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Short Campaigns by Hedge Funds

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Ian Appel
Boston College

Vyacheslav Fos
Boston College,CEPR and ECGI

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Abstract

Recent years have seen the rise of short campaigns by hedge funds. Nearly 80% of campaigns are undertaken by activist hedge funds, particularly those that employ hostile tactics in their long campaigns. Short campaigns are associated with negative abnormal returns of -7%, with aggregate valuation effects similar in magnitude to the gains from long activism campaigns. In contrast to long campaigns, public communication plays a critical role in short campaigns. Short campaigns are also associated with real effects, including increases in CEO turnover. Our analysis highlights the importance of short campaigns for understanding the economic impact of activist hedge funds.

Keywords: Activist Hedge Funds, Short Selling, Strategic Communication

JEL Classifications: G23, G14

Ian Appel*
Assistant Professor of Finance
Boston College, Carroll School of Management
140 Commonwealth Avenue
Chestnut Hill, MA 02467-3809, United States
phone: +1 617 552 1459
e-mail: ian.appel@bc.edu

Vyacheslav Fos
Associate Professor of Finance, Hillenbrand Family Faculty Fellow
Boston College, Carroll School of Management
Fulton Hall, 140 Commonwealth Avenue
Chestnut Hill, MA 02467, United States
phone: +1 617 552 1536
e-mail: fos@bc.edu

*Corresponding Author

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Ian Appel
Carroll School of Management, Boston College
ian.appel@bc.edu

Vyacheslav Fos
Carroll School of Management, Boston College
CEPR, ECGI
vyacheslav.fos@bc.edu

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Short Campaigns by Hedge Funds

Abstract

Recent years have seen the rise of short campaigns by hedge funds. Nearly 80% of campaigns are undertaken by activist hedge funds, particularly those that employ hostile tactics in their long campaigns. Short campaigns are associated with negative abnormal returns of -7%, with aggregate valuation effects similar in magnitude to the gains from long activism campaigns. In contrast to long campaigns, public communication plays a critical role in short campaigns. Short campaigns are also associated with real effects, including increases in CEO turnover. Our analysis highlights the importance of short campaigns for understanding the economic impact of activist hedge funds.

The costs associated with the disclosure of short positions are often significant. In early 2021, for example, short sellers in GameStop were threatened with violence and called to testify before Congress.[1] In addition to hostility from the government and society at large, short sellers are also subject to various "anti-shorting" actions by firms that increase the costs associated with maintaining a position (Lamont, 2012). Because U.S. securities laws do not mandate the disclosure of their positions, short sellers can limit these costs by keeping their positions private.[2] Yet, recent years have seen a new phenomenon: high-profile short-selling campaigns waged by hedge funds. Lakewood Capital's short of Universal Insurance Holdings provides an illustrative example. Lakewood announced a short position in Universal at an investment conference in 2015, alleging (among other things) that the company lacked sufficient reserves. The announcement was covered by multiple media outlets, and the stock fell nearly 30% the following day.

While a rich literature studies the long positions of hedge funds and activism campaigns that often accompany them (hereafter referred to as "long activism campaigns"), relatively little is known about their short campaigns. We aim to fill this gap in the literature. Our paper has three main goals. First, we conduct a descriptive analysis of short campaigns: How common are they? What allegations are made? What are the characteristics of hedge funds that undertake such campaigns and the firms they target? Second, we study the consequences of short campaigns: How do markets react to campaign announcements? How do shareholders/stakeholders respond to the allegations? Are campaigns associated with real effects? Third, we compare short campaigns with long activism campaigns: What is the relative magnitude of their economic impacts? Are there differences in the role public communication plays in short and long campaigns?

A priori, the extent to which hedge funds undertake short campaigns is unclear. On the one hand, hedge funds, in aggregate, have trillions of dollars under management, face few investment restrictions, and use contractual provisions that mitigate risks associated

[1] See "Wall Street's Most Reviled Investors Worry About Their Fate" (*New York Times*, 2/8/2021)

[2] Consistent with this idea, Jones et al. (2016) and Jank et al. (2016) find that mandatory disclosure of short positions reduces short selling.

with short selling. These factors suggest that hedge funds may face relatively weak limits to arbitrage and convey negative information via trading rather than public communication. On the other hand, hedge funds that engage in long activism campaigns may also have distinct advantages related to short campaigns. Like long activism campaigns, short campaigns center on identifying a (mispriced) problem at the target. As discussed above, the public disclosure of such a problem may be costly. Costs associated with public confrontation may, however, be lower for activists, particularly those that use hostile tactics in long campaigns. Moreover, activists that use hostile tactics may have higher reputational capital because their engagements often require support from other investors (e.g., in a proxy fight). Because short campaigns rely on the strength of the signal sent by public disclosure (rather than voting power), the credibility of allegations involved in a campaign may increase the expected payoff.

We use media reports and a commercial database to construct our sample of short campaigns. We identify 323 campaigns between 1996 and 2019. The number of campaigns has increased considerably in recent years. Prior to 2008, the number of campaigns averaged fewer than five per year. Since 2008, however, the annual number of campaigns more than quintupled, peaking at 45 in 2015 (see Figure 1). Campaigns feature a wide array of allegations; the most common are general overvaluation, issues related to industry/competitors, defective product/business model, or fraud. Relative to matched firms, targets of short campaigns tend to be large, high-growth, and have higher short interest prior to a campaign.

We document three main sets of results. First, we examine the characteristics of funds that undertake short campaigns. Activist hedge funds account for the bulk of campaigns in our sample. Specifically, while activists constitute less than a quarter of all hedge funds, they undertake approximately 80% of short campaigns. Other fund characteristics (e.g., AUM, portfolio concentration, turnover, etc.) have little explanatory power. To the best of our knowledge, this paper is the first to document the link between short campaigns and access to activism technology.

We next consider potential explanations for the link between long activism and short campaigns. Ljungqvist and Qian (2016) argue that the disclosure of short positions helps "small arbitrageurs" (i.e., research firms and individuals) to overcome limits to arbitrage. In contrast to Ljungqvist and Qian (2016), we focus on relatively large institutional investors. While all investors face limits to arbitrage, such frictions may not be a primary determinant of campaigns in our setting because hedge funds face weaker financial constraints. Indeed, we do not observe a relationship between AUM and the likelihood of undertaking a short campaign, which is inconsistent with the limits-to-arbitrage explanation. Instead, we propose that the link between long activism and short campaigns is, in part, a consequence of the hostility of activist hedge funds. We find that activists that undertake short campaigns are nearly twice as likely to use hostile tactics (e.g., proxy fights) in their long campaigns. This relationship is robust to controlling for a measure of reputation and characteristics of activists' long campaigns, suggesting that it reflects lower non-pecuniary costs for activists who are accustomed to public confrontations.

Our second set of findings analyzes the valuation consequences of short campaigns. Cumulative abnormal returns (CARs) average approximately -7% in a [t–20, t+20] window around campaign announcements. We do not find evidence that abnormal returns revert over longer time horizons, with CARs averaging approximately -10% for the [t–20, t+100] window. Short-campaign CARs are considerably larger in economic magnitude than CARs associated with large changes in short interest, suggesting that the public nature of campaigns has an incremental effect. We also find negative abnormal returns for the subset of campaigns that are announced at investment conferences, the timing of which are predetermined and likely orthogonal to other events that may affect target returns (e.g., negative news). Finally, we analyze heterogeneity with respect to disclosure methods and the identity of short sellers. Disclosure via high-profile media outlets is associated with 7% lower abnormal returns, and campaigns undertaken by activists have 5% lower abnormal returns.

To quantify the economic impact of short campaigns, we compare their valuation

effects to those of long activism campaigns. Specifically, we analyze abnormal returns for the value-weighted portfolio of all campaigns (both long and short) undertaken by activist hedge funds. We limit the analysis to the second half of our sample, when the bulk of short campaigns occur. We find that value-weighted CARs for all campaigns undertaken by activists over this period are precisely measured as zero. This finding implies that the aggregate decrease in market value stemming from activist hedge funds' short campaigns is similar in economic magnitude to that of their long activism campaigns. The similar magnitudes are a consequence, in part, of differences in the size of targeted firms. Whereas long activism campaigns outnumber short campaigns by a 12 to 1 ratio, short campaigns target considerably larger firms. Thus, the aggregate market cap targeted by long activism campaigns is just three times larger than that of short campaigns.

The difference in target sizes underscores the existence of fundamental asymmetries between short and long campaigns. In a long activism campaign, funds use traditional governance tools (e.g., voting) to influence managers and increase firm value. Such tools typically strengthen when an activist owns a larger stake in the target. Yet, amassing a large stake is costly as it requires capital commitment by the activist. Consistent with this idea, prior research shows that market capitalization is negatively correlated with the likelihood of a long activism campaign (Brav et al., 2008a). In a short campaign, however, funds do not own shares and cannot use traditional governance tools. Our finding that firms targeted by short campaigns are considerably larger than those targeted by long campaigns highlights the idea that the success of short campaigns—as measured by the effect on a target's value—does not necessarily rely on amassing a large stake. Rather, their success depends critically on the information communicated to other market participants.

We examine the relationship between CARs and campaign allegations to shed light on differences in the transmission of positive and negative information into prices. We hypothesize that the specificity of allegations is a key determinant of the success of short campaigns. In contrast to general allegations (e.g., that a firm is overvalued), specific allegations (e.g., that a firm's product is defective) point to a particular problem with

the target and can often be verified by other market participants. We find that 73% of short campaigns feature specific allegations, compared with 52% of long activism campaigns. Abnormal returns for long and short campaigns exhibit starkly different patterns by accusation specificity. For short campaigns, CARs average -8% for specific allegations, compared with -3% for general allegations.[3] This differential is not observed for long activism campaigns; CARs average 5% for specific allegations and 4% for general allegations. This asymmetry highlights differences in incentives to engage in public communication in long and short campaigns. In particular, long campaigns often begin with activists privately communicating with targets' management teams (e.g., Brav et al., 2008a; McCahery et al., 2016). If the communications are successful (i.e., the manager implements the requested reforms), the activist may never engage in public communication. Short sellers have weaker incentives to privately communicate negative information to managers, however, because if such communication is successful (i.e., the firm addresses the allegation) this may limit the profitability of the short position.

Our third set of results examines stakeholder responses and real effects of short campaigns. For this analysis, we compare changes in outcomes for targets with changes for matched firms. We find that short campaigns are associated with an increase in forced CEO turnover, but no change in director turnover. These findings suggest that directors hold CEOs responsible for the accusations or consequences of campaigns, but do not face labor-market consequences themselves. Campaigns are associated with an increase in litigation by various stakeholders, driven primarily by shareholder and fraud/accounting-related lawsuits. We also find evidence that short campaigns are related to firm outcomes. Specifically, targets are more likely to experience bankruptcy-related delistings. We do not, however, find significant changes in profitability, suggesting that short campaigns are more likely to lead to extreme negative outcomes rather than hurting performance on average. Finally, we find a negative and significant association between short campaigns and

[3]Cvijanovic et al. (2022) document similar effects of investor credibility in the context of activists' exits from long positions.

investments. Because short campaigns do not rely on formal governance mechanisms, this finding is consistent with the notion that financial markets exert real effects via information transmission.

Our findings contribute to two primary lines of literature. First, we contribute to the literature on hedge fund activism. This literature broadly finds that activism campaigns are associated with positive stock-price reactions and improved operating performance (e.g., Brav et al., 2008a; Becht et al., 2008; Klein and Zur, 2009; Bebchuk et al., 2015; Clifford, 2008; Albuquerque et al., 2021).[4] We make three primary contributions to this literature. First, we show that the economic impact of activist hedge funds on financial markets is considerably greater than what is measured from long positions alone. Indeed, in recent years, the overall effect of short campaigns on the market value of equities is of similar magnitude (though opposite sign) to the effect of long activism campaigns. Second, we document fundamental asymmetries between short campaigns and long activism campaigns. Whereas long activism campaigns often feature private communication between activists and targets (e.g., Becht et al., 2008; Brav et al., 2008a; McCahery et al., 2016), our results highlight the difference in the role public communication plays in short and long activism campaigns. Third, our findings speak to the channels through which activists affect valuation and real outcomes. In contrast to long activism campaigns, short campaigns do not involve the use of direct governance tools. Thus, the effects of short campaigns highlight the power of financial markets to induce real changes (Bond, Edmans, and Goldstein, 2012).

Second, we contribute to the literature on short selling. Several papers show that short interest is associated with weaker future performance at both the market and individual stock levels.[5] A related strand of literature studies the informational advantages of short

[4]Other papers examine the effects of activists on various outcomes, including innovative activities (Brav et al., 2018), productivity and asset allocation (Brav et al., 2015), and takeover offers (Boyson et al., 2017; Greenwood and Schor, 2009). See Brav et al. (2010), Denes et al. (2017), and Gillan and Starks (2007) for comprehensive reviews of this literature.

[5]For example, see Seneca (1967), Senchack and Starks (1993), Desai et al. (2002), and Rapach et al. (2016). Previous work has also analyzed alternative measures of aggregate or institutional short selling, including required disclosure in European markets (e.g., Jones et al., 2016), costs associated with shorting (e.g., Cohen et al., 2007; Jones and Lamont, 2002), and institutional short-sale orders (e.g., Boehmer et al.,

sellers, including detection of financial misconduct (Karpoff and Lou, 2010), anticipation of earnings and analyst downgrades (e.g., Christophe et al., 2004, 2010), and the ability to process public news releases (Engelberg et al., 2012).

Our paper is closely related to the strand of the short-selling literature that studies the voluntary disclosure of positions by various types of investors. Ljungqvist and Qian (2016) show that short positions disclosed by individuals and research firms (e.g., Muddy Waters) are associated with negative abnormal returns and help to overcome limits to arbitrage. Brendel and Ryans (2021) study firms' responses to reports by research firms. Firms are more likely to respond when a campaign earns stronger abnormal returns, and responses are correlated with future negative outcomes (e.g., SEC enforcement actions, etc.). Other papers use Seeking Alpha and other sources to study short-position announcements by a broader array of market participants. For example, Mitts (2020) uses Seeking Alpha to analyze return dynamics around the announcement of pseudonymous short campaigns. Zhao (2020) and Wong and Zhao (2017) use a sample of short positions disclosed by institutions, research firms, and individuals, primarily from Seeking Alpha, to study the determinants of campaigns and firm outcomes. Kartapanis (2019) uses a similar sample to study allegations of fraud, finding that approximately 30% of such allegations are ultimately confirmed.

