

Governance by Persuasion: Hedge Fund Activism and Market-based Shareholder Influence

Finance Working Paper N° 797/2021

January 2022

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Abstract

Hedge fund activism refers to the phenomenon where hedge fund investors acquire a strict minority block of shares in a target firm and then attempt to pressure management for changes in corporate policies and governance with the aim to improve firm performance. This study provides an updated empirical analysis as well as a comprehensive survey of the academic finance research on hedge fund activism. We review the development, current state, and potential future trends beginning with the institutional background in which hedge fund activists operate, activists' objectives, tactics, and the selection of target companies. Various firm outcomes are also discussed, with a focus on the financial and operating performance of targeted firms, the dynamics of engagement with fellow investors, and the impact on other stakeholders.

Beginning in the early 1990s, shareholder engagement by activist hedge funds has evolved to become both an investment strategy and a remedy for poor corporate governance. Hedge funds represent a group of highly incentivized, value-driven investors who are relatively free from regulatory and structural barriers that have constrained the monitoring by other external investors. While traditional institutional investors have taken actions *ex post* to preserve value or contain observed damage (such as taking the "Wall Street Walk"), hedge fund activists target under-performing firms in order to unlock value and profit from the improvement. Activist hedge funds also differ from corporate raiders that operated in the 1980s, as they tend to accumulate strict minority equity stakes and do not seek direct control. As a result, activists must win support from fellow shareholders via persuasion and influence, representing a hybrid internal-external role in a middle-ground form of corporate governance.

Research on hedge fund activism performed and reviewed in this study centers on how it impacts the target company, its shareholders, other stakeholders, and the capital market as a whole. Opponents of hedge fund activism argue that activists focus narrowly on short term financial performance, and such "short-termism" may be detrimental to the long-run value of target companies. The empirical evidence, however, supports the conclusion that interventions by activist hedge funds lead to improvements in target firms, on average, in terms of both short-term metrics, such as stock value appreciation, and long-term performance, including productivity, innovation, and governance. Overall, the evidence from the full body of the literature generally supports the view that hedge fund activism constitutes an important venue of corporate governance that is both influence-based and market-driven, placing activist hedge funds in a unique position to reduce the agency costs associated with the separation of ownership and control.

Keywords: Hedge funds, shareholder activism, corporate governance, institutional investors

JEL Classifications: G14, G23, G3, K22

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First Draft: August 2021

This Draft: December 2021

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1 Introduction

Beginning in the early 1990s, hedge fund activism has evolved from a niche, specialized strategy that combines investment with corporate governance goals to a well-established style of investment management that has been adopted by hundreds of hedge funds who have added it to their comprehensive mix of strategies.¹ At the same time, the academic literature has also evolved from early studies that characterized activist events and their impact on the target firms to a rich field covering a multitude of different firm outcomes and the consequences for different stakeholders associated the funds' activism. This article provides a comprehensive review of the academic finance research on hedge fund activism, surveying its development, current state, and potential future trends.

The paper begins with the institutional background in Section 2. The section summarizes the legal and institutional settings that are directly relevant to hedge fund activism, especially the rules that govern Schedule 13D, the filing of which has become the primary tool with which activists launch an engagement with a target firm. Section 2 also outlines the key differences between hedge funds and traditional institutional investors (e.g., mutual funds, pension funds, and banks) which allow the former to overcome the main barriers to aggressive forms of activism. Such barriers include lack of incentives, conflict of interest, collective action (or free-riding) problems, and legal restrictions on informed trading.

Unlike most review papers, this review provides up-to-date empirical evidence using a comprehensive, and mostly a manually collected dataset, of 4,657 hedge fund activist events spanning the time period 1994 through 2018. The dataset extends the time period and information that were gathered in Brav et al. [2008a]. Section 3 constitutes an empirical overview of this new dataset which has not been used in any published paper yet. The overview covers the process of the data collection, the time series of the hedge fund activism events, activists' objectives and tactics, their capital commitment and investment horizon, and the characteristics of target firms relative to a control sample. The predictive analysis of targeting by activists shows that under-performing firms (in terms of firm valuation, return

¹Although shareholder activism has a long history, we argue that given the high-powered incentives they face, hedge funds represent a new genre of activists that are highly committed towards shareholder value maximization.

on assets, and recent past stock return), with diversified businesses in more concentrated industries, are more likely to be targeted. Likewise, high institutional ownership and liquid stock trading also facilitate intervention by activists.

Section 4 is devoted to arguably the most important question regarding hedge fund activism, namely, whether there is a positive or negative impact on the target firms' financial and operating performance, both in the short- and longer-term. The empirical evidence suggests that the previously-documented significant positive short-term average abnormal return around the arrival of activists, and the lack of any longer-term reversal of the short-term gain, remains robust in the extended and updated sample. Section 4 then reviews the "real" effects to target firms as opposed to consequences that are due to pure financial engineering. We summarize evidence on productivity, M&A activities (both as targets and acquirers), innovation, and governance, and find an overall positive effect. Two important econometric issues are discussed. First, a difference-in-difference comparison (that is, a comparison of target firms against their matched peers, before and after the intervention), which is commonly adopted in this body of research, likely uncovers a combination of stock-picking and a treatment effect. Second, causal inferences are generally a challenge since hedge fund targeting is decidedly non-random as engagement by activists depends on factors along both observable and unobservable dimensions. Nevertheless, Section 4 includes a subsection dedicated to causal inferences developed in studies based on new data, unique features in the regulation of fund disclosure, and quasi-random variation.

Unlike the "corporate raiders" of the 1980s who sought direct control, activist hedge funds are minority shareholders whose aim is to "influence" corporate policies and governance. Section 5 highlights that support from fellow shareholders is necessary for their success. The most important venue for research on the topic is institutional investors' voting behavior in proxy contests. Voting outcomes in proxy contests are binding rather than advisory as is the case for voting on shareholder proposals and in non-contested board elections. Research shows that institutional investors' voting stance is sensitive to both firm performance and the activist's track record. Though passive funds are, unconditionally, more friendly towards management, they remain alert monitors in that their votes respond to firm

performance. Moreover, activists tend to target firms with a friendly shareholder base and are more likely to opt for settlements when shareholder support is short of being strong. Interestingly, the stance of passive funds turns out to be particularly pivotal for activists' choice of targets and the likelihood of a settlement. Section 5 further points to the growing importance of retail investors due to progress in both regulatory rules and technology.

An important aspect of recent research on hedge fund activism is that it has evolved beyond the focus on activists and target firms and instead explores the impact on other stakeholders. Section 6 surveys evidence on how hedge fund activism impacts the welfare of debtholders, employees, and the target firm's leadership (CEO and directors). This body of work suggests that senior management and incumbent directors are mostly worse off as the turnover rate nearly doubles from the normal level of turnover. CEOs are also provided with more performance-sensitive compensation. The rank-and-file employees do not suffer, although they do not share in the value creation accrued to shareholders. The evidence regarding consequences for debtholders is mostly mixed, providing weak support for the idea that current debtholders lose out due to restructuring at target firms in the post intervention period. Section 6 also covers outcomes that have become highly relevant in the late 2010s: whether hedge fund activism can be detrimental to the environment and whether non-target firms are affected by activism due to the anticipation of a probable intervention. Though this research is still new and scarce at this stage, two studies find that target firms actually exhibit a decline in emissions in the post intervention period, likely the product of improved efficiency and investment in new technology. Finally, researchers find that peer firms make changes to several firm policies and show improvements (albeit on a smaller magnitude) similar to that of firms that are actually targeted, suggesting that the disciplinary effect works both directly and indirectly by deterrence.

Section 7 offers some forward-looking projections of new trends in hedge fund activism. Hedge fund activism occupies an important middle ground between takeovers that entail full change in control and internal monitoring via the board of directors and other gatekeepers. Activists are both outsiders and insiders, in that they do not seek full control but operate by "influencing control." Analogous to corporate raiders operate in "the market for

corporate control” (Jensen and Ruback [1983]), activist hedge funds have created a “market for corporate influence” (Cheffins and Armour [2011]). While active money management is about closing the gap between prices and fair values, the presence of activist hedge funds facilitates the convergence between current and potential firm value. This influence- and market-based governance protocol, and a hybrid internal-external role, puts activist hedge funds in a unique position in the broad spectrum of corporate governance.

Several reviews of academic research preceding this article have covered related topics, including but not limited to Gillan and Starks [1998, 2007] and Denes et al. [2017] on general shareholder activism; Yermack [2010] on shareholder voting; Edmans and Holderness [2017] on blockholder governance; and concurrently, Dasgupta et al. [2021] on the role of institutional investors’ in corporate governance. Brav et al. [2010, 2015] have previously also conducted research surveys on hedge fund activism. Whereas Brav et al. [2010] covers the “first-generation” of research on the topic, characterizing the emergence of hedge fund activism and the direct impact on target firms, Brav et al. [2015] focus on the nature and process of value creation from hedge fund activism as well as the research effort into causal inferences. We hope that this review will serve as a synthesis for readers who seek a comprehensive and updated summary of hedge fund activism and the associated literature. The market in which hedge fund activism operates in continues to evolve and so will academic research.

2 Institutional Background

2.1 Hedge Fund Activism as a New Form of Corporate Governance

2.1.1 The History of Shareholder Activism

Shareholder activism is broadly defined as shareholders’ attempt to pressure management for changes in corporate policies and governance with the aim to improve in firm performance, especially in shareholder returns. shareholder activism has been around for as long

as the existence of the stock market. The decade of the 1980s saw the rise of shareholder activism by institutional investors, coinciding with the wave of corporate takeovers by corporate “raiders,” arguably the most aggressive activists. Investors resorted to the market for corporate control to impose discipline on boards and management as a way to mitigate agency problems. Since then, traditional institutional investors (mainly pension funds, mutual funds, and endowment funds), religious organizations, labor unions, individuals, and other groups have all engaged in shareholder activism. Their impact on firm performance, however, has overall been mixed (see the survey by [Gillan and Starks \[2007\]](#)).

An earlier literature finds that large public pension funds and mutual funds have engaged in a variety of tactics to influence corporate management ([Smith \[1996\]](#), [Wahal \[1996\]](#), [Carleton et al. \[1998\]](#), [Del Guercio and Hawkins \[1999\]](#), [Gillan and Starks \[2000\]](#)), but these efforts were associated with minor changes to firms’ corporate governance structures and did not measurably affect stock prices or earnings ([Black \[1998\]](#), [Karpoff \[2001\]](#), [Romano \[2001\]](#), [Barber \[2007\]](#), [Gillan and Starks \[2007\]](#), [Del Guercio et al. \[2008\]](#)). [Becht et al. \[2010a\]](#) gather data on nonpublic and public activism by Hermes U.K., a leading U.K. pension fund. They, similarly, do not find a positive market reaction to public notification of Hermes’s stakes, although there is a significant 3 percent market reaction to governance outcomes of Hermes’s activism.

Despite the steady rise of institutional ownership in U.S. publicly traded equity,² evidence on the efficacy of shareholder activism by the institutional investors points to an inconsequential impact prior to the turn of the century. [Black \[1998\]](#) concludes that the “...Best reading of currently available evidence is that institutional investor activism does not importantly affect firm performance.” [Gillan and Starks \[2007\]](#) similarly conclude that “...There is little evidence of improvement in the long-term operating or stock market performance of the targeted companies.” Work by [Fisch et al. \[2019\]](#), [Bebchuk and Hirst \[2019\]](#), and [Kahan and Rock \[2020\]](#) continues to support the view that the large institutional investors are poor candidates for take the lead in activist engagements by shareholders.

²According to the authors’ own calculation based on Thomson Financial 13F ownership data, ownership by large institutions, that is, those managing over \$100 million U.S. public equity securities (a lower bound for institutional ownership), ownership has increased from 16 percent in 1980 to 32 percent in 2000, and further to 49 percent by 2018.

2.1.2 Why Is Hedge Fund Activism Different?

Despite the extensive discussion in the literature and news outlets, the term “hedge funds” is loosely defined. The commonly agreed upon defining properties of hedge funds, which we adopt in this review, are: i) pooled, privately organized investment vehicles, ii) administered by professional investment managers with performance-based compensation and significant investments in the fund, iii) not widely available to the public, and can only be placed to “accredited investors” who are institutional investors and qualified high net worth individuals, and iv) operate outside of securities regulation and registration requirements as defined by the Investment Company Act of 1940. The typical hedge fund is a partnership managed by a general partner. The investors are limited partners who are passive and have little or no say in the hedge fund’s business.

Hedge funds represent a new genre of activist investors who are relatively free from regulatory and structural barriers that have constrained the monitoring by other institutional investors. Unlike mutual funds, hedge funds can hold large percentage stakes in individual companies and may demand that investors agree to “lock-up” their funds for a period of a full year or longer. In contrast, mutual funds are generally required by law to hold diversified portfolios, and required to sell securities promptly to satisfy daily investor redemption. Moreover, because hedge funds do not fall under the Investment Company Act regulation, they are permitted to trade on margin and to engage in derivatives trading, strategies that are not available to other institutions such as mutual and pension funds. Despite new regulatory effort, notably Title IV of the Dodd-Frank Act in 2010,³ information about hedge fund portfolio holdings (beyond the quarter-end disclosure by all large institutions under the 13F rule), their trading strategies, and returns remain largely concealed from the public. As a result, hedge funds have greater flexibility and privacy in trading than other institutions.

A key difference in the activism launched by hedge funds versus that by traditional institutional investors is the sequence of events that ultimately lead to a change in firm

³Hedge funds with more than \$150 million Assets under management are required to register as investment advisers and to disclose information about their trades and portfolios to the SEC. By registering hedge fund advisers, the SEC can collect necessary information to prevent fraud, limit systemic risk, and provide information to investors.

performance. A mutual fund or pension fund may voice their concern because a portfolio firm has been under-performing due to managerial inefficiency. This type of activism is motivated by a necessity to contain the damage. Their alternative is to take a “Wall Street Walk,” that is, sell their equity stake outright when they are unhappy with the management rather than turn into a shareholder activist and attempt to impact the decisions from within the firm. The price drop and negative signal about firm fundamentals following the exit may serve a disciplinary role ([Admati and Pfleiderer \[2009\]](#), [Edmans \[2009\]](#), [Dasgupta and Piacentino \[2015\]](#)). Overall, activism by traditional institutional investors is an ex-post action whose goal is to preserve value or mitigate observed damage.

An activist hedge fund, on the other hand, is usually not a shareholder at the outset of a firm’s under-performance but chooses to acquire an equity stake once the under-performance is publicly observed and, more importantly, is impounded into the stock price. Activists accumulate most of their stake in a matter of a quarter or two before disclosing their holdings or announcing their campaign ([Brav et al. \[2008a\]](#)). [Collin-Dufresne and Fos \[2015\]](#) further show that activists acquire 3.8 percent of the shares outstanding (about half of the position disclosed in Schedule 13D) during the 60-day window prior to disclosure. Activists are therefore not victims of poor firm performance because they acquire their stake at a price that already reflects the poor performance; but they expect to make a profit from a correction of the inefficiency or governance failure. The alternative for the activist fund, when firm underperformance is not yet public knowledge, is to short the firm’s shares before publicizing the inefficiency, in which case the short-seller benefits from the decline in the share price to its fundamental value.⁴ Hedge funds’ flexibility in adopting multiple trading strategies allow them to trade quickly to capitalize on observed inefficiencies. Therefore, activism by hedge funds is an ex ante strategy to unlock value.

Overall, activist hedge funds occupy an important middle ground between internal monitoring by boards and external monitoring by corporate raiders. Activist hedge funds are more flexible, incentivized, and independent than internal monitors, and they can generate multiple gains from best practices learnt from targeting several companies with similar is-

⁴Such “activist shorts” are not the focus of this study, readers may refer to [Zhao \[2020\]](#), [Appel and Fos \[2020\]](#), and [Molk and Partnoy \[2021\]](#) for detailed analyses.

sues. Conversely, activist hedge funds differ from external corporate raiders, because they take smaller stakes, often benefit from cooperation with management, and must rely on support from fellow shareholders. This hybrid internal-external role puts activist hedge funds in a potentially unique position to reduce the agency costs associated with the separation of ownership and control.

2.2 Legal and Institutional Setting

2.2.1 Duties of Corporate Leadership and Rights of Shareholders

The legal foundation of hedge fund activism is in the duties that corporate leadership (senior management and board directors) owes the firm and its shareholders. Under Delaware Law, officers and directors owe a duty of loyalty to the corporation and its shareholders. They are expected to put the welfare and best interest of the corporation above their own personal or other business interests. In addition, the duty of care requires officers and directors to exercise due care and prudent judgment in the management of the corporation's business as prudent person usually exercises in the management of their own affairs. Finally, the duty of candor refers to a fiduciary duty of the company's management and board members to disclose all the material information required for evaluating the company and its management.

Because shareholders are the sole owners of corporation, the fiduciary duties toward the firm results in "shareholder primacy," i.e., corporate leaders put shareholders, as opposed to other stakeholders' interest, first and strive to maximize long-term shareholder value. Shareholder primacy has been the dominant paradigm since the 1980s before coming under debate or even attack since mid-2010s, especially with the landmark Business Roundtable 2019 Statement, *On the Purpose of a Corporation*, signed by 181 well-known and high-powered CEOs.⁵ Though the debate has attracted significant attention, there has not been a clear doctrinal shift in the law. The former Chief Justice of the Delaware Supreme Court, Leo E. Strine, Jr, states in [Strine \[2015\]](#) that, "Despite attempts to muddy the doctrinal waters, a clear-eyed look at the law of corporations in Delaware reveals that, within the

⁵See *Business Roundtable Redefines the Purpose of a Corporation to Promote 'An Economy That Serves All Americans,'* by Business Roundtable (August 19, 2019).

limits of their discretion, directors must make stockholder welfare their sole end, and that other interests may be taken into consideration only as a means of promoting stockholder welfare.” Thus, when corporate leadership is perceived to have fallen short of its duties, activist hedge funds can intervene based on their legal rights as owners of shares in the target company. Such an intervention can take forms as modest as communication with management, or as aggressive as launching a contested election for the board of directors or the filing of a derivative lawsuit against management’s violation of its fiduciary duties. In fact, “maximizing shareholder value” has been the most common stated general objective of hedge fund activists.

2.2.2 Schedule 13D and the Announcement of Hedge Fund Activism

Though not required and not universal, a large majority of the hedge fund activism events begin, and are announced by, the filing of Schedule 13D with the U.S. Securities and Exchange Commission (SEC). Schedule 13D is a mandatory federal securities law filing under Section 13(d) of the 1934 Exchange Act that investors who are beneficial owners must file with SEC within ten days of acquiring more than five percent of any class of securities of a publicly traded company if they have an interest in influencing the management and control of the company. The intention to influence corporate control or decision-making is broadly defined. The intention applies, for example, to an investor who plans to send an open letter criticizing the management or to an investor who acquires shares after has been announced that the firm is the target of a pending acquisition in order to vote the shares in favor of the merger. The investor is obligated to file a Schedule 13D upon crossing the five percent threshold as in both cases the action influences the management and control of the company.

If, however, an investor purchases shares for the sole purpose of passive investment and desires privacy, the investor can opt to file a Schedule 13G which requires less detail and is not due until 45 days after the calendar year of the date triggering the transaction. Such a rule allows mutual funds and many other asset managers to file on a Schedule 13G when they hold large equity stakes. However, if a hedge fund owns more than five percent and launches a public campaign, then a Schedule 13D is both inevitable and useful as the filing

itself broadcasts the event to market participants, a prerequisite for garnering support. If multiple hedge funds explicitly work in tandem then they are considered one legal group and the five percent rule applies to the whole group. Nevertheless, there may be informal “wolfpacks” where hedge funds support each other’s campaigns without formal coordination (Artiga González and Calluzzo [2019], He and Li [2020], Brav et al. [2021b]).

In a Schedule 13D filing, the filer discloses its own identity and background (Item 2), the size of the position (Item 3) plus all of their purchases and sales within the previous 60 days (Exhibit), and the source of the funding and other contractual arrangements (Item 5). Exchange-traded derivatives must be disclosed, and derivatives that could be directly converted into equity, such as options, are counted toward beneficial ownership. Equity swaps and other OTC derivatives, however, do not have to be fully disclosed except mentioned briefly and often vaguely in Item 5 (Hu and Black [2006]). Most important to our research, Item 4 of Schedule 13D requires the filer to declare its reasons for acquiring the target firm shares, especially if the intention is to engage in a merger and acquisition activity, seek a sale of any material amount of the issuer’s assets, pursue a change in its capitalization or dividend policy, or propose other types of corporate changes. After the initial Schedule 13D filing, the fund is required to “promptly” file an amendment to its Schedule 13D (Schedule 13D/A) if there is any “material” change in its position, including change in the size of the ownership or modification of the plan. Because of the systematic and detailed disclosure requirement, Schedule 13D filings have been the primary information source for virtually all empirical studies of hedge fund activism in the U.S.

2.2.3 Form 14A and Proxy Contests

Some activists’ plans trigger disclosure even at below a five percent ownership level. A proxy contest is the most important example. Boards of corporations run annual elections of all or a subset of their directors. The great majority (over 95 percent in all years in the U.S.) of the board elections are uncontested, that is, the nominating committee of the current board proposes a slate of candidates who are then put for election by shareholders. Shareholders may vote for the candidates or withhold their votes, but, either way, there are no competing

alternatives. As a result, directors in uncontested elections routinely receive overwhelming (over 90 percent) support (Cai et al. [2009], Bebchuk et al. [2020]). During a proxy contest, in contrast, dissidents and incumbents forward proxy solicitation materials to shareholders, who sign and return the proxy form of their preferred group. The agents for each group accumulate votes via the returned proxies and cast these votes at the shareholders' meeting. In the case of a contested solicitation of votes, the following forms are submitted to the SEC through EDGAR: a preliminary proxy statement in connection with contested solicitations (PREC14A) and a definitive proxy statement in connection with contested solicitations (DEF14A). These forms allow researchers to construct comprehensive samples of proxy contests. The result of the contest is binding in that the candidates winning the highest number of votes are elected to the board.

While the process, known as the contested solicitation of votes, has been around since the initiation of the securities laws, the 1992 proxy reform significantly reduced the costs of proxy contests by relaxing constraints on communications between shareholders of public corporations (Sharara and Hoke-Witherspoon [1993], Bradley et al. [2010]). Following the reform, shareholders could contact each other directly to discuss matters relating to the target company. In addition, virtually any shareholder could run as a dissident since the minimum shareholder requirement is essentially non-binding (any shareholder that has continuously held a minimum of \$2,000 in market value, or 1 percent of the company's outstanding securities, for at least one year). For example, Engine No. 1, a newly founded activist hedge fund in 2021, launched a proxy contest against ExxonMobil and won three board seats despite holding a mere 0.02 percent of Exxon's total shares outstanding.⁶ That being said, the equity stake of the dissident block, as well as the track record as an experienced hedge fund activist, are important determinants for the probability of their winning. Therefore, the average ownership stake by dissidents is comparable to the sample of 13D filings (Fos [2017]). Brav et al. [2021c] document that about three-quarters of the dissidents in proxy contests are hedge funds, who launch about four-fifths of the contests during their 2007-2017 sample period. Moreover, in close to half of proxy contests, the dissident wins at least one seat.

⁶See, e.g., *Activist firm Engine No. 1 claims third Exxon board seat* by Pippa Stevens, CNBC (June 2, 2021).

Hence, proxy contests have been an important tool of engagement for hedge fund activists.

2.2.4 Other Venues for Hedge Fund Activism

The same SEC Rule 14a-8, which governs proxy contests, also allows the same shareholders to submit shareholder proposals. The sponsor of a proposal has to commit to be present, or be represented, at the shareholder meeting where the vote will take place. The target firm is required to include the proposal in its proxy materials as well as to organize a vote on the resolution at the forthcoming shareholder meeting. The submission process is nevertheless subject to procedural requirements as well as substantive content restrictions, such that not all proposals make it to the meeting to be voted upon.⁷

Shareholder proposals target a wide variety of issues not all of which are meant to maximize the firm's profitability and value. Governance issues (e.g., executive pay, takeover defenses, board independence), stakeholder matters (e.g., labor union, supply chain), and ESG-oriented issues have gained significant attention starting the 2010s ([Renneboog and Szilagyi \[2011\]](#), [Li et al. \[2021\]](#)). Unlike proxy contests, the voting outcome of the shareholder proposals is precatory which means that management is not legally obligated to follow the preferences of the majority of shareholders. The voting outcomes does impose a significant reputational cost, and can invite escalation of shareholder activism, if firm management ignores the votes of a majority of shareholders, especially in say-on-pay ([Ferri and Maber \[2013\]](#)) and director elections ([Del Guercio et al. \[2008\]](#)). Sponsors of shareholder proposals span the full spectrum of institutions and individuals due to its relatively low cost. Proposals from hedge funds are a small minority among all proposals.⁸ Nevertheless, activist hedge funds often resort to shareholder proposals as a way to express their demands, and their proposals tend to be more directly targeted at issues affecting firm performance and shareholder value.

⁷[Couvert \[2020\]](#) provides a detailed breakdown from initial submission to its resolution. A little over half of the initial proposals eventually make it to the shareholder meetings to be voted upon. The remainder are successfully dismissed by the management, withdrawn by the proposal sponsor, or are settled between the two parties prior to the shareholder meeting.

⁸[Li et al. \[2021\]](#) document that asset managers submitted 13 percent of all proposals between 2010 and 2018. The share of hedge funds is much lower given that the most proposal-active asset managers (such as Calvert) are not hedge funds.

In addition, hedge funds often send open letters to management, hold press conferences detailing their demands and suggestions outside the cycle of the shareholder meetings. Blogs, tweets, and YouTube have also increasingly become the outlets with which hedge funds communicate with both target firms and the general investor public. For example, Carl Icahn twitted in October 2013 that he demanded \$150 billion buyback by Apple, a firm in which he owned a 0.9 percent equity stake, at a dinner the previous evening with the firm's CEO. The stock price went up close to three percent at the revelation of his demand. Third Point commissioned a YouTube video to broadcast its discontent against and plan for Campbell Soup.⁹

Due to the light regulation, hedge fund activists have the full flexibility of adopting the format of engagement that best matches their goals as they initiate their intervention. They are, however, still bound by the anti-fraud provisions of United States securities laws. The great majority of activists still follow the Schedule 13D protocol because the over five percent ownership and the formal filings (in all but the mega-capitalization firms) provides both credibility and visibility. More importantly, the proposals and open letters from hedge fund activists — despite being precatory — tend to be more powerful compared with those from other sponsors to the extent that hedge fund activists often stand ready to escalate to more aggressive forms of activism, such as proxy contests and lawsuits, if their demands fall upon deaf ears.

2.3 How Do Hedge Funds Overcome Standard Constraints on Activism?

2.3.1 Incentives and Conflicts of Interest

Asset managers' interests are generally aligned with their investors as an increase in the value of portfolios undoubtedly benefits the portfolio managers both directly in terms of financial compensation and indirectly in terms of career outcomes. The strength, as well as the nature of the incentives, however, do vary. Although money managers of other institutions can be

⁹See "*Empty the Can*" presented by Third Point Capital on YouTube.

awarded bonus compensation in part based on performance, their incentives tend to be more muted because they (and the institution they work for) capture a relatively small percentage of superior returns that have been generated, and because the Investment Company Act of 1940 limits performance fees. Passive funds, which account for 45 percent of the assets under management of mutual funds in 2020 based on information from Morningstar, are assessed and rewarded primarily by low fees and minimal tracking errors from the benchmarks instead of absolute returns. Therefore, they have weaker incentives to engage in costly interventions even though their shareholders can benefit from value improvement of portfolio firms. Finally, pension funds as investors often have multiple conflicting objectives in addition to enhancing fund value ([Romano \[1993\]](#)).

Institutional investors may also be reluctant to “rock the boat,” that is, to confront the management, due to other business relations or considerations. Conflicts of interest lead to deviations from shareholder value maximization. Corporate pension plans (defined benefit plans or employee individual accounts in the form of 401(k) plans) frequently employ mutual fund families as trustees or other service providers. These business ties are lucrative to the fund families and therefore incentivize them not to publicly criticize the management of those portfolio firms, let alone to launch an anti-management campaign. The conflict of interest can even potentially bias funds’ voting in controversial proposals sponsored by activists. The empirical evidence on the voting bias is, however, relatively weak. [Davis and Kim \[2007\]](#) find that aggregate votes at the fund family level indicate a positive relation between business ties and the propensity to vote with management. [Ashraf et al. \[2012\]](#) find that pension business ties do not influence mutual funds’ votes after controlling for fund family heterogeneity, although [Cvijanović et al. \[2016\]](#) do find evidence of influence.

