareholder allies.² While defending against an activist hedge fund campaign, one executive we interviewed explained: "You're always traveling to keep shareholders happy. But at the same time you're constantly on the phones, constantly answering calls from the hedge funds who are telling you to buckle and fold and do what you got to do—just give up and cave."

The characteristics and tactics of activist hedge funds distinguish them from other institutional investors that hold concentrated ownership. First, activist hedge funds play a highly active managerial role. In contrast, other concentrated institutional investors can be more passive, preferring to exit an investment if displeased with the firm's performance (McCahery, Sautner, & Starks, 2016). Second, hedge fund managers typically earn a 1.5% management fee and 20% of the fund's profits without any penalty for losses. This one-sided incentive structure encourages extreme risk-taking by hedge fund managers, especially compared with the flat management fee structure used by managers of other concentrated funds. Third, given their incentive to make profits quickly, activist hedge funds typically heavily discount future returns and hold shares for only a short period, enabling them to shift among targeted firms with less concern for long-term value. Some evidence suggests hedge fund managers attribute limited value to returns beyond a 20-month investment horizon (Brav et al., 2008).

Given their rise in popularity, demand for rapid results, and effectiveness in driving corporate change, hedge fund activism has emerged as the most controversial form of shareholder activism (Brav et al., 2008; Klein & Zur, 2011; Schneider & Ryan, 2011). Questions abound as to whether hedge funds create, capture, or destroy corporate value (e.g., Chen & Feldman, 2018). Skeptics of hedge fund activism caution that these activists' short investment horizons and high discount rates concentrate actions on extorting value from longer-term shareholders and other stakeholders. Yet others argue that a constant threat from activist hedge funds prevents managers from serving their own interests at the expense of maximizing returns to shareholders (Borghesi, Houston, & Naranjo, 2014; Masulis & Reza, 2014). We take a different view, neither arguing for nor against the value of hedge fund activism, but rather providing evidence of how multiple dimensions of firm performance vary over time following ownership by activist hedge funds.

Defining *activist ownership* as an activist hedge fund taking an equity stake in a company with the intention to influence the control or the management of the company, we focus on the effects caused by ownership, rather than the range of goals, tactics, or success rates associated with hedge fund activism. Our approach aligns with prior studies of activist ownership (Brav

²Lipton (2019) notes several tactics of activist hedge funds, including aggressively criticizing a firm's governance, management, business, and strategy; recommending their own business plans; conducting (or threatening to conduct) proxy fights to gain board representation; leaking or initiating rumors about a firm or its management; partnering with sell-side research analysts to criticize a firm's current practices; and hiring private investigators to create dossiers on directors, managers, and key employees; among others. In contrast to these public tactics, activist hedge funds also often engage in private negotiations with managers.

et al., 2015; Chen & Feldman, 2018; Gantchev, 2013; Klein & Zur, 2011) and with Coffee and Palia's (2016) testament that the threat created by an activist hedge fund solely owning shares is enough to provoke widespread change in a targeted firm.

Over a 6-month period, we conducted interviews with 11 hedge fund managers and founders in the United States, the United Kingdom, France, and Lebanon, and with members of the executive leadership teams of two large multinational firms that activist hedge funds had targeted in 2016 and 2017. Data from these interviews collectively revealed that activist hedge funds discount future cash flows more than any other type of shareholder. Fund managers almost exclusively prefer shorter-term gains, which are more certain and controllable than longer-term returns. This preference underlies their strategy to reorient targeted firms to prioritize shareholders over non-shareholders and to maximize short-term financial returns over long-term returns. Therefore, we reason that among firms with similar characteristics (i.e., sector, size, performance, growth, and governance), differences in financial and social performance should emerge between firms targeted by activist hedge funds and their non-targeted peers.

2.2 | Impact of activist hedge fund ownership on corporate financial and social performance

Most agency-based studies reveal that ownership by activist hedge funds enhances financial value. In a 30-year review of the literature, Denes et al. (2017) noted that hedge fund activism generally improves a targeted firm's value because activists convince managers to make decisions that build shareholder wealth and reduce wasteful spending in areas that create agency conflicts. For instance, Boyson and Mooradian (2011) found evidence that hedge fund activism improves targeted firms' stock price performance, most dramatically in firms where activists seek reductions in cash positions. The authors leveraged agency theory to argue that hedge fund activism improves targeted firms' market performance by encouraging managers to distribute cash to shareholders in the form of dividends or share buybacks instead of spending that cash on potentially value-decreasing investments. Also grounded in agency theory, Chen and Feldman (2018) found divestitures in Fortune 500 companies impelled by activist hedge funds increased firms' stock price more than divestitures initiated by the targeted firms' managers.

Driven by their incentive schemes and the need to return value to their investors, activist hedge funds may reorient targeted firms to prioritize shareholder wealth above other internal priorities of the firm and the interests of other stakeholders. During an interview, the founding manager of a prominent U.S. hedge fund declared, "I have never seen a case [of hedge fund activism] where shareholder returns is not number one." Another hedge fund manager we interviewed exclaimed, "My investors typically only care about financial returns. So this is my focus—to increase the stock price—or I will not survive." Under pressure from hedge fund activists, managers of targeted firms may attribute lower significance to the interests of other less threatening stakeholders.

Because they discount future earnings more than other shareholders, activist hedge funds may also cause managers to shorten their decision timelines and investment horizons. Ahn and Wiersema (in-press) highlight that "the composition of the firm's shareholders determines its investment horizon, and a strong correlation exists between 'short-termism' within firms and high ownership levels by [hedge fund] activists." In the interviews we conducted, hedge fund managers and founders noted that their investment horizons were as short as four months,

more typically between one and two years, and very rarely up to three years. One hedge fund manager confirmed that “lots of [hedge] funds invest looking for quick gains.” For instance, activist hedge fund Jana Partners made a 39% return on investment in 2017, after purchasing shares of Whole Foods, pushing for an acquisition, and selling the shares after only five months of ownership.

Taken together, managers of firms targeted by activist hedge funds may shift their investment decision-making priorities to focus on maximizing shareholder value in the short term while discounting longer-term outcomes (DesJardine & Bansal, 2019). Shortly after his firm was targeted, one CEO we interviewed had instructed the firm’s top 500 managers to, “not work on anything in the next 9 months unless it has a direct effect on short-term profitability.” Managers may aim to appease shareholders by repurchasing stock and issuing dividends (Boyson & Mooradian, 2011; Klein & Zur, 2009) and cutting ancillary expenses and spending. Despite improving a targeted firm’s market value and accounting performance in the short term, such alterations in asset allocation could compromise a firm’s longer-term outlook. For example, spending on R&D is essential to drive innovation and generate new sales in the future (Bøler, Moxnes, & Ulltveit-Moe, 2015); investing in new capital assets helps build economies of scale so firms can remain competitive (Moatti, Ren, Anand, & Dussauge, 2015); and maintaining sufficient human capital ensures consistent productivity by limiting burn-out and downtime (Shaw, Park, & Kim, 2013). Thus, if managers respond to pressures from activist hedge funds by immediately withdrawing from these core investments, they may simultaneously compromise the firm’s financial vitality in the longer term, which leads to our first question:

Research Question 1 (RQ1) *Following ownership by activist hedge funds, do targeted firms gains in financial (i.e., market, accounting, and cash flow) performance endure over time, and how do their strategic investments change?*

Beyond shareholders, a firm interacts with multiple other stakeholders, some of whom have divergent interests in the firm’s actions (Freeman, Wicks, & Parmar, 2004). CSP refers to the observable outcomes resulting from a firm’s existence, policies, and operations that are directly or indirectly related to a firm’s multiple stakeholders, mostly through a firm’s environmental and societal impacts (Bansal & DesJardine, 2014; Hawn, Chatterjee, & Mitchell, 2018). While the potential social implications of hedge fund activism loom large, most scholars have overlooked them in prior work. The emphasis thus far has been to study the effects of ownership by activist hedge funds on firms’ financial performance—not on CSP.