Our analysis differs from the existing literature on short campaigns along several important dimensions. First, our paper is among the first to study the short campaigns exclusively initiated by hedge funds. This distinction is important because hedge funds face fewer capital constraints than the relatively small investors/individuals studied elsewhere in the literature. Second, our focus on hedge funds enables us to also observe investors' long positions. This information offers several novel insights regarding the economics of short campaigns. In particular, we document a link between short campaigns and access to activism technology and highlight the differences in the use of public communication between short and long activism campaigns. Third, in contrast to papers

2008). See Reed (2013) for a comprehensive review of this literature.

that study platforms that allow for the pseudonymous transmission of information (e.g., Seeking Alpha), we focus exclusively on non-anonymous campaigns. This difference is important as pseudonymous campaigns undermine reputational concerns, thus incentivizing manipulative behaviors (Mitts, 2020). By construction, our sample consists of non-anonymous campaigns that do not offer such incentives. Reputational concerns may be particularly important for hedge funds because, in contrast to research firms and individuals, they manage capital on behalf of external clients (Ljungqvist and Qian, 2016).

1. Data

1.1. Sample and Data Sources

Our sample consists of short campaigns carried out by hedge funds between 1996 and 2019. To construct the sample, we begin with a list of more than 1,200 hedge funds from Agarwal, Fos, and Jiang (2013). This list contains hedge funds that have filed Form 13Fs with the SEC. We use two approaches to assemble a database of hedge funds' short campaigns. First, we use Activist Insight (AI), a commercial database that catalogs public short positions reported by the media. We restrict the campaigns from AI to those from our initial list of hedge funds as well as other investors that we confirm are hedge funds via media reports. Second, we append this list using Factiva searches. Specifically, we conduct searches of the form "Hedge Fund Name" and ("short position" or "short selling") as well as other variants of these phrases across the newspapers, newswires, blogs, and television transcripts covered by Factiva. In some cases, we conduct internet searches to find additional information about campaigns.

For each campaign, we collect the date of the announcement, the revelation method (e.g., investment conference, media interview, release of a white paper, etc.), and the primary allegations made by the hedge fund (e.g., general overvaluation, fraud, threats from competitors, etc.). Our final sample consists of 323 events by 53 hedge funds. Internet Appendix Table A1 reports the hedge funds associated with the highest number of campaigns in our sample. The sample is somewhat top-heavy, with 14 funds undertaking 5

or more campaigns. Funds with the most campaigns include Kynikos Associates, Kerrisdale Capital, Lakewood Capital, and Greenlight Capital.

We merge data from several other sources with our sample. Accounting and returns data are from Compustat annual files and CRSP daily files, respectively. Short interest are from Compustat. Institutional ownership data are from Thomson Reuters and Form 13F filings. Analyst coverage is from IBES. Litigation data are from Audit Analytics. We use data on forced CEO turnovers available on WRDS from Peters and Wagner (2014) and Jenter and Kanaan (2015). Data on directors are from Boardex. Data on long activism campaigns are from Brav et al. (2008a). Variables constructed from these databases are defined in Internet Appendix Table A2.

1.2. Selection Issues

Our reliance on media reports in the construction of our sample raises selection bias concerns. For example, it is possible that the media covers only short position disclosures that are associated with large changes in stock prices. Two pieces of evidence suggest that such effects likely do not drive our main findings.

First, investors often report short positions on Seeking Alpha (Mitts, 2020; Zhao, 2020). If a short campaign does not receive media attention, hedge funds may use such platforms to share information non-anonymously. We do not find evidence that such behavior is widespread. Specifically, searches for disclosures of short campaigns by the 10 largest activist and non-activist hedge funds do not reveal widespread reporting on Seeking Alpha, suggesting that announcements by such funds are likely to be covered in the media.

Second, we report our analysis of abnormal returns for the sub-sample of events disclosed at investment conferences, which often receive considerable media attention. For example, media outlets (e.g., CNBC and *The Wall Street Journal*) provide live analysis of the annual Sohn Investment Conference.[6] Thus, it is unlikely that there is a systematic

[6]See, for example, "Ira Sohn Conference: Live Blogging The David Einhorn Show" available at https://blogs.wsj.com/deals/2012/05/16/ira-sohn-conference-live-blogging-the-david-einhorn-show/.

bias for campaigns disclosed at conferences.

2. Campaign and Target Characteristics

In this section, we document the prevalence of short campaigns over time as well as their allegations and disclosure methods. We also examine the characteristics of targets and funds that predict campaigns.

2.1. Campaign Characteristics

Figure 1 shows the time-series distribution of short campaigns. In the first half of our sample (1996–2007), the number of campaigns averaged fewer than five per year. In the second half, however, the number of campaigns increased substantially, averaging over 23 per year from 2008 to 2019. While some campaigns launched in 2007–2008 were in direct response to the financial crisis (e.g., Bill Ackman's campaign against Lehman Brothers), the number of campaigns remains elevated in the post-crisis period, peaking at 45 in 2014. The number of campaigns drops in the final few years of the sample, although the total remains considerably higher than the pre-2008 period.

[Insert Figure 1 here]

We next turn our attention to campaign allegations. We classify allegations into six categories: financials/capital structure, industry/competitors, fraud/accounting, product/business model, management/insider selling, and general overvaluation. Campaigns that do not state an explicit rationale are classified as general overvaluation. Classifications are not mutually exclusive, so some campaigns include multiple types of allegations. If an allegation is classified as general overvaluation, however, this implies that no other specific allegations are made. Panel A of Table 1 reports the distribution of short campaigns across the types of allegations.

[Insert Table 1 here]

Approximately 27% of campaigns allege that their targets are generally overvalued but do not make specific allegations. The remainder of the campaigns make specific allegations regarding the target firms. The most common allegations relate to a target's industry/competitors (22.5%), product/business model (37.5%), or fraud/accounting problems (13.5%). Other allegations include issues related to financials/capital structure (12.9%) and issues related to management or insider selling (4.0%).

Panel B reports the distribution of disclosure methods for short campaigns. We base our classification of disclosure methods on how a fund initially announces a campaign, not necessarily how we learn about it. For example, if a campaign is announced at an investment conference and we learn about it from a newspaper article, this is classified as a conference announcement. We classify disclosure methods into four categories: letters to investors, newspapers/television, investment conferences, and white papers/other. The most common form of disclosure, in a newspaper or on television, accounts for 34.5% of short campaigns. Another 26.5% of positions are announced at investor conferences and 18.5% are disclosed in a letter to a fund's investors. The remaining 20.6% of campaigns are disclosed through white papers posted online or other methods.

2.2. Target and Fund Characteristics

Table 2 reports characteristics of targets (both mean and median) as well as differences with matched firms. The firm characteristics and matching methodology follow Brav et al. (2008a). Targets differ from the matched sample along a number of dimensions. One prominent difference relates to size: on average the market cap for targets is close to $4 billion larger than that for matched firms. We match on firm size (as measured by market cap) in the remainder of our analysis to account for this difference.

[Insert Table 2 here]

Targets also differ from matched firms in terms of valuation and growth. Specifically, targets have higher Q and sales growth and lower book-to-market ratios. We do not, however, observe strong differences in past performance, measured either by ROA or stock

returns. Targets are characterized by higher institutional ownership and more liquid stocks (as measured by the Amihud (2002) illiquidity measure), suggesting that short-selling costs may be lower. Consistent with this idea, targets also have higher short interest. We do not observe differences for a number of other financial variables, including cash flow, leverage, cash holdings, dividends and payouts, and analyst coverage.

In Table 3, we analyze which target and fund characteristics predict short campaigns. In Panel A, we use firm characteristics as explanatory variables in a probit model (column 1) and OLS models (columns 2–4). Columns 2, 3, and 4 include year, industry and year, and industry-year fixed effects, respectively. The dependent variable is an indicator that equals one if a firm is targeted by a campaign in year t. The sample consists of all Compustat firm-year observations from 1996 through 2019. As is the case with Table 2, here we find robust evidence across each specification that the likelihood of targeting is positively associated with size, Q, and growth. These findings further confirm that targets can generally be characterized as relatively large growth firms. Also as in Table 2, short interest predicts campaigns. The economic magnitude of this effect is large. Specifically, the estimate reported in column 4 indicates that a five percentage point increase in short interest is associated with a 0.3% increase in the likelihood of targeting, approximately double the unconditional likelihood.

[Insert Table 3 here]

Panel B reports the characteristics of hedge funds that undertake campaigns.[7] The sample includes Schedule 13F fund-quarter observations for all hedge funds. For column 1 we use a probit model, and for the remaining columns we use OLS with year-quarter(column 2) and fund and year-quarter (column 3) fixed effects. Columns 1 and 2 indicate a positive relationship between being an activist and the likelihood of undertaking a campaign. Specifically, column 2 indicates that the likelihood of undertaking a campaign is 0.44%

[7]Internet Appendix Table A3 reports descriptive statistics for the fund-level variables used in this analysis.

higher for activist hedge funds than for non-activist hedge funds. The economic magnitude of this coefficient is more than twice the unconditional likelihood of a short campaign. This finding is consistent with the fact that activists initiate 251 out of 323 campaigns in our sample (78%). It is also consistent with the fact that, of the 14 funds in our sample that undertake 5 or more campaigns, all but 2 are activists (Table A1). The effect is not driven by a higher representation of activists in the sample of hedge funds; in our dataset, 240 out of 1,199 hedge funds are activists. Other fund characteristics have little explanatory power. The likelihood that a campaign is undertaken is unrelated to assets under management, portfolio performance, number of holdings, portfolio concentration, etc.

2.3. Why Activists?

The above findings suggest that there is a link between short campaigns and activism technology. We next shed light on what drives this relationship. Ljungqvist and Qian (2016) argue that small, constrained investors publicly disclose short positions to mitigate limits to arbitrage. Our focus on relatively large, less-constrained investors suggests that such constraints may not be particularly important. Indeed, while both activist and non-activist hedge funds incur costs associated with retaining short positions, it is not clear why limits to arbitrage would predict that campaigns are disproportionately undertaken by activists. In addition, limits to arbitrage are presumably more likely to bind for smaller hedge funds. In Table 3, however, we report that there is no significant relationship between a fund's AUM and the likelihood of undertaking a short campaign. If anything, the coefficients on AUM are positive (although not statistically significant), the opposite of what limits to arbitrage would predict.

We examine activist characteristics to shed light on why they undertake the bulk of short campaigns. We focus on the use of hostile tactics (e.g., proxy fights) in long campaigns. We conjecture that short campaigns may be related to the use of hostile tactics for two reasons. First, hostile tactics are often used in long activism campaigns that require support from other shareholders (e.g., in a proxy fight). Investors who use such tactics may have relatively high reputational capital, increasing the credibility of allegations

in a short campaign. Second, the use of hostile tactics may indicate that fund managers bear lower non-pecuniary costs stemming from public confrontations. Given that short campaigns likely feature such costs (e.g., in the form of public backlash, investigations by regulators, etc.), this may explain why activist hedge funds disproportionately engage in short campaigns.

To test this idea, we use long-campaign characteristics to predict whether a fund undertakes short campaigns in the cross-section. We use data on long campaigns from Brav et al. (2008a) to construct the explanatory variables for this test. The main variable of interest is an indicator for whether a fund uses hostile tactics in long campaigns. We also control for whether a fund is included in the "SharkWatch 50" list from SharkRepellent (Factset), a list of 50 prominent activist funds that arguably proxies for reputation. Other long campaign controls include the proportion of campaigns with different objectives (capital structure, business strategy, etc.) and the proportion of long activism campaigns that are classified as successes or failures.

[Insert Table 4 here]

Table 4 reports our findings. Column 1 shows that the use of hostile tactics in long campaigns is associated with approximately a 5 percentage point increase in the likelihood of a short campaign. The economic magnitude of this effect is large given that fewer than 4% of activist hedge funds undertake short campaigns. Column 2 reports that a measure of investor reputation, inclusion on the SharkWatch 50 list, also predicts short campaigns. Column 3 reports a specification that includes indicators for both hostility and SharkWatch 50. Both variables remain positive and statistically significant in this specification. The remaining columns control for objectives of long campaigns (column 4) as well as activists success/failure rates (column 5). The inclusion of these additional controls has little effect on the estimates for hostility or SharkWatch 50. Overall, this table provides evidence that the relationship between long activism campaigns and short campaigns is driven, in part, by the use of hostile tactics. While there are, potentially, multiple interpretations of

this finding, the relationship is robust to controlling for a measure of investor reputation, suggesting that lower non-pecuniary costs may account for this effect.

3. Shareholder Wealth Effects

In this section, we consider the valuation effects of short campaigns. First, we examine CARs around campaign announcements and test how they vary for different types of disclosures. Second, we compare the value effects of short campaigns with those of long activism campaigns. Third, we examine asymetries between long and short campaigns, focusing on incentives to engage in public communication.

3.1. Abnormal Returns

Figure 2 plots CARs from a three-factor model in a [-20, 20] window around short campaign announcements. Panel A uses the full sample of campaigns. The solid line plots equal-weighted CARs associated with short campaigns. CARs drop after the announcement of a campaign, eventually reaching close to -7% by the end of the event window. The magnitude of this effect is similar to that of short campaigns in other contexts (e.g., Ljungqvist and Qian, 2016; Zhao, 2020). In contrast to Mitts (2020), who analyzes pseudonymous campaigns, we do not find evidence of mean reversion in abnormal returns (i.e., a "V" shape). This difference underscores the idea that, while pseudonymity may facilitate manipulative behaviors, this is not the case for non-anonymous campaigns. The pattern of abnormal returns in our setting suggests that short campaigns undertaken by hedge funds enhance price efficiency.