Hedge funds, in contrast, are ultimately motivated by maximizing portfolio returns, especially returns in excess of a benchmark or that of their peers. Hedge fund managers have sharp incentives to generate positive returns because their pay depends primarily on performance. A typical hedge fund charges its investors a fixed annual fee of 1-2 percent of its assets plus a 10-20 percent performance fee based on the fund’s annual return. Moreover, hedge funds rarely have business ties with portfolio firms, and they usually do not sell

products and services to the firms whose shares they hold. The lack of a business relation beyond portfolio holding frees the activist from the concern of business backlash from the management of the firms they target. Unlike pension funds, hedge funds are not subject to extensive state or local influence, and usually the activist does not have political ambitions. Overall, hedge fund managers have powerful and independent incentives to generate positive returns by improving the value of the target companies.¹⁰

2.3.2 Overcoming Collective Action Problem

The most serious barrier to shareholder activism is the collective action problem ([Black \[1990\]](#), [Kahan and Rock \[2007\]](#)). Unlike corporate takeovers where a successful raider ends up with an ownership of a controlling stake in the target company, an activist, with a few exceptions, remains a strict minority shareholder and has to share most of the value created from a successful activist engagement with all fellow shareholders. The activist, however, bears all the costs for the actions taken to unlock value. Actively monitoring and filtering targets already consume research and administrative resources, and other escalated forms of activism, such as proxy contests, often cost in the unit of millions of dollars ([Gantchev \[2013\]](#)). Activist hedge funds cannot completely evade the free riding problem because any appreciation in the price of the stock is captured by all shareholders. However, they are able to mitigate this issue in multiple ways.

First, unlike traditional institutional investors who are subject to diversification requirements due to either sheer size ([Morley \[2019\]](#)) or regulation,^{11,12} hedge funds often manage

¹⁰Although many private equity or venture capital funds also have these characteristics, those funds are distinguished from hedge funds because of their focus on private capital markets. Private equity investors typically target private firms or going private transactions, and acquire larger percentage ownership stakes than hedge fund activists. Venture capital investors typically target private firms exclusively, and invest at much earlier stages than both private equity and activist hedge funds. Nevertheless, the lines among these investors are not always sharp and thus there is some overlap, particularly between some private equity firms and activist hedge funds. In most of such cases, the private equity firm targets a publicly traded firm with an intention of pushing the firm to go private.

¹¹The largest equity mutual funds have assets under management in hundreds of billions of dollars. For example, Fidelity 500 Index Fund managed \$274 billion dollars by the end of 2020. It is impossible to have a undiversified portfolio at this size. The average (median) activist hedge fund manages \$271 (\$67) million in early 2000s according to [Brav et al. \[2008b\]](#)

¹²For example, the Employee Retirement Income Security Act of 1974 (ERISA) lists diversification as part of the fiduciary duties of pension fund planners/managers in order to minimize the risk of large losses.

concentrated portfolios. The typical pure-play activist hedge funds hold a stake in no more than two dozen of companies, some in even fewer companies, based on 13F filings. At the end of June 2021, Pershing Square, a prominent activist fund with \$10.4 billion under management, invested in seven publicly listed firms based on the fund's 13F filings, with positions ranging from 8.2 percent to 21.6 percent of its public-equity portfolio. Similarly, the \$73 billion Elliott Management held a 21-stock portfolio in most of 2020. Such concentrated investments result in activist hedge funds' realizing outsized portfolio returns upon a successful intervention, but also calamitous losses upon defeat. Starboard Value's close to \$600 million gain from Darden Restaurants in 2013-2016 and Pershing Square's near \$500 million loss in J.C. Penny from 2010 to 2014 exemplify the consequences of a non-diversified investment. The high idiosyncratic volatility is borne by the hedge funds' own investors who are presumably more risk tolerant, as compared to the investors or beneficiaries of traditional institutional investors, given the regulation on hedge fund investor eligibility.

Second, hedge funds have far more flexibility in deploying derivatives and leverage, so that they are able to amplify the gains from their costly effort. It is worth noting that the typical hedge fund manager's incentives, a combination of asset management fees (usually between 1-2 percent) and profit sharing (typically 10-20 percent), act as an embedded leverage for fund managers, who are usually the general partners, allowing them gain disproportionately from successful interventions. The funds' outside investors, who are limited partners, share more of the losses than gains under the typical compensation structure. Even though the appreciation in the stock price is shared by all remaining shareholders, the leading hedge funds, especially their general partners, enjoy amplified gains. [Brav et al. \[2008b\]](#) confirm large positive abnormal return to hedge fund activists using return data from self-reported hedge fund databases and supplemented with returns imputed from quarterly holding based on 13F filings. The authors show that activist hedge funds enjoy even higher returns than other equity-oriented hedge funds for the period from 2001 to 2007.

2.3.3 Other Regulatory Differences

Mutual funds are subject to several other regulatory requirements that limit their ability to lead activist campaign beyond a friendly engagement. A key service mutual funds provide their investors is liquidity, in most cases a right on the investor part to buy into and redeem from a fund at the quoted net asset value per share (NAV) on a daily basis. Fund flows, which are hard to predict, prevent funds from entering into a campaign that requires committed capital for as long as several years until a resolution is reached. A more serious potential consequence to mutual funds from engaging in explicit and aggressive forms of activism is risking losing their freedom to trade. Shareholder activism, especially in the form of a Schedule 13D filing, implies that the shareholder intends to “influence control” under section 13(d) of the Securities Exchange Act of 1934. If the engagement goes beyond high-level talks with the management, material and non-public information may be exchanged. The acquisition of such information, planned or inadvertent, would place a restriction on the fund’s ability to trade freely, in order to be compliant with the insider trading rules of the SEC. Such a restriction is not acceptable for most mutual funds as they are expected to provide daily liquidity to current and prospective investors, and must trade to accommodate daily flows even if they do not intend to otherwise actively change their portfolio composition.

Hedge funds, in contrast, can demand that investors agree to “lock-up” their capital for a meaningful period of time. The typical hedge fund imposes a one-year lock-up for new capital, followed by monthly or quarterly liquidity with advance notice ([Aragon \[2007\]](#)). The ability to command a block of committed capital allows activist hedge funds to deal with the restrictions on flow and trading, and therefore enables them to enter into engagements that could be both of a long-duration and involve a significant exchange of information. For example, Starboard Value committed over \$350 million of capital for over two years to bring the Darden Restaurant engagement to full fruition; and during that time the CEO of Starboard Value, Jeff Smith, also served on Darden’s board of directors. Such a deep engagement constrained the hedge fund from trading the Darden Stock given the heightened threshold for compliance and disclosure.

3 Data Collection and Descriptive Statistics

3.1 Data Collection

3.1.1 Construction of the Sample of Hedge Fund Activism Events

There is no official or standard database for hedge fund activism events. The first generation of research on hedge fund activism (e.g., Brav et al. [2008a], Clifford [2008], Greenwood and Schor [2009], Klein and Zur [2009], Boyson and Mooradian [2011]) develops a procedure that gathers data from regulatory filings, news media, and other sources. We follow this procedure to create a comprehensive sample of hedge fund activist events spanning the period from 1994 to 2018.

The main source of information comes from Schedule 13D filings available from EDGAR, the official website for regulatory filings with the SEC. Section 13(d) of the 1934 Securities Exchange Act requires investors who are beneficial owners of over five percent of any class of publicly traded securities of a company, and who have an intention to influence corporate control, to disclose their ownership and intent within 10 days of crossing the five percent threshold. Because activists, by definition, intend to influence corporate policies, it is necessary that they file Schedule 13D if their stake exceeds the five percent threshold. In contrast, investors who accumulate over five percent (but below 10 percent) for passive investment purposes are only required to file a Schedule 13G instead which requires less information and allows for a longer delay in disclosure. Most large positions by asset managers are passive investments and are filed under Schedule 13G. If a 13G investor decides to take actions that could influence corporate policies or control, the investor must convert the 13G filing into a 13D filing before taking the planned action. For this reason, a schedule 13D filing is a signature of investor activism. The 13D filing provides information about the identity of the filer, filing date, ownership and its changes, cost of purchase, and most importantly, the purpose of the investment (from Item 4 “Purpose of Transaction”).

We download all Schedule 13D filings and their amendments (13D/A filings) over the sample period, and then exclude 13D filings targeting non-regular corporations such as closed-end funds and real estate trusts. We also exclude 13D filings whose Item 4 indi-

cates a purpose of M&A risk arbitrage,¹³ bankruptcy reorganization, or distress financing.¹⁴ All these transactions involve an intention to influence corporate control and hence trigger the filing of Schedule 13D, but do not represent an activist strategy in our context. Among the list of “qualified” Schedule 13D filings, we identify hedge funds among the filers based on their defining properties described in Section 2.1.2, namely that they are pooled, privately organized investment vehicles administered by professional investment managers with performance-based compensation, and not available to the general public. The verification of hedge fund status includes matching with commercial hedge fund databases that rely on voluntary reporting (including CISDM and Lipper, accessed via WRDS), mandatory filings on Form ADV required of investment advisors, and website and news searches, we classify 880 unique hedge funds that led a total of 4,595 13D-filing activist events during the sample period.

While the filing of a Schedule 13D is extremely common, it is not a necessary precursor to the launching of an activist campaign. It is possible that an activist acquires a block that places the fund among the largest outside shareholders but it still holds less than five percent, especially in a mega-cap target firm. In such cases the activist is not required to file a Schedule 13D. Examples include Carl Icahn’s campaign in Time Warner in 2006 with a three percent stake, and Trian Partners’ proxy contest against Procter and Gamble in 2017 with a 1.5 percent stake. To ensure that our sample collection covers these below-five-percent events, we implement the following steps. First, we process all Preliminary and Definitive Proxy Statements (PRE 14As and DFAN14As) that are filed with the SEC by investors who intend to or are engaged in a proxy fights with a firm’s management (i.e., a contested election for the board of directors). Though dissidents hold over five percent stakes in three-quarters of the proxy contests, and hence these events overlap with those gathered based on 13D filings, the legal threshold of ownership for launching a proxy contest is essentially

¹³In an M&A risk arbitrage, an investor buys the shares of the firm that is the target of a recently announced merger or acquisition, with an intention to vote for the deal in order to realize a profit from the price convergence at deal completion. See [Cornelli and Li \[2002\]](#) for a model and [Mitchell and Pulvino \[2001\]](#) and [Hsieh and Walkling \[2005\]](#) for empirical evidence.

¹⁴We refer the readers to [Jiang et al. \[2012\]](#)) and [Lim \[2015\]](#) for dedicated analyses on hedge fund intervention at firms in bankruptcy.

non-binding (as low as \$2,000). We therefore supplement the sample with all proxy contests led by investors identified as hedge funds with ownership below the five percent threshold.

Second, we conduct a full search of the Dow Jones and Factiva news archive with key words “hedge fund” and words standing for activist campaigns including, “activism,” “activist,” and “contest.” Finally, we retrieve from FactSet’s Shark Repellent database all activist campaigns launched by entities that are identified as hedge funds by the data vendor, and those that could be matched to our hedge fund list. With a comprehensive search from the three steps specified above, we uncover 62 additional events to the 13D-based sample. In all, our sample includes 896 unique funds, 3,065 unique target companies, and 4,657 events, which represent the most comprehensive activist data base in the current literature.

3.1.2 Other Data

Information about target firms, such as market capitalization, leverage, analyst coverage, and institutional ownership is retrieved from standard databases including CRSP/Compustat, I/B/E/S, and Thomson Reuters Ownership Database. Information about hedge funds and investors are gathered based on data from FactSet, Form ADV, and hedge fund databases based on voluntary reporting (CISDM and Lipper).

Our review is primarily based on U.S. data. We have not collected activism data outside the U.S. but will briefly review work by others covering these events. Generally, sources of data on hedge fund activism vary more across countries outside the United States. [Becht et al. \[2010a\]](#) collect their sample of activism events in the United Kingdom using proprietary data from one hedge fund: the Hermes U.K. Focus Fund. [Mietzner and Schweizer \[2014\]](#) construct their sample from the disclosure of the acquisition of at least five percent of shares in public firms from the German Federal Financial Supervisory Authority. [Stokman \[2008\]](#) performs extensive news searches to collect his sample of activism incidences in Europe. Similarly, [Uchida and Xu \[2008\]](#) collect a sample of Japanese activism events by searching Edinet’s large shareholding filings and Nikkei Shinbun, one of the largest business newspapers in Japan, with a focus on events managed by two activist funds: Steel Partners and Murakami Fund. Finally, [Becht et al. \[2017\]](#) provides the most comprehensive international evidence

of hedge fund activism in 23 countries, most of which are in Europe but also include Japan, with a focus both characteristics and performance of activist engagements across countries.

3.1.3 Overview of Hedge Fund Activism Events

Figure 1 plots the number of activist hedge funds and targeting events annually from 1994 to 2018. Panel A of the Figure shows that hedge fund activism engagements picked in the late 1990s, increasing from fewer than 100 cases a year to over 300 in 2007, just before the financial crisis. On average, 3.0 percent of publicly traded firms are targeted by activist hedge fund in a typical year.¹⁵ Though activist engagements saw a steep decline during the crisis, they have increased to a stable number of 200-250 events a year since 2010. Considering the continuous drain on the number of publicly traded companies over the years since early 2000s, the percentage of firms targeted has in fact increased in the period after the financial crisis. Panel B plots the number of hedge funds that engage in activism, defined as funds leading at least one activist event during a given year. We see a steady increase, from fewer than 50 funds at the beginning of the sample to over 150 towards the end.

[Insert Figure 1 here.]

We observe a high concentration of events towards the most prominent or successful activist funds in that 5 percent of the activist hedge fund account for 40 percent of all the activities. Figure 2 shows the histogram of the distribution for the full sample period (Panel A), as well as separately for 1994-2009 and 2010-2018 (Panel B). The figure shows that about half of the funds that have ever launched an activism event are “accidental activists” in that they engaged just once or twice. These funds pursue general investment strategies but do not exclude engagements with management when they expect to generate shareholder value via engagement given the prevailing circumstances. On the other end, about 45 funds are dedicated activists in that they have launched over 20 public campaigns over the sample period. Top names include Gamco Asset Management, Carl Icahn, and Elliott Associates, for example. [Krishnan et al. \[2016\]](#) demonstrate that the success of the top activist funds

¹⁵We rely on the CRSP database (accessed via WRDS) to define public firms, in a given year, as U.S. firms covered by CRSP that have a market price quote at the end of the year.

can be attributed to both target selection skills and a reputation for “clout and expertise,” manifested in their ability to engage in difficult interventions. These activists target larger firms, launch successful proxy fights, file and win lawsuits, pressure target boards through the media, overcome anti-takeover defenses, and are able to more frequently replace board members.

[Insert Figure 2 here.]

3.2 Characteristics of Hedge Fund Activism Events

3.2.1 Activist Hedge Funds’ Objectives and Tactics

While hedge fund activists engage with the management at target firms with the general goal of enhancing shareholder value, their interventions involve a variety of stated objectives and tactics. Based on information from Item 4 “Purpose of Transaction” in the Schedule 13D filings and press reports or news coverage when it is available, we classify the underlying motives into five major categories, summarized in Panel A of Table 1. For each category, we further classify events into hostile and non-hostile groups, depending on whether the campaigns involved an open confrontation with the management.

[Insert Table 1 here.]

The first objective, “General undervaluation,” includes events in which the hedge fund believes that the company is undervalued and/or that the fund can help unlock shareholder value. Moreover, an event falls into this category if and only if the activist does not specify any additional tangible objectives based on publicly available information. Table 1 shows that such events make up 47.0 percent of the sample. As expected, all events that fall into this category are non-hostile, as an open confrontation would require that the activist present more detailed information including their vision and plan for the target company. By construction, this category is mutually exclusive with all the other four because the first category precisely precludes activists from presenting any specific objectives.

The second objective, “Capital structure,” which represents 13.1 percent of the sample, includes activism targeting a firm’s payout policy (dividends and share buybacks) and capital

structure (debt and equity issuance, and recapitalization). In a large majority of the cases in this category, hedge fund activists propose changes geared toward the reduction of excess cash and an increase in payouts to shareholders. This group of events also involves modifying seasoned equity offerings or proposing debt restructuring. Target firms in this category are mostly mature, cash-flow rich firms, often with a limited growth potential or those experiencing a slow down in growth. These firms are prime candidates for the Jensen [1986] free cash flow problem where, instead of returning the funds to investors, managers invest in negative-NPV projects with free cash flows due to their incentives for empire building and diversification that are not aligned with those of shareholders.

The third objective includes activism targeting issues related to “Business strategy,” such as operational efficiency, business restructuring, and growth strategies. This group represents 18.5 percent of all events in the full sample. The fourth category, “sale of the target” involves events in which activist hedge funds attempt either to force a sale of the target company (or its main assets) to a third party, or, in a small minority of the cases, to acquire the target company themselves.

Last, the fifth objective involves activism targeting “Corporate governance,” which involves 35.5 percent of the sample events. In this category, hedge funds make a variety of attempts, including but not limited to rescinding takeover defenses, ousting the CEO or chairman, challenging board independence and fair representation, demanding information disclosure and question potential fraud, and challenging the level or the pay-for-performance sensitivity of executive compensation. The last four objectives are not mutually exclusive as one activist event can target multiple issues. For this reason, the percentages of sample representations add up to over 100 percent.

Panel B of Table 1 summaries seven categories of tactics adopted by activist hedge funds. In close to a half (49.3 percent) of the cases, the hedge fund indicates that the stake is for investment purposes, and the tactic is restricted to “communication” with the board/management – the most modest form of shareholder engagement. By construction, this category is mutually exclusive with the other six, as a single event may see multiple tactics from the latter six categories. In 23.4 percent of the cases, the hedge fund seeks

board representation without a proxy contest or confrontation with the existing management/board. In such cases, the activist aims at typically a small number (one to two in most events) of board seats in non-contested elections. That is, the “activist directors” are on the same ballot as management nominees, often time as a result of a settlement (Gow et al. [2016], Bebchuk et al. [2020]).

In the third category of tactics, making up slightly over one-third (35.6 percent) of the cases, the hedge fund makes a formal shareholder proposal, or publicly criticizes the company and demands change. The tactic remains at the level of “persuasion” in that the demands are not binding on the management even if the proposal was to receive a majority of shareholder support. If the tactic does not accomplish the intended goals, the activist can escalate the engagement into a threat (the fourth category) or actual (the fifth category) proxy contest, which is a contested board election in which shareholders select between the slate of nominees proposed by the management versus that advocated by the activist. These two categories account for 8.0 percent and 11.6 percent, respectively. In addition, activists may sue the management or directors for failing their fiduciary duties, conflict of interest in related-party transitions, or even fraud (3.6 percent of the cases). Finally, activists may resort to full control with a takeover attempt, though such cases are quite rare (3.2 percent).

An important feature of our sample is that we include both hostile and non-hostile interactions between funds and targets. It is clear from the classification of the tactics that the last four categories are confrontational, and hence hostile; while the first category is non-hostile. It is less clear how to classify the second (seeking board representation without a contest) and third (shareholder proposals) categories, but most events are non-hostile if we define hostility by the tone of the language the activists voice their concerns. For example, a shareholder proposal for higher payout is usually non-hostile; but a demand for the ousting of the CEO almost surely is.

Although many media commentators have characterized hedge fund activists as fundamentally hostile to managers, we find that hedge fund activists are openly hostile in less than one-quarter of the events. It is also not surprising that the “Sale of firm” and “Governance” objective categories include more hostile cases (around one-quarter) than the “Capital struc-

ture” and “Business strategy” categories (around one-fifth). More commonly, hedge fund activists cooperate with managers, at least at the initial stage of their intervention, as hostile tactics are costly to both sides. For example, a dissident’s costs of running a proxy fight can easily rise to millions of dollars as estimated by [Gantchev \[2013\]](#).¹⁶ Overall, activists achieve all or most of their stated goals in about two-thirds of all cases.

3.2.2 Activist Hedge Funds’ Capital Commitment and Investment Horizon

The popular narrative often characterizes hedge fund activists as “short-term” minority investors who have unduly high influence relative to their capital commitment and investment horizon.¹⁷ It is thus helpful to measure the two parameters accurately in order to shed light on the debate. Panel A of [Table 2](#) reports the size of the activists’ stake in their target firms, both in dollar value (at cost, in millions of 2018-dollars), and as a percentage of outstanding shares of the target.

[Insert [Table 2](#) here.]

Information in the columns in [Table 2](#) denoted “Initial” comes from Item 2 in the Schedule 13D filing in which filers are required to disclose the size of investment in the target company. For the non-Schedule 13D events, the information is collected based on searches of several news archives. When unavailable, we resort to the closest quarter-end position in Form 13F at the initiation of the event. The columns labeled “Max” provide the maximum stake that the funds accumulated in the target, which is retrieved from the subsequent amendments to the 13D filings, or 13D/A filings. Values for the non-13D events are from the follow-up of the respective sources. The last four columns in Panel A present this information for the subsample of hostile events.

¹⁶In the Trian Partners versus DuPont proxy fight in 2015, the activist spent \$8 million launching the contest and DuPont spent \$15 million to defend. See [DuPont spent \\$15 M to keep activist investor off board](#) by Jeff Mordock, USA Today (May 19, 2015). In the Trian Partners versus P&G proxy fight two years later, the two sides were estimated to have spent at least \$60 million. See [Procter & Gamble’s count shows how close proxy vote was](#) by Cecilia Kang and Julie Creswell, New York Times (October 16, 2017).

¹⁷In his book entitled “Invasion of the Locusts,” Werner G. Seifert, former CEO of Deutsche Börse likened activist hedge fund TCI to the insect.

The median initial (maximum) percentage stake that a hedge fund takes in the target is 6.6 (9.4) percent, and the median (average) dollar stake, at cost, is 15.2 (89.6) million in 2018 constant dollars. We note that the hostile cases exhibit larger ownership stakes in target firms and greater capital commitments by the hedge funds, especially at the higher percentiles of the sample. Activists' maximum investment in targeted firms is about 50 percent higher than their initial stake across all percentiles. Even at maximum stakes, it is important to note that the activism that we analyze does not generally involve controlling blocks. The inter-quartile range of hedge funds' initial stakes ranges from 5.4 to 9.8 percent, and the 75th percentile of the maximum ownership falls below 15 percent. Even at the 95th percentile of the sample, hedge funds hold 33.8 percent in the target companies at the maximum of the investment, considerably lower than the majority requirement. These statistics are comparable across different studies. For example, [Boyson and Mooradian \[2011\]](#) document that the average initial (maximum) percentage ownership by hedge funds in target companies is 8.8 (12.4) percent. [Greenwood and Schor \[2009\]](#) similarly report a 9.8 percent average initial ownership in their sample.

This evidence shows that activist hedge funds do not, in general, aim to take control of their target firms. Instead, they hope to facilitate value-enhancing changes as minority shareholders. As such, they need to work with and win support from other shareholders, especially on issues that require shareholder voting, either in shareholder proposals or proxy contests. These features distinguish the activist hedge funds from the corporate raiders in the 1980s who sought to obtain full control such that they can dictate firm policy as well as internalize all the benefits from their intervention. More importantly, the strict minority ownership in almost all the cases and the resulting necessity to win support from fellow shareholders restrict the ways that activists can extract private benefits from the intervention that may hurt the interest of other shareholders including the long-term shareholders. For example, [Brav et al. \[2021c\]](#) show that dissidents never win a proxy contests if they do not receive the support from any of the Big Three institutions (BlackRock, Vanguard, and State Street).

Activist hedge funds' investment horizons have been an issue of contention, as critics

often characterize activist funds as short-term investors aiming at quick gains, which could create a potential conflict with long-term shareholders (Coffee and Palia [2016], Strine [2017]). Taking the investment horizon as a proxy for such short term incentives, we are able to use multiple sources to determine the duration of activist investment. The most direct and reliable source is the “exit date” defined as the time when the hedge fund significantly reduces its investment in the target company. If the hedge fund’s stake falls below five percent after the first Schedule 13D filing, the last amendment reported on Schedule 13D/A reveals the date, remaining stake, and sometimes sale price of the transactions that free the hedge fund from future reporting obligations associated with the five percent or more investment. Thus, we are able to use the last 13D/A filing to determine when the ownership drops below the five percent disclosure threshold, or the “exit date.” When such information is not available, we use the date when the outcome of sale of the target or the fund’s withdrawal from the intervention is announced. Note that many events toward the end of our sample are still unresolved. About one-seventh of the sample events lack exit date information.

Focusing on the subsample of completed events, where the information to determine the exit date is available, Panel B of Table 2 shows that the median duration from the first Schedule 13D filing to divestment is 262 days. We also find that the average duration of investment is 532 days, which implies that the distribution of the duration is right-skewed. The 25th and 75th percentile figures for the full sample are 99 days and 616 days, respectively. Furthermore, events that are initiated with hostility see a somewhat shorter investment horizon than the non-hostile events (212 at median and 409 days on average). The statistics reported in Table 2 generally underestimate the total duration of hedge funds’ investment in the target companies both because they exclude investments censored at the end of the sample period and because they assume that dropping below the five percent level reflects divestment while many funds own just below five percent in order to avoid obligations and visibility associated with an active 13D position.

For a subsample of events where 13F holdings data are available, Boyson and Mooradian [2011] show that for hostile (non-hostile) events, the average duration of activist hedge funds’ investment in their sample is 496 (773) days. Similarly, Brav et al. [2008a] estimate that

the average annualized portfolio turnover rates (based on interquartile portfolio turnover using 13F holdings data) is close to 5 percent, corresponding to a duration of two years. To put these turnover estimates in perspective, [Edelman et al. \[2019\]](#) report that the average portfolio turnover rates, based on the 13F data and for similar time periods, are 64 percent, 133 percent, and 60 percent for mutual fund companies, hedge funds, and other professional asset management companies, respectively. Activist hedge funds therefore tend to be longer-term investors relative to the average mutual fund and much more so relative to the average hedge fund.¹⁸

3.2.3 Characteristics of Targeted Firms

Activist funds do not target companies randomly, but instead select firms that are undervalued relative to their potential and whose undervaluation can be reversed with corrective actions. Such strategic targeting should be reflected in the observable characteristics of the firms targeted by activists. [Table 3](#) reports the summary statistics of the firm characteristics in the year before they are targeted in the first seven columns, including mean, standard deviation, and the values at the 10th, 25th, 50th (median), 75th, and 90th percentiles. For a straightforward peer comparison, we also quantify the representation of the target firms in each of the quintiles formed by the universe of Compustat firms matched by the year prior to targeting.

[Insert [Table 3](#) here.]

[Table 3](#) shows that hedge funds tend to target low- and mid-cap (MV) firms although they do not spare the largest firms. Target firms are most overly represented among the second quintile (i.e., not the smallest) market cap among all publicly traded firms (25.7 percent, relative to the neutral value of 20 percent), and 14.4 percent of the targeted firms are drawn from the top quintile. The book-to-market ratio (BM) is also revealing as the frequency within each quintile is monotonically increasing from the lowest to the highest book-to-market ratio, suggesting that higher undervaluation is associated with a heightened

¹⁸As expected, Pension funds and endowment funds have the lowest portfolio turnover rates, at 32 percent and 27 percent on average, by the same source.

probability of targeting. Institutional ownership (*Inst*) has a similar association with targeting. Poor stock returns during the past 12 month (*StkRet*) and lower analyst coverage (*Analyst*) are associated with a higher likelihood of targeting.

Putting all of these covariates together, Table 4 presents probit regressions to analyze the partial effects of firm characteristics. The unconditional probability of a firm being targeted by an activist hedge fund is 3.0 in this regression sample. Further, we separate the sample into the periods before and after the Financial Crisis (1994-2009 and 2010-2018). We do so in order to uncover any regime shift in hedge fund targeting, especially given that the first period has been far more heavily researched than the second. In addition to coefficients and *t*-statistics, Table 4 also presents the marginal effect for one standard-deviation change in the values of the covariates from their respective sample means to facilitate interpretation.

[Insert Table 4 here.]

Firm size and valuation are among the most important characteristics associated with targeting. In the full sample from 1994 to 2018, a one-standard deviation increase in (log) market value is associated with a 1.51 percentage point decrease in the probability of targeting which is significant at the 1 percent level. Moreover, the sensitivity is comparable in the two sub-periods. That is, despite the fact that in the post-crisis period activists have begun to target mega-cap firms (e.g., Google, Microsoft, DuPont, and P&G), the bulk of the hedge fund targets remain small- and mid-cap firms.