Yet in practice, activist hedge funds may not view social initiatives as ideal avenues to maximize shareholder value, thus creating an interesting question about what happens to a firm’s CSP after a firm has been targeted. We probed this possibility in our interviews. When asked about firms making environmental and social investments, one hedge fund manager we interviewed reasoned:

There’s definitely room to cut such spend that would probably move the meter for a company from a profitability perspective ... it’s a very big dilemma and not a nice conundrum to have as an activist, to be pushing a company to stop some spending related to social responsibility in order to improve profitability ... this [spending] can definitely be wasteful and can be done to an extent that is much more than shareholder-value-oriented.

When asked why this pressure to curtail environmental and social spending manifests, the hedge fund manager signaled two mechanisms:

[For the hedge fund manager] there's probably *some short-termism there in terms of thinking*. But there is also likely no strong business case for it. It could very well be that a company is going overboard with such spend and the *benefits of such spend are not being reaped by the company itself, but potentially by other entities ...* and then shareholders look at it and think there's probably no business case for it to do it to that extent and hence push them [the targeted firm's managers] to cut these expenses.

Another hedge fund manager was more direct: "Of course I would be glad to be ESG-[environmental-social-governance] conscious and responsible, but if that means I'm going to underperform, I'm not going to do it." A third, prominent founder of a U.S. hedge fund, reflected, "Let's say you go activist on someone. Are you really going to have investors saying, 'Yeah I want this beat-up company to be green?' It's hard enough to make money in this market."

A natural consequence of activist hedge funds' concentration on maximizing shareholder wealth is to reduce the importance of returns produced for other stakeholders of targeted firms. Environmental and social investments prioritize value created for other stakeholders, such as improved environmental quality for wildlife or a healthier workplace for employees. Indeed, CSP "emphasizes the long-term nature of the benefit that business is expected to provide to society" (Schwartz & Carroll, 2008: 163). In addition, environmental and social issues are often complex and require long investment horizons to alter a firm's trajectory and actions. For instance, firms may redevelop their business models to encompass social goals, reassess their hiring and promotion policies, and design new systems to improve the overall health of the workforce and external community. Such courses of action may yield distant future returns for shareholders through, among other things, increased employee engagement and satisfaction, a safer and healthier workforce, and reputational gains with governments and outside stakeholders.

But the costs of such initiatives mostly exceed the associated benefits over shorter horizons (Madsen & Rodgers, 2015). Criteria for making investment decisions can transform to create a simpler business case whereby short-term shareholder returns take precedence, and in doing so, diminish the value of more delayed rewards (Durand, Hawn, & Ioannou, 2019). Driven by their higher discount rates, activist hedge funds may shorten managers' time horizons (see DesJardine & Bansal, 2019), thereby triggering managers to prioritize actions that yield more immediate financial returns. As a result, environmental and social policies may lose managerial support and be discontinued or put on hold.

Overall, the hedge fund managers we interviewed repeatedly articulated that they typically view any spending on social responsibility initiatives as an extra cost that can be cut to improve immediate shareholder returns. In the words of one hedge fund manager, "cutting this fat is necessary." Additionally, managers themselves may become distracted from social initiatives as they prioritize financial performance in the midst of hedge fund activism. As both sides prioritize shareholder interests and short-term outcomes, resources and attention are diverted away from environmental and social initiatives. Thus, we might expect a short-term decrease in a firm's CSP after activist ownership. But if so, for how long? This leads us to ask:

Research Question 2 (RQ2) *Following ownership by activist hedge funds, do targeted firms decrease their CSP; and, if so, does this reduction endure over time?*

3 | METHODS

3.1 | Identifying firms targeted by activist hedge funds

To answer our research questions, we identified firms whose shares had been acquired by at least one hedge fund activist between 2000 and 2016. We chose 2000 as the first year of our data because the vast majority of hedge fund activism occurred after that year (Goranova & Ryan, 2014). We used 2016 as the last year of our data because we wanted multiple years of data to analyze following the final targeting campaigns in our sample.

The SEC requires that shareholders submit a Schedule 13D filing within 10 days of acquiring 5% of any class of securities of a publicly listed firm when the reason for such acquisition is to actively influence the control or management of the targeted firm. Critical for our study, Schedule 13D requires background information on the filer and the purpose of the transaction, which enabled us to limit our sample to activist hedge funds. As stipulated by the SEC, Schedule 13D is filed only by shareholders who plan to *actively* influence the management of a company; in comparison, shareholders who acquire more than 5% of a stock but plan to passively hold their investment, file a different form, Schedule 13G.

We used two methods to identify firms targeted by activist hedge funds. First, we identified targeted firms from 2011 to 2016 using data from Activist Insight. Activist Insight identifies firms targeted by activist hedge funds by examining Schedule 13D filings, news articles, and other filings. At the time of data collection, Activist Insight had scoured more than 16,000 news articles and 43,000 regulatory documents to identify activist hedge fund campaigns. A key benefit of using these data is that Activist Insight provides direct links to the filings that identify each event as hedge fund activism. In total, data from Activist Insight yielded 1,566 distinct events where a firm was targeted by an activist hedge fund. The main drawback of using these data is that Activist Insight offers data starting only in 2011.

To complement the Activist Insight data, our second method was to hand-collect Schedule 13D filings filed by activist hedge funds between 2000 and 2010. For this step, we started with the filings used by Gantchev (2013) and updated the sample by following a similar multistep process to the one used in that study. First, a master list of hedge funds was constructed using seven sources: (a) FT.com's *100 Hedge funds to watch*; (b) Institutional Investor's Hedge Fund 100 list published in *Alpha Magazine*; (c) Infovest21's register of 714 hedge fund managers; and lists of hedge funds provided by (d) Greenwood and Schor (2009), (e) Activist Insight, (f) EurekaHedge, and (g) SharkRepellent. Next, we collected all Schedule 13D filings filed by any hedge fund on the master list. Using Item 4 of the Schedule 13D filings (i.e., the details on the purpose of each transaction), we retained all filings where hedge funds made direct complaints about a company (e.g., removal of the CEO, pushing for an acquisition, or refocusing the growth strategy). These data yielded 1,619 distinct events where a firm was targeted by an activist hedge fund.

Figure 1 charts, by year, the number of campaigns, the number of distinct targeted firms, and the number of distinct activist hedge funds undertaking a campaign we identified in our search, as well as two lines to show the number of events included in our final samples. For our sample construction, we started with 3,185 distinct targeting events from the Activist Insight

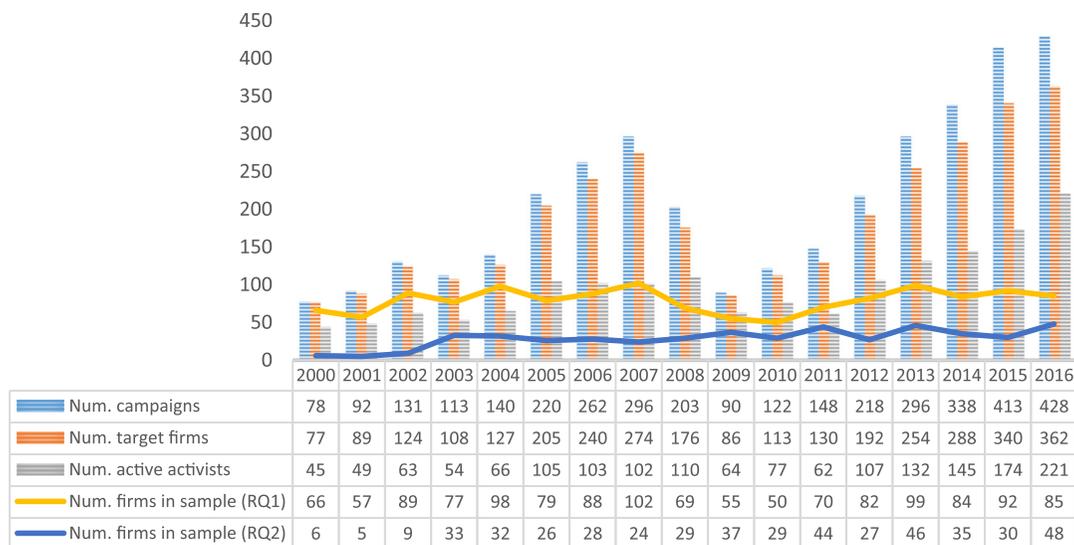


FIGURE 1 Descriptive statistics of activist hedge fund campaigns by year. Brav et al. (2008) attribute the rise of hedge fund activism in the early 2000s to hedge funds' flexibility and the small initial number of investors compared to other types of institutional activists, as well as a tight connection between hedge fund managers' pay and fund performance. As a result, more investment managers gravitated toward starting hedge funds over time. The drop in hedge fund activism in 2008 follows a general drop in investment activity following the 2008 global financial crisis. The proportion of firms included in our two samples (two lines) to the total number of firms targeted each year decreases over time since firms targeted in earlier years are not permitted to reenter the sample when they are once again targeted in later years [Color figure can be viewed at wileyonlinelibrary.com]