[Insert Figure 2 here]

The gray bars in Figure 2 plot abnormal turnover, which trends higher prior to a campaign announcement and remains at an elevated level for approximately five trading days following the announcement. The dashed line plots CARs for large (i.e., greater than five percentage points) increases in short interest for all stocks in the CRSP database. The return dynamics differ dramatically from those for short campaigns. Specifically, abnormal

returns trend higher before a large change in short interest, then slowly trend lower after the change occurs. This stark difference suggests that short campaigns have an incremental effect on valuation beyond that stemming from changes in short interest. Internet Appendix Table A4 reports statistical tests for short campaign CARs (Panel A) and compares post-event CARs for short campaigns with those for large changes in short interest (Panel B).[8] The results provide further support for the idea that public communication via short campaigns has an incremental effect, although differences between short campaigns and large changes in short interest are statistically noisy over longer time horizons.

A potential concern with this analysis is the endogenous timing of campaign announcements. Specifically, funds may time announcements to coincide with other events (e.g., negative earnings announcements) that also affect firm value. If this is the case, the above findings cannot be attributed solely to short campaigns. To address this concern, in Panel B of Figure 2 we confine the sample to the subset of campaigns that are announced at investment conferences, the timing of which are predetermined and likely orthogonal to other firm-specific events. CARs are somewhat larger for this sample, reaching approximately -11% in the [-20, 20] window, suggesting that our main findings are not driven by the endogenous timing of short campaigns.

Internet Appendix Figure A1 plots the distribution of CARs for individual campaigns. This figure indicates that the average effect shown in Figure 2 is not a consequence of a handful of campaigns with highly-negative returns. Rather, the distribution of CARs around announcements exhibits a left-skewed distribution. For example, campaigns with CARs that fall between -15 and -25% outnumber those with CARs that fall between 15 and 25% by a three to one margin (39 vs. 13 campaigns).

Internet Appendix Figure A2 shows CARs over the [-20, 100] period for both the full sample (Panel A) and campaigns announced at conferences (Panel B). The magnitudes of abnormal returns are somewhat larger over the longer time horizon, reaching approximately

[8] We calculate CARs starting at t–1 for this analysis in order to exclude the period of positive drift in returns prior to large changes in short interest.

-10% for the full sample. The full effect on target valuation is not immediate. While there is an initial price reaction to the announcement of a campaign, abnormal returns drift lower for approximately 40 days following a campaign.

We hypothesize that the diffuse nature of long-term CARs reflects the fact that the information revelation in a short campaign often does not constitute a single event. In other words, following an initial campaign announcement, there may be "follow-up" disclosures by either the fund initiating a campaign or other market participants. Such disclosures may contain new information that affects the valuation of the target. Bill Ackman's short of Farmer Mac, one of the campaigns in our sample, is a case in point. In May of 2002, Ackman (Gotham Partners) released a report arguing that Farmer Mac had inadequate loan-loss reserves and made misleading disclosures. The following month, Whitney Tilson (Tilson Capital Partners) announced that his research confirmed Ackman's allegations. In July, Ackman published two follow-up reports, addressing Farmer's management's responses to his allegations. Thus, the short campaign against Farmer Mac consisted of a series of events that may have revealed new information to market participants at different points in time.

We use the subset of campaigns included in Activist Insights (AI), which provides a detailed timeline of short campaigns, to shed further light on the relationship between abnormal returns and the sequence of events following an announcement. We define a "follow-up" as a disclosure or action taken either by the fund that initiated a campaign or another market participant that follow an announcement. Typically, follow-ups consist of the original short seller making an announcement related to the position or the disclosure of a new short position in the target by another market participant. Close to half of all campaigns (89 of 192 observations used to calculate long-term CARs in the AI sample) have a follow-up action within 100 days of the announcement. Internet Appendix Figure A3 shows CARs for campaigns with and without follow-ups. Panels A and B show equal-weighted and value-weighted CARs, respectively. Equal-weighted CARs exhibit similar patterns to those in Figure A2, with CARs trending downward for approximately 50 days for both types of campaigns. However, value-weighted CARs exhibit different patterns.

Specifically, abnormal returns reach their nadir within approximately 15 days for campaigns in which there is no follow-up. In contrast, campaigns that include at least one follow-up continue to decrease for approximately 70 days. The difference between the results shown in Panels A and B for campaigns without follow-ups suggests that prices react more slowly for smaller firms, perhaps as a result of short selling constraints.

3.2. Disclosure Heterogeneity

Short campaigns and long activism campaigns differ notably in how they are disclosed. Long campaigns are often disclosed via Schedule 13D filings, which are required when an investor accumulates a stake of 5% and intends to change/influence control of the target. Short campaigns, however, do not have a standard method of disclosure. Instead, funds use a variety of channels (e.g., TV/newspaper, investment conferences, online white papers) to disclose positions. We next analyze whether campaign CARs are related to methods of disclosure. We focus on whether the prominence of disclosures is associated with larger CARs. There are two reasons this may be the case. First, large media outlets may be more likely to cover "sensational" allegations that are associated with larger abnormal returns. Second, the salience of announcements may be related to market reactions (Bordalo et al., 2013).

We define an announcement as "high profile" if it is covered by a major media outlet (e.g., *The Wall Street Journal*, *The Financial Times*, CNBC, etc.) or if it was announced at the Sohn Investment Conference, which receives significant attention from the media. Table 5 reports the relationship between short campaign disclosures and CARs. Our findings indicate that coverage by a "high-profile" outlet is associated with lower abnormal returns of approximately -7%. Column 2 includes indicators for different methods of disclosure. Consistent with our above discussion, campaigns announced at investment conferences are associated with lower abnormal returns; other types of disclosures are not associated with differential effects. The remaining columns in the table include controls for whether a campaign is undertaken by an activist hedge fund (column 3), fixed effects for campaign accusations (column 4), and firm-level controls (column 5). Of note, the coefficient for

the activist indicator is negative and statistically significant across columns 3–5, indicating that campaigns initiated by activist hedge funds are associated with more negative CARs than those initiated by non-activists.

[Insert Table 5 here]

3.3. Comparison with Long-Activism Campaigns

To assess the economic impact of short campaigns, we compare their effects on shareholder wealth with long-activism campaigns initiated by hedge funds. We restrict our sample in two ways for this analysis. First, we consider only short campaigns by activist hedge funds. Second, we limit our analysis to the post-2008 period, during which the bulk (87%) of short campaigns in our sample occur.

Figure 3 plots value-weighted CARs for short campaigns, long-activism campaigns, and for all campaigns (both long and short) carried out by activist hedge funds in a [-20, 20] window around campaign announcements. Weights are calculated using market caps 20 days prior to the announcement of a campaign. The solid black line shows that value-weighted CARs for short campaigns average approximately -5%, somewhat smaller in magnitude than the equal-weighted CARs documented above. The solid gray line shows value-weighted CARs for long-activism campaigns, which average approximately 2%.[9] CARs for both short and long-activism campaigns are similar until five days prior to announcements, at which time CARs increase for long-activism campaigns and decrease for short campaigns.

[Insert Figure 3 here]

The dashed line in Figure 3 plots the aggregate value-weighted returns for activists' short and long campaigns. Aggregate CARs for all campaigns undertaken by activists are close to zero, indicating that the impact (in dollars) of short campaigns by activists on the

[9]This is consistent with estimates found using an updated sample of campaigns from Brav et al. (2008a). See `https://faculty.fuqua.duke.edu/~brav/HFactivism_March_2019.pdf`.

value of targets is similar to that of long-activism campaigns. Internet Appendix Figure A4 shows that aggregate CARs remain close to zero over a [-20, 100] window. Internet Appendix Figure A5 shows that the use of CRSP-adjusted market caps for weighting (rather than raw market caps) does not affect this inference.

Table 6 reports CARs for [-20, 20] and [-20, 100] windows in columns 1–3 and 4–6, respectively. Columns 1 and 4 report abnormal returns from the market-factor model, columns 2 and 5 report abnormal returns from the three-factor model, and columns 3 and 6 report abnormal returns from the five-factor model. Consistent with the visual evidence, CARs are economically small and statistically indistinguishable from zero across all specifications.

[Insert Table 6 here]

Two factors explain this finding. First, as noted above, value-weighted CARs for short campaigns are nearly twice the magnitude of those for long-activism campaigns (albeit with the opposite sign). Second, while long-activism campaigns are considerably more common, short campaigns tend to target larger firms. Internet Appendix Figure A6 illustrates this idea. Panel A shows the number of firms targeted by all short campaigns, short campaigns undertaken by activists, and long-activism campaigns from 2008 through 2018. During this period, the number of activists' long campaigns outnumbers their short campaigns by a 12 to 1 ratio. This difference, however, is attenuated when comparing the total market capitalization of targeted firms. Specifically, the results reported in Panel B show that the total market cap targeted by long campaigns is only three times larger than the total market cap targeted by activists' short campaigns over the second half of our sample. We discuss reasons for the difference in target size for short and long-activism campaigns in the next section of the paper.

In sum, our analysis indicates that the value effects of short campaigns rival those of long-activism campaigns. This finding has implications for the study of activist investors. Specifically, while many papers use stock returns to assess the economic impact of activist investors (Brav et al., 2008a; Becht et al., 2008; Klein and Zur, 2009; Bebchuk et al.,

2015; Clifford, 2008), the focus of the existing literature on long campaigns considerably underestimates the effects of this class of institutional investors.

3.4. Long/Short Campaign Asymmetries

Next, we turn our attention to asymmetries between short and long-activism campaigns. At a fundamental level, both types of campaigns feature a fund that holds private information about a firm. Short campaigns center on communicating negative information about a target. If prices move in the intended direction, hedge funds realize profits on their short positions. Long activism campaigns focus on communicating information about positive effects of activism engagements. If prices move in the intended direction, hedge funds realize profits on their long positions. Therefore, the goal of these campaigns is, ultimately, to impound this information into prices. The potential payoffs stemming from campaigns differ as short sellers face limited upside and unlimited downside. In this section, our goal is to examine differences between short and long-activism campaigns. Our analysis focuses on the role of public communication with other market participants.

In a long-activism campaign, activists have positive information about the target that may increase the share price. This information may relate to an activist's own intentions to intervene (Brav et al., 2008b). To impound this information into prices, activists typically use or threaten to use traditional governance tools (e.g., voting). The strength of such tools is directly related to the size of the activist's ownership stake. Previous research shows that market capitalization is negatively related to the likelihood that a long-activism campaign occurs, a finding that is consistent with the idea that capital commitment is costly (e.g., Brav et al., 2008a). Public communication is not necessarily a critical component of long-activism campaigns. Indeed, such campaigns often feature private communications with managers, and activists may make their demands public only if such communications do not achieve the desired outcome (McCahery et al., 2016).

In a short campaign, funds have negative information about a target. Because they do not own shares, short sellers cannot use traditional governance tools to impound this

information into prices. Thus, the size of a short position may not be directly related to campaign success. Our finding that that targets of short campaigns are larger than those of long-activism campaigns (illustrated by Internet Appendix Figure A6) is consistent with this idea.[10] Instead, the success of a short campaign relies on the communication of negative information to other market participants. In contrast to long-activism campaigns, short sellers have relatively weak incentives to privately communicate negative information to managers because this may enable corrective actions to be taken before the information is priced, thus limiting the profitability of the campaign.

To shed light on differences in the importance of public communication in short and long-activism campaigns, we examine the relationship between CARs and the specificity of communications. This test is based on the premise that other market participants can verify specific communications more easily than they can verify non-specific communications. We classify both short and long-activism campaigns as being specific or general. Specific campaigns provide an allegation (in the case of a short) or objective (in the case of a long).[11] General campaigns involve only the disclosure of a position or information related to valuation (e.g., the target has a high/low earnings multiple). Overall, 73% of short campaigns are specific compared with 53% of long campaigns.

Figure 4 plots CARs from the three-factor model in the [-20, 20] window for specific and general campaigns. The solid and dashed black lines correspond to short campaigns with specific and general allegations, respectively. The dynamics for specific and general short campaigns are markedly different. While CARs for both types of campaigns fall following campaign announcements, CARs for specific campaigns are roughly twice the magnitude of those for general campaigns. This pattern, however, is not observed for long-activism campaigns. The solid and dashed gray lines correspond to long-activism campaigns

[10]This is not the only reason that short campaigns may target relatively large firms. For example, firm size may also be negatively related to short constraints. These explanations are not mutually exclusive.

[11]For short campaigns, specific allegations are financials/capital structure, industry/competitors, fraud/accounting, product/business model, and management/insider trading. For long-activism campaigns, we use the campaign classification data provided by Brav et al. (2008a). Specific objectives for long-activism campaigns are capital structure, business strategy, sale of the target, or governance.

with specific and general objectives, respectively. In contrast to short campaigns, specific and general CARs for long campaigns closely track each other over the [-20, 20] period, suggesting that abnormal returns are not related to the specificity of communications.

[Insert Figure 4 here]

Table 7 reports statistical tests corresponding to the above mentioned figure. Panel A reports tests for short campaigns, and Panel B reports tests for long activism campaigns. Both panels include CARs for the [-20, 20] window in columns 1–3, and for the [-20, 100] window in columns 4–6.[12] In Panel A, CARs for short campaigns with specific allegations are economically large and statistically significant across all columns. CARs for short campaigns with general allegations are smaller, although they remain statistically significant for the one-factor model (columns 1 and 4). The difference between general/specific CARs is generally not significant, perhaps because of the limited statistical power of this test. For long activism campaigns (Panel B), CARs for specific and general campaigns are of similar economic magnitude and both are statistically significant across all columns. Indeed, for the [-20, 100] window, point estimates for general campaigns are larger than those for specific campaigns.

[Insert Table 7 here]

Overall, this analysis highlights differences in the communication strategies employed in long and short campaigns. The success of long campaigns, as measured by targets' abnormal returns, does not necessarily rely on communicating specific information to other market participants. In contrast, the success of short campaigns is related to the specificity of allegations, suggesting that public communication plays a key role in impounding negative information into prices.