Activist hedge funds resemble value investors in that their target firms have low valuation, as measured by Tobin's *q* (*Q*). A one-standard deviation decrease in Tobin's *q* is associated with a 0.29 percentage point increase in the probability of being targeted, other things equal. This suggests that activist hedge funds attempt to identify undervalued companies where the potential for improvement is high. The hedge funds' stated goals, as reflected in their Schedule 13D filings, are consistent with this conclusion. Indeed, even the names of the activist hedge funds suggest that the funds and their investors believe they are value investors. A substantial fraction of the hedge fund names in our sample include the word or phrases that connote value investing, notably "value." However, the sensitivity

to measured valuation has decreased in the post financial crisis period although the effect remains marginally significant, which is expected as activists have also turned their sight to high-valuation technology firms in the latter part of the sample.

Firm performance matters for target selection. A one-standard deviation increase in stock return during the past year (*StkRet*), sales growth (*Growth*), and return on assets (*ROA*) are associated with 0.20, 0.07, 0.01 and percentage points decrease, decrease, and increase in the probability of targeting, respectively, but only the former effect is significant. It is worth pointing out that these relations vary between pre- and post-crisis periods. The relation between targeting and stock return is much stronger during the latter period; while the sign of coefficients on *ROA* switches from significantly negative in the pre-crisis period to significantly positive in the post-crisis period. One possible explanation is that the underperforming firms with cash flow problems were low-hanging fruit for the first generation of activist investors while in the post-financial crisis period hedge funds have had to identify targets with issues that are not associated with the traditional fundamental performance metrics such as *ROA*. For example, Carl Icahn targeted Apple in 2013, a highly profitable firm by the usual standards but that was hoarding cash inefficiently. The same firm was targeted again in 2018 by Jana Partners due to its lack of a suitable plan to mitigate iPhone addiction among minors, a potential regulatory vulnerability. There is an insignificant relation between targeting and R&D (*RnD*) in both periods, indicating that activists do not avoid innovative firms.

Capital structure is a significant determinant in that firms with high leverage, as measured by debt-to-capital ratio (*Leverage*), and low payout, as measured by dividend yield (*Divyld*), are significantly more likely to be targeted, with stronger effect in the latter part of the sample period (significant at the 1 percent level). Demanding higher payouts is a recurring theme in activist demands: in 13.1 percent of the events hedge funds make dividend and related payout requests in Schedule 13D filings or in open letters. However, the fact that targets tend to have higher leverage than their peers is inconsistent with the popular view that activists select under-levered targets so that they can load them up with debt and then increase payout to shareholders (e.g., [George and Lorsch \[2014\]](#)).

Next, the impact of business concentration depends on whether we measure it within or outside the firm. Industry concentration, measured by the Herfindahl index of sales at the three-digit SIC level (*HHI-SIC*), is associated with higher propensity for targeting. Firms in highly concentrated industries have higher potential for profitability and the relation is significant at the 5 percent level. On the other hand, the sales Herfindahl index of business segments within the firm (*HHI-Seg*), where a low measure corresponds to more business diversification, is negatively related to targeting, significant at the 1 percent level. This is also consistent with the stated goals of many activists that they wish to see target firms focus on their core competence. Such a relation is consistent with the large literature on the “diversification discount” (e.g., [Lang and Stulz \[1994\]](#), [Rajan et al. \[2000\]](#), [Villalonga \[2004\]](#), [Kim \[2020\]](#)) that due to the fact that management, whose financial and human capital are primarily tied with the firm, desires an unduly high level of diversification at the firm level than their investors, who tend to hold well-diversified portfolios.

The evidence in [Table 4](#) also indicates that the presence of institutional investors facilitates hedge fund activism. A one-standard deviation in institutional ownership (*Inst*) is associated with 0.91 percentage point increase in the probability of activist intervention, representing the second highest marginal effect (below that of the firm’s market capitalization) among all firm characteristics considered in the regression. This effect is consistent with that reported in [Bradley et al. \[2010\]](#) who examine how activist communication with institutional investors encourages more activism against deeply-discounted closed-end funds. The favored shareholder base also avoids retail investor apathy in corporate governance ([Fisch \[2017\]](#), [Brav et al. \[2021a\]](#)). The impact of stock analysts, who primarily serve institutional investors, flips signs over the two sub-periods. Up to 2009, analyst coverage is a significantly negative determinant of engagement; but since 2010, the opposite has been true. This is consistent with fact that activists have begun to target more well-known firms in years preceding this article, and that market depth has become more important since the financial crisis as activist funds have grown in size.

Several variables discussed, including firm size, institutional ownership, and analyst coverage, are all related to the liquidity of the target firm’s stock. For this reason, we include

the last regressor, Amihud illiquidity (*Amihud*), defined as the yearly average, using daily data, of $\sqrt{|Return|/(Dollar\ Trading\ Volume)}$, following Amihud [2002]. Trading liquidity facilitates the accumulation of the activist stake prior to reaching the five percent threshold without a significant price impact and without revealing their presence. It should therefore encourage activism by easing block formation, other things equal. On the other hand, conditional upon acquiring a stake, liquidity favors “exit” over “voice” as a form of shareholder governance (Edmans et al. [2013]). High liquidity allows informed blockholders to divest quickly at low trading costs before the information of their exit is processed by the market and leads to negative reactions — which, in turn, punish the incumbent management. Since activists are generally not pre-existing blockholders but seek to become shareholders in the selected target firms (see the discussion in Section 2.1.2), we expect that the first effect dominates.

The results in Table 4 confirm a positive relation between trading liquidity (the inverse of *Amihud*) and activist targeting. A one-standard deviation decrease in the illiquidity variable is associated with a 0.62 percentage point increase in the probability of being targeted. This result replicates the relation between liquidity and activist block formation studied in Norli et al. [2015] and Mihov [2016] using a variety of specifications and liquidity measures, including the Hasbrouck [2009] effective trading cost measure and the Kyle [1985] lambda (λ). The liquidity level that is relevant to activist targeting is not just a firm-inherent characteristic, but could also be situation-specific within the candidate firms. While activists can take time their trades to accumulate their stake before hitting the five percent threshold, they have only up to ten days before disclosure after the crossing. Thus, trading towards five percent and trading after crossing the threshold entail different interactions with liquidity.

Because the size of activist stake motivates effort (Albuquerque et al. [2021]) and offsets managerial influence (Fos and Jiang [2016]), activists often wish to acquire a stake as high as possible at the pre-impact cost, subject to the obligation to disclose right after crossing the five-percent threshold. Collin-Dufresne and Fos [2015] show that activists’ trades in the stake building-up phase incur little (or even create perverse) price impact because they take the other side of liquidity-motivated trades. They are able to do so due to the flexible duration

of their private information (which is their own intention to intervene) as long as the stake is under five percent. Moreover, an opportunity of a liquidity event that favors buyers prompts activists to exercise the real option of triggering disclosure. [Gantchev and Jotikasthira \[2018\]](#) show that large, liquidity-motivated selling by institutional investors such as pension funds is disproportionately a catalyst for activists' to cross the five-percent threshold, or disclosure-triggering trades. Overall, activists' ability to time liquidity in building up their pre-disclosure stakes has been successful, as [Brav et al. \[2008a\]](#) show. The stock price of targeted firms shows little abnormal positive change until about ten-day prior to 13D, which generally coincides with the triggering event. Such success allows hedge funds to internalize the gain from their planned activism to the fullest extent, making it an important factor in mitigating the free-rider problem.

In addition to firm characteristics, [Brav et al. \[2008a\]](#) posit that activists target firms with issues that are generalizable to a large group of firms, such as changes in governance and payout policies, rather than issues that are specific to one or few candidate firms, such as declining sales of a particular product. It is difficult for activists to fix a firm that suffers from serious operational difficulties or chronic distress, but they can be quite effective in stemming agency problem of free cash flows, such as relatively low dividend yield and diversifying investments that might not be in the best interest of shareholders. Governance issues, including rescinding takeover defenses, promoting board independence, and curtailing executive compensation, are also commonly cited as reasons for activism. Focusing on issues that are generalizable to other potential target firms helps hedge funds lower the marginal cost of launching activism at a new company ([Black \[1990\]](#)).

This style of engagement has evolved since the financial crisis as low-hanging fruits — firms with known problems that are fixable with general governance tactics that do not require an operational deep dive — have been largely exhausted. Post crisis it has become more common that activists have industry consultants on advisory boards or on their payroll. For example, Trian's advisory board included former Heinz executives. Moreover, investments by multiple prominent activists have been articulated in polished and published white papers, often run up to or over one hundred pages requiring months' of due diligence.

Such white papers provide in-depth analysis of the failings of the target firms, what steps are need for improvement, and what the activists would do differently if they and/or their slate of directors were elected.¹⁹ Some activists have become sector specialists by being “serial activists” in particular industries (Boyson et al. [2021]). For instance, hedge fund Altimeter has been a pure-play in airlines, with the help of a former airline CEO. Elliott has, similarly, accumulated in-house expertise in technology after serial engagements with firms like Arconic, Samsung, and SAP. During 1994-2009, there were 95 activist funds who targeted at least two firms in the same four-digit SIC industry, while the same statistic increases to 135 during 2010-2018.

4 Hedge Fund Activism and Firm Outcomes

4.1 *Short-term Average Return and Trading Volume*

4.1.1 *Short-term Average Abnormal Return to the Announcement of Activism*

More than any other type of shareholder activist, hedge funds are results-driven. It is thus important to address the question whether and to what extent hedge fund activism impacts firm operating and financial outcomes. Given hedge fund activists’ focus on value for shareholders and the standard methodology for event-based stock return analyses, we begin with examining short-run average abnormal stock return around the announcement of hedge fund activist campaigns.

Figure 3, Panel A, plots the average buy-and-hold return, in excess of the buy-and-hold return on the CRSP value-weighted index, from 20 days prior to the event date to 20 days afterwards for all 4,094 events from 1994 to 2018 for which daily return and turnover data are required. The event date is defined as the Schedule 13D filing date if available, or the first announcement of targeting if the activism is launched without filing a Schedule 13D since the hedge fund ownership stake is lower than five percent. The solid blue line (left axis) in Panel

¹⁹For example, Trian’s 93-page white paper ([link](#)) proposed that P&G reorganize into three units, amongst other demands. Starboard Value’s white paper on Darden Restaurant ([link](#)) has become a role model for activism that aims at operational enhancements instead of financial transactions.

A plots the average buy-and-hold return while the dashed green line (right axis) plots the change in percentage points of the share trading turnover during the same time window as compared to the average turnover rate during the preceding (-220, -21) event window. Share turnover in the (-220, -21) window is winsorized within-event at the 99 percent extreme to limit the effect of the highest volume trading days on the baseline turnover rates.

[Insert Figure 3 here.]

The average abnormal return for the entire event period is 4.8 percent. Notably, most of the gains take place within ten days leading up to event date. Turnover, however, is elevated during the entire pre-event period. Abnormal trading volume is at its highest, at close to double of normal level of turnover, in the ten-day period prior to the event date. Both return and volume patterns seem to be consistent with the fact that investors are required to file Schedule 13D no later than ten days after the transaction causing them to exceed the five percent threshold.²⁰ It is possible that the filing funds may have purchased additional shares after the disclosure-triggering trades and prior to the disclosure or announcement of the event. Alternatively, the abnormal volume during this period may be consistent with “wolf-pack” investing, in which several hedge funds, who do not formally coordinate, buy into the target firm in tandem; or with “tipping,” where the lead hedge fund reveals its intention to a small number of investors before the public filing. These alternative interpretations of the turnover evidence are later discussed in Section 4.1.2.

Figure 3, Panel B, provides value-weight average abnormal return and share turnover analogues to the evidence in Panel A. We weight with the 2018-adjusted market capitalization measured at 21 days prior to the event date. Average abnormal return is lower at 2.1 percent indicating that price reactions are inversely related to target firm size. We also observe that the magnitude of abnormal share turnover is lower than that in Panel A and now spikes on the event date rather than in the preceding time-period. Additional evidence on the relation between firm size and event day returns is provided in in Panel C. Specifically, we sort event firms into terciles based on their 2018-adjusted market capitalization and then report the

²⁰See Section 3.2.3 for a discussion of hedge fund activists’ trading and target firm’s stock liquidity.

average buy and hold abnormal return for each size tercile. The solid blue line displays the equal-weighted average return for the “small” size tercile, the red dashed line displays the same for the second size tercile and the green dashed-dotted line displays the average abnormal return for the third tercile of the largest event firms targeted by activist hedge funds. As in Panel B, we observe a higher average abnormal return of 9.2 percent for the smaller target firms whereas it is lower at 3.1 percent and 2.2 percent for the second and third size sorts, respectively. As before, essentially all of the drift takes place in the period prior to the event date. While the smaller size sort shows a positive drift throughout the event period, the second and third size sorts show a negative abnormal return a few days prior the event day, indicating that activists time their final acquisition of target firm shares to coincide with a drop in target firm value.

The magnitude of the short-run average abnormal returns is comparable with those in other studies that study activism in the U.S. [Klein and Zur \[2009\]](#) report a 7.2 percent for the (-30, +30) event window. Other studies also document significantly positive average abnormal announcement-day returns ranging from 3 percent to 9 percent for various samples and event windows (see [Clifford \[2008\]](#), [Greenwood and Schor \[2009\]](#), [Boyson and Mooradian \[2011\]](#), [Collin-Dufresne and Fos \[2015\]](#), [Krishnan et al. \[2016\]](#), [Artiga González and Calluzzo \[2019\]](#), [deHaan et al. \[2019\]](#), [Mihov \[2020\]](#), [von Lilienfeld-Toal and Schnitzler \[2020\]](#), [Boyson et al. \[2021\]](#), [Francis et al. \[2021\]](#)).

The stock market’s reaction to the disclosure of activist funds’ engagement outside the U.S. is broadly consistent with the U.S. experience. [Becht et al. \[2010a\]](#) report that the average abnormal return over the (-5, +5) window around the announcement of activism outcomes is 3.9 percent in the U.K. [Becht et al. \[2017\]](#) gather a sample of activism events across 23 countries finding that short run abnormal returns measured over (-20, +20) are highest for their North American sample at 7.0 percent, followed by events in Asia at 6.4 percent, and Europe at 4.8 percent. For Japan, [Uchida and Xu \[2008\]](#) document an average excess return of 5.6 percent for the (-2, +2) event window around the announcement of activist events. [Hamao and Matos \[2018\]](#) document that average buy and hold abnormal returns for the event window (-5, +5) for their sample of Japanese activism events is lower at

1.8 percent. Because the stock price is forward-looking, the combined evidence is consistent with the idea that investors perceive hedge fund activism as value-enhancing for shareholders.

The average announcement-window abnormal returns, split by the activists' stated objectives are as follows: 4.9 percent for the "General undervaluation" objective, 2.7 percent for "Capital structure" oriented events, 6.2 percent for "Business strategy" driven activism, 6.6 percent for activism aiming at the "Sale of target company," and 4.1 percent for events targeting "Governance." The distribution is broadly consistent with several studies that explore the cross-sectional heterogeneity in market perceptions regarding the expected value generated by activism. [Brav et al. \[2008a\]](#) find that activism announcements in which the activist's intent is to sell the target generates the highest abnormal return, with an average of 8.5 percent followed by a 6.0 percent average abnormal return to business strategy-related activism. [Greenwood and Schor \[2009\]](#) report that abnormal returns are the highest for events related to asset sales and block mergers of the target firm. [Becht et al. \[2010b\]](#) document a similar difference in average abnormal returns between acquired and non-acquired targets (8.1 vs. 5.2 percent) for activism events in Europe. On the other hand, the initial returns related to governance-related hedge fund activism are mixed. [Brav et al. \[2008a\]](#) find that activism targeting capital structure and governance issues also generates small positive average returns of 1.5 percent and 1.7 percent, respectively. [Becht et al. \[2010b\]](#) similarly find that the abnormal returns generated by governance issues are not statistically distinguishable from zero, although [Boyson and Mooradian \[2011\]](#) report that governance-related hedge fund activism is associated with the highest favorable stock market reaction.

Event-window price reactions have also been linked to other target firm, fund, and event characteristics. Consistent with the size sorting in Figure 3, [Brav et al. \[2008a\]](#) show that market reaction is negatively associated with firm size, presumably because an activist can have greater influence in a relatively small firms. [Krishnan et al. \[2016\]](#) argue that the activist's reputation impacts the likelihood of a successful outcome, finding higher announcement returns for activists which they classify as having more financial clout and expertise. [Brick et al. \[2019\]](#) similarly find that hedge fund managers' past experience with the target firm's industry is positively correlated with event-day price reactions. [Brav et al. \[2008a\]](#),

however, find that hostile events have an announcement return that is on average 3.8 percent higher than non-hostile engagements. Because hostility, by definition, comes with managerial resistance, the higher positive market response suggests that the intervention adds value but would have not taken place as a “voluntary reform” in the absence of a confrontation.

4.1.2 Trading Around Activism Events

Given the unique legal and institutional setup for Schedule 13D filings (see Section 2.2.2) several papers, beginning with [Bebchuk et al. \[2013\]](#), have investigated how trading and returns evolve around the time in which the five percent threshold has been crossed. Figure 4 extends the analysis in [Bebchuk et al. \[2013\]](#) to our larger sample of activism events, providing evidence on how average abnormal return and turnover vary around the crossing of the five percent threshold. Panels A and B provide equal- and value-weight event-window evidence and Panel C provides size-sorted buy and hold abnormal returns, all measured over the (-20, +20) event window.

[Insert Figure 4 here.]

Now that activism events are centered around the day activists cross the five-percent threshold (rather than the day the market learns of their block ownership as in Figure 3), it can be seen that the positive price drift indeed begins on the day activists make the disclosure-triggering trades. The value-weight abnormal return in Panel B and the size-sorted sample evidence in Panel C indicate that the buy-and-hold stock return prior to the crossing is negatively correlated with firm size. In other words, activists tend to complete the formation of their block after negative abnormal price performance, and more so for the large-cap firms for which the average abnormal performance reaches -3.3 percent. The turnover evidence is also striking. Most of abnormal trading volume occurs on the day the activist investor crosses the five percent threshold. Turnover on that day is, on average, 600.4 percent higher than normal when equal-weighted and 173.5 percent higher when value-weighted. The evidence is consistent with the idea that activists’ purchases comprise a large part of the daily volume on the day of the triggering event. [Gantchev and Jotikasthira \[2018\]](#),

von Lilienfeld-Toal and Schnitzler [2020], and Wong [2020] report a similar spike in turnover on the crossing date.

It is worthwhile to compare the evidence on turnover in Figures 3 and 4. When centering the event study around the day the ownership of the activist becomes public information, we see that abnormal turnover is “spread out” over the ten-day period preceding day zero. Yet, when centering the event study around the day the activist crosses the five percent threshold, the increase in turnover is largely concentrated on the event day. This is driven by the fact that there is heterogeneity in the number of days activists take to file after the crossing of the threshold.²¹ Hence, though most of the abnormal turnover takes place when the activist makes the purchase that takes the hedge fund over the five percent threshold, when these events are pulled together and centered around the day the information becomes public the result becomes the “hump shaped” pattern in turnover observed in Figure 3.

[Insert Table 5 here.]

There have been several efforts to interpret the evolution of trading prior to and subsequent to the crossing of the five percent threshold. Wong [2020] studies the possibility first proposed by Coffee and Palia [2016] that activist hedge funds facilitate the formation of “wolf-packs.” Wong [2020] argues that the focal activist shares with other investors the imminent filing with the SEC. Sharing information helps the activist accumulate more voting power by like-minded investors who, in turn, can benefit from the expected increase in the target firm stock price. The author finds that on the day of crossing, a large part of the turnover does not reflect the activist’s own purchases but rather the trading by other investors which, the author argues, is consistent with the presence of a “wolf-pack.”

Di Maggio et al. [2019], provide a different perspective on the trading around the five percent threshold. They study brokers’ role in disseminating information, focusing on how brokers who are central to their network and have access to information by executing informed trades, then share it with their best clients. In particular, they ask whether brokers

²¹See Table 5 in which detailed information on the number of days from crossing the five percent threshold to the filing of Schedule 13D is provided.

who execute trades on behalf of their client hedge funds share the order flow with other favored clients prior to the filing of Schedule 13D. They find that other clients of such central brokers are significantly more likely to buy the stock of the activist's target firm right before the 13D filing. The evidence on information sharing by brokers rather than the activists is also consistent with the fact that activists would not have an incentive to share information with other investors on the same day they make a large purchase so as to cross the five-percent threshold.

4.2 Long-term Average Abnormal Return Subsequent to Announcement of Activism

The positive average abnormal return documented in the preceding section is based on a short post-event window. It is possible, however, that part, or all, of the average price reaction may reflect a trading friction or overreaction rather than an unbiased reaction to the information revealed in the announcement regarding prospective value changes at the target firm. If so, one should observe a negative average abnormal return in the time period subsequent to the event.

To assess whether average returns are abnormally low in the period subsequent to the announcement of activism, we estimate the long-term abnormal performance to target firms following [Brav et al. \[2008a\]](#) and [Bebchuk et al. \[2015\]](#). Specifically, we form value-weighted calendar-time portfolios that implement a trading strategy of establishing a position in target companies in the month following the announcement of the activism and then holding these targets in value weights for a predetermined time period. Three post-event holding periods are considered: (+1, +12), (+13, +24), (+25, +36), all measured in months relative to the month in which the hedge fund intervention was announced. The latest date for portfolio monthly returns is June 2020. For example, beginning in 1994, the portfolio with holding period (+1, +12), continually adds target target firms that have had an announced activist event in the preceding month and holds these firms through a year after their respective activism event. We similarly form portfolios for the time intervals, (-36, -25), (-24, -13), (-12, -1). Clearly, the latter three portfolios do not represent a tradable strategy as they require

future information regarding the timing of the events. We present the regression results for these portfolios for an ex-post analysis of the stock return comovement of the companies in the pre-targeting period. A minimum of ten firms per month is required for all portfolios. For each of the six portfolios we estimate a regression of the portfolio excess returns on the Fama and French five-factor model including, $R_m - R_f$, SMB , HML , RMW , CMA , and the Carhart momentum factor, MOM . Panel A of the Table 6 provides the regression results. We focus on the regression intercept, the alpha, as evidence for possible mean reversion in target firm prices.

[Insert Table 6 here.]

Estimates of alphas in Table 6, Panel A, in the post-targeting period, i.e., (+1, +12), (+13, +24), (+25, +36), are 0.02, 0.11, 0.39 measured in basis points, respectively. All three are insignificant from zero, consistent with the null that the market properly anticipates the consequences of activism for target firms, and hence there is no further drift. For the three years prior to the arrival of activists we estimate negative and economically large alphas which is consistent with firm under-performance that triggers the arrival of activist investors. Panels B and C of Table 6 provide additional regression results for portfolios in which we form the calendar time portfolios by further conditioning on the target firm size. Panel B (Panel C) provides regression result for a value-weighted portfolio in which the strategy is to purchase small (non-small) target firms. Small (non-small) target firms are those firms whose market capitalization is lower (higher) than the 10th percentile NYSE breakpoint in the beginning of the month. The alphas in panels B and C in Table 6 are all insignificant from zero, implying that we cannot reject the null that target firm prices do not revert to pre-event levels for up to three years after the initiation of activist interventions. Therefore, the evidence refutes the market over-reaction hypothesis, as we do not find evidence that the initial spike in stock price reverses into long-term under-performance. This evidence is consistent with the hypothesis that the stock market perceives hedge fund activism as value creating for shareholders, and, moreover, that the market reaction is in an unbiased reaction to the announcement of activism.

Table 7 provides an analysis similar to that in Table 6 but we now form portfolios in which event month zero is the month in which activists exit from the engagement. Exit is defined in Section 3.2.2. If activists' actions are detrimental to target firm valuation and the market recognizes this effect only after they have exited, we should see long run under-performance subsequent to the exit. We form post-exit portfolios for periods, i.e., (+1, +12), (+13, +24), (+25, +36), relative to the month in which the exit took place. Panel A provides value weight results for the entire sample whereas Panel B (Panel C) provides regression results in which calendar time portfolios hold small (non-small) target firms. The main message from the full sample as well as the samples holdings small or large target firms post-exit is that alphas are typically small and positive and all insignificant. For example, for the full sample, the alphas for the first, second, and third year post-exit are 0.08, 0.16, 0.14 measured in basis points, respectively. The fact that the alpha estimates are all insignificant from zero and mostly positive is consistent with the idea that the market properly prices the target firm, on average, upon learning of the activist's exit.

[Insert Table 7 here.]

Figure 6 shows the buy-and-hold abnormal return from 20 days prior to the activist exit date to 20 days afterwards. The average abnormal return above the value-weighted market benchmark for the entire event period is 2.5 percent. Importantly, there is no notable stock price decline post hedge fund's exit which is disclosed promptly in the last Schedule 13D/A. The overall evidence does not support a "pump-and-dump" scheme by activists.

[Insert Figure 6 here.]

The evidence of insignificant port-event alphas is consistent with that of [Bebchuk et al. \[2015\]](#) who also examine individual firm-level regressions and a matched set of firms based on size and book-to-market in order to find out whether target firms experienced lower average abnormal buy and hold returns than the matched set. These results are also comparable to those in [Clifford \[2008\]](#), who runs calendar-time portfolio regressions for the target firms in his sample. For windows of (0, +12), (0, +24), and (0, +36) (in months), [Clifford \[2008\]](#)

finds that the average three- and four-factor alphas range from 1.0 percent to 1.9 percent per month and that they are, if anything, statistically significant, consistent with underreaction rather than overreaction. Similar evidence for lack of a negative drift is reported in [deHaan et al. \[2019\]](#) who report an insignificant average abnormal one- and two-year post-event return using a matched portfolio approach controlling for size, book-to-market, and momentum.

While the evidence on increased shareholder wealth is consistent with the positive role of activist investors, it does not reveal the source of such gains. In the next section we proceed to document potential mechanisms via which hedge fund activism creates real, long-term value for the target firm and its stakeholders.

4.3 Intermediate and Long-term Firm Performance: The Real Effects of Activist Engagements

4.3.1 Overview

There has been little controversy over the positive short-term stock market reaction as the relation has been documented and replicated by numerous studies covering both the U.S. and overseas markets. On the other hand, there has been significant on-going debate over whether the “real” effects of shareholder activism are positive — that is, whether activists have a long-term effect on target firms that lasts beyond the short-term market reaction. Similarly, whether activist interventions lead to fundamental changes to how target firms operate instead of restructuring that is driven by “financial engineering.”

Most critics of hedge fund activism argue that activists focus narrowly on short-term financial performance, and that such “short-termism,” as well as a focus on financial metrics, is detrimental to the long-term value of the target companies. This concern over short-termism has been repeated by academics ([Bratton and Wachter \[2010\]](#), [Fox and Lorsch \[2012\]](#), [George and Lorsch \[2014\]](#)), members of the government ([Krehmeyer et al. \[2006\]](#), [Strine \[2010, 2014\]](#)), and practitioners.²²

²²See, e.g., *Bite the Apple; Poison the Apple; Paralyze the Company; Wreck the Economy* by Wachtell, Lipton, Rosen & Katz (February 26, 2013); *Activist Hedge Funds Aren't Good for Companies or Investors, So Why Do They Exist?* by Roger L. Martin (August 20, 2018).

Opponents of hedge fund activism argue that although peer-benchmarked operating performance and abnormal stock returns in the year following intervention are positive, the initial metrics reflect unsustainable changes that have been achieved through financial engineering, such as shareholder distributions or increased leverage, and will not translate into long-term improvement especially once a proper benchmark is set. For example, it has been argued that activists benefit at the expense of long-term shareholders through “pump-and-dump” schemes, in which the activist sells the shares after earning a short-term profit while leaving the firm in a worse situation than before.²³ A related critique is that the purported gains to activists reflect wealth-transfers from the firms’ other stakeholders, such as bondholders (Klein and Zur [2011]), rather than evidence of genuine long-term value creation. In the rest of this section, comprehensive empirical evidence is presented to directly address the concerns regarding the long-term effects of hedge fund activism.