and SEC data. We dropped all events where the same firm was targeted later in the sample window (738 in total) to (a) isolate the effects of a single instance of activist ownership on our dependent variables; and (b) avoid misidentifying the temporal outcomes of activist ownership. Due to missing financial and accounting data, we lost 1,123 observations for RQ1; and due to missing CSP data, we lost 836 observations for RQ2. As a result, our final sample contains 1,324 unique targeted firms for RQ1 and 488 targeted firms for RQ2. We also include data on 7,670 non-targeted firms (encompassing 50,529 firm-year observations), which we use as control firms both in an unmatched full panel design and as the pool of potential control firms in a matched sample design.

3.2 | Dependent variables

3.2.1 | Financial performance

To yield a more complete picture of how activist ownership by hedge funds affects the financial sustainability of targeted firms, we captured three dimensions of firms' financial performance: market performance, accounting performance, and cash flow performance. To assess market performance, we measured *firm value* using Tobin's Q, which is the ratio of a firm's market value of assets to the replacement value of assets. A higher Tobin's Q implies that a firm is more highly valued by investors. Market measures are better suited than accounting measures for

capturing any “expected” benefits of a company's operations, although the latter provide a clearer measure of a firm's financial efficiency.

To assess accounting performance, we measured *profitability* using return on assets (ROA), which is the ratio of net income to total assets, making it a suitable measure of a firm's efficiency. A downside of profitability measures is that they are easily managed (Roychowdhury, 2006). For example, firms can recognize revenues early to increase their financial efficiency. Therefore, when discussing financial sustainability, other measures of financial performance should also be considered, especially cash flow.

To assess cash flow performance, we measured *cash flow from operations (CFO)* as the ratio of operating cash flow to total assets. Operating cash flow captures the flow of cash from a firm's regular business activities, such as manufacturing and selling goods or providing services, but does not include long-term capital expenditures or investment costs (e.g., building new facilities), which are captured by cash flow from investing (described in the next section). We focus on operating cash flow because it measures changes in a firm's tangible liquid assets—that is, the difference between cash inflow (i.e., actual sales) and cash outflow (i.e., actual purchases). Because operating cash flow represents the total amount of money transferred into and out of a business, it is less susceptible than typical profitability measures to accounting manipulations, and thus sheds a cruder light on a firm's financial performance.

3.2.2 | Strategic investments

To further address our first research question, we also considered five distinct dimensions of strategic investment spending that managers may adjust in response to activist ownership: number of employees, operating expenses, R&D spending, capital expenditures, and cash flow from investing. First, we measured *number of employees* (in thousands) because activist hedge funds may push for targeted firms to lay off employees in an effort to improve short-term profitability. For instance, in early 2019, the *Washington Post* criticized activist hedge fund Alden Global Capital for pressuring newspaper firms to increase their profitability by laying off editors and other workers (O'Connell, 2019). Second, because a firm can increase its profits in the short term by curtailing its operating expenses,³ we captured *operating expenses* (in millions of USD) as the sales, general, and administrative expenses on a firm's income statement, which report the overall costs of selling a product, including sales and commissions, marketing expenses, and overhead.

Third, we considered total *R&D spending* (in millions of USD) as the total research and development expenditures incurred by a firm. Fourth, we measured *capital expenditures* (in millions of USD) as the total funds spent annually on property, plant, and equipment, excluding the amount spent on acquisitions (e.g., the fixed assets of purchased companies). Accounting rules mandate that only assets with multiyear impacts qualify as capital expenditures. Fifth, we measured *cash flow from investing (CFI)* (in millions of USD) as the change in a firm's cash position from spending on investments in capital assets. CFI includes items such as the purchase of fixed assets (i.e., a decrease in CFI) or the sale of fixed assets (i.e., an increase in

³There is some overlap between *number of employees* and *operating expenses* since the latter captures employees' salaries. However, *operating expenses* also cover expenses not related to employees (e.g., overhead) so we include both variables to compare them. The correlation in our sample between the two variables is high at 0.737.

CFI), acquisitions of other businesses (i.e., a decrease in CFI) or divestitures (i.e., an increase in CFI), and capital lending (i.e., a decrease in CFI) or loan collections (i.e., an increase in CFI).⁴ A negative value of CFI reflects a growth intention since cash is being spent on investments that managers expect to pay off in the future.

3.2.3 | Corporate social performance

We used data from KLD to measure *CSP*. KLD is used prominently in sustainability studies, as it provides comprehensive data on the environmental and social performance of publicly traded firms (e.g., Ioannou & Serafeim, 2015). Based on public disclosures, expert assessment, company surveys, and other sources (e.g., media), KLD rates firms' environmental and social "strengths" and "concerns." KLD uses a binary system where 1 indicates the presence of a strength or concern in a particular area, and 0 indicates its absence. For example, a firm's strength in the natural environment sub-domain is the sum of its strengths in climate change, natural resource use, waste management, and environmental opportunities. Following others, we computed *CSP* by summing all strengths along the following dimensions: community, diversity, employee relations, environment, and human rights (Flammer, 2015). We excluded product quality because it mainly pertains to R&D and quality programs, which are not closely related to traditional conceptualizations of *CSP*.

The KLD data have limitations. First, the binary measurement approach can restrict a highly granular analysis of *CSP*. For instance, KLD considers various categories, including employee health and safety, training programs, and labor relations, but groups all of these topics under the employee relations sub-dimension, making it difficult to analyze specific changes in employee relations. Moreover, different rating agencies place different weights on each category of *CSP*. KLD, for instance, places more weight on social issues than Asset4, leading to an imperfect convergence of ratings across agencies (Chatterji, Durand, Levine, & Touboul, 2016). This discrepancy across ratings can lead to different outcomes when a global measure of *CSP* is calculated using all dimensions. Despite these limitations, KLD was the best data source for this study because it provided the most comprehensive dataset for our sample. As we discuss after our main results, we computed multiple variations of *CSP* to assess the robustness of our findings.

3.3 | Independent variable

We use the data on hedge fund campaigns to create a dichotomous variable, *target*, which is equal to 1 in the year a firm is targeted by an activist hedge fund and all subsequent years, and 0 otherwise (i.e., for targeted firms prior to the targeting year and non-targeted firms in all years).

⁴Capital expenditures are fully captured in CFI, which includes the purchase and sale of fixed assets. R&D spending is not included in CFI for our sample. The development portion of R&D is included in CFI only when a firm capitalizes development costs. However, for U.S. firms using GAAP, both research and development costs must be expensed rather than capitalized. For our sample, *CFI* has correlations of -0.715 with *capital expenditures* and -0.412 with *R&D spending*. The correlation between *capital expenditures* and *R&D spending* is 0.472 .