[12]Internet Appendix Figure A7 plots CARs from the three-factor model in the [-20, 100] window.

4. Real Effects of Short Campaigns

Our previous analysis indicates that short campaigns are associated with negative abnormal returns that do not revert over time, suggesting that such campaigns enhance price efficiency. In this section, we turn our attention to the real effects of short campaigns. Specifically, we consider how campaigns affect the behavior of directors, shareholders, and other stakeholders. We also analyze the effects of campaigns on firm performance and policies.

For our analysis, we compare outcomes for targeted firms with a matched sample for five years before/after a campaign, using a difference-in-differences framework. Our matching methodology follows Brav et al. (2008a). We use the following specifications:

$$y_{iet} = \beta_1 Target_{ie} \times Post_{iet} + \beta_2 Target_{ie} + \beta_3 Post_{iet} + \zeta_e + \varepsilon_{iet}, \quad (1)$$

where y_{iet} is the dependent variable for firm i, event e, and year t. $Target_{ie}$ is an indicator that equals one if a firm i is targeted by event e, $Post_{iet}$ is an indicator for the five years following event e for firm i, and ζ_e is an event fixed effect. The coefficient on $Target_{ie} \times Post_{iet}$ (β_1) is the difference-in-differences estimate. We cluster standard errors at the event level for this analysis.

While the use of a matching strategy helps us control for observable differences between treatment and control firms, short campaigns are not randomly assigned, so there are likely unobservable differences as well. Thus, the interpretation of these findings is not necessarily causal in nature.

4.1. Director, Shareholder, and Stakeholder Responses

In Table 8, we analyze actions taken by directors, shareholders, and other stakeholders in response to short campaigns. To the extent that campaigns make credible allegations, we hypothesize that these parties take actions to punish those responsible. To test this hypothesis, we examine three outcomes: forced CEO turnover, director turnover (non-retirement), and litigation against the firm. For each outcome, we report the difference-

in-differences estimate from Equation 1 (columns 1, 3, and 5), as well as coefficient trends obtained by replacing $Post_{iet}$ with indicators for each year before/after an event (columns 2, 4, and 6).

We find evidence that some of these groups respond to short campaigns. Columns 1–4 of Table 8 investigate career consequences for CEOs and directors. Column 1 reports that campaigns are associated with an increase in forced CEO turnover of approximately 4 percentage points. The magnitude of this effect is economically large relative to the sample mean of 2.6% for the matched sample. Column 2 reports a large spike in the likelihood of forced CEO turnover in the year of a campaign (i.e., in year 0). We investigate director turnover in columns 3 and 4. While the point estimate for director turnover is positive, it is not significant at conventional levels.

[Insert Table 8 here]

Columns 5 and 6 investigate litigation. The dependent variable is an indicator for shareholder litigation, fraud/accounting suits (potentially initiated by the SEC or other regulators), IP suits, product liability suits, and antitrust suits. Column 5 indicates that campaigns are associated with a statistically significant increase in the likelihood of litigation. The economic magnitude of this increase is large, corresponding to an increase of approximately one-third relative to the sample mean. The effect is particularly strong for shareholder and fraud/accounting suits. Column 6 indicates that litigation increases during the year of a campaign and remains at an elevated level in subsequent years.

As noted above, our findings are not necessarily causal in nature. For example, the above findings could stem from short campaigns targeting firms that appear vulnerable to litigation. Molk and Partnoy (2021) find evidence that the allegations of shareholder class actions often rely on research conducted by short sellers, suggesting that this effect is not entirely driven by reverse causality. Another challenge to the interpretation of our findings is that they may be driven by changes in short interest rather than a short campaign itself. For example, Karpoff and Lou (2010) show that short interest predicts financial misconduct and litigation. This is a valid concern in our setting because, as we show in

Internet Appendix Table A5, campaigns are associated with an increase in aggregate short interest. To assuage this concern, Internet Appendix Table A6 reruns the specifications from columns 1, 3, and 5 of Table 8 while controlling for short interest. We find qualitatively similar results in this analysis.

Overall, our results indicate that short campaigns are associated with increases in forced CEO turnover and litigation against the target, suggesting that shareholders and other stakeholders take actions to punish responsible parties.

4.2. Firm Performance and Policies

Next, we examine the relationship between short campaigns and firm performance and policies. We continue using the matched sample and difference-in-differences specification (Equation 1) for this analysis. Table 9 reports our findings.

[Insert Table 9 here]

First, we examine the relationship between short campaigns and firm performance. The dependent variables for columns 1–2 and 3–4 are ROA and an indicator for bankruptcy, respectively. Column 1 reports a negative association between short campaigns and ROA, but this effect is statistically indistinguishable from zero. Column 3, however, reports a positive association between campaigns and the likelihood of bankruptcy. Column 4 shows that this effect is not immediate; coefficients are indistinguishable from zero until 3 years following a campaign. We view the general timing as plausible as there is likely to be a lag between the identification of a problem and a firm's filing for bankruptcy. This finding should be viewed with a degree of caution, however, as bankruptcy is a relatively rare event, limiting variation in our sample. Overall, these findings indicate that, while short campaigns are not associated with changes in average profitability, there is an increase in the likelihood of extreme negative outcomes.

Next, we examine the relationship between short campaigns and corporate policies. We focus specifically on investments (columns 5–6) and payouts (columns 7–8). Column 5 reports a negative and significant association between campaigns and investments, similar

to that found by Wong and Zhao (2017) for a sample of campaigns primarily from Seeking Alpha. Column 6 shows that this effect starts one year after the campaign and strengthens over the following years. Because short campaigns do not rely on formal governance mechanisms such as shareholder voting or board representation, this finding is consistent with the idea that the informational role of prices can lead to real effects (Bond, Edmans, and Goldstein, 2012). The decrease in investment following a campaign is consistent with evidene from Wong and Zhao (2017). Column 7 reports a negative association between campaigns and payouts, but column 8 shows that coefficients are indistinguishable from zero in each individual year following a campaign.

In Internet Appendix Table A7, we control for short interest in the baseline specification. The estimates for ROA, bankruptcy, and investments are qualitatively similar to those reported in Table 9. The effect on payouts is negative but statistically indistinguishable from zero, further suggesting that this association is sensitive to the empirical specification.

5. Conclusion

In this paper, we conduct the first comprehensive analysis of short campaigns by hedge funds. Our findings highlight a link between short campaigns and activism technology, with nearly 80% of campaigns undertaken by activist hedge funds. Campaigns are disproportionately undertaken by funds that use hostile tactics in their long campaigns, consistent with the idea that these investors incur lower non-pecuniary costs when engaging in public confrontations.

Short campaigns have negative announcement returns that, on an aggregate dollar basis, are similar in economic magnitude to those of long-activism campaigns. There are, however, important asymmetries between these types of campaigns. In contrast to long-activism campaigns, short campaigns do not feature the use of traditional tools of direct governance (e.g., voting). Instead, the success of short campaigns depends critically on the information communicated to market participants. Consistent with this idea, CARs for

short campaigns with specific allegations are larger in magnitude than CARs for campaigns with general allegations. This pattern is not observed for long-activism campaigns, where general and specific campaigns earn similar announcement returns.

We also find evidence that the effects of short campaigns are not limited to valuation. Campaigns are associated with increases in forced CEO turnover and litigation, suggesting that shareholders and other stakeholders take actions to punish responsible parties. Campaigns are also associated with increases in the likelihood that extreme outcomes (i.e., bankruptcy) occur, but not with changes in average profitability.

Overall, our findings have implications for understanding the aggregate economic impact of activist hedge funds. While a rich literature studies how activists affect various dimensions of firm performance and behavior, this literature primarily focuses on long-activism campaigns. Our findings indicate that the economic impact of short campaigns, as quantified by changes in firm value, is of similar magnitude. Thus, the activist hedge fund literature considerably underestimates the economic impact of this class of institutional investors.

Our findings also have implications for policy debates related to short selling. Recently, policymakers have proposed rules targeting tactics used by short sellers.[13] These proposals are, in part, a response to the rise of pseudonymous short campaigns on platforms like Seeking Alpha. Pseudonymity undermines non-pecuniary costs associated with the disclosure of short positions and facilitates price manipulation (Mitts, 2020). Our analysis underscores the difference between pseudonymous and non-anonymous short campaigns. While pseudonymous campaigns are associated with price reversals soon after announcements, this is not the case for the campaigns in our sample. Rather, our findings indicate that short campaigns can also promote price discovery and economic efficiency. Thus, efforts to impose uniform restrictions on short campaigns may not enhance welfare.

[13]See, for example, "Are Activist Short Sellers Misunderstood?" (*New York Times*, February 14, 2022)

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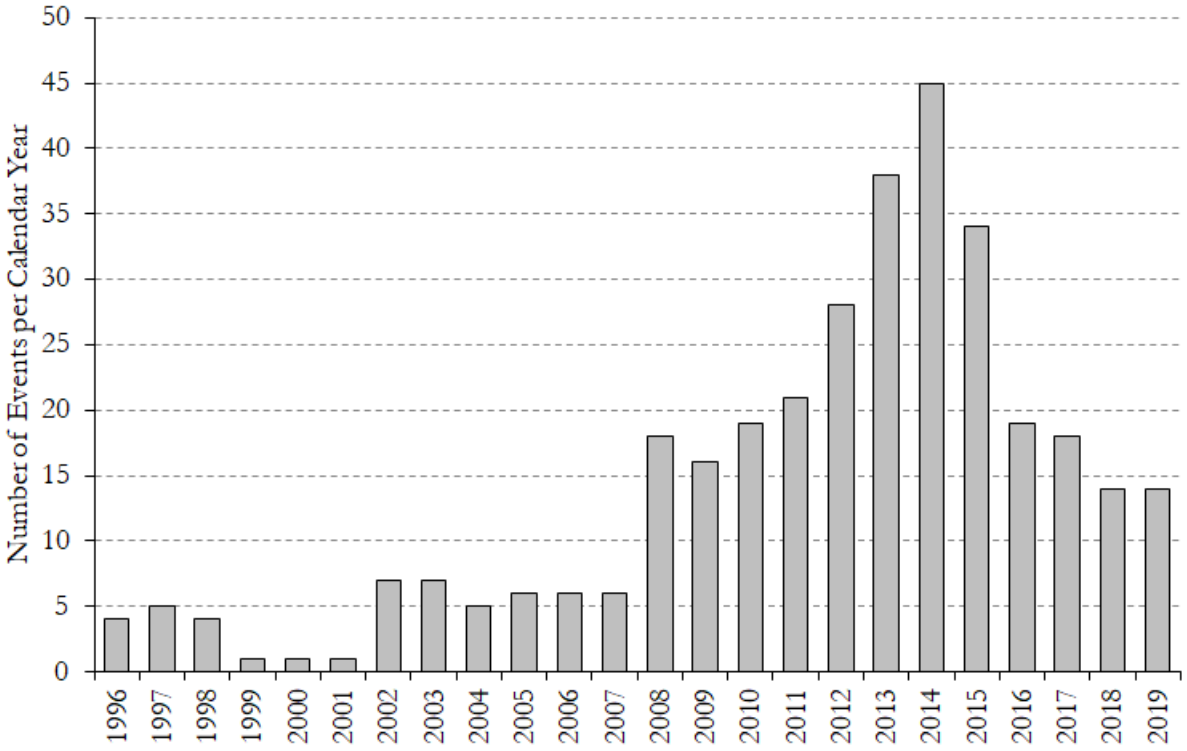
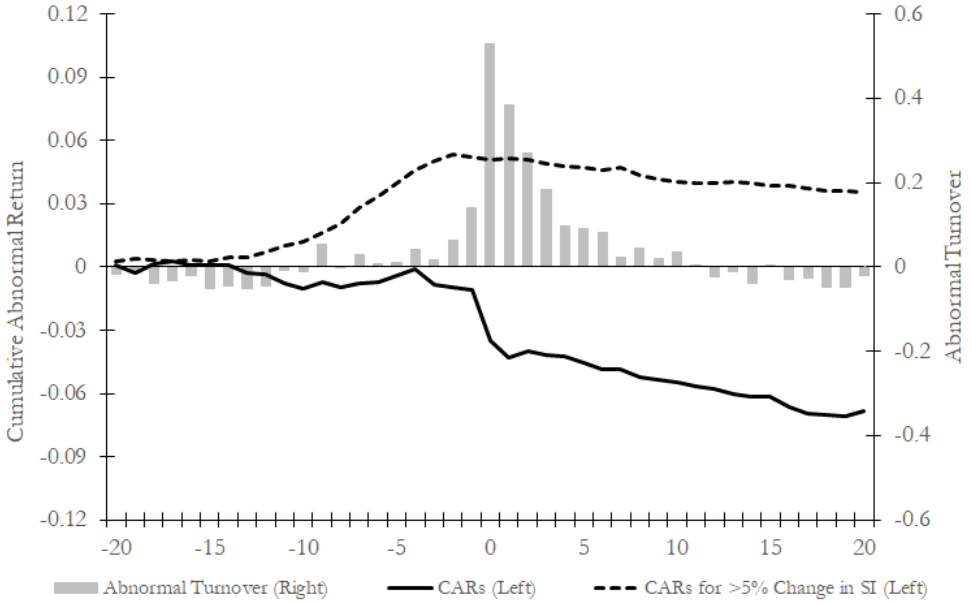
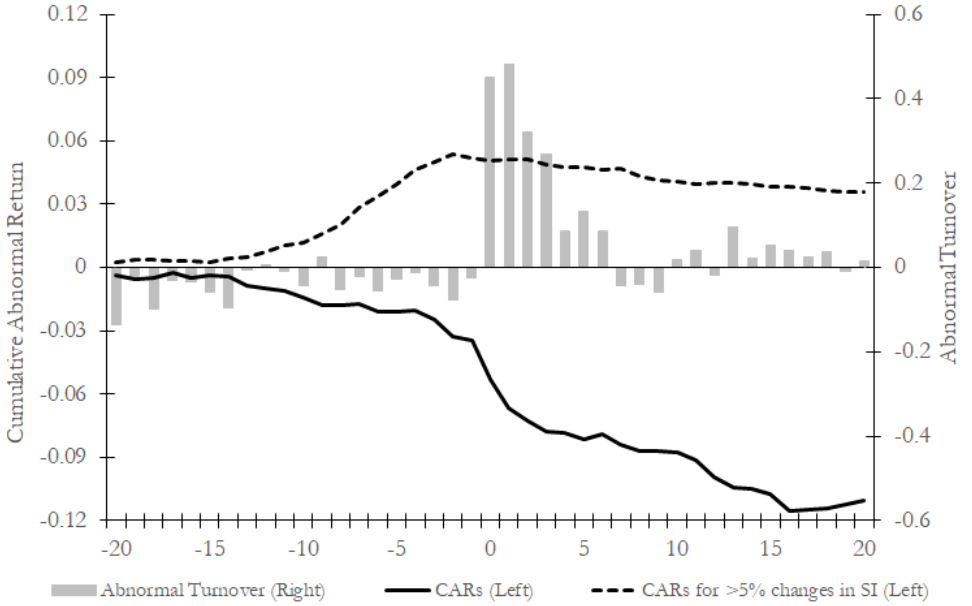


Figure 1: **Time Series of Short Campaigns**
This figure shows the number of short campaigns initiated by hedge funds from 1996 through 2019.