4.3.2 *Operating Performance*

With our updated sample we ask how the intermediate- and long-term operating performance of target firms evolves before and after activist intervention. Specifically, we focus on return on assets (*ROA*) and Tobin’s *Q* (*Q*), the two most commonly used performance metrics in the literature. For the choice of benchmarks, we explore three different alternatives. First, we extend the analysis in Bebchuk et al. [2015] in which the set of control firms for a target firm *i* in year *t* are non-target firms that are purged of both year and three-digit industry fixed effects. We also examine within-firm variation before and after intervention by incorporating firm fixed effects (in addition to the year fixed effects). Table 8 tabulates the regression results. Using regressions with firm fixed effects for illustration, results show that during the three-year period prior to intervention, a typical target firm’s *Q* was 0.14 – 0.17 below its own normal value. The undervaluation disappears upon targeting and evolves into a premium up to 0.18 in the following five years. The representative target firm also

²³See, e.g., the report issued by the law firm Wachtell, Lipton, Rosen & Katz, “Do Activist Funds Really Create Long Term Value?,” featured at the Harvard Law School Forum on Corporate Governance & Financial Regulation (July 22, 2014)(<http://blogs.law.harvard.edu/corpgov/2014/07/22/do-activist-hedge-funds-really-create-long-term-value/>)

underperforms its own normal level in *ROA* by 0.68 percentage point during the year of targeting, but improves to 0.79 – 0.91 percentage points above par four-five years following the intervention.

[Insert Table 8 here.]

Second, we match a control firm to each of our target firms by selecting a non-target firm in the same two-digit SIC industry and year with the closest propensity score (*p*-score). The *p*-scores used in matching are estimated by the probit model with predictive variables that appear in Table 4, plus lagged *Q* or *ROA* ($t - 2$ and $t - 3$), to ensure that controls firms are not only in similar economic circumstances right before targeting, they had also been through similar paths of past performance. Results are reported in Table 9 Panel A. Under the matching, the representative target firm and its peer mostly maintain a parallel pre-trend in their performance in $t - 3$ to $t - 2$ in that the coefficients associated with these periods are not significant except that in the *Q* regression the coefficient on $d \times (t - 3)$ is significant at the 10% level.²⁴ Importantly, event firms no longer exhibit undervaluation during the year of intervention relative to their matched controls. Nevertheless, the *Q* ratio appreciates to 0.16 – 0.32 above the benchmark during the five-year period post intervention. Relative to the control firms, the *ROA* of target firms also improve post intervention, with the incremental improvement relative to the control firms being significant in year four, by around 1.5 percentage points.

[Insert Table 9 here.]

In the third event-control firm matching scheme, we select matched firms as those that experienced a similar rate of deterioration in the *ROA* and *Q* as the event firms prior to intervention following the methodology developed in Brav et al. [2015]. This approach allows us to filter out any effect due to “mean reversion.” that is, struggling firms that may “self-cure” by the statistics rule of reversion to the mean (Allaire and Dauphin [2014], Coffee and Palia [2016]). Specifically, a matched firm is selected from the pool of non-targets from

²⁴Note that year $t - 1$ is the omitted dummy variable and the coefficients are set to zero by construction.

the same two-digit SIC industry if its percentage changes in within-industry ranks of both *ROA* and *Q* are in the same quartile as the actual targeted firm in the same year. Panel B of Table 9 reports the results. We find that targeted firms that share the same path of deterioration with the control firms up to the year prior to intervention, deviate from the benchmark upwards significantly. *Q* improves on average for 0.21 – 0.32 and *ROA* improves upwards by 1.1 – 1.7 percentage points.

The consistent empirical results, both qualitatively and quantitatively, from Tables 8 and 9 confirm that the short-term stock price gains do not come at the expense of long-term performance. Cremers et al. [2020] emphasize the point that non-random targeting by activists may be driving the positive results in earlier research. The authors argue that in competitive markets, many different actors (management, directors, long-term shareholders) can intervene to turn company performance around at an underperforming company. Therefore, the advantage to the hedge fund activists, if any, can only be established if the improvement in performance is benchmarked against firms in a similar state of affairs. Earlier studies by Brav et al. [2015] and Brav et al. [2018] conducted various tests based on control firms that are closely matched based on the condition at the time of targeting as well as changes in performance prior to that time. The various benchmarks adopted in the analyses in this section further yield consistent evidence refuting the alternative hypothesis that performance improvement at target firms is due to activists' selection of firms with certain characteristics or due to mean-reversion after poor firm performance.

4.3.3 *Real Effects: Productivity*

A top candidate for the part of the firm performance that is “real” is that involving the firm’s production process. Brav et al. [2015] gather a sample of manufacturing firms targeted by activist investors over the period 1994-2007. The sample is restricted to manufacturing firms so that their plant-level data is covered by the U.S. Census Bureau’s Annual Surveys of Manufacturers and the Census of Manufacturers, henceforth the “Census data.” The Census data provide crucial inputs into the production process, such as the plant assets, number of employees, annual payroll, capital, and materials used, and ownership status.

Plant productivity, measured as total factor productivity (TFP), is the difference between the actual and predicted output given the inputs, and is calculated as the residual from a log-linear Cobb-Douglas production function run at the industry-year level (e.g., [Lichtenberg and Siegel \[1990\]](#), [Lichtenberg \[1992\]](#), [Schoar \[2002\]](#), [Bertrand and Mullainathan \[2003\]](#), [Giroud \[2013\]](#)). The TFP measure can thus be interpreted as the relative productivity rank for each plant within its specific industry in that year.

[Brav et al. \[2015\]](#) find that activists tend to target firms whose plants are at equal or greater levels of productivity than a set of control plants with similar size and age in a given year and industry a few years beforehand. This result is consistent with the finding in [Brav et al. \[2008a\]](#) that hedge funds generally target mature firms that have relatively strong business fundamentals, but that are facing difficulty due to mismanagement or other governance problems. The productivity of assets in place in the three-year period prior to intervention tends to steadily decline but then rebounds in the three years afterwards. Importantly, the increase in firm productivity in the third year following intervention is statistically significant and economically large. On average, TFP at targeted plants increases by 8.9 percent (5.2 percent) of the standard deviation from the year of intervention to three years afterwards in specifications with firm (plant) fixed effects. Target plants increase their investment in information technology, which, in turn, is positively associated with the gains in productivity after the intervention. The improvement in TFP associated with hedge fund activism is more pronounced when the activist targets operational issues, such as business strategies or asset sales, relative to when the activist targets general undervaluation or capital structure issues.

[Brav et al. \[2015\]](#) also ask whether activists have a role in the reallocation of underperforming assets at target firms. Earlier work by [Brav et al. \[2008a\]](#) and [Greenwood and Schor \[2009\]](#) shows that initial stock returns are largest for those activism events in which the stated goal is to push for the sale of the target. However, these early studies have left three unanswered questions. First, data at the firm-level provides limited inference on the separation between assets in place and redeployment. Second, a firm's operating performance based on accounting data, such as ROA, does not capture real changes at the production-

unit level. Third, about a quarter of the firms targeted by hedge funds activists drop out of the Compustat dataset within two years after the arrival of activists which is almost double the average attrition rate for firms in Compustat. Hence, firm-level analysis may suffer from an attrition bias, and the direction of the bias is *a priori* unclear.²⁵ The plant level analysis based on the Census data provides significant progress that addresses these constraints.

Brav et al. [2015] show that under-performing plants are more likely to be sold following the hedge fund intervention compared with plants with similar attributes. The high rate of plant sales is even more pronounced when the target firm's plant belongs to an industry with low concentration, consistent with the important role of asset redeployability and the number of potential buyers facilitating physical capital reallocation (Williamson [1988]). The plants that were sold after the hedge fund intervention experience a significant improvement in productivity under the new ownership, and the improvement is significantly greater than that of plants sold without the involvement of hedge funds. This evidence suggests that the presence of hedge funds is essential for the matching of plants to new owners who can operate the under-performing plants more efficiently. That is, activism is not only associated with the divestment of under-performing plants but also with the matching of these plants to more suited owners resulting in an increase in productivity under new regime. This evidence strengthens the argument that asset redeployment is one venue with which hedge fund activism creates value.

Finally, the Census data provides information on labor productivity at plants owned by firms targeted by activists. Brav et al. [2015] find that labor productivity improves significantly, although the changes in work hours, as well as wages, are insignificant after the intervention. The increase in labor productivity is only significant in highly unionized industries. The improvement in labor productivity coupled with relatively stable wages indicates that workers do not fully capture the value of productivity improvements but instead relinquish most of the surplus to equity investors after the hedge fund intervention. The combined evidence is nevertheless inconsistent with the view that the effects of hedge fund activism are purely financial. Instead, the Census-based evidence confirms the positive

²⁵On the one hand, poor-performance makes distress-related attrition (e.g., bankruptcy) more likely; on the other hand, healthy firms are also more attractive targets for M&A.

real effect of activist engagements in value creation at target firms both from the improvement of assets in place and due to the reallocation of assets.

Kim [2020] provides additional evidence regarding the impact of activists on corporate investment by investigating how divisions within conglomerates make investment allocation subsequent to the targeting by hedge fund activists. Kim [2020] finds that target firms tend to increase capital expenditures in divisions with good investment opportunities and, as a result, these divisions become less reliant on their own cash flows so as to fund their investments. In addition, dispersion in segment profitability declines for treated conglomerates while there is no observable change to the dispersion in profitability for matched controls, consistent with the idea that the marginal return on capital becomes more equalized across divisions.

Kim [2020] also finds that the diversification discount at target conglomerates disappears in the five-year period after they are targeted by hedge funds while it increases for control firms. Improvements are higher for target firms that are financially constrained prior to being targeted, and for firms in which the CEO has been replaced by outsiders. The author argues that the CEO replacement likely weakens powerful divisional managers and ameliorates inefficiencies that are due to internal power struggles among divisional managers over limited corporate resources. The study concludes that conglomerate discounts stem from inefficiency that is resolved with the intervention by activists who are able to resolve agency problems afflicting target firms.

4.3.4 The Market for Corporate Control

Beginning with Greenwood and Schor [2009], the literature has sought to document the role that activist investors play in the market for corporate control. Greenwood and Schor [2009] point to the large, short-run average abnormal return documented around the announcement of an activist engagement (see the discussion in Section 4.1.1) and argue that it mostly reflects the market's expectations that target firms will be acquired at a premium. Other activists' objectives such as change to corporate governance, capital structure, or business strategy do not earn a significant price reaction in their sample. When they look, ex-post, at firm outcomes within 18 months of the initiation of the engagement, they find that events in which

an acquisition was announced or completed earn an economically large positive abnormal return whereas the rest of the activist engagements earn a positive but insignificant average abnormal return. Several measures of firm performance such as ROA, payout ratio, and asset growth, for firms that have not been acquired, measured over a horizon extending from the fiscal year before the filing of a Schedule 13D to the fiscal year after the filing, are all insignificant. The poor performance of firms that have not been acquired leads the authors to conclude that activists do not bring about substantive changes other than through putting the firms in play in the M&A market and increasing the probability that they will be acquired at a premium.

Boyson et al. [2017] extend the analysis in Greenwood and Schor [2009]. They find that over one-third of firms targeted by hedge fund activists over the period 2000–2012 are subsequently involved in a takeover bid. The likelihood of receiving a bid remains high at 22 percent even when they exclude events in which activists intervened as part of a risk arbitrage strategy after a takeover bid has been announced. The likelihood of a takeover after the arrival of activists is nearly four times as large as when no activist has intervened, and they argue that this heightened propensity is likely to be causal rather than by activists' ability to pre-select future takeover targets.

The evidence that activists are able to certify a third-party's bid is consistent with the predictions of the model of Corum and Levit [2019] in which activists, who own a stake in the target company, can credibly signal that the bid is adequate and thus help overcome constraints faced by the target firm's shareholders in assessing the bid. Unlike the bidder who is a counter-party to the acquisition and cannot be expected to act in the best interest of the target firm, activists are free from such conflicts of interest and are therefore in a better position to bargain for the highest takeover premium and push the target firm's board to consider a sale that might otherwise be rejected. Boyson et al. [2017] find that relative to mergers in which activists were not involved, activist interventions result in higher target announcement returns, acquisition premia, and completion rates. Interestingly, when it is the activist that makes the bid, which happens with low probability, they find that both the probability of completion and the returns to target shareholders are worse than for mergers

without such involvement. Importantly, they find that even failed takeover bids for activism targets nevertheless experience significant increases in return on assets, operating margins, leverage, and capital expenditures relative to other target firms where no takeover activity has taken place.

Rather than focus on activists' role in facilitating acquisitions, [Jiang et al. \[2018\]](#) study what they refer to as "activist risk arbitrage," in which activist arbitrageurs acquire a significant stake in a target company after a takeover has been announced and then seek to block the announced deal under its current terms. These activists threaten to vote against the deal and typically engage in public campaigns that are meant to persuade other shareholders to do the same unless the target company's management team is able to negotiate higher premium or other better deal terms. They find that such actions result in higher deal failure, but the average premium paid is higher even when they take the incremental deal failure into account. Activists earn positive abnormal returns for their funds and higher average returns than passive risk arbitrageurs. Passive, buy-and-hold shareholders, also share in the gains from the improved deal terms.

Consistent with the idea that activists decide to engage in response to poor governance [Jiang et al. \[2018\]](#) find that the odds of activist targeting increase more than 60 percent when a merger agreement offers special severance payments to the target's top management team contingent on successful deal completion, as this creates a conflict of interest whereby top management benefits disproportionately from selling the company to a particular acquirer. M&A deals in which CEOs receive "excessive" compensation, a common proxy for poor governance, are also associated with increased risk of activist intervention. Their results suggest that activist risk arbitrage is an important governance mechanism that is used to protect shareholders' interests in corporate control changes that are susceptible to management self-dealing or other managerial conflicts of interest.

[Gantchev et al. \[2020\]](#) and [Wu and Chung \[2021\]](#) consider another aspect of the interaction between activists and the market for corporate control, namely, how activists reshape the acquisition and divestiture strategies of target firms. Activists are more likely to target serial acquirers: firms that agree to a large-size or low-return stock-financed deal over the

three years prior to targeting are twice as likely to be targeted. Firms that pursue diversifying acquisitions and those that undertake deals during industry merger waves are also more likely to become targets of activism. On the other hand, firms that pursue deals with similar characteristics but with cash (instead of stock) or engage in divestitures, especially large divestitures, are less likely to be targeted. Both studies find that in the three-year period after the intervention the firms' propensity to acquire declines relative to that of control firms. Moreover, to the extent that these firms do go on to acquire, they are less likely to overpay or to engage in acquisitions that are generally considered to be inefficient, such as large, diversifying acquisitions. Compared to control firms not targeted by activists matched by industry, market capitalization, Tobin's q , and past M&A activity, acquiring firms that are subject to an activist intervention see about 2.5 percent higher deal announcement returns, consistent with the idea that activism is associated with higher quality acquisitions. Relatedly, activists increase the rate of divestitures that are a result of pre-event over-investment or, "empire building," leading to more focused firms post targeting.

[Gantchev et al. \[2020\]](#) argue that activist engagement is an effective tool to counteract the tendency of target management to deviate from shareholder value maximization. They find that activists are able to bring about change by constraining empire building via the removal of empire building CEOs, changing the composition of CEO incentive pay, and restructuring the boards. [Wu and Chung \[2021\]](#) similarly show that turnover of CEOs and board directors at the target firms are key mechanisms for changes in firm policies; especially, the decline in M&A activities that are largely concentrated in firms with weak internal governance. Corroborating evidence for the impact of hedge fund activists on divestitures is offered in [Chen and Feldman \[2018\]](#) and [Guo et al. \[2020\]](#). Overall, these studies conclude that hedge fund activists are able to increase shareholder value by improving the efficiency of target firm's acquisitions and divestitures.

[Hege and Zhang \[2019\]](#) confirm and extend the line of research discussed so far by documenting how activism shapes the corporate asset market beyond that experienced by firms directly targeted by activists. They find that the very threat of potential activist intervention leads firms to take actions that are similar to those taken by actual targets.

Higher threat is associated with firms' increased propensity of asset sales, and higher (lower) likelihood of being acquired (making an acquisition). Since the impact of activism extends beyond the small set of firms targeted by activists, they attempt to assess the combined effect of activism both on real asset liquidity, transaction prices, transaction volume, and economic efficiency gains.

Hege and Zhang [2019] find that in affected industries the tendency for increased (reduced) asset sales (purchases) results in a reduction in liquidity that is mitigated by the arrival of other liquidity providers such as private firms, listed firms from other industries, and private equity funds. The reduction in liquidity affects, in turn, transaction prices mainly for firms not targeted by activists. Seller announcement returns are lower in corporate sales while buyer announcement returns are higher in acquisitions and such effects are larger in industries with low asset redeployability. Importantly, they ask whether pressure by activist investors impacts the efficiency of corporate transactions finding positive long-run performance, not only when targets of activists engage in such transactions but also by companies that are under the threat of activist engagements.

4.3.5 *Corporate Innovation*

Corporate innovation results from research and development efforts that are arguably the most important long-term investment a firm makes. Thus, corporate innovation provides a clean setting to test whether hedge fund activism has led to a short-term focus among senior managers at publicly listed firms.²⁶

Brav et al. [2018] conduct a comprehensive study of how hedge fund activism reshapes corporate innovation with a sample of firms targeted by activist investors over the period 1994-2007. A priori, neither the direction nor the magnitude of activists' impact on overall innovative activities is clear. First, activists might have a negative impact on innovation

²⁶In a letter sent to chief executives of the 500 largest publicly traded U.S. companies in 2015 ([link](#)), Larry Fink, the CEO of BlackRock, stressed the importance of taking a long-term approach to creating value and his concern with management acquiescing to pressure originating from "the proliferation of activist shareholders seeking immediate returns." Fink highlights innovation, warning that, "In the face of these pressures, more and more corporate leaders have responded with actions that can deliver immediate returns to shareholders, such as buybacks or dividend increases, while underinvesting in innovation, skilled workforces or essential capital expenditures necessary to sustain long-term growth."

because innovative activities depend on the exploration of untested and unknown approaches that have a high probability of failure with contingencies that are impossible to foresee. Given the lack of observability and predictability, the concern is that management might respond to pressure for near-term performance by adopting investment and innovation policies that are detrimental to long-term firm value. Second, managerial preferences and objectives may not be aligned with firm value maximization since agency problems could lead to either over- or under-investment. For example, over-investment arises if specialized investment entrenches the management or if managers derive private benefits from such activities. In such a setting, shareholders can legitimately demand that firms dedicate fewer resources to innovative activities. The opposite is also plausible since agency problems may lead to under-investment and shareholders may demand higher levels of research and development (R&D) than management wants if diversified investors have more capacity to absorb innovation risk (Aghion et al. [2013]).

Brav et al. [2018] measure innovation at firms from five years prior to the hedge fund intervention through five years afterwards, by both inputs (R&D expenditures) and outputs (patent quantity and quality). Consistent with earlier evidence that target firms reduce investment and streamline their assets following activists' intervention, they document a drop in R&D spending in dollar terms during the five-year window subsequent to hedge fund activism but no decline once R&D is scaled by assets. Importantly, they do not find a reduction in output from innovation as both patent counts and citation counts per patent increase significantly, on average, consistent with the idea that target firms' innovation efficiency improves post intervention. The improvement in patent quantity and quality is driven by firms with a diverse portfolio of patents prior to the intervention that refocused their efforts after the arrival of activists. Moreover, the increase in innovation is concentrated in technological areas that are central to the core capabilities of target firms.

Hedge fund interventions are followed by a more active and efficient reallocation of outputs from innovation as target firms sell an abnormally high number of existing patents compared to their matched peer firms, and patents sold are those that are less related to their technological expertise. Moreover, patents sold post hedge fund intervention receive a

significantly higher number of citations relative to their own history and matched patents. These patterns do not appear prior to the intervention, suggesting that the higher rate of patent transactions matching peripheral patents to new and better-suited owners represents an efficient reallocation of innovation outputs. Activism also impacts the redeployment of innovators at target firms following the intervention, resulting in efficiency gains post-intervention as key innovative personnel are matched or re-matched to work environments where they can be more productive. Specifically, inventor productivity, measured in terms of both patents filed and citations per patent, improves for those employees retained by target firms relative to other “stayers” at non-target peers. They also find that inventors who leave following hedge fund intervention are more productive with their new employers. Finally, the inventors newly hired post-intervention are of similar productivity at the new firm.

Consistent with the idea that management has more “skin in the game” and risk tolerance in the post-intervention period, [Brav et al. \[2018\]](#) find that new and retained top executives experience longer expected tenure, which helps mitigate career concerns. While three-year period prior to activists’ engagement, target CEO share ownership is essentially the same as that of CEOs at matched firms, CEOs at target firms see an abnormal increase in their share ownership in the three-year post-intervention period relative to the same control firms. Moreover, directors added to the boards post-activism have better credentials in general and have more technology- or industry-based experience relative to directors added to the boards of matched control firms. Overall, the evidence from this study suggests that firms become “leaner” but not “weaker” subsequent to hedge fund interventions. The arrival of activists coincides with improved innovation efficiency, the refocusing of the scope of innovation, and improvement in innovative resource allocation. The efficiency gains also derive from the redeployment of patents or innovators and this pattern parallels the activist hedge funds’ role in improving the productivity of physical assets through reallocation as discussed in [Section 4.3.3](#). Activists are effectively redrawing the target firm’s boundaries via the refocusing and leveraging of core competency.

4.3.6 *Impact on Firm Leadership: CEOs and Board of Directors*

A. Turnover in Target Firm Leadership

As governance advocates, hedge fund activists often trigger the turnover of senior management and directors who serve on the target firm's board. [Brav et al. \[2008a\]](#) and [Fos \[2017\]](#) show that hedge fund activism and proxy contests are associated CEO turnover rates that double the normal turnover rates. [Gow et al. \[2016\]](#) provide a careful analysis of how activist engagements lead to turnover on the target firm's board of directors and therefore its implications for the labor market for directors. Based on a sample of activism events over the period 2004-2012, they find that the likelihood of directors' departure nearly doubles relative to the rate of departure at propensity score matched control firms. They observe high departure rates for both inside and independent directors. The high turnover holds both for activism events that proceed to a proxy fight and for those that do not. Similarly, high turnover holds irrespective of whether activists had initially asked for a board refreshment or not. They show that director turnover at target firms becomes more sensitive to firm performance, consistent with stronger incentives. Interestingly, they do not find evidence for director loss of reputation as target firm's directors do not experience a loss of other directorships in the period after the initial engagement.

Activists' threat on CEO and directors' job security naturally invites defensive actions from target firms. According to [Boyson and Pichler \[2019\]](#), in about 43 percentage of the events incumbent management/boards choose to resist the activists' demands. The common tactics include the use of poison pills, lawsuits, and limiting shareholder ability to act by written consent or call special meetings accounts. The authors show that the resistance is clearly successful in 30 percent of the subsample. [Fos and Jiang \[2016\]](#) show that resistance can be more subtle, involving, in this setting, executive option exercises and share transactions. The authors show that when a it is likely that a proxy contest will take place, the rate at which CEOs exercise options to sell (hold) the resulting shares slows down by 80 percent (accelerates by 60 percent), consistent with their desire to maintain or strengthen voting rights when facing this challenge. Moreover, the deviations are closely aligned with features unique to proxy contests, such as the record dates and nomination status, and are

more pronounced when the private benefits are higher or when the voting rights are more crucial. The distortion in option exercise is likely to be just one of many schemes used for defensive tactics.

When activists have a strong case and incumbents see the writing on the wall, the latter can offer a settlement with the activist. Such a settlement usually promises the implementation of some of the requests from the activist in exchange for truce (see additional information in Section 5.2.2). [Gow et al. \[2016\]](#) document that settlements with activists also result in higher board turnover. This result is confirmed by [Bebchuk et al. \[2020\]](#) who find that settlements result in an increase in the number of activist-affiliated or activist-desired, and well-connected directors, and a decline in the number of old and long-tenured directors. They argue that the terms of settlements ought to include agreements to changes in board composition as means to achieve the activists' goals of operational changes at target firms. They indeed find that while settlements generally do not stipulate a replacement of the CEO, they are, however, followed by an increase in CEO turnover and in the performance-sensitivity of CEO turnover. Similarly, while settlement agreements generally do not require any specific operational changes, settlements are followed by increased payouts to shareholders and improvements in operating performance. Importantly, [Bebchuk et al. \[2020\]](#) find that directors who enter the board through settlements do not subsequently receive less voting support at the following annual general meetings than other directors.

Finally, regarding the new CEOs who are hired during activism campaigns, [Keusch \[2021\]](#) examines the role of hedge fund activists in CEO recruiting. He finds that activists influence recruiting in 24 percent of 700 CEO recruiting events during activism campaigns over the period 1994-2016, and they do so by gaining board seats prior to CEO appointments, by proposing CEO candidates, or by negotiating the right to interview finalist candidates. Activists' influence on CEO recruitment is beneficial if it alleviates recruiting frictions that result from multiple sources, including uncertainty among board directors about which skills and experiences the new CEO should have, directors' difficulty in identifying candidates who possess these desired characteristics, directors' bias toward internal candidates over conducting a time-consuming external search, and directors' difficulty convincing talented

candidates to join the new firm.

Keusch [2021] presents evidence consistent with activists alleviating recruiting frictions. Specifically, the average abnormal stock market reaction to CEO appointment announcements during activism campaigns is about 3 percent higher when activists are involved in CEO recruiting compared to CEO appointments during campaigns without an activist's influence on the hiring process. This abnormal market reaction does not reverse over the ensuing three years. CEO appointments with activist involvement are also followed by improvements in industry-adjusted return on assets from the year before the appointment to three years afterwards that are 3.6 percent higher compared to CEO appointments during campaigns without shareholder influence on the recruiting process.

Keusch [2021] finds little evidence that activists push for candidates who will increase payout and leverage or sell the target firm relative to CEO appointments that also occur during activism campaigns but without direct influence from activists on the recruiting process. Analyses of characteristics of the recruiting process reveal that activist influence is associated with more resources being dedicated to the CEO search process, as indicated by a higher likelihood that the target company hires an executive search consultant and by a longer duration of the search process. Finally, CEOs recruited with the help of activists are 22 percent more likely to come from outside the firm. Subject to the caveat that activist involvement in CEO recruiting is not randomly assigned, these findings suggest that CEO recruiting is one mechanism via which activists can create value, and during this process there is little evidence that hedge fund activists impose myopic objectives.

B. Diversity in leadership

Over the past two decades, institutional shareholders and regulators have been increasingly focused on the diversity of corporate leadership. In some countries mandatory diversity on boards, especially gender diversity, has become increasingly common. Given that hedge fund activism is associated with heightened board turnover, and given the “alpha male” culture of the hedge fund industry (Lu and Teo [2021]), concerns have arisen regarding the impact hedge fund activism on the diversity of firm leadership. A growing literature has

attempted to address this question.

Francis et al. [2021] find that activist hedge funds are about 52 percent more likely to target firms with a female CEO compared to firms with male CEOs during the period 2003-2018.²⁷ Interestingly, the authors find that none of the natural explanations, including firm fundamentals, the existence of a “glass cliff,” gender discrimination bias, and hedge fund activists’ inherent characteristics, are supported by data. Instead, the transformational leadership style of female CEOs is the most plausible explanation for this gender effect: instead of being self-defensive, female CEOs are more likely to communicate and cooperate with hedge fund activists to achieve their intervention goals. Finally, the authors find that female-led targets experience greater increases in market and operational performance subsequent to the targeting by hedge funds.

Chu et al. [2021] tackle more directly how board gender diversity evolves after the arrival of activist investors. Using a sample of activism events over the period 2004-2014 they document a one percentage point decline in the percent of women on target boards (relative to an average of 8.9 percent representation prior to the intervention). The decline is driven by newly appointed board members that are more likely to be male rather than due to abnormal departures of female directors. They argue that the decline is driven by the fact that activists are more likely to appoint directors from the Finance industry which is dominated by male candidates. Moreover, since there is lack of female representation within activists’ own networks, activists end up appointing male directors with the desired industry experience.

Encouragingly, this diversity-limiting effect of hedge fund activism has been mostly reversed starting the second half of the 2010s. Using data updated to 2019, Jiang [2020] shows that proxy contests resulting from hedge fund activism have contributed to gender diversity on boards by increasing board turnover. This result holds despite the evidence in Chu et al. [2021] that activist directors tend to be less gender-diverse compared to new directors added to the boards in the absence of proxy contests. Because the incumbent board members are far less diverse than the current candidate pools, a 50 percent higher director

²⁷The following article *Do Activist Investors Target Female C.E.O.s?* by Andrew Sorokin, New York Times (February 9, 2015) was among the first to discuss the issue within the major media outlets.

turnover associated with hedge fund-led proxy contests has led to increased diversity in the boards of target firms relative to their peers. Jiang [2020] also notes that the gender gap among activist-supported directors has also converged to the sample average in the few years preceding this article.