3.4 | Control variables

We control for a variety of factors that may influence the dependent variables. Because it is well known that activist hedge funds sometimes restructure companies and notably do so through asset sales and divestitures (Chen & Feldman, 2018), we control for firm size since smaller or larger firms may perform differently following such changes. *Firm size* equals the natural log of a firm's total assets. Next, we include *leverage*, computed as the sum of a firm's total long-term and short-term debt divided by stockholders' equity, since the financial leverage of firms can affect performance. Financial liquidity will influence a firm's capacity to make strategic investments, so we add *liquidity* as a firm's total cash and short-term investments deflated by total assets. Since slower-growing firms may be less profitable and have less leeway to make new investments, we also include *sales growth* as the two-year percentage change in a firm's total sales. Lastly, we account for R&D and advertising expenditures since R&D is likely to mainly affect long-term performance and advertising generally impacts short-term performance. *R&D intensity* equals a firm's total research and development expenses divided by total assets, and *advertising intensity* is a firm's total advertising expenditures divided by total assets.

3.5 | Models and analysis

For each research question, we use two different sample designs to test the effect of hedge fund activism on each dependent variable across 1- to 5-year observation windows. The nature of the treated sample of firms is similar in both designs, consisting only of firms targeted by an activist hedge fund. Only the control pool changes. First, we present results using an unmatched full panel of firms, where the control pool consists of all firms with data that have not been targeted by an activist hedge fund in the sample timeframe. Here, the coefficient estimate on *target* reflects the change in the dependent variable due to activist ownership relative to all non-targeted firms. No matching is used, so the control group is larger than in our second sample.

Second, we present results using a matched sample design. Specifically, we match each targeted firm with a control firm that has not been targeted but is otherwise similar to a targeted firm in the years preceding a hedge fund campaign. We match firms by industry (two-digit SIC) using nearest neighbor propensity scores on the values for each dependent and control variable in the year preceding each hedge fund campaign, as well as the pre-treatment trends in these variables. The initial matching pool consists of all firms from the full panel sample. After using one-to-one matching, the number of matched control firms is 1,324 for RQ1 and 488 for RQ2.

4 | RESULTS

4.1 | Main results using unmatched full panel sample

Table 1 reports descriptive statistics and correlations for the main variables of interest.

In all models, the coefficient for *target* indicates the change in each outcome variable due to being targeted by an activist hedge fund. We report models indicating the change 1–5 years after the targeting campaign date, given our interest in both short- and long-term outcomes. All models include firm and year fixed effects to control for time-invariant, firm-specific heterogeneity along with temporal trends that may impact the relationships of interest.

TABLE 1 Descriptive statistics and correlation matrix

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Firm value	1.995	1.814												
2. Profitability	-0.040	0.312	0.006											
3. CFO	-0.031	0.188	0.058	0.703										
4. CSP	1.260	2.199	0.008	0.118	0.131									
5. Number of employees	7.627	22.342	-0.065	0.130	0.137	0.549								
6. Operating expenses	416.688	1,325.299	0.010	0.122	0.130	0.665	0.792							
7. R&D spending	69.906	288.564	0.059	0.066	0.090	0.606	0.464	0.732						
8. Capital expenditures	117.626	468.029	-0.035	0.098	0.107	0.571	0.733	0.778	0.594					
9. CFI	-257.716	1,804.790	0.020	-0.100	-0.109	-0.506	-0.588	-0.705	-0.601	-0.779				
10. Target	—	—	-0.069	-0.044	-0.010	-0.003	-0.013	-0.019	-0.013	-0.028	0.045			
11. Size	4.839	2.818	-0.204	0.241	0.207	0.579	0.645	0.685	0.532	0.611	-0.576	-0.034		
12. Leverage	0.481	2.302	-0.098	-0.001	-0.020	0.054	0.076	0.055	0.027	0.066	-0.068	0.014	0.165	
13. Liquidity	0.272	0.279	0.385	-0.219	-0.176	-0.088	-0.227	-0.137	0.011	-0.154	0.126	-0.021	-0.403	-0.162
14. Sales growth	0.021	0.053	0.178	-0.159	-0.194	-0.080	-0.082	-0.069	-0.041	-0.038	0.023	-0.035	-0.125	-0.006
15. Advertising intensity	0.013	0.046	0.096	0.003	0.056	0.048	0.069	0.096	-0.025	0.011	0.017	0.021	-0.032	-0.021
16. R&D intensity	0.158	0.341	0.331	-0.491	-0.385	-0.032	-0.179	-0.069	0.128	-0.097	0.075	0.011	-0.312	-0.111

Note: $n = 65,093$ for all variables except CSP, where $n = 15,452$. $|r| > 0.01$ implies significance at $p < .05$.

4.1.1 | Changes in financial performance after activist hedge fund ownership

Tables 2–5 report results for Research Question 1. Table 2 shows that ownership by an activist hedge fund increases the value of targeted firms in the year following the targeting date. Specifically, the coefficient on *target* in Model 1 shows that, compared with nontargeted firms, targeted firms' value increases ($b = 0.112$; $p = .000$) 1 year after activist funds take ownership. Given the average value for targeted firms prior to activist ownership is 1.462, this change represents a 7.66% immediate uptick in value. Similarly, prior results have shown an increase in stock prices (not Tobin's Q) of between 4.68% (Clifford, 2008) and 11.35% (Klein & Zur, 2009) 1–3 years after hedge fund activism. Models 4 and 5 in Table 2 further reveal that firm value decreases 4.92% ($b = -0.072$; $p = .004$) and 9.71% ($b = -0.142$; $p = .000$), respectively, 4 and 5 years after being targeted, meaning earlier gains in value are reversed in these later years.

Next, Table 3 shows that being targeted by an activist hedge fund alters firms' *profitability*. Increases in profitability amounted to 1.10 and 1.50%, respectively, one year ($b = 0.011$;

TABLE 2 Firm value after ownership by activist hedge funds

Variable	(1) Firm value $t - 1: t + 1$	(2) Firm value $t - 2: t + 2$	(3) Firm value $t - 3: t + 3$	(4) Firm value $t - 4: t + 4$	(5) Firm value $t - 5: t + 5$
Target	0.112 (0.029)	0.036 (0.025)	0.006 (0.022)	-0.072 (0.025)	-0.142 (0.027)
Size	-0.269 (0.006)	-0.272 (0.006)	-0.274 (0.006)	-0.302 (0.007)	-0.322 (0.008)
Leverage	-0.009 (0.002)	-0.009 (0.002)	-0.009 (0.002)	-0.008 (0.002)	-0.007 (0.002)
Liquidity	0.780 (0.025)	0.793 (0.026)	0.803 (0.027)	0.766 (0.032)	0.781 (0.036)
Sales growth	0.278 (0.007)	0.270 (0.007)	0.269 (0.008)	0.274 (0.009)	0.277 (0.010)
R&D intensity	0.279 (0.020)	0.311 (0.021)	0.333 (0.022)	0.380 (0.026)	0.468 (0.029)
Advertising intensity	-0.166 (0.135)	-0.152 (0.141)	-0.162 (0.144)	-0.236 (0.171)	-0.311 (0.194)
Constant	3.235 (0.032)	3.256 (0.034)	3.276 (0.035)	3.429 (0.041)	3.531 (0.047)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	60,392	61,824	63,077	64,158	65,093
Adjusted R^2	0.134	0.123	0.119	0.093	0.081

Note: Firm value = market value of assets/replacement value of assets (i.e., Tobin's Q). SEs appear in parentheses below coefficients.