(a) Full Sample



(b) Campaigns Announced at Conferences

Figure 2: **Short Campaign CARs and Abnormal Turnover**
Panel (a) includes all short campaigns in the sample. Panel (b) restricts the sample to campaigns announced at investment conferences. For both panels, the solid line plots the cumulative abnormal returns for short campaigns. The dashed line plots the cumulative abnormal returns for large (i.e., with more than 5% of shares outstanding) increases in short interest. The histogram plots abnormal share turnover. CARs are calculated using the three-factor model for the [-20, 20] window around campaign announcements.

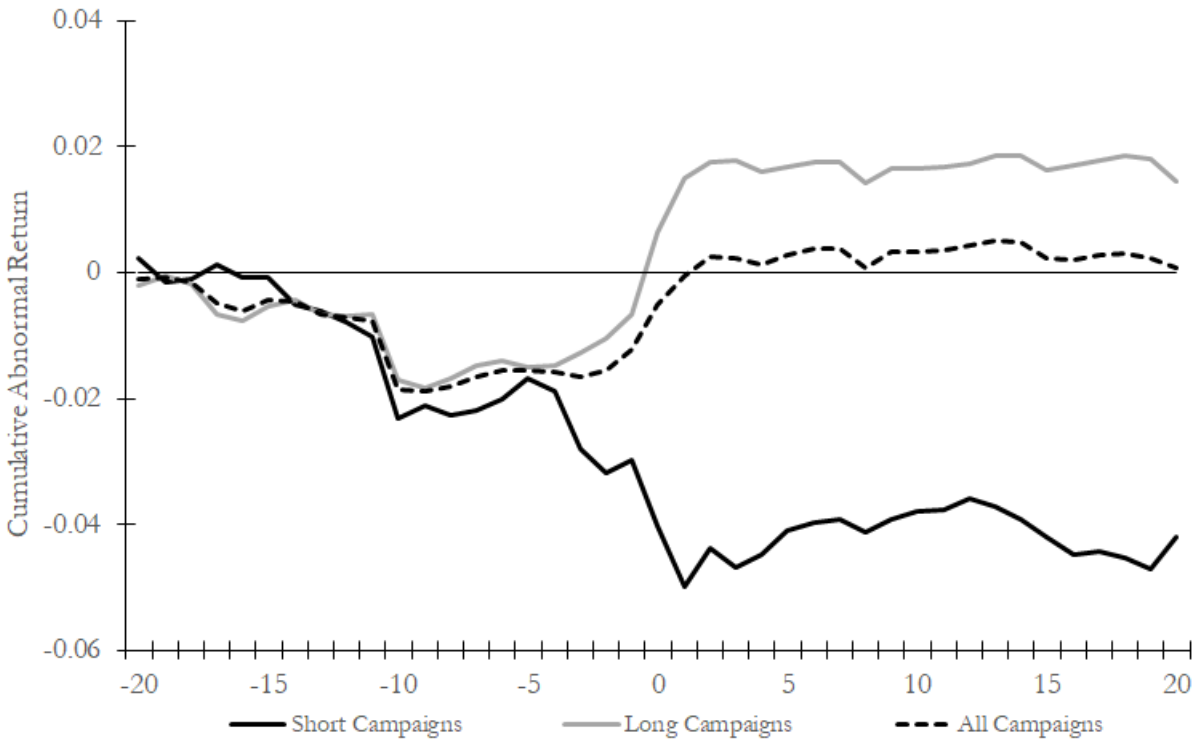


Figure 3: **Activist Hedge Fund Long/Short Value-Weighted CARs**
The solid black line plots value-weighted CARs for short campaigns by activist hedge funds. The solid gray line plots value-weighted CARs for long campaigns by activist hedge funds. The dashed line plots the aggregate value-weighted returns for long and short campaigns. Weights are based on market capitalization 20 trading days prior to the announcement of a campaign. CARs are calculated using the three-factor model for the [-20, 20] window around campaign announcements.

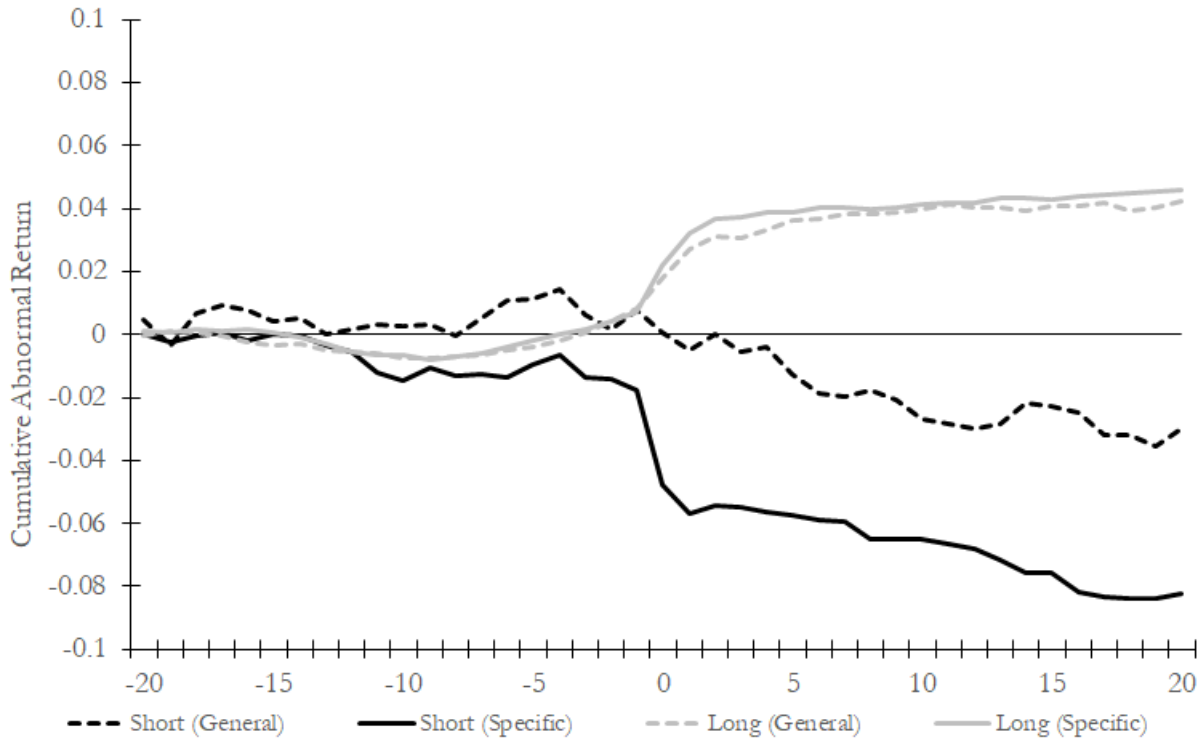


Figure 4: **Long/Short CARs by Accusation Specificity**
The black lines plot CARs for short campaigns. The gray lines plot CARs for long campaigns. Campaigns with specific accusations are solid, and campaigns with general allegations are dashed. CARs are calculated using the three-factor model for the [-20, 20] window around campaign announcements.

Table 1: **Allegations and Disclosure Methods**
Panel A reports allegations made by hedge funds in short campaigns. Allegations are not mutually exclusive. Panel B reports disclosure methods for short campaigns.

	Number of Campaigns (1)	Percent of Total (2)
Panel A: *Allegations*		
General Overvaluation	87	26.8
Industry/Competitors	73	22.5
Product/Business Model	122	37.5
Fraud/Accounting	44	13.5
Financial/Capital Structure	42	12.9
Management/Insider Selling	13	4.0
Panel B: *Disclosure Methods*		
Newspaper/TV	110	34.5
Conference	86	26.5
Letter to Investors	60	18.5
White Paper/Other	67	20.6
Total Campaigns	*323*	

Table 2: **Target Characteristics**

This table reports summary statistics for the targets of short campaigns. Columns (1)–(3) report mean, median, and standard deviation of each variable. Column (4) reports the average difference with a matched firm and column (5) reports the t-statistic of the difference. Columns (6) and (7) report the median difference and the corresponding Wilcoxon signed-rank test statistic. Following Brav et al. (2008a), matched firms are chosen based on 3-digit SIC codes and MV and BM deciles. If no match is found, we change the matching criteria to 2-digit SIC codes and MV and BM quintiles, or 2-digit SIC codes and MV and BM terciles if necessary. Variables are defined in Internet Appendix Table A2.

	Summary Statistics			Difference with Matched Firms			
	Mean	Median	SD	Avg. Diff.	t-stat of Diff.	Median Diff.	Wilcoxon z-stat
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
MV (log)	8.29	8.25	1.72	1.41	12.11	1.35	10.17
BM	0.34	0.25	0.48	-0.13	-4.65	-0.13	-7.52
Q	3.19	2.28	2.56	0.81	5.63	0.17	4.42
Growth	0.16	0.12	0.32	0.07	3.22	0.03	2.54
ROA	0.11	0.13	0.26	-0.01	-0.40	-0.01	-0.39
CF	0.06	0.09	0.25	-0.01	-0.41	-0.01	-0.61
Leverage	0.55	0.58	0.25	-0.01	-0.68	0.00	-0.05
Cash	0.24	0.15	0.24	0.01	0.96	-0.01	-0.08
Dividend Yield	0.01	0.00	0.02	0.00	-1.19	0.00	-4.08
Payout	0.24	0.00	0.56	-0.08	-1.69	-0.06	-5.28
# Analysts (log)	2.16	2.56	1.21	0.12	1.54	0.09	2.42
Institutional Ownership	0.68	0.72	0.29	0.06	2.53	0.05	2.60
Stock Return	0.19	0.08	0.53	0.05	1.68	-0.01	0.76
Amihud	0.04	0.02	0.06	-0.03	-4.36	-0.01	-7.91
Short Interest (Annual)	0.10	0.09	0.07	0.05	11.75	0.04	9.00

Table 3: **Predicting Short Campaigns**

Panel A uses firm-level variables to predict short campaigns. The dependent variable is an indicator defined at the firm-year level for whether a firm is targeted by a campaign. The sample includes all Compustat firms from 1996 through 2019, and standard errors are clustered at the firm level. Panel B uses fund-level variables to predict campaigns. The dependent variable is an indicator defined at the fund-year-quarter level for whether a fund undertakes a short campaign. The sample includes all hedge funds with Schedule 13F filings, and standard errors are clustered at the fund level. Both panels use a probit model in column (1) and OLS in the remaining columns. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All independent variables are defined in Internet Appendix Table A2.