4.3.7 Other Firm Policies

This section briefly reviews the literature which explores how other firm policies tend to change with the arrival of activist investors.

A. Tax planning and corporate tax avoidance

Cheng et al. [2012] ask whether activists target companies with inefficient tax planning and push these firms to better optimize on their tax avoidance strategies so as to generate higher post-tax cashflows. Using several measures of tax avoidance, they find increases in tax avoidance at target firms following hedge fund intervention, all measured related to propensity score matched control firms. They find that these tax avoidance changes are not driven by a other policies (e.g., leverage) that tend to change after the arrival of activists and these changes persist for at least five years post-event. The propensity to improve the efficiency of target firms' tax planning increase with the activists' past success or expertise in implementing such changes. Finally, they do not find that the increase in tax savings is driven by potentially illegal tax evasion strategies, concluding that tax savings are likely driven from more efficient planning.

B. Accounting conservatism

Cheng et al. [2015] argue that accounting conservatism can serve as a monitoring tool by activist investors. They find that the quality of financial reporting (the timely recognition of losses) improves relative to a propensity score matched sample and argue that the resulting decline in information asymmetry via the release of more credible information helps to mitigate agency problems at target firms. The increase in their measure of conservatism is driven by target firms in which the activists held the target company for a longer period

of time. Importantly, the likely mechanisms driving these changes are improvements in audit committee independence, CFO turnovers (not CEO turnovers), and upward or lateral changes of the firms' auditors.

C. Voluntary disclosure and earnings management strategies

Chen and Jung [2016] ask whether the propensity of target companies to provide financial guidance changes in response to the arrival of activist investors. They find that target firms are more likely to stop providing guidance or provide a less accurate guidance in the first quarter after the arrival of activist investors relative to a propensity score matched control sample. They argue that such changes may be driven either by management decision not to share information that might aid the activists in their campaigns or that reduced guidance simply reflects management's uncertainty in forecasting fundamentals in the face of the expected change in several firm policies.

Khurana et al. [2018] also study how the management of target firms use voluntary disclosure and earnings management in response to the arrival of activist investors. They find that target firms' earnings forecasts tend to convey less bad news whereas there is no change in the release of good news. Target firms' propensity to engage in earnings management also increases after the initiation of the intervention. They argue that their evidence is consistent with the idea that management withholds bad news during the engagement with the activist in an attempt to improve their control over corporate strategy and thus reduce the likelihood of an imminent turnover. Disclosing bad news likely strengthens the activist's bargaining position and management therefore releases more good news and delays the release of bad news as part of a broad plan to counteract the activist's agenda. Earnings management is similarly another tool that management employs to combat the activist. Interestingly, Bourveau and Schoenfeld [2017] show that management utilizes voluntary disclosure in anticipation of a potential future intervention. Firms under heightened threat of engagement issue earnings and sales forecasts more frequently than propensity control matched firms and this reduces the likelihood that the firm will be targeted. They attribute this effort to firms' attempt to improve relations with current shareholders, to enhance management's credibility

and reputation, and to reduce the potential for litigation initiated by the activist.

4.4 The Threat of Activist Intervention

The impact of hedge fund activism may extend beyond the target firms as the very threat of activist intervention serves as a potent external disciplining force affecting several key firm policies. Several papers have empirically tested this idea. Both [Gantchev et al. \[2019\]](#) and [Zhu \[2021\]](#) find that higher likelihood of activist intervention results in higher payout ratios and lower cash levels which they interpret as improvement in firms' quality of corporate governance. Capital expenditures also decline with a higher threat of engagement. [Gantchev et al. \[2019\]](#) also document positive spillover effects with firms facing a heightened threat of engagement significantly improve their profitability and valuations as compared to firms that do not face a potential intervention. [Maffett et al. \[2021\]](#) find similar evidence using a large sample of activism campaigns undertaken in 56 countries over the period 2010-2018. Higher threat is associated with higher payout, higher profitability, and lower investment. Moreover, these effects are higher for firms in countries with poorer governance regulations.

This evidence implies that the use of non-target firms that share similar characteristics to target firms as controls may lead to an understatement of activist impact on target firms if these non-targets act proactively given the threat of activist intervention. [Gantchev et al. \[2019\]](#) and [Maffett et al. \[2021\]](#) conclude that hedge fund activism mitigates agency conflicts, exerting a positive disciplinary effect above and beyond that documented earlier in this section for firms targeted by activists. In the setting of proxy contests which are mostly led by hedge funds, [Fos \[2017\]](#) finds that companies modify their corporate policies when they perceive the threat of a proxy contest. Such a feedback effect, i.e., changing key policies in anticipation of an activist intervention, results in higher valuations and a lower probability of subsequent targeting.

Both [Lakkis \[2021\]](#) and [Fos and Kahn \[2019\]](#) provide a more nuanced view of the threat of activist interventions. [Lakkis \[2021\]](#) focuses on the role of the threat of activism on corporate acquisitions. As in [Gantchev et al. \[2020\]](#), [Lakkis \[2021\]](#) finds that activist engagements result in the curbing of value destroying acquisitions (see the discussion in Section 4.3.4).

However, [Lakkis \[2021\]](#) argues that some valuable positive-NPV projects are given up by firms under the threat of activist investors. He attributes this negative effect to the possibility that management at potential bidders may bear an abnormal level of firm specific risk if an activist was to intervene and may therefore avoid undertaking risky but positive NPV acquisitions. [Fos and Kahn \[2019\]](#) elaborate on the trade-off between credible threat and costly intervention in a model, showing that too frequent interventions ex-post may convey a signal that activism is a weak disciplinary act. Thus, there is an equilibrium level of activism in the market.

4.5 The Impact of Activist Investors: Causal Inferences

The literature summarized in this section finds evidence consistent with the view that hedge fund activists bring about an overall improvement in target firms' performance. The authors of these papers recognize the challenge in pinning down a causal relationship since the observed statistical relations are most likely a combination of the effects of stock picking and the effort that activists invest in such interventions. Hedge funds activists are sophisticated investors who can potentially profit from investing in undervalued companies with improving prospects even if they remain as passive shareholders. At the same time, hedge fund activists are likely to choose engagements in which they can most effectively influence the outcome in their favor. For this reason, a standard average treatment effect, that is, the improvement a hedge fund activist could bring about if it were randomly assigned to a company, is likely to be limited. In addition, the identification of such an effect is also of limited value for policy implications. A more interesting question is whether conditional on hedge funds' selection of a target, whether the same outcome would occur if it were not for hedge funds' efforts, that is, if the activist remained as a passive investor.

The growing body of research on hedge fund activism suggests that the effect of hedge fund activism results from actions that extend beyond mere stock picking. Certain changes, such as the near doubling of CEO turnover (see [Section 6.3](#)) are necessarily an outcome of a confrontation, and are unlikely to have occurred but due to the effort of the activists. Moreover, the fact that a large number of hedge fund activists hold undiversified positions

for long periods of time and participate in costly engagements, including proxy contests or public campaigns, cannot be justified by pure stock picking. It is implausible that activists would choose to bear these costs if they could achieve the same outcome by holding a passive stake. In fact, in our sample, the stock market reaction to announced activism, as measured by the average buy-and-hold abnormal return in the (-20, +20) window around activism announcement, is 1.3 percent higher for hostile events than the non-hostile ones, indicating that the market perceives incremental value creation from more costly tactics.

Consistent with the idea that the market anticipates that activists will bring about change at target firms, the disclosure of the activist stake, as revealed in Schedule 13D filings, generates a higher short-run average abnormal return than that of the disclosure of large passive stakes, which are disclosed with a longer delay in Schedule 13G filings (Clifford [2008], Klein and Zur [2009]). Kim et al. [2009] provide similar evidence from the Korean market. Finally, Becht et al. [2017] find multi-country evidence that abnormal returns during the entire activist engagement period are significantly higher for engagements with specific objectives compared to those without, which is inconsistent with stock picking alone.

While the details of causal inferences and identification tests vary across studies, the standard in the literature has been the adoption of a matching procedure, such as propensity score matching, that yields a control set of firms as a benchmark. The matching is meant to capture those observable attributes that are the main drivers of the activist's decision to intervene, and thus absorbs any mean-reversion in firm performance in the post-intervention time period that is related to the characteristics and pre-intervention performance of target firms.

Matching is typically supplanted with additional empirical schemes that are meant to isolate the treatment effect brought about by activists. For example, Brav et al. [2015] conduct additional tests to directly analyze three specific alternate hypotheses. First, they address the possibility that management would have instituted the changes that were sought by the activist absent the intervention. They refute this hypothesis by analyzing the subsample of confrontational events in which management displayed public resistance to the activist's agenda and still document the same pattern of improved productivity following

activist events as for the rest of the sample. Second, [Brav et al. \[2015\]](#) consider the possibility that activists are sophisticated stock pickers who select firms that are best positioned to benefit from an industry shock rather than from the intervention. To test this stock picking hypothesis they use a subsample of target firms that have plants in both the primary industry to which the firm belongs and in nonprimary industries. If the industry shock is the central driver of improvement in target firm productivity one ought not see any gains to target plants that do not belong to the primary industry. They find, however, that improvements in plants in nonprimary industries are just as strong as improvements in the primary industry.

Finally, another test of the hypothesis that activists are able to select companies that are poised for improvement is based on a subsample of firms that switched from a passive investment stance to an active stance and thus switched from the Schedule 13G filing required for passive investors to the Schedule 13D filing required for activist investors (or required when a formerly passive investor decides that it may now become an active investor). The results indicate that the performance of plants improves after a passive investor becomes active. [Aslan and Kumar \[2016\]](#), [Boyson et al. \[2017\]](#), [Brav et al. \[2018\]](#), [Hege and Zhang \[2019\]](#), [Aslan \[2020\]](#), and [Gantchev et al. \[2020\]](#) all adopt a similar approach based on the 13G-to-13D switch to demonstrate that changes are associated with the change in the activist's stance instead of mere block formation.

[Brav et al. \[2018\]](#) further resort to a “quasi-random timing” approach to show that activist interventions enhance the value of innovation. The authors measure the incremental value of patents filed prior to the arrival of the activists but granted shortly after the intervention relative to those granted shortly beforehand based on the stock price reaction to patent approval. The two sets of patents are comparable because they were both filed by the target firm in the period prior to the intervention, and because the time lag between filing and granting is both long (typically about two to three years) and semi-random (out of control of either the firm or the activist). The authors document a significant increase of 31 to 45 basis points in abnormal stock return around the patent grant day if the latter occurs post-intervention, suggesting that the pre-existing innovation outputs become more

valuable because they are better utilized and allocated under the “new” regime.

5 The Role of Other Investors in Hedge Fund Activism

5.1 Overview

Hedge fund activists aim at influencing corporate decision making, governance, and control. A critical feature that differentiates activists from corporate raiders is that they almost always hold strictly minority positions in target companies, typically around 5-10 percent, as shown in Table 2 in Section 3.2.2. Support from fellow shareholders, in the form of implicit endorsement or explicit voting is therefore crucial for activists’ success.

As discussed in Section 2.3, traditional institutional investors (pension funds, mutual funds, and other institutional money managers) face legal, institutional, and incentive constraints limiting their ability to lead aggressive activism against their portfolio firms. A cost-benefit trade-off makes it even less plausible to expect to see retail shareholders engage in activism beyond perhaps submitting shareholder proposals. Nevertheless, these investors still care for the performance and resulting value of their portfolios, as well as the governance process that aligns managers’ objectives with that of their shareholders. When a hedge fund plays the “bad cop” role, spearheading a shareholder campaign, the cost to showing support, including casting a vote, is relatively low and should be out-weighed by the expected benefit of voting, especially in highly pivotal situations like proxy contests. For this reason, the participation of other shareholders is instrumental for hedge fund activists’ success.

Shareholders have the right but are not legally required to vote their shares. Institutional shareholders, however, are effectively obligated to vote, and to do so in their client’s best interest given the fiduciary duties they owe their investors. As SEC chair Jay Clayton stated in 2019, “Investment advisers are fiduciaries that owe each of their clients duties of care and loyalty with respect to services undertaken on their client’s behalf, including voting. These are the same duties that apply to their investment advice generally.”²⁸ These fiduciary duties

²⁸See *Statement at Open Meeting on Commission Guidance and Interpretation Regarding Proxy Voting and Proxy Voting Advice* by SEC Chairman Jay Clayton (August 21, 2019).

dictate that investment advisors participate in voting, and when they do, they are required to have a reasonable understanding of their client's objectives so as to vote in the latter's best interest. The mandated disclosure of votes actually cast by registered investment companies (mostly mutual funds), and news coverage of voting by other major asset managers in highly contested events, puts further pressure on institutional investors to both participate in voting and vote in a seemingly well-thought out manner.

Broadridge, a leading service provider of proxy and shareholder communications for public firms, reports that institutional investors voted 92 percent of the shares they held during the 2020 season, up from 90 percent in 2019 for its clients.²⁹ Brav et al. [2021c] estimate based on disclosed quarterly holdings that among mutual funds, the probability of showing up to vote is close to 86 percent for their sample of proxy fights over the period 2007-2017. Moreover, the authors find that funds' "no-show" is more likely to occur when the firm is small, the equity stake is small relative to a fund's assets under management, and when the firm's institutional ownership is high. This evidence is consistent with a "rational participation" model in proxy voting in which investors trade-off between free-riding and asserting their views. The evidence also supports the justification often provided by mutual funds that abstention from voting is justified when the cost of casting an informed vote exceeds the expected benefit.

This section summarizes empirical findings on investor behavior in activist-led campaigns, demonstrating how support from fellow shareholders shapes the selection of target firms and ex post outcomes of hedge fund activism. The focus, in particular, is on voting by institutional investors in proxy contests and not on their routine proxy voting on management and shareholder proposals, such as votes on compensation or governance proposals, for the following reasons. First and foremost, hedge funds are a dominant force in leading proxy contests but not an important player in submitting shareholder proposals (See Section 2.2.4 for more details). Hence, routine proxy voting falls out of the scope of this review. We, nevertheless, compare shareholder behavior in both settings when discussing the evidence based on proxy contests. For a comprehensive survey on shareholder voting in non-contested

²⁹See *2020 Proxy Season Review* jointly published by Broadridge and PwC.

events, readers may check [Yermack \[2010\]](#), and [Iliev et al. \[2015\]](#), which surveys similar events around the world.

Second, proxy contests are ex-ante pivotal voting events where both the incumbent management and a dissident shareholder ought to expect to have an equal chance of prevailing. Indeed, dissidents win board representation in almost exactly one half of the contests empirically. In contrast, management and shareholder proposals often receive one-sided support, where a pivotal event is the exception rather than the norm. Third, funds are more likely to conduct serious research in order to cast an informed vote in proxy contests, instead of following simpler rules such as general guidelines or recommendations by proxy advisors ([Brav et al. \[2021c\]](#)). Indeed, institutions are more likely to recall shares on loan in order to vote in proxy contests ([Aggarwal et al. \[2015\]](#)). Finally, while shareholder proposals and many management proposals are only advisory and non-binding to a firm's management, the outcome of a proxy fight determines which party wins board seats in a contest.

5.2 Institutional Investors in Proxy Contests

5.2.1 Voting in Proxy Contests

A proxy contest takes place when a dissident shareholder puts forward an alternative slate (for a full or partial board seats) to compete with the nominations by the incumbent board. Because both insiders and dissident shareholders typically own similar and strict minority percentage of the outstanding target stock, around 10 percent on average ([Fos and Jiang \[2016\]](#)), the votes of the firm's remaining shareholders determine which side prevails. In addition, the low and inconsistent rate of participation by retail investors in voting matters (discussed further in Section 5.3 below) implies that the support from institutional shareholders of the target firms is crucial for the dissidents' success. Because hedge funds initiate close to 80 percent of the proxy contests ([Fos \[2017\]](#), [Brav et al. \[2021c\]](#)), voting in proxy contests represent the most direct role institutional investors play in interaction with hedge fund activism.

Disclosure of mutual fund voting records mandated by the SEC in 2003 and the availability of standardized databases such as Voting Analytics (owned by Institutional Shareholder

Services, or ISS, a leading proxy advisor), have led to a burgeoning literature analyzing the voting behavior of institutional investors in management and shareholder proposals. Voting records of contested meetings are, however, disclosed in irregular forms. Reporting formats vary within the same fund family across different funds, or over time for the same fund. This information has thus far been excluded from standard databases and can be retrieved using sophisticated parsing algorithms supplemented with manual processing. To date, [Brav et al. \[2021c\]](#) is the only academic study that explores a comprehensive database of mutual fund voting in proxy contests collected directly from individual fund regulatory filings. Unless otherwise specified, the findings reviewed in this section come from that paper.

The first natural question to address is how investor voting choices are related to observable firm- and event-specific characteristics. As expected, mutual funds' support for a dissident is higher when a target firm's performance and valuation are lower, as measured by Tobin's q , return on assets, or stock returns. Presumably, sub-par performance makes alternative leadership and strategies more appealing to shareholders. Mutual funds are also more likely to vote for activist hedge funds than other types of dissidents, consistent with the belief that they have clear, value-oriented goals and are an effective force of governance.

In terms of fund characteristics, a key variable is whether the fund is passively or actively managed. The growth in capital allocated to passively managed funds has intensified the debate over whether passively managed funds take actions to strengthen shareholder governance because they are devoted long-term investors (e.g., [Appel et al. \[2019\]](#), [Kahan and Rock \[2020\]](#), [Lewellen and Lewellen \[2021\]](#)), or weakens it because they are not allowed to select stocks or incentivized to maximize individual firm performance (e.g., [Bebchuk et al. \[2017\]](#), [Heath et al. \[2021\]](#)).

The evidence from the proxy contest sample is that passive funds are 9-10 percentage points less likely than active funds to support dissidents in proxy contests, in the cross section or within events. Such a gap is mostly on par with the corresponding figures, reported in [Heath et al. \[2021\]](#) and [Bubb and Catan \[2020\]](#), that passive investors provide support for management proposals and oppose shareholder proposals by a margin of 10-13 percent relative to actively managed funds. It is tempting to conclude that the sizable gap supports

the hypothesis that passive funds have weaker incentives to confront incumbent management because they are not rewarded for “beating the index” but instead for minimizing expenses (which translates into lower fees for investors) and tracking errors (Elton et al. [2004], Choi et al. [2010], Lund [2017], Bubb and Catan [2020]). A deeper dive into the active-passive gap, however, suggests a more nuanced interpretation.

First, the gap is mostly driven by funds managed by the “Big Three” families, BlackRock, Vanguard, and State Street. Excluding these funds more than halves the difference to 4.4 percentage points. This contrast suggests that what has been attributed to passive funds may in fact be influenced by additional factors such as the size of the fund complex and is not representative of the typical index fund. Second, the higher unconditional pro-management stance of passive funds represents an innate preference instead a lack of monitoring motivation: the sensitivity of passive funds’ votes to firm performance and dissident track records is similar to that of active funds. Moreover, compared with active funds, passive funds are significantly more sensitive to operating performance while they are less sensitive to stock-price performance. This suggests that they place more emphasis on firm fundamentals rather than on the perceptions of the stock market which may also reflect transitory shocks rather than long term firm value. Third, passive funds utilize the option to withhold votes for selected nominees from either party to express a more moderated form of dissent. While passive funds are more likely to support an entire slate of management nominees and less likely to support the entire slate of dissident nominees, they are as likely as active funds to make use of the intermediate options of withholding support from a subset of management nominees, abstaining, or supporting a partial slate out of the dissident nominees.

Overall, the evidence confirms that passive funds are more likely than active funds to side with incumbent management in proxy contests as well as in voting on non-contested matters. Nevertheless, more granular results indicate that passively managed funds are passive monitors. They do support a dissident when the latter has a strong case (e.g., poor firm performance and a strong track record), suggesting that they are assessing individual contests based on the merits of the case. Passive funds prefer to resort to moderate confrontation with management when needed, e.g., by withholding managerial candidates

instead of explicitly voting against incumbent management by submitting the dissident's ballot. Importantly, partial withholding can implicitly coordinate between shareholders who choose to use this more moderate form of withholding and still have a material impact on voting outcomes.

Institutional investors' collective preferences help direct activist targeting. The pro-dissident stance is measured by the funds' fixed effects in voting while controlling for event fixed effects, so funds are evaluated relative to their peers within the same events. It is then aggregated at the firms' shareholder base. A one standard-deviation increase in the average pro-activist stance among all mutual fund shareholders increases the odds that a firm is targeted and proceeds into a voted contest (settlement) by 28 percent (10 percent). These magnitudes are economically large relative to the unconditional probabilities of 0.51 percent (0.80 percent) out of all publicly traded firms. As a result, a dissident-friendly shareholder base, holding all else equal, not only attracts dissidents but also encourages them to persist to the voting stage. This result is consistent with the finding in [Kedia et al. \[2021\]](#) that firms with strong predicted shareholder support, based on shareholders' voting histories on proposals at the same firm and changes in investment positions around a dissident's prior targeting, are more likely to be targeted by dissidents. [He and Li \[2020\]](#) further show that mutual funds whose managers are socially connected to the lead activist are more likely to increase their ownership in the target firm around the activist disclosure, and the likelihood is higher when the activist has a stronger case. Their presence contributes to the activist's campaign success.

5.2.2 Target Company Settlements with Hedge Fund Activists

After hedge fund activists have launched a campaign, the target board and management can decide to settle with the activist, usually by trying to meet the activist demands half-way, or by agreeing to implement the activist's plans under largely the incumbent leadership. For example, Sotheby's, the world's leading auction house, settled with hedge fund Third Point the day before the annual shareholder meeting by agreeing to include three activist board candidates among the management nominees so as to avert a proxy contest. Moreover, ten

months later, Sotheby's announced the hiring of a new CEO, the appointment of a new board chairman, and a plan to return capital to its investors, all of which were requests made at the initial activist campaign. [Bebchuk et al. \[2020\]](#) document that the unconditional likelihood of an activism campaign leading to a settlement has increased sevenfold and steadily from 3 percent in 2000 to 21 percent in 2013 out of the campaigns launched annually, the growth of which outpaced proxy contests during the same period.

The growing importance of settlements suggests that both sides, activists and companies, have learnt of the mutual benefits to meet at a middle-ground and to thus avert a costly escalation. A central finding of [Bebchuk et al. \[2020\]](#), who cover settlements with activist hedge funds from 2000 to 2018, is that settlements provide outcomes that each party can hope to accomplish had they decided to proceed with the battle. Settlements are accompanied by positive stock price reactions, and they are subsequently followed by changes of the type sought by activists, including CEO turnover, higher shareholder payouts, and improved operating performance. Notably, changes to board composition are the primary focus of settlements. A settlement is associated with activists receiving 1.8 board seats, on average, on par with what they could expect to gain if they had won a contested election. On the other hand, CEO and board chair turnover post settlement is closer to the expected level seen after management wins a contest. Moreover, the departure of the CEO and some incumbent directors, if it happens, occurs as voluntary separation and at a distance (usually around a year) after the settlement, providing the departing executives both the ability to protect their reputation and more comfort in the transition.

Settlements seem to circumvent disinterested shareholders as the terms of the settlements are usually not voted upon by shareholders; or even when they do, they become non-contested matters (as they are part of the management proposal) and therefore shareholder votes are usually precatory. For this reason, some large institutional investors have expressed concerns for being left out of the decision process which is critical to shareholder value.³⁰ Such a concern, while justified, underestimates the influence that institutional investors exert in the background of these settlements. The sample of votes studied by [Brav et al. \[2021c\]](#) includes

³⁰See, for example, *Big Funds Push Back Against Investor Settlements* by Michael Flaherty, Reuters (July 19, 2016).

mutual fund votes for a subset of proxy contests that were settled or withdrawn before the contested elections took place. Because the lead time, usually a few days, was so short, many mutual funds had already cast their votes with the expectation that the vote would proceed as planned. Such votes accidentally reveal the counterfactual for how shareholders would have voted had the contested elections actually taken place. In contests that were settled (withdrawn), 43.8 percent (82.1 percent) of mutual funds submitted early votes in favor of an entire management slate, compared to 50.6 percent for the full sample of voted contests, suggesting that strong support for a dissident — which the management could have predicted to some degree even if they did not directly observe — induces management to offer a settlement. Conversely, a dissident is likely to withdraw its campaign when it expects weak support from shareholders. Therefore, anticipated shareholder support is a critical factor for the development of proxy contests, including those in which investor votes were not sought due to settlement or withdrawal.

A related and interesting finding is that the gap between active and passive funds shrinks for this subsample of ex-post settled events. Compared with the 9.5 percentage point difference in voting for activists between actively- and passively-managed funds in voted contests, the gap falls to an insignificant 2.4 percent (1.6 percent) for settled (withdrawn) contests for which votes are observed. As a result, the voting gap observed in proposals and voted proxy contests may over-estimate the difference in voting preferences between the two groups of mutual funds in high-stake, pivotal settings. When dissidents manage to get passive investors on their side, managers are often forced into a settlement to avert failure in broad daylight. In other words, passive investors serve as a screening device for attempted and voted proxy contests given the higher threshold for passive funds to turn their back on management and their critical mass of voting power. Dissident shareholders need to be confident that they can win over a significant mass of passive investors when considering launching a contest. Moreover, they are more likely to achieve their goals via a settlement (and thus avoid costly fights) if passive funds support them just as much as active funds do.

The combined evidence is important for understanding the role played by institutional investors in hedge fund activism, whether their votes determine the outcome, or their ex-

pressed/anticipated support for either side influences the evolution of the campaigns. The role played by passive funds is more nuanced than what has been discussed in the current literature. Though passive funds have a stronger unconditional pro-management preference, they support activists when they are convinced by the merit of the activist's case. Given their size, passive money's support for activists is instrumental for proxy contests to materialize, and for such engagements to proceed into the different outcomes discussed above.

5.3 Retail Investors in Proxy Voting

Until recently, retail investors have long been considered as unimportant in hedge fund activism due to their inconsistent participation in proxy voting. A CNN Money article indicted that “A paltry 27 percent of retail investor shares were voted during the fall 2013 proxy election season. That’s even worse than the turnout in U.S. political elections — 57.5 percent of eligible U.S. citizens participated in the 2012 presidential election.”³¹ A comprehensive report by Broadridge estimated that during the ten years from 2008 to 2017, the percentage of retail positions (accounts) participating in voting dropped steadily from 17.6 percent to 10.9 percent, while the percentage of retail shares voted has held steadily between 27.0 percent in 2010 and 31.9 percent in 2008, despite technological changes that have dramatically lowered the cost of casting a vote by individuals.³² Brav et al. [2021a] arrive at a similar estimate of 32 percent of shares held by retail investors were cast for a sample of retail accounts between 2015 and 2017. With institutional investors holding an ever growing share of public equity, the overall low propensity of retail investors to vote their shares, and the significant cost for proxy solicitors to reach out to individual investors, retail votes have been largely been neglected (Fisch [2017]).

The somewhat counter-intuitive decline in the participation of retail shareholders, however, was not a result of increasing retail investor apathy but a likely outcome of a 2010 NYSE policy change to Rule 452. For a long time, NYSE Rule 452 has allowed brokers to vote their customers' uninstructed shares in “routine matters” at their discretion. In 2010,

³¹See *Just 27 percent of Investors Bother to Vote* by Matt Egan, CNN Money (June 12, 2014).

³²See *Broadridge Analysis of Traditional and Notice & Access Issuers: N&A Adoption, Distribution and Voting* published by Broadridge.

the NYSE implemented a new rule where director elections in uncontested elections and other important governance issues were no longer considered routine matters, which eliminated brokers' voting at their discretion if the shares are uninstructed by their beneficial holders. As a result, the retail votes cast post 2010 are closer expressions of retail investor preferences in voting matters. [Shu \[2020\]](#) shows that “for” votes dropped more after the rule change in firms where the retail shareholdings were higher, consistent with the hypothesis that brokers were more likely to support the management when they held the discretionary voting rights (but not the corresponding cash flow rights from those shares). [Lee and Souther \[2020\]](#), on the other hand, find that more retail turnout is correlated with more support for the management.