TABLE 3 Profitability after ownership by activist hedge funds

Variable	(6) Profitability $t - 1: t + 1$	(7) Profitability $t - 2: t + 2$	(8) Profitability $t - 3: t + 3$	(9) Profitability $t - 4: t + 4$	(10) Profitability $t - 5: t + 5$
Target	0.011 (0.006)	0.015 (0.005)	0.010 (0.007)	0.008 (0.005)	0.005 (0.005)
Size	0.030 (0.001)	0.031 (0.001)	0.031 (0.001)	0.034 (0.001)	0.036 (0.001)
Leverage	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Liquidity	0.067 (0.005)	0.069 (0.006)	0.069 (0.006)	0.076 (0.006)	0.078 (0.006)
Sales growth	0.042 (0.002)	0.042 (0.002)	0.042 (0.002)	0.043 (0.002)	0.044 (0.002)
R&D intensity	-0.152 (0.004)	-0.167 (0.005)	-0.179 (0.005)	-0.186 (0.005)	-0.206 (0.005)
Advertising intensity	-0.325 (0.029)	-0.337 (0.030)	-0.336 (0.031)	-0.327 (0.033)	-0.314 (0.034)
Constant	-0.253 (0.007)	-0.255 (0.007)	-0.255 (0.008)	-0.271 (0.008)	-0.279 (0.008)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	60,392	61,824	63,077	64,158	65,093
Adjusted R^2	0.092	0.092	0.088	0.086	0.088

Note: Profitability = net income/total assets. *SEs* appear in parentheses below coefficients.

$p = .091$) and two years ($b = 0.015$; $p = .003$) after the targeting date, consistent with prior results (Greenwood & Schor, 2009; Klein & Zur, 2009, 2011). However, this effect does not endure, as shown by the marginal results in Models 8 through 10.

For our third financial performance variable, we find activist hedge fund ownership is associated with a decrease in *CFO* multiple years after the targeting date. Specifically, *CFO* drops by \$74 million in year two ($b = -0.007$; $p = .017$), \$127 million in year three ($b = -0.012$; $p = .000$), \$116 million in year four ($b = -0.011$; $p = .000$), and \$106 million in year five ($b = -0.010$; $p = .000$). These changes represent decreases of between 15.82% and 27.12% of *CFO* from pretargeting levels.

Overall, after a firm is targeted by an activist hedge fund, we can expect the following changes in financial performance: (a) market value improves immediately, but temporarily, before turning negative; (b) profitability increases in years one and two then no more; and (c) cash flow decreases nearly immediately and for at least five subsequent years. We now investigate the reasoning for these changes in financial performance by analyzing possible changes in firms' strategic investments induced by hedge fund activism.

TABLE 4 CFO after activist ownership

Variable	(11) CFO $t - 1: t + 1$	(12) CFO $t - 2: t + 2$	(13) CFO $t - 3: t + 3$	(14) CFO $t - 4: t + 4$	(15) CFO $t - 5: t + 5$
Target	-0.001 (0.004)	-0.007 (0.003)	-0.012 (0.003)	-0.011 (0.003)	-0.010 (0.002)
Size	0.016 (0.001)	0.017 (0.001)	0.017 (0.001)	0.018 (0.001)	0.019 (0.001)
Leverage	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)	-0.001 (0.000)
Liquidity	0.029 (0.003)	0.030 (0.003)	0.031 (0.003)	0.033 (0.003)	0.036 (0.003)
Sales growth	0.020 (0.001)	0.020 (0.001)	0.020 (0.001)	0.021 (0.001)	0.022 (0.001)
R&D intensity	-0.068 (0.003)	-0.076 (0.003)	-0.085 (0.003)	-0.090 (0.003)	-0.103 (0.003)
Advertising intensity	-0.121 (0.017)	-0.119 (0.017)	-0.120 (0.018)	-0.120 (0.018)	-0.112 (0.019)
Constant	-0.095 (0.004)	-0.096 (0.004)	-0.095 (0.004)	-0.100 (0.004)	-0.105 (0.005)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	60,392	61,824	63,077	64,158	65,093
Adjusted R^2	0.061	0.063	0.065	0.068	0.071

Note: CFO = operating cash flow/total assets. SEs appear in parentheses below coefficients.

4.1.2 | Changes in strategic investments after activist hedge fund ownership

Coherent with the preceding findings, the quote in the epigraph from David Taylor suggests that positive changes in short-term financial performance may result from cost-cutting efforts following hedge fund activism. We investigate this possibility by exploring whether ownership by activist hedge funds affects firms' strategic investments. Each panel in Table 5 reports the results for one of the five dependent variables related to strategic investments, and each model includes the same control variables that were used in the prior models.

Panel A of Table 5 reports results where *number of employees* is the dependent variable. Interpreting these results, after activist hedge funds acquire ownership, a firm's workforce steadily decreases, dropping 4.57% in year one ($b = -0.383$; $p = .079$) and culminating with a 7.66% drop by year five ($b = -0.642$; $p = .000$). For an average firm, the result is a loss of 383 to 642 employees. Panel B reports results for *operating expenses*. In line with the decrease in employees, operating expenses decline 4.74% two years after activist ownership ($b = -21.885$; $p = .020$) and 6.64% by year five ($b = -30.685$; $p = .000$), which equates to spending cutbacks of between \$22 million and \$31 million. Panel C reports results for *R&D*

TABLE 5 Strategic investments after ownership by activist hedge funds

Variable	(16) $t - 1: t + 1$	(17) $t - 2: t + 2$	(18) $t - 3: t + 3$	(19) $t - 4: t + 4$	(20) $t - 5: t + 5$
<i>Panel A: Number of employees</i>					
Target	-0.383 (0.218)	-0.453 (0.173)	-0.509 (0.153)	-0.584 (0.142)	-0.642 (0.136)
Constant	-0.216 (0.237)	-0.242 (0.235)	-0.265 (0.233)	-0.311 (0.232)	-0.360 (0.231)
Adjusted R^2	0.152	0.151	0.151	0.151	0.151
<i>Panel B: Operating expenses</i>					
Target	-17.509 (11.883)	-21.885 (9.380)	-24.239 (8.284)	-27.504 (7.685)	-30.685 (7.317)
Constant	-156.114 (13.289)	-158.710 (13.152)	-160.615 (13.026)	-163.009 (12.918)	-164.871 (12.822)
Adjusted R^2	0.161	0.160	0.161	0.162	0.164
<i>Panel C: R&D spending</i>					
Target	-6.286 (3.621)	-7.304 (2.868)	-9.036 (2.537)	-9.739 (2.355)	-9.874 (2.246)
Constant	-74.347 (3.713)	-74.729 (3.678)	-75.547 (3.649)	-76.596 (3.627)	-77.603 (3.610)
Adjusted R^2	0.078	0.077	0.076	0.076	0.076
<i>Panel D: Capital expenditures</i>					
Target	-9.866 (5.786)	-11.331 (4.589)	-11.213 (4.059)	-12.554 (3.769)	-14.099 (3.590)
Constant	-5.358 (5.985)	-6.222 (5.933)	-7.053 (5.888)	-7.615 (5.854)	-7.661 (5.819)
Adjusted R^2	0.122	0.120	0.121	0.121	0.120
<i>Panel E: CFI</i>					
Target	53.008 (19.706)	59.860 (15.604)	65.599 (13.874)	69.269 (12.872)	64.893 (12.263)
Constant	214.228 (19.804)	215.283 (19.649)	213.886 (19.603)	215.411 (19.469)	216.697 (19.355)
Adjusted R^2	0.073	0.073	0.071	0.071	0.070

Note: This table reports the changes in firms' strategic investments following ownership by activist hedge funds. Each panel reports results for the dependent variable listed in the panel heading. All figures are denoted in millions except for those relating to *number of employees*, which are denoted in thousands. In the year prior to activist ownership ($t - 1$), target firms had, on average: (a) 8,385 employees; (b) \$462.105 million in operating expenses; (c) \$106.589 million in R&D spending; (d) \$149.828 million in capital expenditures; and (e) \$247.244 million in CFI. We omit *advertising intensity* in Panel B and *R&D spending* in Panel C as covariates due to collinearity with the respective dependent variables. All other control variables and firm and year fixed effects are included in all models. *SEs* appear in parentheses below coefficients.

spending, which decreases 6.27% in the first year after activist ownership ($b = -6.286$; $p = .083$) and continues to fall, dropping 9.26% by year five ($b = -9.874$; $p = .000$). While the average percentage cutbacks on R&D are slightly greater than cutbacks in operating expenses, the absolute dollar cutbacks are less, falling between \$6 million and \$10 million for an average targeted firm. Panel D reports results for *capital expenditures*. One year after activist ownership, capital spending decreases by 6.59% ($b = -9.866$; $p = .088$) and continues to decrease until reaching a 9.41% decline by year five ($b = -14.099$; $p = .000$). For an average firm, these changes represent reductions in capital expenditures between \$10 million and \$14 million. Lastly, Panel E reports results for *CFI*. Given the decreases in R&D spending and capital expenditures, it is not surprising that CFI increases after activist ownership. Specifically, CFI climbs by 21.44% in year one ($b = 53.008$; $p = .007$) and continues through year five, increasing by 26.25% ($b = 64.893$; $p = .000$). Economically, the CFI of targeted firms increases (becomes less negative) by between \$53 million and \$70 million. In the year prior to targeting, the CFI of targeted firms is approximately $-\$247$ million, compared with $-\$231$ million for non-targeted firms. Hence, targeted firms tend to invest more capital than their non-targeted peers prior to hedge fund activism, but then invest less after they are targeted.