Panel A: *Firm Characteristics*				
Dependent Variable:	𝟙(Short Campaign – Firm Level)			
Model:	Probit	OLS	OLS	OLS
	(1)	(2)	(3)	(4)
MV (log)	0.0005***	0.0013***	0.0014***	0.0014***
	(0.0001)	(0.0002)	(0.0002)	(0.0002)
Q	0.0000***	0.0003**	0.0003**	0.0003**
	(0.0000)	(0.0001)	(0.0001)	(0.0001)
Growth	0.0004**	0.0020**	0.0020**	0.0022**
	(0.0002)	(0.0009)	(0.0009)	(0.0009)
ROA	-0.0003	-0.0005	-0.0008	-0.0004
	(0.0002)	(0.0012)	(0.0013)	(0.0014)
Leverage	0.0003	0.0020**	0.0030**	0.0032**
	(0.0003)	(0.0010)	(0.0015)	(0.0016)
Div. Yield	-0.0044	-0.0157***	-0.0044	-0.0078
	(0.0034)	(0.0051)	(0.0052)	(0.0061)
# Analysts (log)	-0.0001	-0.0004	-0.0003	-0.0004
	(0.0001)	(0.0003)	(0.0003)	(0.0004)
Institutional Ownership	0.0008***	-0.0018	-0.0025**	-0.0023*
	(0.0002)	(0.0011)	(0.0013)	(0.0014)
Short Interest	0.0110***	0.0686***	0.0657***	0.0625***
	(0.0020)	(0.0124)	(0.0128)	(0.0137)
Industry FE	No	No	Yes	No
Year FE	No	Yes	Yes	No
Industry-Year FE	No	No	No	Yes
Observations	65,579	65,579	65,578	64,748
Pseudo R^2 / R^2	0.1623	0.0085	0.0144	0.0799

Panel B: *Fund Characteristics*			
Dependent Variable:	𝟙(Short Campaign – Fund Level)		
Model:	Probit	OLS	OLS
	(1)	(2)	(3)
Activist	0.0030**	0.0044***	
	(0.0012)	(0.0016)	
AUM (log)	0.0001	0.0004	0.0003
	(0.0001)	(0.0004)	(0.0003)
Portfolio Return	0.0007	-0.0013	-0.0066
	(0.0019)	(0.0086)	(0.0093)
% Portfolio Short Interest	0.0076	0.0299	0.0906
	(0.0095)	(0.0435)	(0.0681)
# Holdings (log)	-0.0002	-0.0006	0.0001
	(0.0001)	(0.0004)	(0.0003)
Portfolio Turnover	-0.0002	-0.0002	-0.0002
	(0.0002)	(0.0004)	(0.0003)
Portfolio Concentration	-0.0023	-0.0045**	-0.0006
	(0.0016)	(0.0020)	(0.0016)
Portfolio Illiquidity	-0.0000	-0.0000	-0.0000
	(0.0000)	(0.0000)	(0.0000)
Year-Quarter FE	No	Yes	Yes
Fund FE	No	No	Yes
Observations	51,268	51,268	51,248
Pseudo R^2 / R^2	0.1629	0.0061	0.1113

Table 4: **Short Campaigns and Activist Hostility**
This table examines the cross-sectional relationship between short campaigns and the use of hostile tactics (e.g., proxy fights) in long activism campaigns. The dependent variable is an indicator for whether an activist undertakes a short campaign at any point during our sample. Hostile Activist is an indicator for whether an activist uses hostile tactics in long activism campaigns. SharkWatch is an indicator for whether a fund is included on the SharkWatch 50 list of top activists. Controls for the portion of long campaigns that use different objectives are denoted by Long Objective. Success and Failure are the success and failure rate for long campaigns. Data on hostility, objectives, and success/failure of activists is from Brav et al. (2008a). *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Varaible:	𝟙(Fund with Short Campaign)				
	(1)	(2)	(3)	(4)	(5)
Hostile Activist	0.0487***		0.0378***	0.0533***	0.0526***
	(0.0136)		(0.0132)	(0.0161)	(0.0161)
SharkWatch 50		0.1189**	0.0971*	0.0960*	0.0967*
		(0.0523)	(0.0530)	(0.0529)	(0.0532)
Long Objective-Sale				-0.0140	-0.0057
				(0.0165)	(0.0161)
Long Objective-Business Strategy				0.0123	0.0183
				(0.0182)	(0.0203)
Long Objective-Governance				-0.0385***	-0.0245
				(0.0124)	(0.0151)
Long Objective Capital Structure				-0.0169	-0.0118
				(0.0136)	(0.0139)
Long Objective-General					0.0237
					(0.0160)
Long Success Rate					0.0029
					(0.0143)
Long Failure Rate					0.0196
					(0.0247)
Observations	947	947	947	947	947
R^2	0.0166	0.0193	0.0286	0.0356	0.0366

Table 5: **CAR Disclosure Heterogeneity**
This table reports cross-sectional heterogeneity in abnormal returns. CARs are calculated from the three-factor model for the [-20, 20] window around campaign announcements. High Profile Media is an indicator for whether a campaign is reported by a prominent news source (e.g., *Wall Street Journal*, *The Financial Times*, CNBC, etc.) or was announced at the Sohn Investment Conference. Firm controls consist of Q, MV (log), and sales growth. *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Dependent Variable:	[-20, 20] CAR				
	(1)	(2)	(3)	(4)	(5)
High Profile Media	-0.0592*	-0.0751**	-0.0704**	-0.0715**	-0.0697*
	(0.0309)	(0.0346)	(0.0349)	(0.0356)	(0.0384)
Revealed – Letter		0.0294	0.0436	0.0308	0.0404
		(0.0463)	(0.0488)	(0.0508)	(0.0555)
Revealed – Conference		-0.0713**	-0.0832**	-0.0921***	-0.0827**
		(0.0343)	(0.0326)	(0.0347)	(0.0371)
Revealed – Other		-0.0988*	-0.0843	-0.0944	-0.0716
		(0.0566)	(0.0588)	(0.0601)	(0.0642)
Activist			-0.0586**	-0.0482*	-0.0565**
			(0.0256)	(0.0252)	(0.0253)
MV (log)					0.0144
					(0.0114)
Q					0.0072
					(0.0072)
Growth					-0.1011
					(0.0770)
Accusation FEs	No	No	No	Yes	Yes
Observations	304	304	304	304	304
R^2	0.0117	0.0443	0.0578	0.0569	0.0621

Table 6: **Aggregate Long/Short Value-Weighted CARs for Activists**
This table reports the aggregate value-weighted CARs for activist hedge funds' combined short and long campaigns. Long-activism campaign data are from Brav et al. (2008a). CARs are calculated from the three-factor model for the [-20, 20] window around campaign announcements in columns (1)–(3) and for the [-20, 100] window in columns (4)–(6). Columns (1) and (4) report abnormal returns from the market factor model, columns (2) and (5) report abnormal returns from the three-factor model, and columns (3) and (6) report abnormal returns from the five-factor model. Weights are calculated using market capitalization 20 trading days prior to the announcement of a campaign.

Dependent Variable:	[t-20, t+20] VW CAR			[t-20, t+100] VW CAR		
Model:	one-factor	three-factor	five-factor	one-factor	three-factor	five-factor
	(1)	(2)	(3)	(4)	(5)	(6)
CAR	0.0045	0.0007	0.0108	-0.0053	-0.0079	0.0088
	(0.0168)	(0.0158)	(0.0126)	(0.0251)	(0.0230)	(0.0187)
Observations	2,512	2,512	2,512	2,375	2,375	2,375

Table 7: **Long/Short CARs by Specificity**
This table reports CARs for long and short campaigns based on the specificity of accusations/objectives. Panel A examines short campaigns. Panel B examines long campaigns. Both panels report CARs for specific and general campaigns. Long-activism campaign data are from Brav et al. (2008a). CARs are calculated from the three-factor model for the [-20, 20] window around campaign announcements in columns (1)–(3) and for the [-20, 100] window in columns (4)–(6). Columns (1) and (4) report abnormal returns from the market-factor model, columns (2) and (5) report abnormal returns from the three-factor model, and columns (3) and (6) report abnormal returns from the five-factor model. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Panel A: *Short Campaigns*

Dependent Variable:	[t-20, t+20] CAR			[t-20, t+100] CAR		
Model:	one-factor	three-factor	five-factor	one-factor	three-factor	five-factor
	(1)	(2)	(3)	(4)	(5)	(6)
			Specific			
CAR	-0.0795***	-0.0824***	-0.0738***	-0.1249***	-0.1143***	-0.0968***
	(0.0192)	(0.0183)	(0.0179)	(0.0233)	(0.0240)	(0.0264)
Observations	223	223	223	218	218	218
			General			
CAR	-0.0619**	-0.0297	-0.0091	-0.0651*	-0.0401	-0.0149
	(0.0246)	(0.0269)	(0.0299)	(0.0375)	(0.0440)	(0.0492)
Observations	81	81	81	78	78	78

Panel B: *Long Campaigns*

Dependent Variable:	[t-20, t+20] CAR			[t-20, t+100] CAR		
Model:	one-factor	three-factor	five-factor	one-factor	three-factor	five-factor
	(1)	(2)	(3)	(4)	(5)	(6)
			Specific			
CAR	0.0509***	0.0506***	0.0506***	0.0422***	0.0431***	0.0441***
	(0.0050)	(0.0050)	(0.0052)	(0.0080)	(0.0083)	(0.0087)
Observations	2,270	2,270	2,270	2,135	2,135	2,135
			General			
CAR	0.0478***	0.0432***	0.0465***	0.0698***	0.0633***	0.0712***
	(0.0079)	(0.0081)	(0.0083)	(0.0116)	(0.0119)	(0.0124)
Observations	1,801	1,801	1,801	1,721	1,721	1,721

Table 8: **Director, Shareholder, and Stakeholder Responses**
This table reports estimates of equation (1). *Target* is an indicator for whether company is targeted by a short campaign. *Post* is an indicator for post-campaign years. In columns (2), (4), and (6) *Post* is replaced with a set of event-time dummy variables (t=-5 is the reference group). In columns (1) and (2) the dependent variable is Forced CEO Turnover, an indicator for whether a firm experiences forced CEO turnover in year t. CEO turnover analysis is performed in the Execucomp sample. In columns (3) and (4) the dependent variable is Director Turnover, an indicator for whether a firm experiences director turnover in year t. In columns (5) and (6) the dependent variable is Litigation, an indicator for whether a firm was subject to a lawsuit in year t. The sample covers all targets of short campaigns as well as matched control firms for the period of five years before and after a campaign. Following Brav et al. (2008), matched firms are chosen based on 3-digit SIC codes and MV and BM deciles. If no match is found, we change the matching criteria to 2-digit SIC codes and MV and BM quintiles, or 2-digit SIC codes and MV and BM terciles if necessary. All regressions include short campaign fixed effects. Standard errors are clustered at the short-campaign level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable:	Forced CEO Turnover		Director Turnover		Litigation	
	(1)	(2)	(3)	(4)	(5)	(6)
Target × Post	0.0412***		0.0185		0.1010***	
	(0.0068)		(0.0204)		(0.0230)	
Target × T=-4		0.0010		-0.0117		-0.0023
		(0.0135)		(0.0426)		(0.0359)
Target × T=-3		-0.0112		-0.0023		-0.0273
		(0.0116)		(0.0425)		(0.0367)
Target × T=-2		0.0201		-0.0087		-0.0375
		(0.0173)		(0.0458)		(0.0392)
Target × T=-1		0.0336*		-0.0309		0.0135
		(0.0197)		(0.0493)		(0.0377)
Target × T=0		0.0818***		-0.0106		0.1043**
		(0.0234)		(0.0476)		(0.0427)
Target × T=+1		0.0342*		0.0265		0.1030**
		(0.0200)		(0.0489)		(0.0421)
Target × T=+2		0.0293		0.0573		0.0431
		(0.0228)		(0.0481)		(0.0426)
Target × T=+3		0.0459*		0.0299		0.1070**
		(0.0250)		(0.0465)		(0.0464)
Target × T=+4		0.0580*		0.0133		0.0862*
		(0.0312)		(0.0480)		(0.0460)
Target × T=+5		0.0477		-0.0227		0.0954*
		(0.0346)		(0.0563)		(0.0552)
Event FE	Yes	Yes	Yes	Yes	Yes	Yes
Uninteracted Terms Included	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,671	10,671	17,442	17,442	17,893	17,893
R^2	0.043	0.045	0.037	0.053	0.159	0.159

Table 9: **Firm Outcomes and Policies**

This table reports estimates of equation (1). *Target* is an indicator for whether company is targeted by a short campaign. *Post* is an indicator for post-campaign years. In columns (2), (4), (6), and (8) *Post* is replaced with a set of event-time dummy variables (t=-5 is the reference group). In columns (1) and (2) the dependent variable is ROA (EBITDA to lagged total assets). In columns (3) and (4) the dependent variable is Bankruptcy, an indicator for whether the firm experienced a delisting due to bankruptcy or liquidation in year t. In columns (5) and (6) the dependent variable is Investments (Capex and R&D to lagged total assets). In columns (7) and (8) the dependent variable is Payouts (total dividend payments to net income before extraordinary items). The sample covers all targets of short campaigns as well as matched control firms for the period of five years before and after a campaign. Following Brav et al. (2008), matched firms are chosen based on 3-digit SIC codes and MV and BM deciles. If no match is found, we change the matching criteria to 2-digit SIC codes and MV and BM quintiles, and 2-digit SIC codes and MV and BM terciles if necessary. All regressions include short-campaign fixed effects. Standard errors are clustered at the short-campaign level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable:	ROA		Bankruptcy		Investments		Payouts	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Target × Post	-0.0145		0.0045**		-0.0117***		-0.0542**	
	(0.0207)		(0.0020)		(0.0044)		(0.0259)	
Target × T=-4		0.0346		-0.0002		0.0049		0.0704
		(0.0851)		(0.0002)		(0.0074)		(0.0480)
Target × T=-3		0.0432		-0.0001		0.0056		0.0804*
		(0.0828)		(0.0002)		(0.0072)		(0.0473)
Target × T=-2		0.1021		-0.0001		-0.0015		0.0570
		(0.0722)		(0.0001)		(0.0074)		(0.0448)
Target × T=-1		0.0850		-0.0001		-0.0047		0.0240
		(0.0664)		(0.0001)		(0.0073)		(0.0406)
Target × T=0		0.0574		-0.0004		-0.0118		0.0791
		(0.0657)		(0.0002)		(0.0072)		(0.0500)
Target × T=+1		0.0530		0.0030		-0.0198***		0.0314
		(0.0631)		(0.0041)		(0.0068)		(0.0435)
Target × T=+2		0.0389		0.0033		-0.0269***		0.0470
		(0.0668)		(0.0043)		(0.0072)		(0.0443)
Target × T=+3		0.0123		0.0201**		-0.0274***		-0.0211
		(0.0601)		(0.0100)		(0.0073)		(0.0434)
Target × T=+4		0.0328		-0.0004		-0.0338***		0.0685
		(0.0632)		(0.0012)		(0.0073)		(0.0502)
Target × T=+5		0.0449		0.0008*		-0.0371***		0.0838
		(0.0679)		(0.0005)		(0.0077)		(0.0597)
Event FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Uninteracted Terms Included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,212	17,212	17,893	17,893	17,385	17,385	16,821	16,821
R^2	0.274	0.274	0.032	0.039	0.287	0.281	0.274	0.190