Analyses into more granular level reveal heterogeneity in retail shareholders' contribution to governance via proxy voting, especially during more recent years. [Brav et al. \[2021a\]](#) establish the overall retail stance in that their voting participation is likely a calculated decision based on cost-benefit analysis. Retail investors tend to provide similar overall support for management proposals, but provide less support for shareholder proposals relative to institutional shareholders. There are several additional heterogeneities. First, retail shareholder turnout per se is negatively correlated with firm performance, defying the common wisdom that absence from voting is pure apathy. Second, retail shareholders at small firms are less (more) supportive of management (shareholder) proposals than they are at larger firms. Relatedly, retail shareholders with a larger equity stake provide stronger (weaker) support for management (shareholder) proposals than smaller shareholders across all firm size sorts. Third, retail investors exhibit lower conformity with ISS recommendations relative to institutional investors. Finally, retail shareholder support for management proposals is strongly related to recent past firm stock price performance, consistent with a focus on disciplining poorly-performing firms.

Overall, the empirical evidence is consistent with the idea that a sizeable portion of retail shareholders rationally trade off costs and benefits instead of being uninformed, whether or not they turn out to vote. They may therefore play a beneficial role in monitoring, and one that institutional investors may not perfectly replicate. Conditional on their presence, they

are overall more supportive of management than other investors but their support is also sensitive to firm performance. Retail investors may well become pivotal in important voting events, as was the case in the DuPont proxy contest in 2015 that was led by prominent activist hedge fund Trian Partners.³³ As such, the amendment to Rule 452 was progress in the right direction. Fisch [2017] has recently proposed that retail investors be given the opportunity to submit standing voting instructions (SVI), also known as client-directed voting, which has been routinely available to institutional investors, so as to reduce the cost of voting to retail shareholder on a case-by-case basis. Moreover, institutional settings that ease the frictions for retail shareholder voting will allow boards and management to receive more comprehensive feedback from all investors. Notably, Lee and Souther [2020] find that sending a full set of proxy materials (as opposed to a notice with links to the materials available on line) increases the average voter turnout by almost five percentage points in the period after the Rule 452 amendments, which is primarily driven by increase in retail voting. Brav et al. [2021a] show that the documented increase in retail shareholder participation is not driven by information material sent to them but rather the change in access to the voter's preferred voting method.

Encouraging retail turnover should be a win-win for shareholder governance, and may be further facilitated with more advanced technology. On the one hand, their unconditional higher level of support for management should assuage the latter's concern in soliciting retail shareholders. On the other hand, retail investors are a potentially important force in both holding management accountable and providing feedback to management that is different from other investors due to their somewhat different preferences from those of institutional investors. At a more fundamental level, expanding the shareholder voter base reinforces the legitimacy of shareholder democracy.

³³Anecdotal evidence suggests that DuPont CEO Ellen Kullman, DuPont's victory was due, in part, to the support of retail investors. See, e.g., *Why DuPont Beat Nelson Peltz in the Biggest Proxy Fight in Years* by Ronald Orol, The Street (May 20, 2015).

6 Hedge Fund Activism and Other Stakeholders

The debate on whether corporations should serve primarily shareholders or stakeholders has, once again, attracted particularly high attention since the 2010s (See discussion in Section 2.2). The review of finance literature on the impact of hedge fund activism on non-shareholder stakeholders hopefully will help addressing the focal question as whether and to what extent shareholder power could come at the expense of other stakeholders.³⁴

6.1 *Impact on Debtholders*

Given that hedge fund activists are advocates for shareholders, it is natural to ask the question as to whether their agenda complements that of the target firm's debtholders. [Brav et al. \[2008a\]](#) provide initial evidence on this matter by testing whether shareholders gains are higher in companies with higher levels of leverage. They focus on target companies with long-term debt rather than short-term debt since short-term debt is renewed to reflect the new firm and industry conditions within a short period of time, and hence should not decline significantly in value whereas long-term debt, in the absence of renegotiation before the contracting term ends, is more sensitive to potential expropriation by shareholders. They find no relation between the ratio of long-term market leverage and announcement returns. The point estimate is both statistically insignificant and economically small. Furthermore, they examine a subsample of 174 target firms that do not have any long-term debt and shareholders cannot therefore expropriate wealth from long-term creditors. They find that, if anything, these firms have a higher announcement window returns than those that have some long-term debt although the difference is insignificant. They conclude that it is unlikely that the expropriation of bondholders is a meaningful source of shareholder gains earned due to activists' engagements.

Several papers provide additional tests linking hedge fund activism and bondholder wealth. [Klein and Zur \[2011\]](#), study a sample of 193 firms targeted by hedge fund activists over the period 1994-2006 for which they can obtain data on seasoned bond outstanding

³⁴Readers may refer to a concurrent review by [Aslan \[2021\]](#) on the same topic.

over the year prior to the intervention. They find that target firms' bondholders experience negative average abnormal return around the filing of Schedule 13D and an additional negative drift for the subsequent year. They attribute the average negative bond excess return to subsequent decreases in the target firms' cash on hand, increase in dividends paid to shareholders, and an increase in total debt as a percentage of total assets. Consistent with the negative price reaction they also document a large number of credit rating downgrades. [Klein and Zur \[2011\]](#) interpret the change in cash and leverage as central drivers of higher credit risk and potential loss of collateral to existing target firms' bondholders and thus an expropriation of bondholder wealth benefiting shareholders via the intervention by hedge fund activists.

[Aslan and Maraachlian \[2018\]](#) study a larger sample of 579 target firms with bond data over the period 1996 to early 2008. In contrast to [Klein and Zur \[2011\]](#), they find a positive average short run bond excess returns. Bondholders in firms in which activists have outlined governance-related agenda (e.g., replacing the CEO) see the largest positive bond price reaction while attempts to restructure the target firm by changing business strategy, including a sale of all or part of the assets, experience a wealth loss at the time of the announcement. Bondholder gains are concentrated in target firms with below investment grade bonds and with bonds with a strong covenant protection. The heterogeneity in price reaction is consistent with the idea that activism is beneficial to target firms' bondholders when it results in improved monitoring but may be detrimental when it increases business risk or impairs the value of collateral. As in [Klein and Zur \[2011\]](#), [Aslan and Maraachlian \[2018\]](#) find that target firm bonds tend to underperform in the two years after the intervention exhibiting more frequent credit downgrades.

[Sunder et al. \[2014\]](#) similarly examine the effect of shareholder activism on debtholders wealth by tracing the change in the terms of bank loans (interest spreads and covenant structure) taken by target firms in the period after the arrival of activist investors. Given the repeated interactions of loan officers with borrowers, they argue that the bank loan market is informationally more efficient than public debt markets and that studying changes in loan term around the time activists engage with target firms offers a more accurate picture

of the consequences of activist engagements for debtholders' wealth. They gather a sample of 797 target firms over the period 1995-2009 for which they can obtain loan and covenant data. Consistent with evidence mentioned earlier, that the implications of activism depend on the activist's goals and the characteristics of the target firm, they find that activists' objectives that serve to mitigate agency problems, such as preventing value destroying acquisitions or the replacement of the CEO, result in lower loan spreads. However, attempts to put the target firm up for sale or divest some of its assets lead to an increase in spreads in the period after the engagement. As in [Klein and Zur \[2011\]](#), an increase in payout or leverage results in an increase in loan spreads.

[Sunder et al. \[2014\]](#) interpret their results similar to [Aslan and Maraachlian \[2018\]](#), in that the implications of activist investors for debtholders depend on the objectives adopted by activist. Lenders increase loan spreads, adopting stricter covenants, when credit risk is higher. However, when lenders recognize that activists ameliorate agency problems, loan spreads tend to decline. Both [Xu and Li \[2011\]](#) and [Dahiya et al. \[2020\]](#), who also study the impact of activism on bank loans, reach similar conclusions regarding the unconditional effect of activism on loan spreads and collateral and how these loan terms vary with the type of activist intervention.

[Singh \[2021\]](#) focuses on short-term debt financing in the form of trade-credit by and to firms targeted by activists. A priori, it is unclear whether trade credit to target firms will be curtailed or not as it depends on whether activism pushes for the expropriation of debt claimants or leads to an improvement in the target firm's operations that can be shared by both shareholders and trade creditors. It is similarly unclear whether target firms alter the trade credit they offer to their customers. [Singh \[2021\]](#) finds that suppliers of trade credit to target firms reduce the supply in the period after the initial engagement relative to a propensity control matched sample. Target firms also reduce the level of trade credit to their customers. The author finds that high leverage and low levels of tangible assets are associated with a reduction in both trade receivables and accounts payables. He argues that suppliers of trade credit are not willing to supply credit after the arrival of activists due to concerns with potential expropriation.

Lastly, [Feng et al. \[2020\]](#) find that the very threat of hedge fund activism results in wealth losses to bondholders of likely future targets. They attribute the wealth losses to preemptive actions taken by firms that are meant to reduce the likelihood of intervention. Threatened firms conduct share repurchases funded by cash, asset sales, and increase leverage, all of which lead to higher shareholder value at the expense of bondholders. In a related paper, [Griffith and Reisel \[2019\]](#) find that companies anticipating future activist engagements tend to adopt “Dead Hand Proxy Puts,” a contractual agreement that triggers default and immediate repayment of outstanding debt to the extent that there is a change in the firm’s board of directors that is due to an actual or threatened proxy contest. [Griffith and Reisel \[2019\]](#) argue that the presence of this contractual feature incentivizes shareholders to vote against dissident nominees and thus reduces the threat of potential future engagements. They show that firms that the literature has found to be likely candidates of activists tend to adopt such agreements and the adoption results in lower cost of loans that tends to benefit other corporate debtholders. Interestingly, shareholders do not react negatively to the adoption of such agreements. Indeed, for companies with repeat banking relationship they observe that shareholder benefit from dead hand proxy puts, consistent with the idea that the commitment to creditors outweighs the reduction in the propensity for future activist engagements.

6.2 Impact on the Target Firms’ Employees

As discussed in Section 4.3.3, [Brav et al. \[2015\]](#) use data from the U.S. Census Bureau to assess how employment, wages, and labor productivity (measured as output per labor hour or value added) change at plants owned by firms targeted by activists. They find that target plants experience a decline in employment and work hours relative to their peers within the same industry-year. Both the number of workers and hours per worker decrease after the year of the intervention although the declines, are not statistically significant. They do find, however, a statistically significant reduction in “labor stock” as the capital-to-labor (K/L) ratio increases in the two years following the intervention. Regarding labor productivity they find an economically large and statistically significant improvement of 8.4 percent to 9.2 percent at the target plants during the 3-year period after the year of the intervention,

which is consistent with the improvements in total factor productivity. They find, however, that worker wages do not increase along with the improved labor productivity. They estimate a small and insignificant increase in per-hour wages while wages per worker remain flat in the three years after the initial intervention. Employees of target firms experience a de-facto but implicit wage reduction.

Brav et al. [2015] examine changes in labor outcomes separately for activist events in low- and high-unionization industries. They find that employment and work hours decrease three years after the intervention in industries with strong union presence, whereas they are relatively flat in industries with weak union presence. Importantly, both measures of labor productivity improve significantly in the highly unionized industries, whereas the change is insignificant in industries with low unionization rates. The improvement in productivity in highly unionized industries is, however, not significantly different from that in industries with low unionization. Per-hour wages increase significantly in highly unionized industries relative to that in industries with low unionization thus partly countering the potentially negative effect of activism on workers' welfare in these high-unionization industries. Finally, Brav et al. [2015] examine wage changes separately for "white-collar" (i.e., non-production) and "blue-collar" (i.e., production) workers. and find that the average wage of white-collar workers drops by 5.0 percent after the intervention, whereas it is relatively flat for blue-collar workers employed at targeted plants. In addition, they also find evidence consistent with the idea that non-production workers, who are less likely to be covered by unions, suffer larger wage cuts than production workers do.

Overall, these results are consistent with the idea that hedge fund activism helps mitigate inefficiencies that are due to divergence of interests between managers and outside shareholders concerning labor prior to the intervention by hedge funds. As has been argued in the literature, top managers, who usually own a minority stake of the target firm but bear the full cost of monitoring workers, are less incentivized to improve productivity through strict monitoring. Instead, given the small private cost, managers might be willing to pay employees higher wages to motivate them or improve relations with labor. In contrast, activist hedge funds, who have a stronger financial incentive to improve firm performance as

minority blockholders are more willing to monitor the top managers and promote higher-powered (financial and non-financial) incentives. This change, in turn, likely trickles down to lower-level management, leading to an improvement in productive efficiency while reigning in wages. The increase in workers' productivity is especially pronounced in industries with strong labor unions which is consistent with the idea that highly unionized industries are more likely to employ a surplus of labor prior to hedge fund intervention or that unionized labor might prefer to restructure via layoffs rather than wage cuts partly due to "inverse seniority rules," in which junior workers are laid off before senior workers. Since workers at target firms do not share in the improvements associated with hedge fund activism as they experience stagnation in wages, while their productivity improves significantly, this suggests that part of the positive abnormal returns associated with the announcement of hedge fund interventions might be driven by a transfer of "labor rents" to shareholders.

[Agrawal and Lim \[2021\]](#) focus on a related aspect of target firms' employee welfare, namely, how activism impacts employee pensions. They gather a sample of 544 target firms that selected to sponsor a defined benefit pension plan over the period 2001-2014. They document that these plans are already highly underfunded in the year prior to the targeting and after the arrival of activists underfunding increases relative to a propensity control matched set of peer firms. Relative to an average underfunding of 19.5 percent, the target firms' underfunding increases by 2.4 percent points. The decline in funding is driven by a reduction in employer contributions. They also find that just seven percent of the initial event price reaction is accounted for by the wealth transfer from employee pensions. It is, of course, challenging to equate employee wealth and welfare as [Agrawal and Lim \[2021\]](#) do. Activism impacts several facets of firm performance, including the improved profitability and job security for those employees who stay with the target firm.

6.3 CEOs and Directors on Target Boards

Section 4.3.6 has discussed how hedge fund activism leads to CEO and board turnover. This section focuses on their welfare. [Brav et al. \[2008a\]](#) document the effect of hedge fund activism on target firm executives and whether some of the shareholder gains can be traced

to a wealth transfer from target firm CEOs. They find that in the year of targeting total CEO compensation including option grants, an ex-ante measure of total CEO compensation, is higher than the equivalent measure of CEO compensation at peer companies in the same industry that are of similar size and stock valuation. One year after the hedge fund intervention, CEO pay at targeted firms is indistinguishable from that of peer levels. A related pattern is reflected in the increase in pay-for-performance sensitivity, measured as the percentage of CEO actual pay (including option exercise) that comes from equity-based incentives. Targeted firms experience a significant increase in pay-for-performance during the event-year and the year afterwards. Accompanying the change in the level and composition of CEO pay they find an increase in the CEO turnover rate after the intervention. While the difference in turnover relative to peer firms is insignificant during the year prior to targeting, one year afterwards the turnover rate at the targeted companies is 12.4 percent higher than that of their matched peers. The turnover estimates used in their analysis likely understate true CEO turnover as they do not include CEO departures as a result of liquidation or sale of the target company.

Choi and Gong [2020] extend the results on CEO replacement with a sample of activist events over the period 1995-2015. Consistent with Brav et al. [2008a], they find that turnover rate at target firms is nearly double that of propensity score matched control firms. They find that CEO pay increases only for newly hired CEOs via an increase in the bonus component of pay, whereas compensation remains unchanged for those CEOs who retain their positions. The sensitivity of the bonus component of pay to firm performance increases in the post-intervention period while they find no change in the sensitivity of the equity component of pay to firm performance. Consistent with the idea that the new pay arrangements are viewed favorably by shareholders, they find an increase in support in say-on-pay voting.

6.4 Impact on the Environment

Stepping into the 2020s, unprecedented spotlights are focused firms' environmental impacts and carbon footprints. Two studies, in specific, ask whether activist interventions carry consequences for how firms impact the environment, captured by emissions of chemicals at

plants of targeted firms. A priori it is unclear whether firm policies will prove beneficial or detrimental to the environment. Activists may, on the one hand, push for cost savings by the reduction of investment in abatement activities. On the other hand, activists' attempts to reduce the likelihood of environmental-related litigation or their push to implement changes in investments, such a move to more efficient technology or lower production, may result in a decline in measured emissions. [Akey and Appel \[2020\]](#) match the U.S. Environmental Protection Agency (EPA) data on plant-level toxic emissions into the air, water, and ground, as well as information on plant-level abatement and production with information on plants owned by firms targeted by activists. Their main finding is an abnormally large decline in emissions by target plants. It is not only emissions that drop but emission efficiency, that is, emissions per unit of production, improves in the post intervention period. Target plants are more likely to stop using a previously used chemical and less likely to begin the use of new chemicals.

[Akey and Appel \[2020\]](#) attempt to trace the channels via which these changes take place. They do not find that target firms attempt to directly reduce pollution by investing in pollution abatement. Instead, they trace the reduction in emissions to increase in production efficiency at target plants and a resulting decrease in production at the chemical-level. They find that the reduction in emissions is concentrated in events in which activist objectives centered on making changes to target firms' operations. The positive spillover effects they document are clearly valuable for target firms' employees and to households residing in surrounding communities.

[Chu and Zhao \[2019\]](#) in a contemporaneous paper, provide evidence consistent with that in [Akey and Appel \[2020\]](#). They also utilize toxic chemical emissions data from the EPA to find a reduction in toxic emissions relative to a propensity score matched sample of control firms in the period after the arrival of activist investors. They document several potential channels for this result. First, plants that are shut down by target firms are more likely to have been heavy-polluting plants. Second, they find that target firms generate a higher number of pollution-reducing patents relative to the matched control firms, consistent with the activists' broader effort to reallocate innovative resources towards more efficient investment

technologies. Different from [Akey and Appel \[2020\]](#), they do not find that the reduction in emissions is driven by a reduction in the overall level of production. Interestingly, the environmental outcomes from intervention in both papers are on par to those from intervention of environmental activists using comparable metrics as documented in [Naaraayanan et al. \[2021\]](#).

6.5 Other Stakeholders

[Chu et al. \[2020\]](#) study how activists impact banks and mortgage lending with a sample of activist engagements over the period 2000-2014. They focus on discrimination in lending by banks targeted by activists, arguing that it is a priori unclear whether activist pressure expands or contracts loans to disadvantaged borrowers. They access the Home Mortgage Disclosure Act data to identify changes in discrimination in mortgage lending. The authors obtain the mortgage applicants' race and therefore assess the differences in the denial rates between different racial groups. Their main finding is that banks that have been targeted by hedge fund activists exhibit a decline in denial rates relative to a control set of banks. The decline is economically large. It accounts for about twenty percent of the unconditional average denial rates to African American borrowers in their sample. They argue that this result is not driven by a change in the composition of applications nor by banks willingness to approve riskier loans. They also find that target banks do not raise interest rates to these borrowers. African American borrowers obtain loans with lower contractual mortgage interest rates. [Chu et al. \[2020\]](#) find two channels through which such changes take place. The first is target banks' higher propensity to replace mortgage officers in areas with a greater racial mortgage approval gap. The second is the higher propensity to open new bank branches in areas where the racial disparities in mortgage approval rates have been high prior to the intervention. They argue that this evidence is consistent with target banks trying to address taste-based discrimination.

[Aslan \[2020\]](#) focuses on the impact of shareholder activism on one specific group of stakeholders in the target firm, namely, the target firm's suppliers. Based on a sample of activism events over the period 1994-2015, [Aslan \[2020\]](#) finds that treated suppliers of

target firms exhibit lower performance, profit margins, and reductions in capex and R&D, all relative to the matched controls, consistent with the idea that a reduction in supplier costs is one channel via which activists create value at target firms. The author then documents variation in such spillover effects by conditioning on proxies for suppliers' bargaining power, finding that higher target firm bargaining power (e.g., suppliers with more asset-specific investments or with strategic alliances and joint ventures with target firms) experience larger reduction in profitability and capital investment. Higher degree of industry competitiveness is also associated with larger declines in supplier profitability. [Aslan \[2020\]](#) concludes that a decline in supplier related costs is one potential channel via which activists create value at target firms.

6.6 Impact on Peer Firms

[Aslan and Kumar \[2016\]](#) recognize that intervention by activists carries implications that extend beyond the impact on the target firm and that the consequences of activists' engagement ought to impact rival firms. They draw on the industrial organization and strategy literatures to set up their empirical analyses in an attempt to trace the channels via which the increase in target firms' profitability and cost reductions come at the expense of competitors. They utilize a sample of hedge fund activist interventions over the period 1996-2008, defining rival firms as all other firms in a target firm's four-digit SIC industry on Compustat. Spillover effects manifest in a negative impact on rivals' profitability, cashflows, and productivity, although not on capital investments. Rival firms reduce price-cost markups, and they document a muted effect on rival market shares. This is consistent with the evidence in [Section 4.3.3](#) that activists are able to improve target firms' efficiency rather than increasing their scale.

[Aslan and Kumar \[2016\]](#) document the heterogeneity in rival firm responses that varies with firm and industry-level attributes. The spillover effects are weaker when rival firms implement their own improvement to cost and capital allocation efficiency and product differentiation. Higher leverage and illiquidity are, however, associated with larger spillover effect in the form of lower rival firms' market shares. Spillover effects vary in the cross-

section by the degree of competition within the industry, with larger impact on rival firms in competitive industries.

The evidence in [Aslan and Kumar \[2016\]](#) is important as it speaks more broadly to the criticism raised by opponents of activist investors as to whether policies that hedge fund activists pursue ultimately weaken the target firms. This view implies, however, that rival firms ought to benefit from the loss in competitiveness of target firms. The evidence that rival firm's share prices decline upon the announcement of targeting within their industry shows that this negative view is unjustified. Rival firms share prices should not decline upon the announcement of activism if activists harm the long-term performance of target firms.

7 Concluding Remarks and Directions for Future Research

We have reviewed the evolution of hedge fund activism and the academic research analyzing the various aspects of such engagements. The article covers the institutional background in which hedge fund activists operate, activists' objectives, tactics, and choice of target companies. Various outcomes of hedge fund activism are also reviewed, with a focus on the financial and operating performance of targeted firms, the dynamics of engagement with fellow investors, and the impact on other stakeholders. The multitude of evidence from the full body of the literature generally supports the view that hedge fund activism constitutes an important venue of corporate governance that is both influence-based and market-driven. It differs from both control-oriented takeover activities and internal and institutional monitoring (by boards, auditors, rating agencies, and large institutional shareholders, etc.)

Hedge fund activism has continued to evolve into the 2020s, as hedge fund managers move in several different directions seeking new investment opportunities and returns as previous strategies have reached an equilibrium and saturation. Looking forward, several emerging trends are worth commenting on.

First, activist hedge funds move along with trendy tools and themes, including funding

with SPACs³⁵, and running campaigns with ESG-related motives, especially a focus on sustainability. Activists with such agenda push firms to make real changes that are meant to better address the uncertainty companies face due to climate change.³⁶ A promising direction for future research would be to study how these capital market developments reshape the goals and tactics that activists adopt, and the resulting impacts on targeted firms.

Second, hedge fund activism continues to blur the boundary between public and private markets. On the one hand, private equity funds have begun turning towards activism in public markets, employing activists' tools.³⁷ On the other hand, activist funds, notably Trian, aim at "bringing a private equity mindset to the public markets."³⁸ It might be useful to study how funds entering heterogeneous styles (among which there is activism) evolve and compete with the conventional hedge funds and private equity firms specialized in their own representative styles.

Third, a few observations suggest activists' strategies conform to business and market cycles. As has happened after the Financial Crisis, with the end of the pandemic liquidity premium (i.e., firms with high liquidity enjoyed a higher valuation due to their resilience to adversity), it is possible that the market may see payout activism come back. That being said, it remains an open question what, in the aggregate, drives the amount of capital flowing into the activism and how capital supply dynamically impacts the profitability of activism, sharing of profits between GPs and LPs, and performance of targeted firms.

Finally, we expect retail investors as a group to be courted by both management and activists more frequently than ever before, as contests become more and more pivotal and every vote counts. The importance of retail investors will strengthen also due to technological development that will make it easier for retail investors to express their views, including cast their votes.³⁹ It is worthwhile to observe how hedge funds, who rely on support from fellow

³⁵In 2020, Pershing Square raised \$4 billion via SPAC for the purpose of targeting large-cap mature, established firms.

³⁶The primary example of this trend is Engine No.1's push to shift ExxonMobil towards a sustainable value creation given long-term demand uncertainty due to advancements in low- and no-carbon technologies.

³⁷Firms like TPG had long been involved in public markets. In 2020, KKR filed a Schedule 13D at Dave & Busters to receive board representation, Cerberus requested changes at Commerzbank, including having representation on the board, and Oaktree disclosed two public active investments.

³⁸Stated at Trian's main website: <https://trianpartners.com/about/>.

³⁹See, e.g., *Robinhood Agrees to Buy Say Technologies for \$140 Million* by Annie Massa, Bloomberg (Aug

shareholders to achieve their goals, would embrace the rising presence of retail investors and how they may change their ways of communication, persuasion, etc.

Overall, the role of shareholder engagement and activist hedge funds in capital markets has been involved while gaining importance over the past two decades. While the goal of active money management is in closing the gap between share prices and fair values, the presence and actions of activist hedge funds leads to the convergence between current and potential firm values. Activist hedge funds play a crucial rule in financial markets that are increasingly dominated by passive funds, forming an integral monitoring system by and for all shareholders. This influence- and market-based governance protocol, and a hybrid internal-external role, puts activist hedge funds in a unique position to mitigate the agency costs which are fundamentally associated with the separation of ownership and control.

10, 2021).

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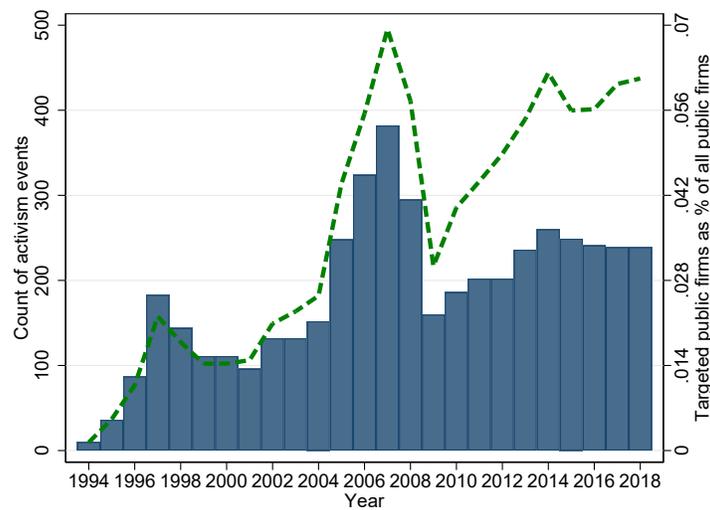
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Figure 1: Summary of Event Counts and Hedge Funds Presence

The sample consists of all Schedule 13D filings over the period 1994-2018 narrowed down to those made by hedge fund managers based on the names and descriptions of the filer type listed in the Schedule's Item 2 ("Identity and Background") combined with news searches of the filers. We exclude filings that involve risk arbitrage, distress financing, non-regular corporations such as closed-end funds, and firms with non-common share codes (those that differ from 10 or 11) as identified from information from CRSP. We include in the sample events in which the hedge fund maintained an activist position in a large public company but owned less than 5% of the company's stock (and thus, were not required to file a Schedule 13D). For these events we set the event date to the first public announcement of the activist's intervention. The final sample consists of 4,657 fund-target firm pairs. See [Brav et al. \[2008a\]](#) or Section 3.1.1 for additional details on the formation of the sample. Panel A plots the time series of the number of events per year; Panel B plots the number of hedge funds filing in a given year.