An interesting insight emerges when comparing the results from Table 4 with the results from Panel E of Table 5. In the years that follow, ownership by activist hedge funds results in cash outflows associated with operations (decreases in *CFO*) between \$74 million (starting in year two) and \$127 million (year three) and cash inflows associated with investing activities (increases in *CFI*) between \$53 million (year one) and \$70 million (year four). From these results, we infer that management may attempt to offset drawdowns in operating cash flows by increasing investing cash flow through cutbacks in investment spending. In year one, management is successful, experiencing an average cash surplus of roughly \$53 million, as *CFI* increases \$53 million with only marginal changes in *CFO*. However, in later years, targeted firms experience cash deficits between \$14 million (year two) and \$61 million (year three), as increases in *CFI* are unable to offset decreases in *CFO*—which are plausibly driven by earlier cutbacks in investment spending.

4.1.3 | Changes in CSP after activist hedge fund ownership

Table 6 reports results related to Research Question 2, where *CSP* is the dependent variable. Looking at Panel A, the negative coefficients on *target* indicate that two, three, four, and five years after activist ownership, the *CSP* of targeted firms decreases by 18.56% ($b = -0.241$; $p = .000$), 21.95% ($b = -0.285$; $p = .000$), 23.64% ($b = -0.307$; $p = .000$), and 24.79% ($b = -0.322$; $p = .000$) more than it would have absent hedge fund activism. Panel B in Table 6 shows similar results using a net measure of *CSP* calculated by subtracting the number of concerns from the number of strengths reported by KLD. Both panels reveal that ownership by activist hedge funds reduces a firm's *CSP*. We explore the nature of these changes in more detail using the results from our matched sample.

4.2 | Main results using matched sample

We found no significant differences in the matching (control) variables between the targeted and non-targeted control firms in either sample. As shown in Table 7, the results from the

TABLE 6 CSP after ownership by activist hedge funds

Variable	(21) CSP $t - 1: t + 1$	(22) CSP $t - 2: t + 2$	(23) CSP $t - 3: t + 3$	(24) CSP $t - 4: t + 4$	(25) CSP $t - 5: t + 5$
<i>Panel A: CSP</i>					
Target	-0.162 (0.081)	-0.241 (0.064)	-0.285 (0.057)	-0.307 (0.054)	-0.322 (0.052)
Size	0.177 (0.034)	0.193 (0.033)	0.201 (0.033)	0.211 (0.032)	0.216 (0.032)
Leverage	-0.004 (0.007)	-0.002 (0.006)	-0.003 (0.006)	-0.001 (0.006)	0.001 (0.006)
Liquidity	0.388 (0.126)	0.375 (0.123)	0.325 (0.120)	0.330 (0.117)	0.307 (0.116)
Sales growth	-0.006 (0.034)	-0.005 (0.033)	-0.014 (0.033)	-0.024 (0.032)	-0.029 (0.032)
R&D intensity	0.148 (0.242)	0.196 (0.237)	0.184 (0.233)	0.174 (0.228)	0.199 (0.213)
Advertising intensity	-0.757 (0.944)	-0.136 (0.901)	-0.013 (0.879)	0.112 (0.862)	0.159 (0.852)
Constant	-1.348 (0.252)	-1.450 (0.248)	-1.469 (0.244)	-1.513 (0.241)	-1.513 (0.237)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	13,361	14,017	14,577	15,066	15,452
Adjusted R^2	0.127	0.125	0.121	0.117	0.115
<i>Panel B: Net CSP</i>					
Target	-0.193 (0.096)	-0.307 (0.076)	-0.366 (0.068)	-0.387 (0.064)	-0.396 (0.062)
Size	0.028 (0.040)	0.040 (0.040)	0.048 (0.039)	0.062 (0.038)	0.072 (0.038)
Leverage	-0.003 (0.008)	0.000 (0.008)	0.003 (0.007)	0.004 (0.007)	0.006 (0.007)
Liquidity	0.487 (0.150)	0.471 (0.146)	0.439 (0.142)	0.452 (0.139)	0.417 (0.137)
Sales growth	-0.008 (0.041)	-0.009 (0.040)	-0.020 (0.039)	-0.035 (0.038)	-0.031 (0.038)
R&D intensity	-0.134 (0.287)	-0.130 (0.281)	-0.134 (0.277)	-0.165 (0.270)	-0.022 (0.252)
Advertising intensity	-1.641 (1.119)	-1.018 (1.069)	-0.852 (1.044)	-0.834 (1.023)	-0.732 (1.007)

TABLE 6 (Continued)

Variable	(21) CSP $t - 1: t + 1$	(22) CSP $t - 2: t + 2$	(23) CSP $t - 3: t + 3$	(24) CSP $t - 4: t + 4$	(25) CSP $t - 5: t + 5$
Constant	-0.957 (0.298)	-1.023 (0.294)	-1.057 (0.290)	-1.123 (0.285)	-1.157 (0.281)
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	13,361	14,017	14,577	15,066	15,452
Adjusted R^2	0.150	0.144	0.140	0.139	0.136

Note: CSP (Panel A) = total number of strengths by firm in the KLD database. Net CSP (Panel B) = total number of strengths minus total number of concerns by firm. SEs appear in parentheses below coefficients.

matched sample mostly corroborate those presented from the full panel design. The first notable difference, however, is that we do not find any meaningful change in *profitability* following activist ownership. Additionally, in terms of strategic investments, decreases in the *number of employees* and in *R&D spending* take two years to manifest, whereas in the full sample design, this effect began after one year. Economically, for the most part there are larger effects across all five strategic investment variables in the matched design. Lastly, we see substantial decreases in CSP in all five years following activist ownership instead of beginning in only in year two.

We graph the effects for the three financial dependent variables as well as CSP in Figures 2–5. In each figure, the solid (red) line indicates the value of the dependent variable for the targeted firms and the dotted (blue) line represents the value for the non-targeted control firms. Due to the matching protocol, the two lines for the targeted and non-targeted firms are relatively flat and similar in the years preceding the targeting date ($t - 5$ to $t - 1$) in all four figures. However, as shown in Figures 2 and 3, starting in $t + 1$, there is a sharp increase in *firm value* and slight increase in *profitability* of targeted firms. These effects weaken but remain positive for another year before turning negative. Conversely, in Figure 4, we see an immediate decline in *CFO* beginning in $t + 1$ and continuing through to $t + 5$. These results support the prior findings.

A final insight comes from plotting the results from the matched sample for CSP. In Figure 5, we see a fairly steady increase in CSP for the non-targeted control firms throughout the observation window. This increase is not surprising, given that firms have been increasingly pushed and rewarded for their CSP efforts over the past two decades (Ioannou & Serafeim, 2015). In contrast, we see the CSP of targeted firms remains level throughout the post-activism period. Extending the prior results, we conclude that CSP does not decline, but rather stagnates following ownership by activist hedge funds: targeted firms put CSP initiatives on hold rather than overturning and divesting their prior environmental and social investments.