Supplemental Internal Materials for the paper

"Short Campaigns by Hedge Funds"

by Ian Appel and Vyacheslav Fos

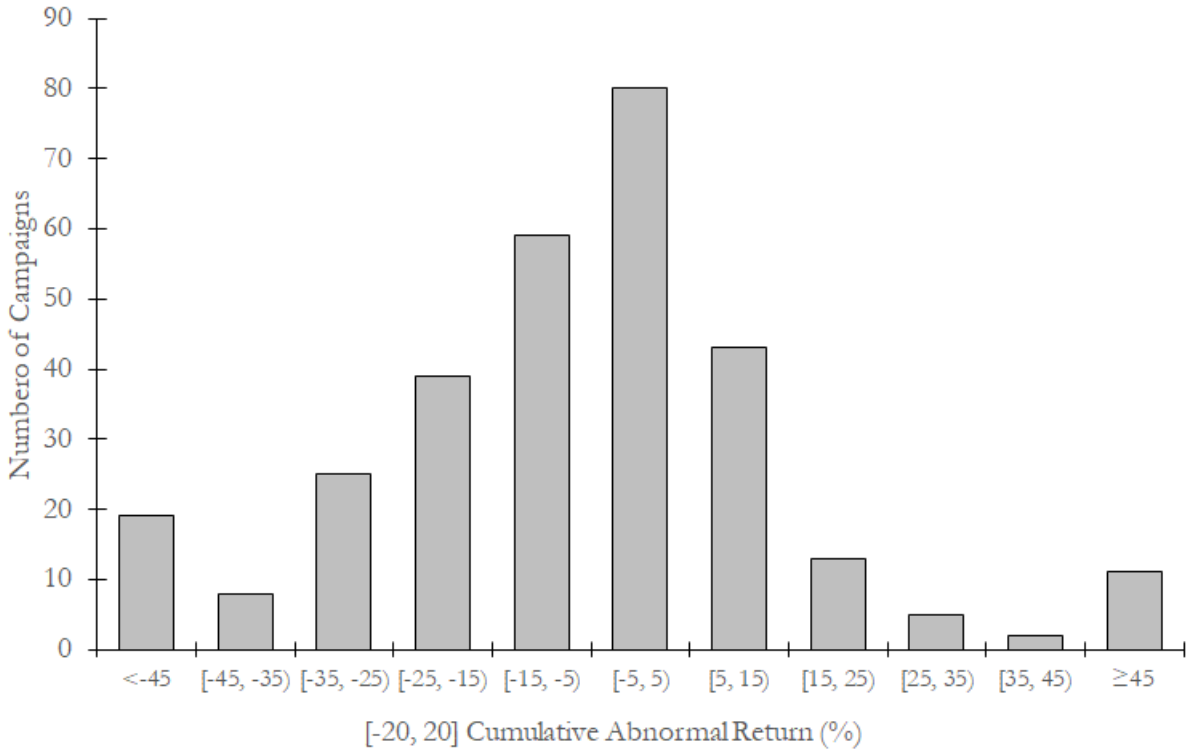
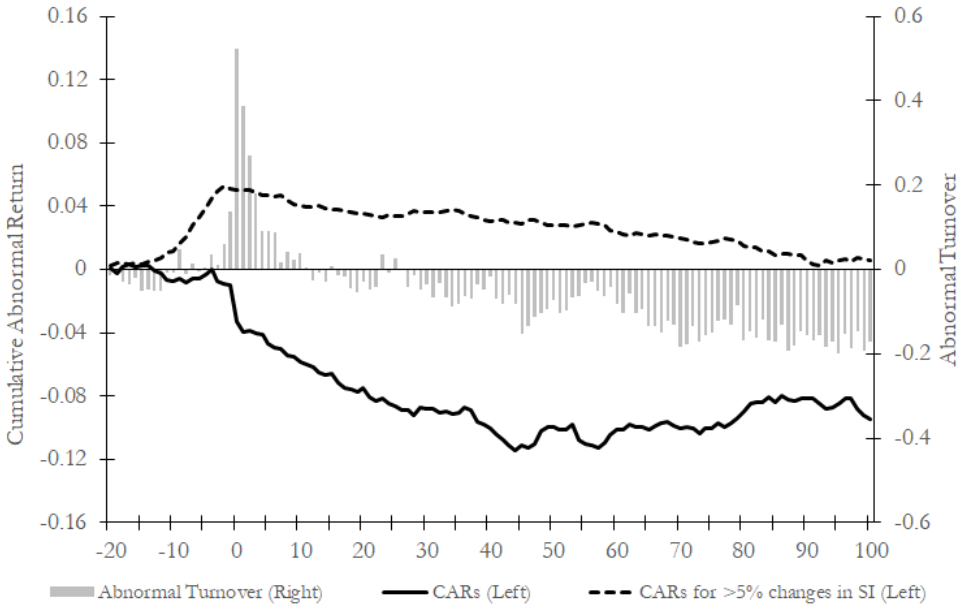
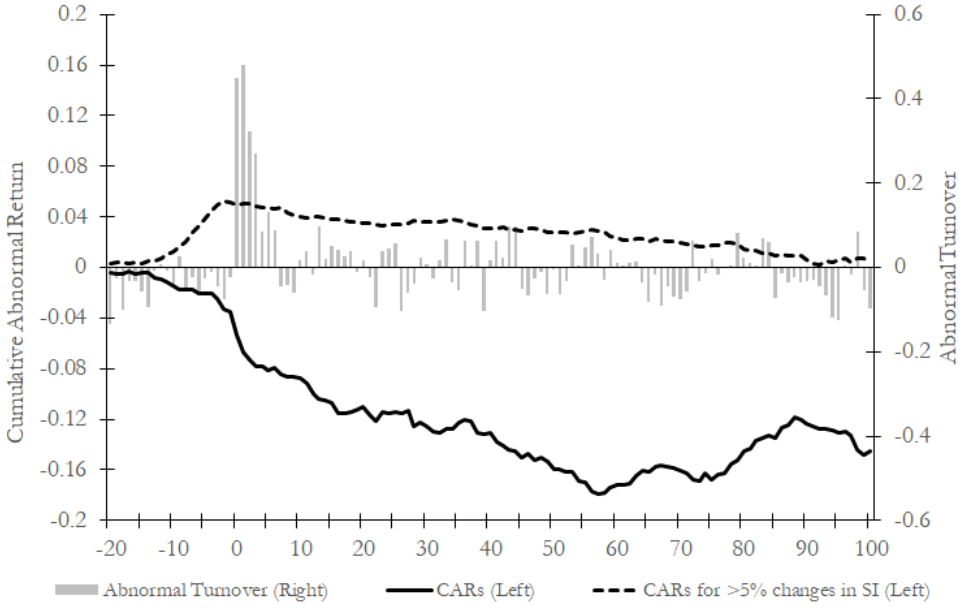


Figure A1: **Distribution of Short Campaign CARs**
The figure shows the distribution of CARs for short campaigns. CARs are calculated from the three-factor model for the [-20, 20] window around campaign announcements.

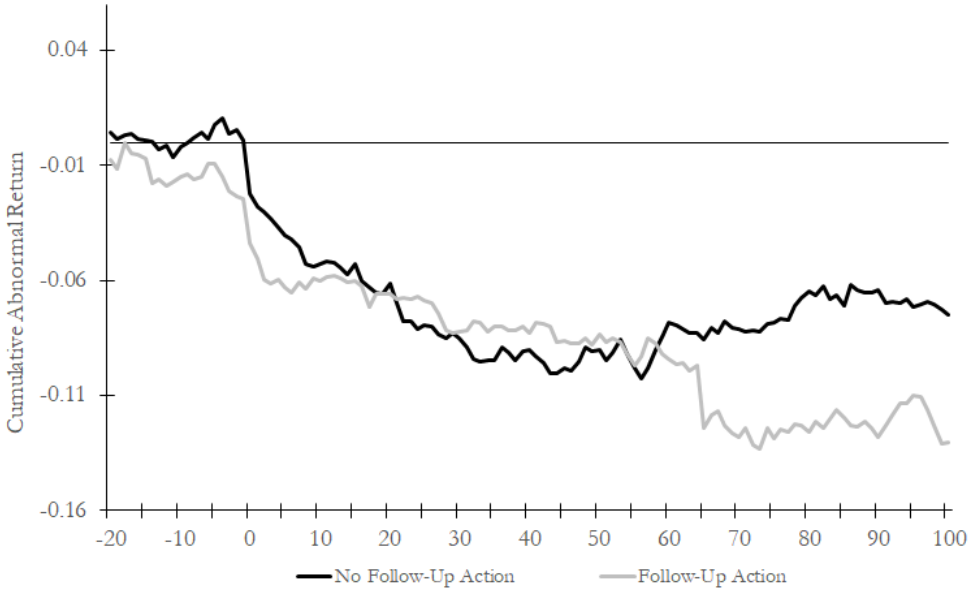


(a) Full Sample

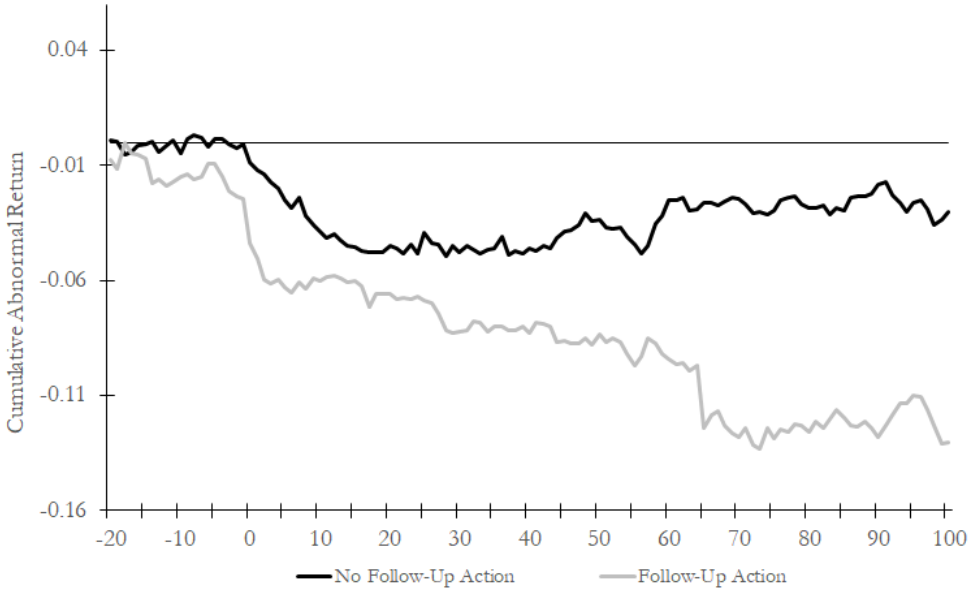


(b) Campaigns Announced at Conferences

Figure A2: **Short Campaign CARs and Abnormal Turnover: [-20, 100] Window** Panel (a) includes all short campaigns in the sample. Panel (b) restricts the sample to campaigns announced at investment conferences. For both panels, the solid line plots the cumulative abnormal returns for short campaigns. The dashed line plots the cumulative abnormal returns for large (i.e., more than 5% of shares outstanding) increases in short interest. The histogram plots abnormal share turnover. CARs are calculated using the three-factor model for the [-20, 100] window around campaign announcements.



(a) EW CARs



(b) VW CARs

Figure A3: **Short Campaign CARs and Follow-Up Actions: [-20, 100] Window** Panel (a) reports equal-weighted CARs. Panel (b) reports value-weighted CARs. For both panels, the black line plots CARs for short campaigns without a follow-up action. The gray line plots CARs for short campaigns that include a follow-up action. Follow-ups include actions taken either by the fund that initiated the campaign or another market participant following an announcement. The sample consists of short campaigns by hedge funds included in the Activist Insights database. CARs are calculated using the three-factor model for the [-20, 100] window around campaign announcements.

Figure A4: **Activist Long/Short Value-Weighted CARs: [-20, 100] Window**
The solid black line plots value-weighted CARs for short campaigns by activist hedge funds. The solid gray line plots value-weighted CARs for long campaigns by activist hedge funds. The dashed line plots the aggregate value-weighted returns for long and short campaigns. Weights are based on market capitalization 20 trading days prior to the announcement of a campaign. CARs are calculated using the three-factor model for the [-20, 100] window around campaign announcements.