(A) Number of Events per year



(B) Number of Activist Hedge Funds per Year

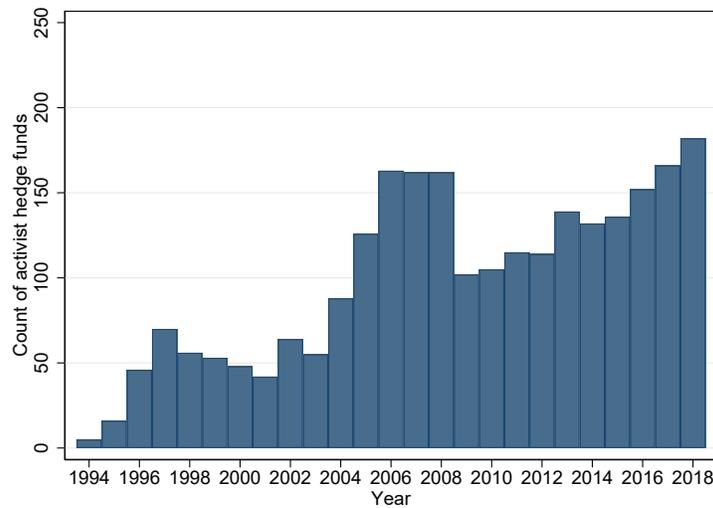
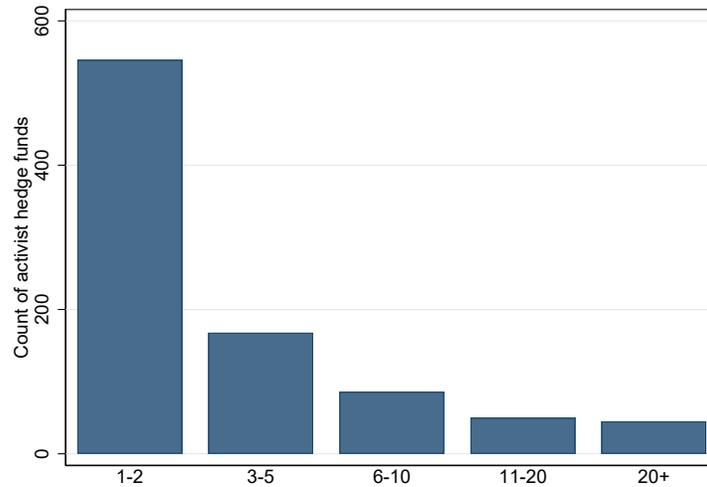


Figure 2: Histograms of Activist Hedge Fund by Activity Volume

Panel A plots the histogram of the number of events per activist hedge fund, while Panel B provides a further breakdown by repeating Panel A over two subsamples: pre- and post- the 2008 financial crisis.

(A) Histogram of Number of Events per Activist Hedge Funds



(B) Histogram of Number of Events per Activist Hedge Funds: Pre- and Post- Crisis

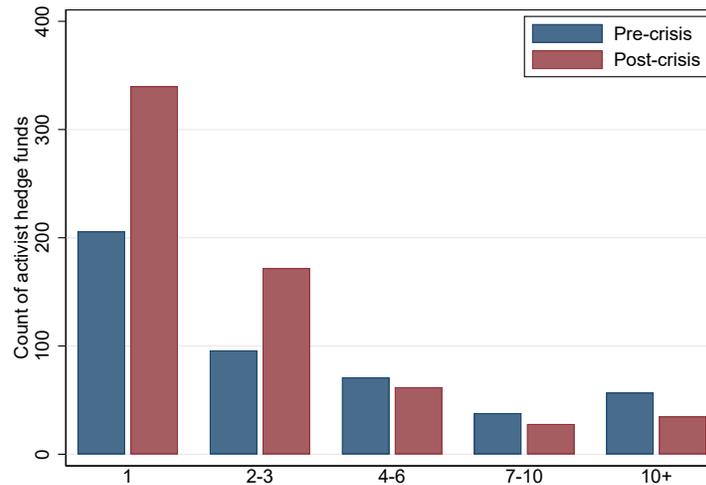
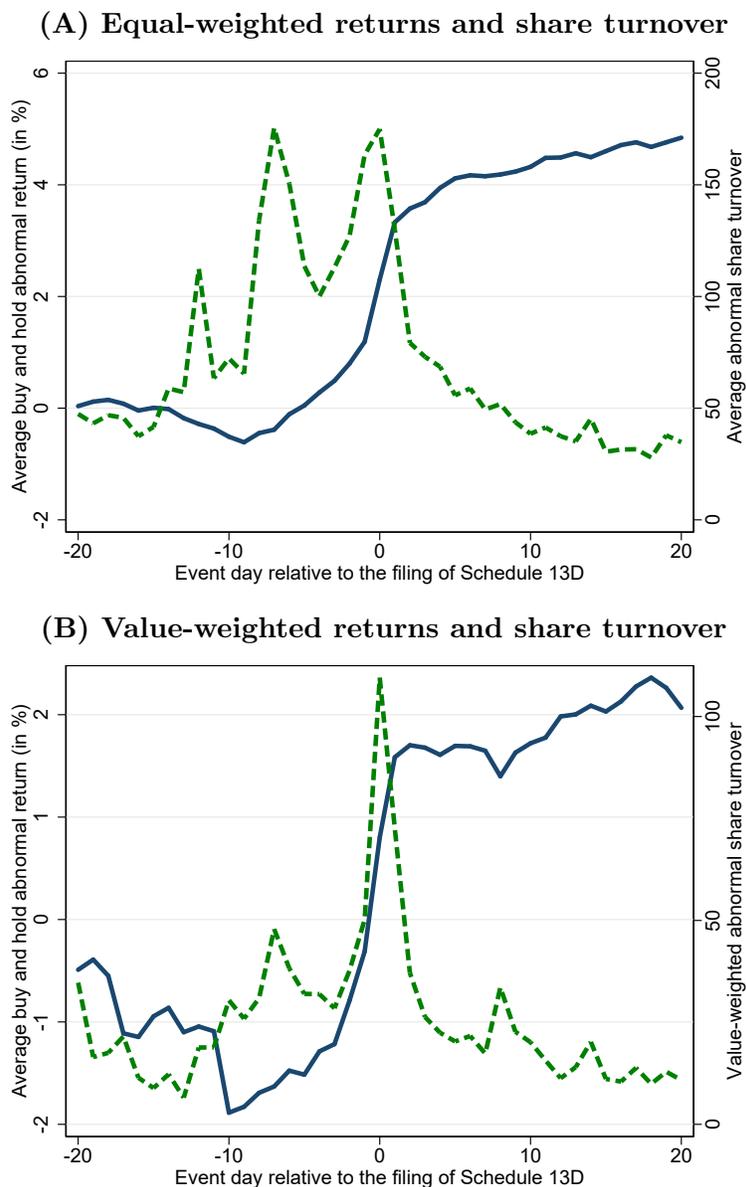


Figure 3: Abnormal Return Centered Around the Filing of Schedule 13D with the SEC: 20 days before to 20 days after

In Panel A, the solid blue line (left axis) plots the average buy-and-hold centered return around the filing of the Schedule 13D with the SEC, in excess of the buy-and-hold return of the value-weight market, from 20 days prior the 13D file date to 20 days after. The dashed green line (right axis) plots the increase in percentage points of the share trading turnover during the same time window compared to the average turnover rate during the preceding (-220, -21) event window. Share turnover in the (-220,-21) window is winsorized within-event at the 99% extreme to limit the effect of the highest volume trading days on the baseline. Panel B plots value-weighted analogue of panel A, where events are weighted by their 2018-adjusted market capitalization at 21 days before the filing of the 13D. In Panel C, events are split into terciles based on their 2018-adjusted market capitalization; the solid blue line displays the equal-weighted average return for “small” stocks, the red dashed line displays the same for “mid” and the green dashed-dotted line displays that for “large”. Of the 4,657 events, 4,094 have return and turnover data available in CRSP around the date of the 13D.



(C) Equal-weighted returns, split by size

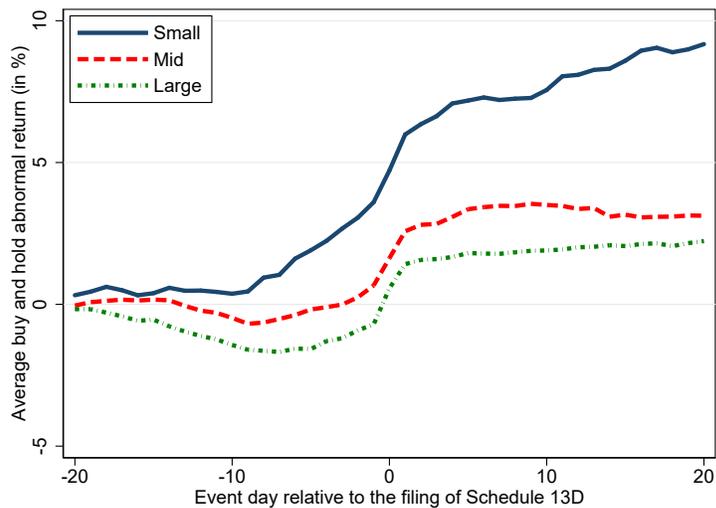
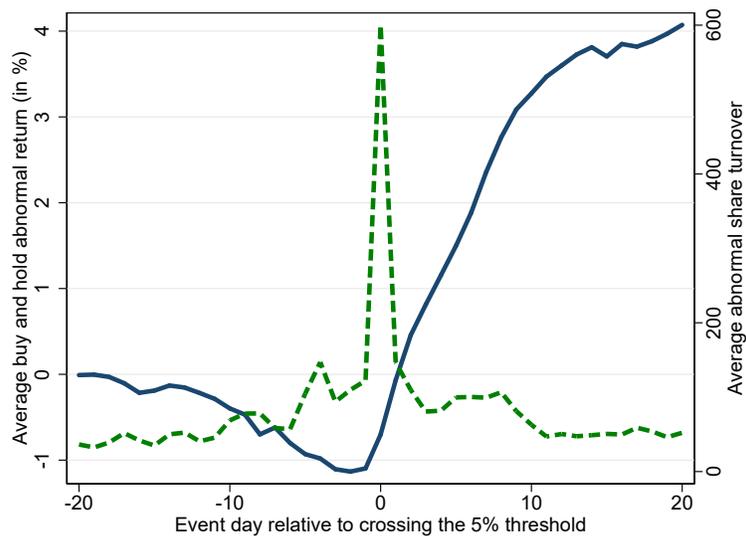


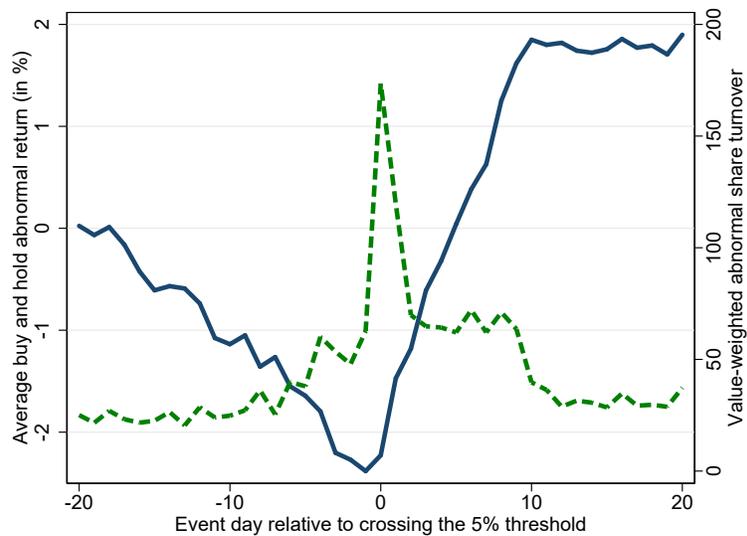
Figure 4: Average Abnormal Return Centered Around the Date that Triggers the Requirement to File the Schedule 13D

Investors are required to file Schedule 13D no later than 10 days after the transaction that causes them to go over (“cross”) the 5% threshold. The solid blue line (left axis) plots the average buy-and-hold return around the “cross” date, in excess of the buy-and-hold return of the value-weight market, from 20 days prior the 13D file date to 20 days after. The dashed green line (right axis) plots the increase in percentage points of the share trading turnover during the same time window compared to the average turnover rate during the preceding (-220,-21) event window. Share turnover in the (-220,-21) window is winsorized within-firm at the 99% extreme. Of the 4,657 activist events in the sample, 3,448 have price data available in CRSP around the date that triggers the filing of the 13D.

(A) Equal-weighted average abnormal return and share turnover



(B) Value-weighted average abnormal return and share turnover



(C) Equal-weighted average abnormal return, split by size

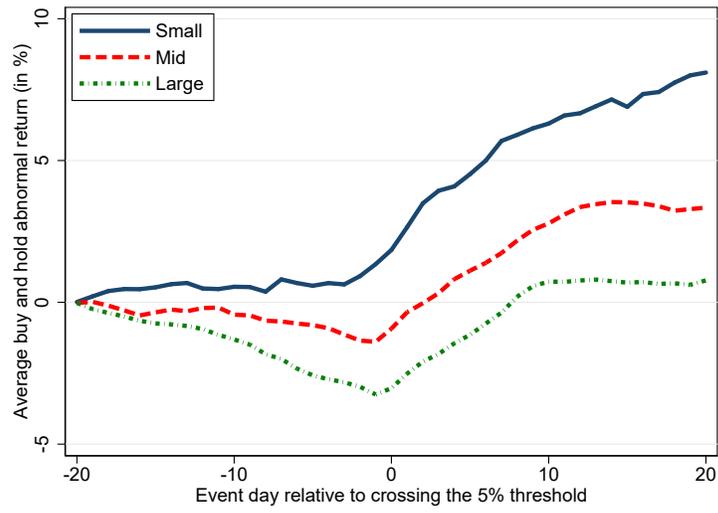


Figure 5: Abnormal Return Centered Around Activists' Exit

The solid blue line (left axis) plots the average buy-and-hold target return net of the value weight market around activists' exit, defined as the filing of an amendment to Schedule 13D in which the fund reveals that the percent of shares held in the target declined below the 5% reporting threshold. If this date is missing we replace it with the date in which it is announced that the activist has divested its stake in the target (this latter date included events in which the target firm is acquired or liquidated). The event period lasts from 20 days prior to the amendment to the 13D file date to 20 days afterwards. The green dashed line (right axis) plots the increase in percentage points of the share trading turnover during the same time window compared to the average turnover rate during the preceding (-220, -21) event window. Share turnover in the (-220,-21) window is Winsorized within-firm at the 99% extreme. Of the 4,657 activist events in the sample, 2,272 have price data available in CRSP around the date hedge funds exit.

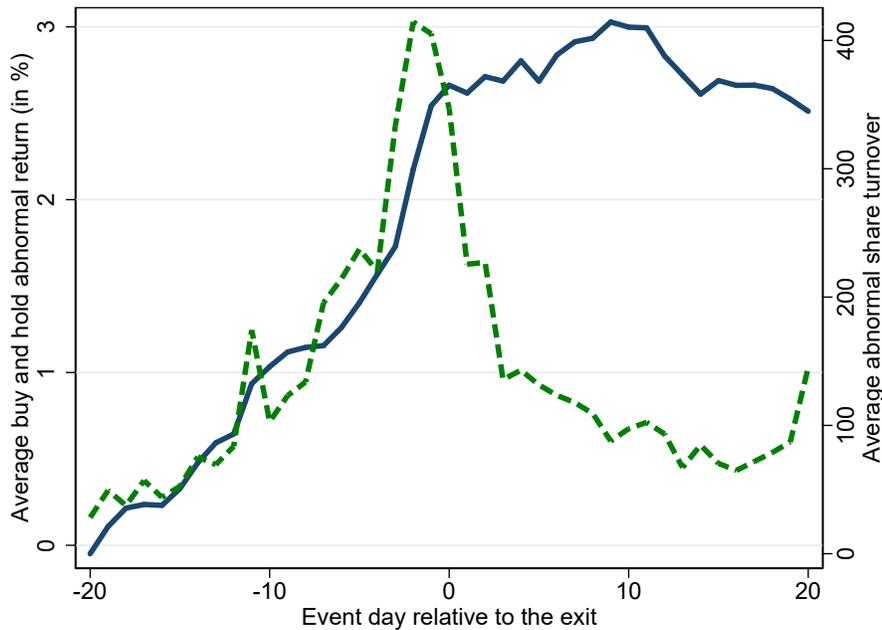


Figure 6: Abnormal Return Centered Around Activists' Exit

The solid blue line (left axis) plots the average buy-and-hold target return net of the value weight market around activists' exit, defined as the filing of an amendment to Schedule 13D in which the fund reveals that the percent of shares held in the target declined below the 5% reporting threshold. If this date is missing we replace it with the date in which it is announced that the activist has divested its stake in the target (this latter date included events in which the target firm is acquired or liquidated). The event period lasts from 20 days prior to the amendment to the 13D file date to 20 days afterwards. The green dashed line (right axis) plots the increase in percentage points of the share trading turnover during the same time window compared to the average turnover rate during the preceding (-220, -21) event window. Share turnover in the (-220,-21) window is Winsorized within-firm at the 99% extreme. Of the 4,657 activist events in the sample, 2,272 have price data available in CRSP around the date hedge funds exit.

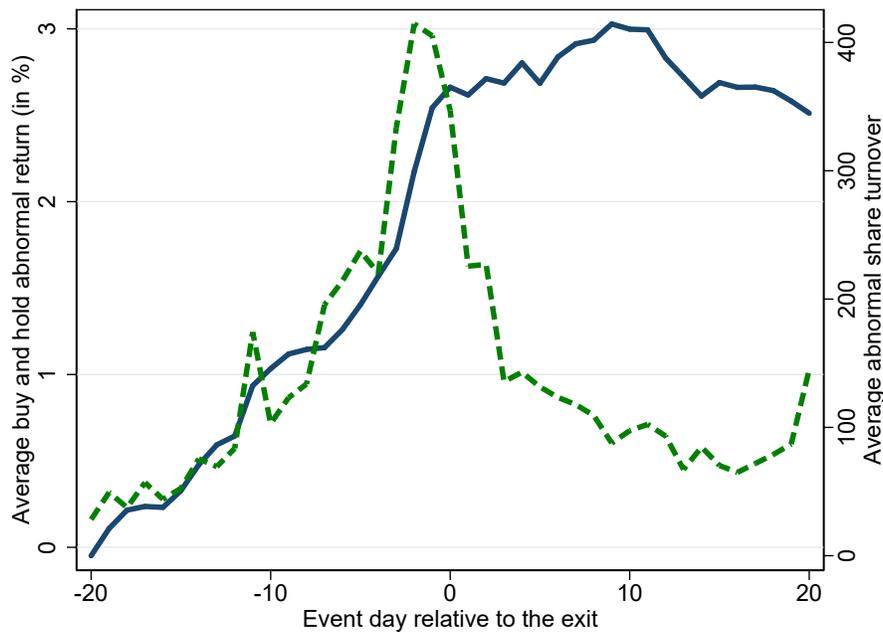


Table 1: Summary of Events by Hedge Funds' Stated Goals and Tactics

The sample includes 4,657 events. Panel A reports the summary of activism events sorted by the hedge funds' stated objective. The "General undervaluation" objective includes events in which the hedge fund believes that the company is undervalued and/or that the fund can help the manager maximize shareholder value. All events in this objective category involve either the stated intent for passive engagement or communication with the management. The "Capital structure" category includes activism targeting firms' payout policy and capital structure in which the hedge fund proposes changes geared toward the reduction of excess cash, an increase in firm leverage, or higher payout to shareholders. It also involves issuance of securities by the target companies, such as modifying seasoned equity offerings or proposing debt restructuring. The "Business strategy" objective includes activism targeting issues related to operational efficiency, business restructuring, mergers and acquisitions, and growth strategies. The "Sale of target company" category involves activism in which hedge funds attempt either to force a sale of the target company to a third party, or, in a small minority of the cases, to acquire the company themselves. The "Governance" category includes events in which hedge funds attempt to rescind takeover defenses, to oust the CEO or chairman, to challenge board independence and fair representation, to demand more information disclosure and question potential fraud, and to challenge the level or the pay-for-performance sensitivity of executive compensation. Percentages sum up to more than 100% since one event can have multiple objectives. However, the first category and the other four categories are mutually exclusive. We report the fraction of events that had begun hostile ("Initially Hostile") and the fraction of events that had turned hostile ("Ex-post Hostile") within each category. Panel B provides information on the tactics undertaken by hedge funds, sorted from the least to most aggressive, and the percent of events in each category relative to the full sample. The first tactic category includes events in which the hedge fund states that it intends to remain passive or to communicate with the board/management on a regular basis with the goal of enhancing shareholder value. The second tactic category includes events in which the hedge fund seeks board representation without a proxy contest or confrontation with the existing management/board. The third tactic category includes cases where the hedge fund makes formal shareholder proposals, or publicly criticizes the management and demands change. The fourth category includes events in which the hedge fund threatens to wage a proxy fight in order to gain board representation, or to sue the management for breach of duty. The fifth category includes events in which the hedge fund launches a proxy contest in order to replace the board. The remaining two tactic groups include events in which the hedge fund sues the company with the intention to take control of the company. Activist events can fall within more than one category.

Panel A: Summary of Hedge Funds' Stated Objectives				
	Full Sample Statistics		Subsample Statistics	
	Number of Events	% of Sample	% Initially Hostile	% Ex-post Hostile
General undervaluation	2191.0	47.0	NaN	NaN
Capital structure	609.0	13.1	18.4	19.5
Business strategy	863.0	18.5	20.5	23.1
Sale of target company	861.0	18.5	26.1	26.8
Governance	1654.0	35.5	23.2	25.3

Panel B: Summary of Hedge Funds' Tactics	
Tactic categories	% of Events
1. The stake is for investment purposes. Alternatively, the intent is to communicate with the board/management to enhance shareholder value.	49.3
2. The hedge fund seeks board representation without a proxy contest or confrontation with the existing management/board.	23.4
3. The hedge fund makes formal shareholder proposals, or publicly criticizes the company and demands change.	35.6
4. The hedge fund threatens to wage a proxy fight in order to gain board representation, or to sue the company for breach of fiduciary duty etc.	8.0
5. The hedge fund launches a proxy contest in order to replace the board.	11.6
6. The hedge fund sues the company.	3.6
7. The hedge fund intends to take control of the company, for example, with a takeover bid.	3.2

Table 2: Hedge Funds' Capital Commitment and Investment Horizon

Panel A provides the size of the hedge funds' stakes both in terms of dollar values (at cost, in millions of 2018-dollars), and as a percentage of the outstanding shares of the target companies. We report the 5th, 25th, 50th (median), 75th, and 95th percentiles of the sample. The "Initial" columns report the stake that hedge funds take at their initial 13D filing. The "Max" columns report the maximum reported stakes that the funds accumulated in the targets as revealed from subsequent 13D/A filings. Panel B lists the length of holding period (in number of days) at different percentiles of the sample for the subsample that has exit information. Exit date is determined as the date in which there has been a resolution of the activist's demands. If this date is missing we look for the date in which the fund's stake in the target declined to below 5%. We report both the number of completed events, as well as those that are still ongoing or the date of exit cannot be firmly determined. In each panel, the statistics for the full sample and the subsample of initially hostile events are reported separately.

Panel A: Hedge Funds' Invested Capital								
Full Sample					Hostile Subsample			
Initial		Max			Initial		Max	
	Percent Ownership	Invested Cap' (in \$1m)						
5th	5.0	1.4	5.1	2.0	3.1	1.7	5.0	2.4
25th	5.4	5.4	6.7	7.0	5.4	5.4	7.3	8.2
Median	6.6	15.2	9.4	20.1	6.7	17.0	9.8	24.2
75h	9.8	55.3	14.2	71.9	9.6	57.7	14.8	86.2
95th	23.9	384.0	33.8	468.3	19.8	492.4	34.7	604.9
Average	9.5	89.6	12.9	115.9	8.6	105.0	13.6	149.4
N	4246.0	3820.0	4017.0	3616.0	911.0	848.0	836.0	782.0

Panel B: Hedge Funds' Investment Horizon (in days)		
	Full Sample	Hostile Subsample
5th	20	24
25th	99	90
Median	262	212
75th	616	477
95th	1976	1421
Average	532	409
Not completed or no data on completion	625	54
Total number of completed events	4032	1002

Table 3: Characteristics of Target Companies

Columns 1-7 columns display summary statistics of target firm characteristics. All potentially unbounded variables are winsorized at 1% and 99% extremes. Columns 8-12 show the proportion of target firms that fall into each of the quintile groups formed by the universe of firms in Compustat, CRSP, or Thomson-Reuters. Quintile breakpoints are re-computed yearly. All variables are retrieved from the year prior to the event year (and from two years prior to the event year if the first two data items are missing). *MV* is market capitalization in millions of dollars; *BM* is the book-to-market ratio defined as (book value of equity/market value of equity); *Q* is defined as (book value of debt + market value of equity)/(book value of debt + book value of equity); *Growth* is the growth rate of sales over the previous year; *ROA* is return on assets, defined as EBITDA/lagged assets; *CF* is cash flow, defined as (net income + depreciation and amortization)/lagged assets; *StkRet* is the buy-and-hold return during the 12 months before the announced activism; *Lev* is the book leverage ratio defined as debt/(debt + book value of equity); *Cash* is defined as (cash + cash equivalent)/assets; *DivYld* is dividend yield, defined as (common dividend)/*MV*; *Payout* is the total payout ratio, defined as (sum of common dividend payments and share repurchases)/*MV*; *RnD* is R&D (missing values are imputed as zeros) scaled by lagged assets; *HHI(SIC)* is the Herfindahl-Hirschman index of sales within 2-digit SIC industries; *HHI(Seg)* is the Herfindahl-Hirschman index of sales in different business segment within firms; *Analyst* is the the number of analysts covering the company from I/B/E/S. *Inst* is the proportion of shares held by institutions; *Amihud* is the Amihud (2002) illiquidity measure, defined as the yearly average (using daily data) of $1000\sqrt{|\text{Return}|}/(\text{Dollar Trading Volume})$. 73% of firm-years in the sample of target firms do not pay a dividend, 46% have zero payout, 57% do not engage in R&D, and 64% do not report segment data.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Summary statistics							% of Sample in each quintile				
Firm chars.	Mean	St. Dev.	10th	25th	Median	75th	90th	Q1	Q2	Q3	Q4	Q5
<i>MV</i>	1998.2	6529.0	35.6	81.8	255.2	987.0	3703.8	20.1	25.7	22.2	17.7	14.4
<i>BM</i>	0.689	0.742	0.119	0.301	0.570	0.947	1.431	17.5	17.9	17.7	20.9	24.7
<i>Q</i>	2.100	2.078	0.820	1.034	1.457	2.287	3.820	25.8	19.7	20.4	19.7	14.4
<i>Growth</i>	0.167	0.717	-0.193	-0.047	0.045	0.177	0.440	25.0	21.8	17.9	18.4	16.9
<i>ROA</i>	0.034	0.208	-0.161	0.007	0.076	0.137	0.200	22.3	18.4	22.7	21.2	15.4
<i>CF</i>	-0.011	0.221	-0.246	-0.028	0.042	0.096	0.152	23.7	18.7	22.1	19.5	15.9
<i>StkRet</i>	0.032	0.527	-0.551	-0.291	-0.037	0.250	0.628	30.1	22.0	15.3	14.8	17.8
<i>Lev</i>	0.247	0.269	0	0.010	0.177	0.370	0.605	23.1	15.3	17.1	19.5	25.0
<i>Cash</i>	0.208	0.233	0.012	0.035	0.112	0.300	0.580	18.8	18.1	20.0	22.4	19.5
<i>DivYld</i>	0.007	0.017	0	0	0	0.004	0.025	73.1	.	0.6	12.8	12.3
<i>Payout</i>	0.026	0.052	0	0	0.001	0.031	0.074	46.3	2.8	15.9	14.6	18.8
<i>RnD</i>	0.053	0.113	0	0	0	0.058	0.168	56.8	.	2.1	19.7	20.1
<i>HHI(SIC)</i>	0.062	0.055	0.024	0.029	0.042	0.072	0.120	20.5	13.7	23.1	19.3	23.4
<i>HHI(Seg)</i>	0.845	0.237	0.452	0.642	1	1	1	25.8	74.2	.	.	.
<i>Analyst</i>	6.624	7.671	0	1	4	9	17	21.7	21.7	21.5	19.0	14.8
<i>Inst</i>	0.533	0.318	0.068	0.250	0.553	0.816	0.954	12.5	18.6	20.8	22.9	25.3
<i>Amihud</i>	0.356	0.529	0.019	0.048	0.144	0.423	0.974	17.3	19.6	22.6	23.4	17.0

Table 4: Probit Analysis of Targeting

This table reports the effects of covariates on the probability of being targeted by activist hedge funds. The dependent variable is a dummy variable equal to one if there is hedge fund activism targeting the company during the following year. All covariates are defined in Table 3. For targeted companies, covariates are retrieved from two years prior to the event year if the data item from the year before is missing. Year fixed effects are included. Standard errors are clustered at firm level. In each column we report probit coefficients, their t -statistics, and the marginal probability change induced by a one-standard deviation change in the values of the covariates from their respective sample averages. *, **, and *** indicate statistical significance of the coefficients at the 10%, 5%, and 1% significance levels, respectively.