4.3 | Robustness checks

We tested the robustness of our results by modifying our main analyses in several ways. We first adjusted our matching procedure by: (a) adding and using alternative matching characteristics, including dividend yield and institutional ownership; (b) permitting the same control firm to match to multiple targeted firms; and (c) adding different calipers to

TABLE 7 Effects of ownership by activist hedge funds using matched sample

Dependent variable	(26) <i>t</i> − 1: <i>t</i> + 1	(27) <i>t</i> − 2: <i>t</i> + 2	(28) <i>t</i> − 3: <i>t</i> + 3	(29) <i>t</i> − 4: <i>t</i> + 4	(30) <i>t</i> − 5: <i>t</i> + 5
<i>Panel A: Financial performance</i>					
Firm value	0.253 (0.084)	0.072 (0.068)	0.022 (0.054)	0.002 (0.048)	−0.034 (0.049)
Adjusted <i>R</i> ²	0.112	0.066	0.060	0.042	0.043
Profitability	0.007 (0.007)	0.007 (0.005)	−0.005 (0.004)	−0.006 (0.004)	−0.005 (0.003)
Adjusted <i>R</i> ²	0.073	0.055	0.054	0.050	0.042
CFO	−0.007 (0.007)	−0.012 (0.006)	−0.013 (0.005)	−0.015 (0.004)	−0.018 (0.004)
Adjusted <i>R</i> ²	0.028	0.022	0.023	0.026	0.027
<i>Panel B: Strategic investments</i>					
Number of employees	−0.250 (0.264)	−0.429 (0.227)	−0.431 (0.230)	−0.691 (0.219)	−0.858 (0.216)
Adjusted <i>R</i> ²	0.034	0.013	0.008	0.008	0.011
Operating expenses	−43.800 (18.204)	−63.346 (16.225)	−79.846 (15.492)	−88.015 (14.598)	−92.849 (14.404)
Adjusted <i>R</i> ²	0.041	0.028	0.035	0.047	0.063
R&D spending	−8.535 (7.178)	−11.047 (6.105)	−11.366 (6.273)	−12.346 (6.001)	−9.473 (4.907)
Adjusted <i>R</i> ²	0.039	0.018	0.012	0.015	0.020
Capital expenditures	−30.065 (17.890)	−36.308 (12.180)	−30.330 (11.148)	−34.473 (10.452)	−38.889 (10.138)
Adjusted <i>R</i> ²	0.056	0.034	0.026	0.030	0.034
CFI	58.944 (33.667)	76.267 (36.099)	99.107 (31.486)	137.354 (29.749)	141.181 (27.920)
Adjusted <i>R</i> ²	0.018	0.009	0.007	0.010	0.012
<i>Panel C: Corporate social performance</i>					
CSP	−0.212 (0.109)	−0.342 (0.087)	−0.351 (0.078)	−0.300 (0.075)	−0.266 (0.073)
Adjusted <i>R</i> ²	0.129	0.101	0.086	0.084	0.085
Net CSP	−0.215 (0.142)	−0.384 (0.107)	−0.372 (0.097)	−0.297 (0.090)	−0.262 (0.088)
Adjusted <i>R</i> ²	0.079	0.060	0.068	0.076	0.072

Note: This table replicates the analyses from the full panel data design but instead uses a one-to-one nearest neighbor matched sample. Dependent variables are listed in the first column. Firm and year fixed effects are included in all models, but controls are excluded as their effect is accounted for via matching. There are 2,648 (1,324 treated + 1,324 control) firms included in Panel A and Panel B and 976 (488 treated + 488 control) firms included in Panel C. *SEs* appear in parentheses below coefficients.

FIGURE 2 Firm value before and after ownership by activist hedge funds [Color figure can be viewed at wileyonlinelibrary.com]

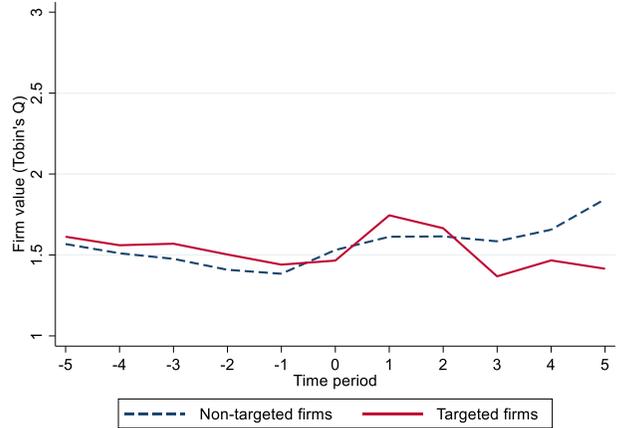


FIGURE 3 Profitability before and after ownership by activist hedge funds [Color figure can be viewed at wileyonlinelibrary.com]

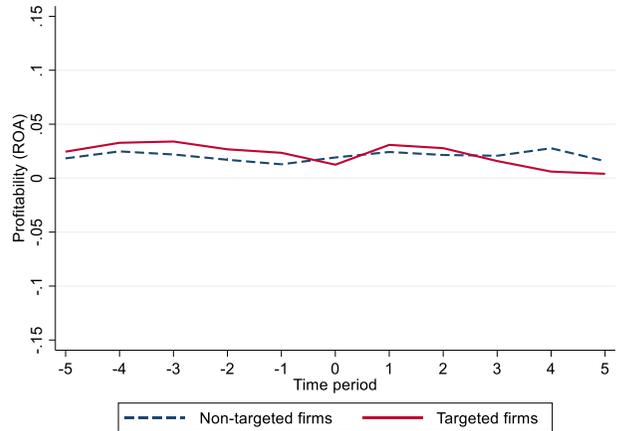
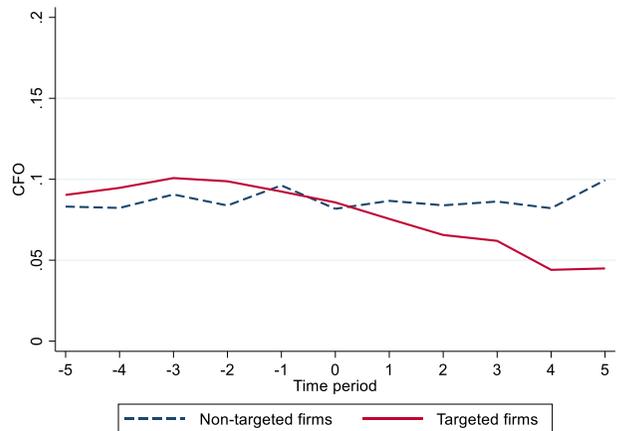


FIGURE 4 Cash flow from operations (CFO) before and after ownership by activist hedge funds [Color figure can be viewed at wileyonlinelibrary.com]



force closer matches. Next, we reran our models for RQ1 using the subsample of firms originally used to investigate RQ2. Results are mostly similar to those from our main analyses: an immediate but short-lived increase in firm value (year one) and a longer-term decrease in cash flow (years two through five). We did not find any meaningful changes

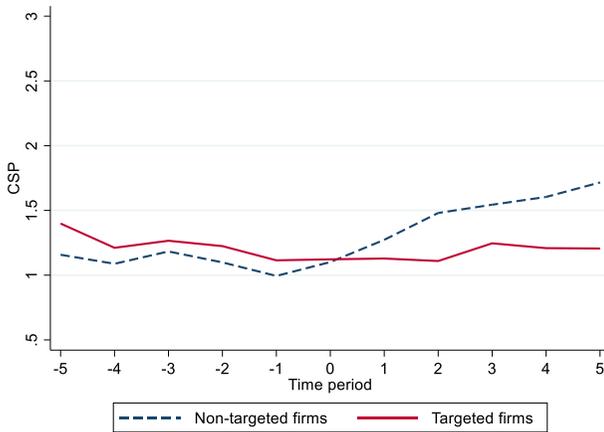


FIGURE 5 Corporate social performance (CSP) before and after ownership by activist hedge funds [Color figure can be viewed at wileyonlinelibrary.com]

in profitability, and we found results for the five strategic investment variables that aligned with our main findings.

To offer more granularity, we considered whether changes in specific dimensions of CSP were driving our findings. Specifically, we disaggregated the CSP measure into five sub-dimensions based on the KLD data: community, diversity, employee relations, environment, and human rights. We found negative changes in each dimension after activist ownership, except for community. It is plausible that targeted firms do not reduce their community involvement given the short-term benefits of community initiatives, such as charitable giving (DesJardine, Bansal, & Yang, 2019). The largest economic reduction was in diversity followed by the environment.

Lastly, to address whether our results can be explained by activist hedge funds' ownership in firms with weaker governance profiles, we examine potential differences in governance indicators. First, the average number of strengths in the corporate governance sub-domain of KLD was 0.351 for targeted firms and 0.348 for non-targeted firms, a difference of 0.003 ($p = .912$). Similarly, we found no major difference using a net measure (strengths minus concerns) of this same indicator ($p = .797$). Second, using data from Thomson Reuters Asset4, the governance score—ranging from 0 to 100—was 72.66 for targeted firms and 68.85 for non-targeted firms ($p = .002$). Third, using various measures from Execucomp (e.g., total compensation, salary, and options) and KLD (e.g., “High Compensation” concerns), we found that managers of targeted firms had similar compensation packages than managers of non-targeted firms. Overall, no evidence suggests major differences between the governance conditions of the targeted and non-targeted firms in our sample.

5 | DISCUSSION

In this paper, we endeavored to test the financial, strategic, and social impacts of ownership by activist hedge funds over time. In moving beyond the ongoing debate on the “value” of hedge fund activism, we tackled two research questions by examining changes in the financial performance, strategic investments, and CSP of targeted firms in the five years following hedge fund activism. Our results reveal that ownership by activist hedge funds increases the financial value

and profitability of targeted firms in the short term, but undermines the financial vitality and sustainability of targeted firms in the longer term.

We contribute to the literature by identifying differences in the short- and long-term financial performance of firms targeted by activist hedge funds. Proponents of hedge fund activism cite evidence that the value of firms increases after hedge funds acquire stock and intervene in these companies. One concern, however, is that researchers tend to use stock prices to operationalize firm value, and employ event study designs with relatively short observation windows that fail to capture the full extent to which hedge fund activism affects firms' financial performance (Denes et al., 2017). Our study advances prior findings by considering both short- and long-term financial performance, and by distinguishing between different financial performance indicators (i.e., market performance, accounting performance, and cash flow performance). Cash flow performance has been overlooked in prior research, yet is a critical consideration because it arguably best reflects a firm's financial sustainability. Our results indicate that ownership by activist hedge funds creates market value and boosts profitability in the short term. However, as time passes, the effects of investment cutbacks—in human resources, overhead, R&D, and capital spending—materialize, ultimately decreasing firms' cash flow.

We also contribute by offering a more balanced view of how shareholder activists affect the CSP of targeted firms. While prior findings reveal that certain types and tactics of shareholder activists promote social performance (David et al., 2007; Neubaum & Zahra, 2006; Reid & Toffel, 2009), our findings show that some shareholder activists undermine social performance. Building on the arguments that targeted firms prioritize shareholders over other stakeholders and that managers shorten their time horizons when hedge funds mount pressure, we found that hedge fund activism suppresses firms' CSP. In conjunction with our findings on the effects on financial performance, this finding reveals a clear intertemporal and inter-stakeholder trade-off associated with ownership by activist hedge funds. On the one hand, firm value improves immediately after hedge fund activism, but mostly for the short-term benefit of shareholders. On the other hand, in the longer term, targeted firms generate less cash flow and see their social performance decline, likely to the detriment of longer-term shareholders and other stakeholders. Rather than fueling the ongoing and unresolved debate on the value of hedge fund activism, our study reveals this trade-off for the relevant stakeholders.

Our findings also illuminate the meaning of activism. Typically, management researchers do not distinguish between different types of shareholder activism (Goranova & Ryan, 2014). This tendency is especially problematic when researchers examine the effect of shareholder activism on CSP, since the word *activism* itself might invoke the misguided assumption that activists unanimously support environmental and social practices. Our results reveal the importance of explicitly identifying the type of shareholder activism, as well as the range of objectives, tactics, and influence being investigated (Eesley et al., 2016). Here, we focused explicitly on hedge funds and on only the effects of their ownership, rather than their tactics.

Overall, our study highlights the influence of shareholders on a firm's role in society. Scholars have expressed concerns that CSP can become a tool that managers use to pursue personal gain to, for instance, build their reputations or pursue their personal interests (Borghesi et al., 2014; Masulis & Reza, 2014; Petrenko, Aime, Ridge, & Hill, 2016). In comparison, shareholders' influence on CSP has received less attention (Dyck, Lins, Roth, & Wagner, 2019). Yet, as our interviews and results suggest, shareholders discount future returns at different rates, which will impact firm outcomes, including CSP. This distinction emphasizes the function that different shareholders have in balancing a firm's short- and long-term financial and non-financial priorities.

5.1 | Limitations and future research

Given the paucity of research that explores long-term financial performance and CSP in the context of hedge fund activism (Ahn & Wiersema, in-press), our aim was to provide a broad picture of the landscape. Yet, this high-level inquiry has some limitations that reveal opportunities for future research. First, our theory and qualitative findings suggest activist hedge funds reorient target firms' attention toward short-term performance, though we did not directly test this potential mechanism. Future research could employ text-based measures of time horizons (see DesJardine & Bansal, 2019) to examine how firms' attention changes after hedge fund activism.

Second, while our interviews begin to tap into the mechanisms at play, it remains unclear exactly *how* hedge fund activism suppresses firms' environmental and social initiatives. It is possible that, rather than hedge funds denouncing social and environmental initiatives, managers distract themselves from these initiatives when under the strain of combatting hedge fund activism. A senior executive of a targeted firm we interviewed explained: "You get this pressure during a battle like that, when your leadership really wants to make sure assets are performing so this whole thing goes away. So this pressure exists on the numbers. And because of this pressure at the top, the pressure goes down the lines to your operational people, saying: 'keep moving, work harder, we got to make money.' And from this, I think, there can come this rash of health issues and deaths all the way down the line. And your company has to perform better, but to do that you have to put people at risk. As a consequence, we actually had a lot of safety problems, social problems in the company after the hedge fund attacked us.... This probably came from our leadership team losing sight of the ball." In light of this quote, future work should consider whether managers need not go to such great lengths in suppressing environmental and social objectives to prioritize financial returns when defending against activist hedge funds.

Third, for our control group, we used firms that were not targeted by any type of shareholder activist. Yet, given that hedge funds differ from other types of shareholders, it is worth considering how the effects of ownership by activist hedge funds compare with ownership by other shareholders seeking to influence companies, such as pension funds, labor unions, or strategic (corporate) investors. Fourth, we utilized a dichotomous measure to capture ownership by activist hedge funds. Yet, the consequences of ownership could depend on the percentage of stock acquired by an activist shareholder. For example, the tactics available to a smaller shareholder (e.g., public criticism) may differ from those available to a large shareholder (e.g., calling a special shareholder meeting), thereby affecting an activist shareholder's capacity to directly influence management. Hence, future work might also study the effects of hedge fund activism using a more granular measure of ownership.

6 | CONCLUSION

Our study raises important concerns for managers of publicly traded companies. More than ever before, managers are experiencing increasing pressure to fend off activist hedge funds. As activist investor Carl Icahn has warned, "You better get that price up or someone else will do it for you." But how should managers respond to this mounting pressure? Our findings suggest managers will improve their odds of winning battles against activist hedge funds by informing other—especially long-term—shareholders and stakeholders about the adverse consequences

that hedge fund activism inflicts on the financial and social sustainability of targeted companies. By capturing the range of positive and negative effects on target companies, our study presents the competing implications of hedge fund activism on business and society.

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