Panel A: Full sample period						
VARIABLES	(1) Coefficient	(2) t -statistic	(3) Marg. Prob. (%)			
$\ln(MV)$	-0.13***	-13.74	-1.51			
Q	-0.02***	-4.25	-0.29			
$Growth$	-0.02	-1.25	-0.07			
ROA	0.01	0.13	0.01			
$StkRet$	-0.06***	-3.52	-0.20			
Lev	0.21***	5.95	0.26			
$DivYld$	-2.75***	-4.66	-0.24			
RnD	0.10	0.91	0.06			
$HHI(SIC)$	0.41**	2.56	0.11			
$HHI(Seg)$	-0.11***	-2.77	-0.13			
$Inst$	0.54***	12.63	0.91			
$\ln(1+Analyst)$	0.02	1.14	0.10			
$Amihud$	-0.16***	-8.46	-0.62			
Year FE	Yes	Yes	Yes			
Clustered SE	Firm	Firm	Firm			
N and Pseudo R^2	112726	0.0693				

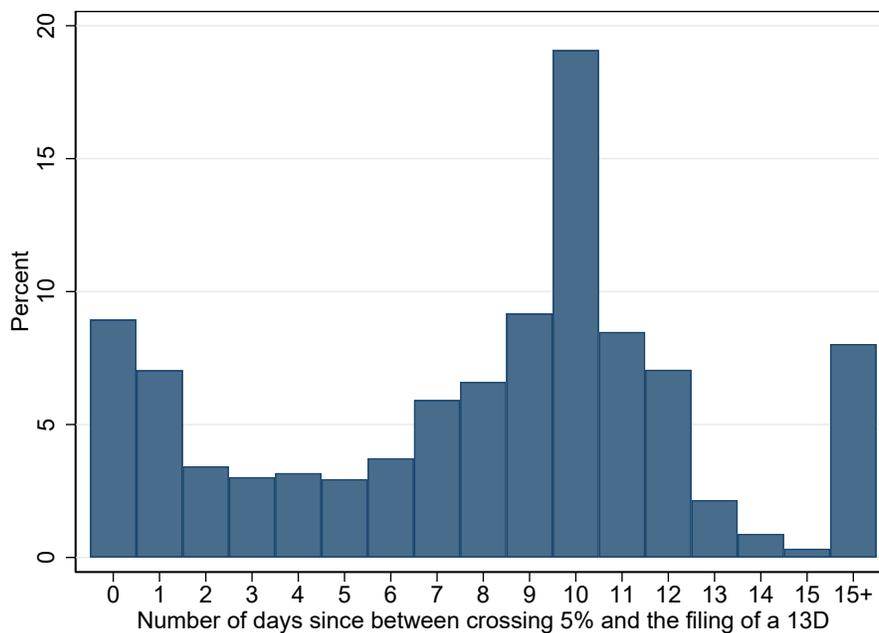
Panel B: Subsample: pre- and post-crisis						
VARIABLES	(1) Pre-crisis Coefficient	(2) Pre-crisis t -statistic	(3) Pre-crisis Marg. Prob. (%)	(4) Post-crisis Coefficient	(5) Post-crisis t -statistic	(6) Post-crisis Marg. Prob. (%)
$\ln(MV)$	-0.13***	-10.87	-1.14	-0.15***	-10.06	-2.95
Q	-0.03***	-3.82	-0.28	-0.02**	-2.08	-0.37
$Growth$	-0.02	-1.22	-0.07	-0.01	-0.30	-0.04
ROA	-0.14**	-2.11	-0.13	0.25***	2.82	0.52
$StkRet$	-0.02	-1.06	-0.06	-0.12***	-4.15	-0.62
Lev	0.18***	4.02	0.17	0.21***	4.02	0.47
$DivYld$	-1.33*	-1.78	-0.09	-4.28***	-4.72	-0.72
RnD	0.14	1.07	0.06	0.05	0.27	0.05
$HHI(SIC)$	0.75***	3.72	0.16	-0.03	-0.11	-0.01
$HHI(Seg)$	-0.12**	-2.40	-0.11	-0.08	-1.35	-0.18
$Inst$	0.80***	14.76	0.96	0.30***	5.00	0.94
$\ln(1+Analyst)$	-0.05***	-2.88	-0.24	0.12***	5.34	1.22
$Amihud$	-0.19***	-7.88	-0.59	-0.10***	-3.71	-0.66
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Clustered SE	Firm	Firm	Firm	Firm	Firm	Firm
N and Pseudo R^2	81508	0.0799		31218	0.0297	

Table 5: Initial Filing of Schedule 13D and the Number of Days Since Crossing the 5% Threshold to File

For each activism event in which a hedge fund filed a Schedule 13D with the SEC we search EDGAR for the filing date from the “Filing date” on the filing detail webpage. Similarly, we collect for each event the date that triggered the filing, namely, when the activist crossed the 5% ownership, from the item “Date of Event Which Requires Filing of this Statement.” The filing of a Schedule 13D on the same day that a fund has crossed the 5% threshold is measured as a 0 lag. Panel A provides the number and sample percentage of events in day-bins ranging from 1 to 15 days and a bin for those events with a day difference beyond 15 days. The same information is given as a bar graph below Panel A. Panel B provides the distribution of days since crossing the 5% threshold by year. We also report the number of events in each year that exceed 10 days. Panel C provides information on the association between the “day lag” for each event and the size of the hedge fund’s invested capital as a percentage of the outstanding shares of the target companies at the time of their initial 13D filings. We report the 5th, 25th, 50th (median), 75th, and 95th percentiles as well as the average for the subsamples of days lags: 0-1, 2-4, 5-7, and 8-10, 10+ days as well as the entire sample. For a detailed analysis of disclosures of accumulations of large blocks of stock in public companies by activist investors, see [Bebchuk et al. \[2013\]](#)

Panel A: Distribution of the number of days from crossing 5% to the filing of the 13D									
Day Bin	0	1	2	3	4	5	6	7	8
Number of Events	352	277	135	119	125	116	147	233	260
Percent of Sample	8.94	7.04	3.43	3.02	3.18	2.95	3.73	5.92	6.6

Day Bin	9	10	11	12	13	14	15	15+	Total
Number of Events	361	751	334	278	85	35	13	316	3937
Percent of Sample	9.17	19.08	8.48	7.06	2.16	0.89	0.33	8.03	100



Panel B: Yearly distribution of day lag							
Year	N	Percentile					$N_{>10}$
		5th	25th	Median	75th	95th	
1994	8	1	1.5	3	6.5	135	1
1995	32	6	8	10	12.5	82	12
1996	84	3	8	10.5	14.5	85	42
1997	179	4	8	10	14	80	85
1998	137	1	8	10	14	154	63
1999	97	1	8	10	12	96	36
2000	97	1	8	10	12	56	36
2001	85	1	7	10	11	20	23
2002	123	0	5	9	10	35	30
2003	115	0	5	9	11	26	33
2004	138	0	6	9	11	13	38
2005	213	1	5	9	11	18	58
2006	283	0	4	9	11	15	73
2007	333	0	4	9	11	16	94
2008	253	0	4	10	11	28	80
2009	137	0	4	9	11	368	40
2010	159	0	3	9	10	20	35
2011	166	0	5	9	10	13	35
2012	161	0	1	7	10	12	25
2013	172	0	3	8	10	12	38
2014	187	0	3	9	10	12	25
2015	147	0	3	8	10	58	31
2016	190	0	0	1	9	12	15
2017	217	0	4	9	11	18	55
2018	224	0	4	9	11	61	58

Panel C: Percent ownership sorted by days lag subsamples							
Group	N	5th	25th	Median	75th	95th	Average
0-1	629	5	5.4	7.9	10.3	20.8	9.8
2-4	1061	5.1	5.6	6.8	9.8	29.4	10.4
5-7	379	5	5.3	6.6	10.2	24.8	9.9
8-10	496	5.1	5.2	6.1	9	21.1	8.8
10+	1372	5	5.4	6.3	9	22.5	9.1
All Events	3937	5	5.4	6.6	9.8	24.3	9.6

Table 6: Long-term Abnormal Returns Subsequent to Hedge Fund Intervention

The table reports statistics on long-term abnormal returns associated with targets of hedge fund activism. We report regression estimates and t-statistics from value-weighted calendar-time portfolio regressions. The “Holding period” indicates the holding period in months relative to the month of the hedge fund **intervention**. For example, the portfolio with holding period (+1, +12), continually adds target firms that have had an activist event in the preceding month and holds these firms through a year after their respective activism event. The regression takes the form:

$$r_t - r_f = \alpha + \beta_{RMRF}RMRF_t + \beta_{SMB}SMB_t + \beta_{HML}HML_t + \beta_{RMW}RMW_t + \beta_{CMA}CMA_t + \beta_{MOM}MOM_t + \varepsilon_t$$

α is the estimate of the regression intercept from the factor model. β_{RMRF} is the loading on the market excess return. β_{SMB} , β_{HML} , β_{RMW} , β_{CMA} and β_{MOM} are the estimates of portfolio factor loadings on the Fama-French size, book-to-market, profitability, investment factors, and the Carhart momentum factor. We obtain the factor returns, market capitalization breakpoints, and monthly risk-free rates from Ken French’s web site at Dartmouth College. R^2 is the adjusted R^2 from the regressions and N is the number of monthly observations. Standard errors are Newey-West with four lags of autocorrelation. We set a minimum of ten firms per month for all portfolios.

Panel A: Value-weighted target firm six-factor regressions

VARIABLES	Holding period (in months)					
	(1) -36 to -25	(2) -24 to -13	(3) -12 to -1	(4) +1 to +12	(5) +13 to +24	(6) +25 to +36
α	-0.008 (-3.819)	-0.010 (-4.579)	-0.012 (-5.124)	-0.000 (-0.132)	0.001 (0.606)	0.004 (1.868)
β_{RMRF}	1.008 (17.506)	1.125 (14.024)	1.004 (14.829)	0.981 (17.956)	1.072 (20.860)	0.897 (16.591)
β_{SMB}	0.404 (4.661)	0.398 (4.728)	0.230 (2.078)	0.465 (6.448)	0.422 (6.895)	0.422 (4.827)
β_{HML}	-0.161 (-1.695)	-0.274 (-2.218)	0.057 (0.556)	-0.052 (-0.515)	-0.005 (-0.063)	0.041 (0.509)
β_{RMW}	-0.114 (-0.956)	0.321 (3.339)	0.305 (2.318)	0.345 (3.511)	0.245 (3.482)	-0.169 (-1.596)
β_{CMA}	0.251 (1.976)	0.120 (0.736)	0.019 (0.135)	0.229 (1.714)	0.054 (0.540)	0.081 (0.696)
β_{MOM}	-0.033 (-0.783)	-0.112 (-1.794)	-0.113 (-1.239)	-0.129 (-2.551)	-0.006 (-0.137)	0.091 (1.981)
N	300	300	301	298	292	280
R^2	0.690	0.706	0.594	0.694	0.763	0.694

Panel B: Value-weighted small target firms six-factor regressions

VARIABLES	Holding period (in months)					
	(1) -36 to -25	(2) -24 to -13	(3) -12 to -1	(4) +1 to +12	(5) +13 to +24	(6) +25 to +36
α	0.003 (1.268)	-0.002 (-1.107)	-0.004 (-2.064)	0.001 (0.574)	0.001 (0.458)	0.002 (0.955)
β_{RMRF}	0.890 (13.526)	0.809 (14.159)	0.887 (14.304)	0.820 (11.923)	0.877 (10.949)	0.941 (13.530)
β_{SMB}	0.910 (10.794)	0.974 (13.648)	0.774 (11.193)	0.789 (10.872)	1.070 (10.632)	0.976 (11.052)
β_{HML}	0.308 (2.468)	-0.043 (-0.376)	0.093 (0.600)	0.086 (0.647)	-0.009 (-0.051)	0.170 (1.315)
β_{RMW}	-0.129 (-1.222)	0.001 (0.007)	0.067 (0.667)	0.099 (0.872)	0.077 (0.495)	0.178 (1.540)
β_{CMA}	0.078 (0.473)	0.224 (1.625)	0.077 (0.546)	-0.058 (-0.402)	0.067 (0.358)	-0.196 (-1.195)
β_{MOM}	-0.331 (-4.386)	-0.345 (-5.146)	-0.221 (-4.515)	-0.238 (-3.938)	-0.280 (-3.547)	-0.202 (-3.218)
N	292	292	293	292	286	273
R^2	0.750	0.758	0.707	0.633	0.681	0.730

Panel C: Value-weighted large target firms six-factor regressions
Holding period (in months)

VARIABLES	(1) -36 to -25	(2) -24 to -13	(3) -12 to -1	(4) +1 to +12	(5) +13 to +24	(6) +25 to +36
α	-0.009 (-4.138)	-0.010 (-4.449)	-0.013 (-5.994)	0.000 (0.017)	0.001 (0.433)	0.003 (1.581)
β_{RMRF}	1.026 (16.446)	1.124 (13.247)	1.034 (15.763)	1.000 (17.621)	1.088 (20.306)	0.868 (15.635)
β_{SMB}	0.402 (4.328)	0.374 (4.251)	0.194 (1.689)	0.435 (5.839)	0.382 (5.934)	0.455 (5.148)
β_{HML}	-0.205 (-2.054)	-0.261 (-1.966)	0.065 (0.619)	-0.034 (-0.327)	0.010 (0.134)	0.014 (0.180)
β_{RMW}	-0.098 (-0.784)	0.312 (2.922)	0.302 (2.256)	0.339 (3.382)	0.249 (3.392)	-0.187 (-1.752)
β_{CMA}	0.267 (2.059)	0.099 (0.585)	0.047 (0.333)	0.247 (1.768)	0.062 (0.577)	0.121 (1.049)
β_{MOM}	-0.025 (-0.568)	-0.104 (-1.591)	-0.105 (-1.108)	-0.120 (-2.286)	0.009 (0.195)	0.072 (1.591)
N	290	290	297	292	289	275
R^2	0.690	0.695	0.608	0.683	0.750	0.689

Table 7: Long-term Abnormal Returns Subsequent to Hedge Fund Exit

The table reports statistics on long-term abnormal returns associated with targets of hedge fund activism. We report regression estimates and t-statistics from value-weighted calendar-time portfolio regressions. The “Holding period” indicates the holding period in months relative to the month of the hedge fund **exit**. For example, the portfolio with holding period (+1, +12), continually adds target firms that have had an activist event in the preceding month and holds these firms through a year after their respective activism event. The regression takes the form:

$$r_t - r_f = \alpha + \beta_{RMRF}RMRF_t + \beta_{SMB}SMB_t + \beta_{HML}HML_t + \beta_{RMW}RMW_t + \beta_{CMA}CMA_t + \beta_{MOM}MOM_t + \varepsilon_t$$

α is the estimate of the regression intercept from the factor model. β_{RMRF} is the loading on the market excess return. β_{SMB} , β_{HML} , β_{RMW} , β_{CMA} and β_{MOM} are the estimates of portfolio factor loadings on the Fama-French size, book-to-market, profitability, investment factors, and the Carhart momentum factor. We obtain the factor returns, market capitalization breakpoints, and monthly risk-free rates from Ken French’s web site at Dartmouth College. R^2 is the adjusted R^2 from the regressions and N is the number of monthly observations. Standard errors are Newey-West with four lags of autocorrelation. We set a minimum of ten firms per month for all portfolios.

Panel A: Value-weighted target firm six-factor regressions

VARIABLES	Holding period (in months)					
	(1) -36 to -25	(2) -24 to -13	(3) -12 to -1	(4) +1 to +12	(5) +13 to +24	(6) +25 to +36
α	-0.013 (-5.354)	-0.006 (-2.523)	0.003 (1.513)	0.001 (0.412)	0.002 (0.714)	0.001 (0.615)
β_{RMRF}	1.108 (13.802)	1.050 (14.343)	0.949 (13.216)	1.090 (20.077)	0.920 (13.084)	0.996 (12.375)
β_{SMB}	0.499 (4.686)	0.349 (3.083)	0.487 (5.977)	0.492 (6.873)	0.709 (6.869)	0.373 (3.017)
β_{HML}	-0.067 (-0.505)	-0.098 (-0.739)	0.210 (1.928)	0.219 (2.396)	-0.046 (-0.428)	0.071 (0.573)
β_{RMW}	0.106 (0.800)	0.241 (1.383)	0.268 (2.924)	0.141 (1.714)	-0.322 (-1.819)	0.077 (0.525)
β_{CMA}	0.165 (1.059)	0.388 (2.015)	-0.027 (-0.175)	-0.209 (-1.459)	0.283 (1.536)	-0.072 (-0.377)
β_{MOM}	0.052 (0.957)	-0.213 (-3.432)	-0.069 (-1.160)	0.097 (2.135)	0.116 (1.882)	0.101 (1.260)
N	292	292	293	287	275	262
R^2	0.635	0.635	0.654	0.778	0.735	0.603

Panel B: Value-weighted small target firms six-factor regressions

VARIABLES	Holding period (in months)					
	(1) -36 to -25	(2) -24 to -13	(3) -12 to -1	(4) +1 to +12	(5) +13 to +24	(6) +25 to +36
α	0.001 (0.492)	-0.002 (-0.890)	0.006 (2.366)	-0.001 (-0.413)	0.007 (2.121)	0.000 (0.031)
β_{RMRF}	0.879 (12.661)	0.863 (13.811)	0.900 (11.509)	0.997 (11.399)	0.920 (8.832)	0.961 (8.444)
β_{SMB}	0.928 (10.630)	0.870 (9.833)	0.911 (10.981)	1.213 (10.687)	1.018 (7.168)	0.892 (6.078)
β_{HML}	0.086 (0.647)	0.126 (0.816)	0.074 (0.458)	0.129 (0.748)	0.279 (1.536)	-0.065 (-0.406)
β_{RMW}	0.010 (0.087)	-0.033 (-0.278)	0.185 (1.371)	0.228 (1.278)	-0.006 (-0.031)	-0.187 (-1.038)
β_{CMA}	0.027 (0.174)	0.069 (0.408)	0.058 (0.359)	-0.385 (-2.155)	-0.353 (-1.404)	0.137 (0.507)
β_{MOM}	-0.235 (-4.675)	-0.237 (-3.888)	-0.155 (-2.615)	-0.319 (-4.580)	-0.298 (-2.474)	-0.233 (-2.229)
N	282	283	283	281	267	248
R^2	0.680	0.663	0.653	0.717	0.656	0.611

Panel C: Value-weighted large target firms six-factor regressions
Holding period (in months)

VARIABLES	(1) -36 to -25	(2) -24 to -13	(3) -12 to -1	(4) +1 to +12	(5) +13 to +24	(6) +25 to +36
α	-0.014 (-5.339)	-0.006 (-2.607)	0.003 (1.465)	0.001 (0.583)	0.002 (0.822)	0.002 (0.905)
β_{RMRF}	1.126 (13.520)	1.034 (13.624)	0.956 (12.684)	1.108 (20.241)	0.910 (12.087)	1.021 (12.800)
β_{SMB}	0.483 (4.317)	0.308 (2.615)	0.446 (5.063)	0.447 (6.107)	0.710 (6.513)	0.354 (2.791)
β_{HML}	-0.086 (-0.616)	-0.098 (-0.716)	0.230 (2.046)	0.235 (2.496)	-0.050 (-0.435)	0.084 (0.666)
β_{RMW}	0.112 (0.801)	0.238 (1.302)	0.245 (2.536)	0.147 (1.691)	-0.363 (-1.963)	0.104 (0.684)
β_{CMA}	0.201 (1.208)	0.418 (2.047)	-0.036 (-0.217)	-0.228 (-1.506)	0.318 (1.590)	-0.169 (-0.818)
β_{MOM}	0.057 (1.004)	-0.217 (-3.341)	-0.049 (-0.750)	0.116 (2.434)	0.123 (1.985)	0.134 (1.632)
N	285	287	287	283	267	251
R^2	0.619	0.610	0.636	0.769	0.721	0.615

Table 8: Benchmark-adjusted Evolution of Q and ROA around Activist Intervention

This table reports the results (coefficients and t -statistics in the parentheses) from linear regressions where the dependent variables are Q (columns (1) and (2)) and ROA (columns (3) and (4)), as defined in Table 3. The sample includes all firm-year observations from Compustat from 1994-2018. The tabulated coefficients measure the benchmark-adjusted evolution of target firm's Q/ROA over an event window centering around the activist's intervention, where the benchmark comprises all non-targeted Compustat firm-years. In specific, the regression takes the form:

$$y_{i,t} = \alpha_t + \alpha_j(\alpha_i) + \beta \cdot [t + k]_{i,t} + \gamma \cdot \Gamma_{i,t} + \varepsilon_{i,t}$$

The independent variables of key interest are dummy variables, $[t + k]$, $k = -3, -2, \dots, 5$, which are equal to one if a firm was targeted by activist hedge funds in k years prior to ($k \geq 0$) or ahead of ($k < 0$) the intervention year. Control variables include $\ln(MV)$, which is the logarithm of a firm's market capitalization at a given year-end; and $\ln(Age)$, which is the logarithm of the number of years since the firm's first appearance in the merged CRSP/Compustat database. All regressions include yearly dummies α_t . Columns (1) and (3) further include SIC3 industry-fixed effects α_j , while columns (2) and (4) include firm-fixed effects α_i . All standard errors adjust for heteroskedasticity as well as clustering at the firm level. Finally, *, **, and *** indicate statistical significance of the coefficients at the 10%, 5%, and 1% significance levels, respectively.

VARIABLES	Q and ROA evolution			
	(1) Q	(2) Q	(3) ROA	(4) ROA
$t - 3$	-0.2473*** (-6.74)	-0.1641*** (-4.21)	0.0116*** (4.05)	-0.0001 (-0.05)
$t - 2$	-0.3019*** (-8.58)	-0.1728*** (-4.32)	0.0066** (2.30)	-0.0028 (-1.01)
$t - 1$	-0.3712*** (-10.40)	-0.1874*** (-4.62)	0.0039 (1.37)	-0.0017 (-0.62)
t Event Year	-0.4008*** (-11.35)	-0.1351*** (-3.34)	-0.0042 (-1.43)	-0.0068** (-2.34)
$t + 1$	-0.1875*** (-4.56)	0.0371 (0.80)	0.0032 (1.08)	0.0001 (0.03)
$t + 2$	-0.1535*** (-3.51)	0.0933* (1.92)	0.0071** (2.16)	0.0007 (0.21)
$t + 3$	-0.0507 (-1.01)	0.1826*** (3.42)	0.0136*** (3.88)	0.0049 (1.46)
$t + 4$	-0.0573 (-1.15)	0.1626*** (3.03)	0.0183*** (4.82)	0.0091*** (2.70)
$t + 5$	0.0003 (0.01)	0.1758*** (3.33)	0.0161*** (3.82)	0.0079** (2.19)
$\ln(MV)$	0.2886*** (38.06)	0.8420*** (50.49)	0.0359*** (48.34)	0.0445*** (39.12)
$\ln(Age)$	-0.3716*** (-26.63)	-0.3711*** (-14.23)	0.0237*** (17.89)	0.0054*** (3.05)
Year FE	Yes	Yes	Yes	Yes
SIC3 FE	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes
N	137789	137789	137165	137165
R^2	0.216	0.555	0.316	0.737

Table 9: Diff-in-diff Analysis of Q and ROA around Activist Intervention

This table reports the results (coefficients and t -statistics in the parentheses) from linear regressions where the dependent variables are Q (columns (1) and (2)) and ROA (columns (3) and (4)), as defined in Table 3. The sample includes all activist events from 1994-2018. For each activism event, we select untargeted control event by 1) matching propensity score, and 2) matching deterioration of Q and ROA on the year that the activist intervened. For propensity score matching, we select the closest match according to propensity score computed based on the probit regression specified in Table 4. For deterioration matching, we select control candidates among those whose deterioration of Q and ROA falls into the same quartile bracket with the target firm, then keep the one with the closet market capitalization to the target firm. For both match methods, we require the placebo year to be the same year as the intervention year, and we require the matched firm to be in the same industry by the two-digit Standard Industrial Classification (SIC) classification. Matched firm who is targeted by activist hedge fund up to five years prior to the placebo year is replaced with the next best match. The tabulated coefficients measure the differences in target firm's and matched firm's Q/ROA evolution relative to the base year, i.e., the actual (placebo) intervention year for target (matched) firm. In specific, the diff-in-diff regression takes the form⁴⁰:

$$y_{i,t} = \alpha_t + \alpha_j(\alpha_i) + \lambda \cdot d_i \cdot [t + k]_{i,t} + \delta \cdot d_i + \beta \cdot [t + k]_{i,t} + \gamma \cdot \Gamma_{i,t} + \varepsilon_{i,t}$$

The independent variables of key interest are the interaction between treatment dummies d , which are equal to one if the firm is actually targeted, and dummy variables $[t + k]$, $k = -3, -2, \dots, 5$, which are equal to one if a firm was targeted by activist hedge funds in k years prior to ($k \geq 0$) or ahead of ($k < 0$) the intervention year. Year $t - 1$ is the omitted base year. All others are the same as in Table 8.

Panel A: The p -score-matched sample				
VARIABLES	(1) Q	(2) Q	(3) ROA	(4) ROA
$d \cdot t - 3$	0.0809* (1.65)	0.0165 (0.35)	0.0046 (1.21)	0.0030 (0.85)
$d \cdot t - 2$	0.0460 (1.19)	0.0121 (0.33)	-0.0044 (-1.63)	-0.0043 (-1.64)
$d \cdot t$ Event Year	0.1137*** (2.92)	0.1099*** (2.81)	-0.0038 (-1.41)	-0.0036 (-1.31)
$d \cdot t + 1$	0.1966*** (3.94)	0.1828*** (3.77)	-0.0024 (-0.62)	0.0017 (0.46)
$d \cdot t + 2$	0.1633*** (2.75)	0.2119*** (3.83)	-0.0019 (-0.42)	0.0026 (0.65)
$d \cdot t + 3$	0.2296*** (3.47)	0.2670*** (4.29)	0.0055 (1.06)	0.0102** (2.26)
$d \cdot t + 4$	0.2277*** (3.21)	0.2650*** (3.93)	0.0086 (1.53)	0.0152*** (3.12)
$d \cdot t + 5$	0.3174*** (4.11)	0.3281*** (4.63)	0.0024 (0.38)	0.0112** (2.08)
$\ln(MV)$	0.2435*** (18.70)	0.7038*** (25.54)	0.0339*** (27.52)	0.0441*** (21.99)
$\ln(Age)$	-0.2747*** (-9.25)	-0.2486*** (-4.53)	0.0206*** (8.01)	0.0067 (1.64)
$t + k$ Dummies	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
SIC3 FE	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes
N	42060	42060	42060	42060
R^2	0.232	0.631	0.355	0.763

Panel B: The deterioration-matched sample

VARIABLES	(1) Q	(2) Q	(3) ROA	(4) ROA
$d \cdot t - 3$	0.1169* (1.88)	-0.0248 (-0.42)	-0.0026 (-0.59)	0.0044 (1.13)
$d \cdot t - 2$	0.0511 (0.97)	-0.0276 (-0.58)	-0.0084** (-2.44)	-0.0037 (-1.24)
$d \cdot t$ Event Year	0.0037 (0.08)	0.0800* (1.79)	0.0009 (0.28)	-0.0026 (-0.92)
$d \cdot t + 1$	0.1511** (2.54)	0.2149*** (3.73)	0.0064 (1.47)	0.0052 (1.32)
$d \cdot t + 2$	0.1188* (1.75)	0.2392*** (3.71)	0.0092* (1.79)	0.0055 (1.22)
$d \cdot t + 3$	0.1173 (1.48)	0.2524*** (3.36)	0.0116** (2.01)	0.0099** (1.99)
$d \cdot t + 4$	0.2005** (2.41)	0.3210*** (4.07)	0.0105* (1.68)	0.0123** (2.35)
$d \cdot t + 5$	0.1962** (2.08)	0.2715*** (3.24)	0.0112* (1.65)	0.0169*** (2.95)
$\ln(MV)$	0.2507*** (18.27)	0.7848*** (23.89)	0.0353*** (25.53)	0.0445*** (17.92)
$\ln(Age)$	-0.3196*** (-10.45)	-0.1274** (-2.27)	0.0310*** (11.32)	0.0080** (2.02)
$t + k$ Dummies	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
SIC3 FE	Yes	No	Yes	No
Firm FE	No	Yes	No	Yes
N	45005	45005	45005	45005
R^2	0.221	0.623	0.366	0.776

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