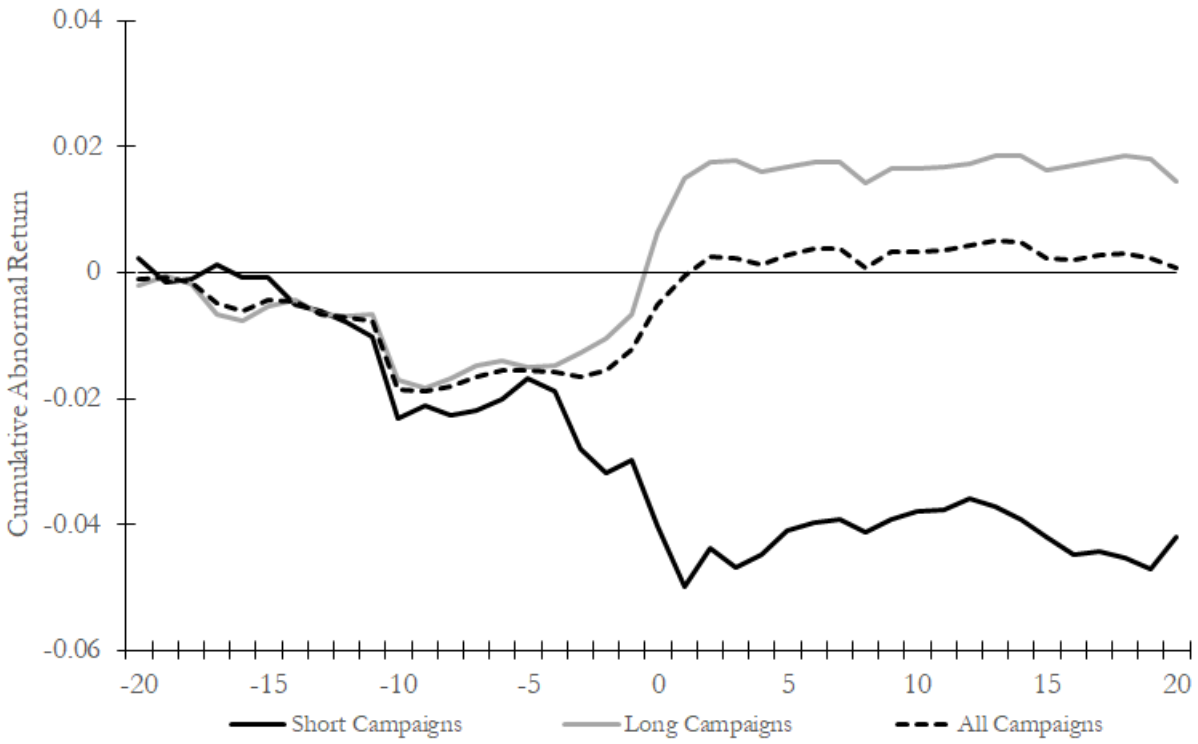
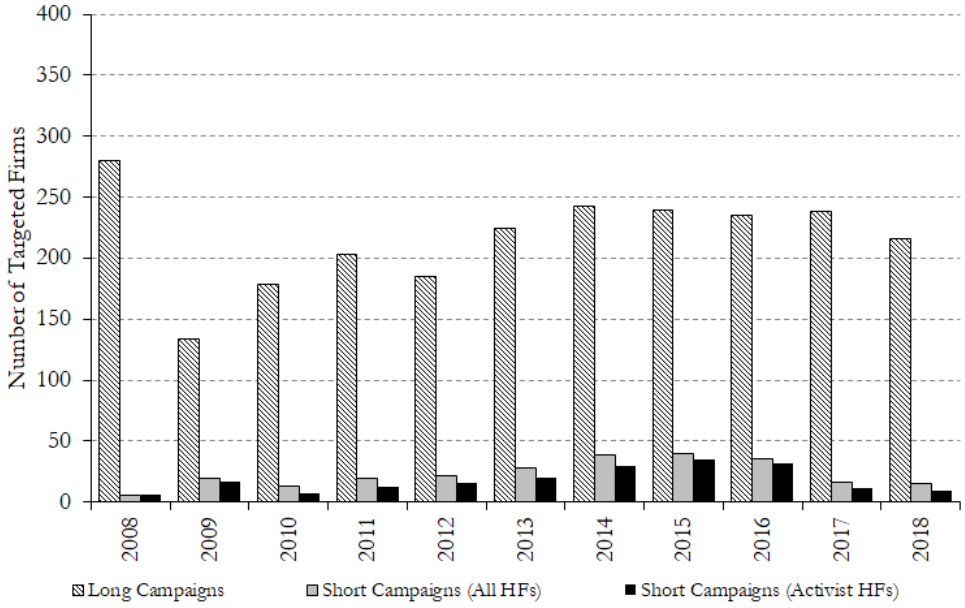
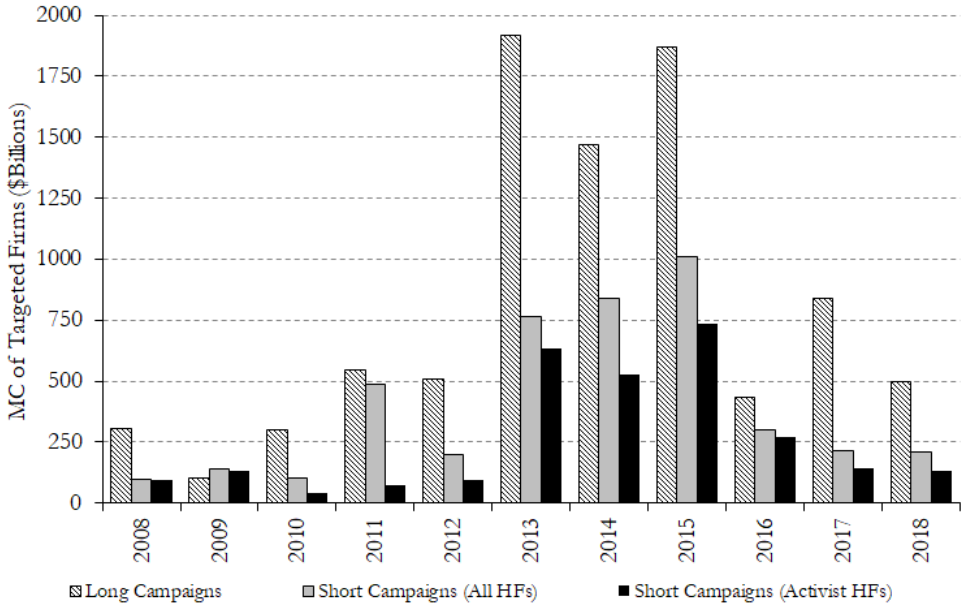


Figure A5: **Activist Long/Short Index-Adjusted Value-Weighted CARs**
The solid black line plots value-weighted CARs for short campaigns by activist hedge funds. The solid gray line plots value-weighted CARs for long campaigns by activist hedge funds. The dashed line plots the total value-weighted returns for long and short campaigns. Weights are based on market capitalization (adjusted by the CRSP VW Index) 20 trading days prior to the announcement of a campaign. CARs are calculated from the three-factor model for the [-20, 20] window around campaign announcements.



(a) Number of Targeted Firms



(b) Market Cap of Targeted Firms

Figure A6: **Long/Short Campaign Targets: 2008–2018**
Panel (a) shows the number of targets for long and short campaigns. Panel (b) shows the total market capitalization of targets for long and short campaigns.

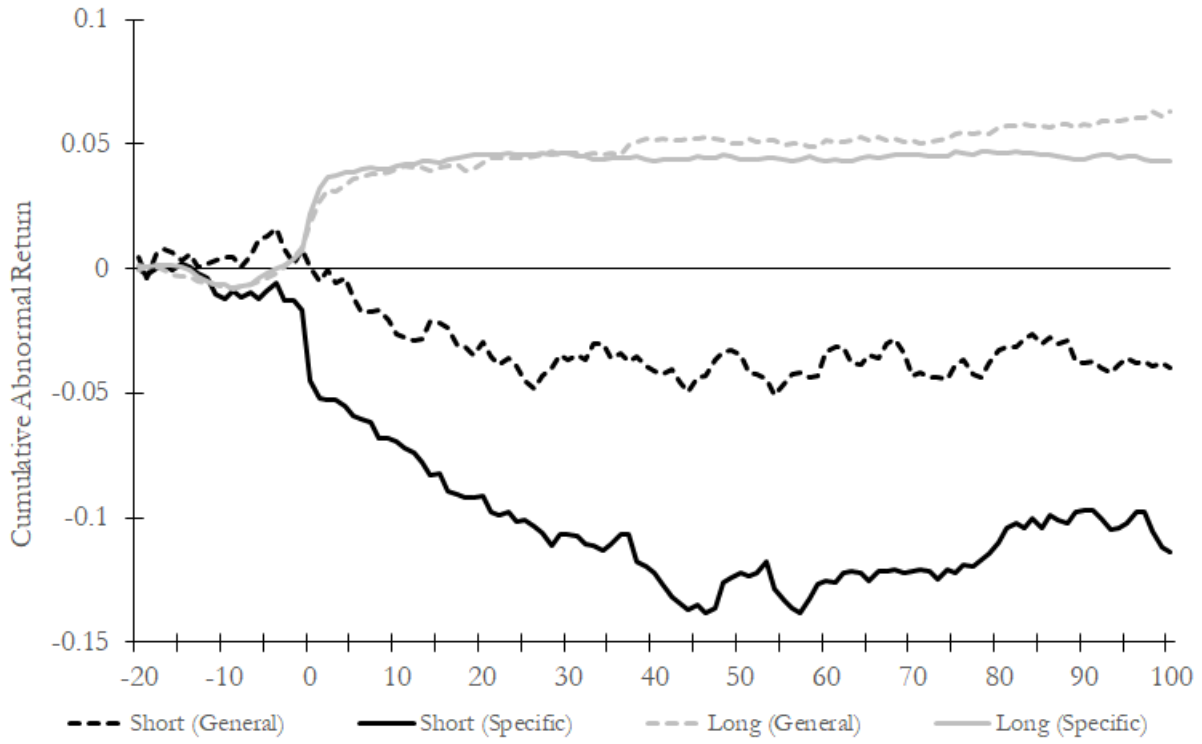


Figure A7: **Long/Short Campaign CARs by Accusation Specificity: [-20, 100] Window**
The black lines plot CARs for short campaigns. The gray lines plot CARs for long campaigns. Campaigns with specific accusations are solid, and campaigns with general allegations are dashed. CARs are calculated from the three-factor model for the [-20, 100] window around campaign announcements.

Table A1: **Hedge Funds with Largest Number of Short Campaigns**
This table reports the ten hedge funds with the most short campaigns in our sample. Column (1) reports the number of campaigns. Column (2) reports an indicator for whether each fund is classified as an activist investor based its long campaigns.

Fund	Short Campaigns	Activist
Kynikos Associates	51	0
Whitney Tilson	50	1
Kerrisdale Capital	36	1
Lakewood Capital Management	29	1
Greenlight Capital	27	1
Dialectic Capital	14	1
Hayman Capital Management	12	1
Heartland Advisors	8	1
Cannell Capital	8	1
Pershing Square Capital Management	6	1
Chapman Capital	6	1
BlueMountain Capital	6	1
Frontpoint Partners	5	0
Eminence Capital	5	1

Table A2: **Variable Definitions**

Variable	Definition
Firm-level variables	
MV (log)	log of market capitalization
BM	market value of equity / book value of equity
Q	(book value of debt + market value of equity) / (book value of debt + book value of equity)
Growth	log of sales growth
ROA	EBITDA / total assets
Leverage	total liabilities / total assets
Payouts	total dividend payments / net income before extraordinary items
Investments	(capex + R&D) / total assets
Dividend Yield	(common dividends + preferred dividends)/(market value of common equity + book value of preferred equity)
# Analysts (log)	log of 1 + the number of analysts following the firm
Institutional Ownership	percentage of shares held by institutions
Short Interest	short interest / shares outstanding (biweekly)
Forced CEO Turnover	dummy for forced CEO turnover
Director Turnover	dummy for director turnover (non-retirement)
Lawsuit	indicator for shareholder, fraud/accounting, product liability, IP, or antitrust lawsuit
Bankruptcy	dummy variable equal to one if a firm is delisted due to bankruptcy
Fund-level variables	
Activist	dummy variable equal to one if a fund is an activist hedge fund
# Analysts (log)	log of 1 + the number of analysts following the firm
AUM (log)	log of 1 + assets under management (in dollars)
Portfolio Return	value-weighted return of a fund's 13F holdings
% Portfolio Short Interest	average short interest for portfolio holdings
Holdings (log)	number distinct long positions on a fund's 13F
Portfolio Turnover	sum of the holding-level absolute dollar value change across all 13F portfolio holdings, divided by the sum of the holding-level average dollar value over the last two quarters across all 13F portfolio holdings
Portfolio Concentration	Herfindahl-Hirschman Index (HHI) of a fund's long positions on its 13F
Portfolio Illiquidity	value-weighted Amihud (2002) measure of illiquidity across a funds 13F portfolio holdings

Table A3: **Fund-Level Descriptive Statistics**
This table reports descriptive statistics for fund characteristics. All variables are defined in Table A2.

	Mean (1)	Median (2)	SD (3)
Short Campaign	0.0013	0.0000	0.0367
Activist	0.25	0.00	0.43
AUM (log)	20.04	19.91	1.76
Portfolio Return	0.0015	0.0000	0.0131
# Holdings (log)	4.17	4.16	1.39
Portfolio Turnover	0.5472	0.3991	0.4805
Portfolio Concentration	0.0877	0.0372	0.1483
% Portfolio Short Interest	0.0012	0.0001	0.0035
Portfolio Illiquidity	11.62	2.85	29.56

Table A4: **Short Campaign CARs**

Panel A reports cumulative abnormal returns for short campaigns. Columns (1)–(3) report CARs for a [-20, 20] window around campaign announcements. Columns (4)–(6) report CARs for a [-20, 100] window around campaign announcements. Panel B compares CARs for short campaigns to CARs for large changes in short interest (i.e., at least 5% of shares outstanding). Columns (1)–(3) report CARs for a [-1, 20] window around campaign announcements. Columns (4)–(6) report CARs for a [-1, 100] window around campaign announcements. Columns (1) and (4) report abnormal returns from the market-factor model, columns (2) and (5) report abnormal returns from the three-factor (market, size, and book-to-market) model, and columns (3) and (6) report abnormal returns from the five-factor model (market, size, book-to-market, profitability, and investment). ** and *** indicate statistical significance at the 5% and 1% levels, respectively.

Panel A: Baseline CARs						
Dependent Variable:	[t-20, t+20] CAR			[t-20, t+100] CAR		
Model:	one-factor	three-factor	five-factor	one-factor	three-factor	five-factor
	(1)	(2)	(3)	(4)	(5)	(6)
Short Campaign CAR	-0.0748***	-0.0684***	-0.0566***	-0.1092***	-0.0947***	-0.0752***
	(0.0155)	(0.0152)	(0.0154)	(0.0198)	(0.0212)	(0.0235)
Observations	304	304	304	296	296	296

Panel B: Post-Event Comparison to >5% Change in SI						
Dependent Variable:	[t-1, t+20] CAR			[t-1, t+100] CAR		
Model :	one-factor	three-factor	five-factor	one-factor	three-factor	five-factor
	(1)	(2)	(3)	(4)	(5)	(6)
Short Campaign CAR	-0.0603***	-0.0585***	-0.0541***	-0.0938***	-0.0859***	-0.0740***
	(0.0118)	(0.0117)	(0.0117)	(0.0195)	(0.0193)	(0.0213)
Observations	304	304	304	296	296	296
>5% Change in SI CAR	-0.0184***	-0.0178***	-0.0154***	-0.0556***	-0.0472***	-0.0385***
	(0.0031)	(0.0031)	(0.0032)	(0.0059)	(0.0061)	(0.0064)
Observations	5,819	5,819	5,819	5,754	5,754	5,754
Difference	-0.0419***	-0.0408***	-0.0386***	-0.0383	-0.0387	-0.0354
	(0.0140)	(0.0140)	(0.0143)	(0.0266)	(0.0270)	(0.0286)

Table A5: **Short Interest**

This table analyzes changes in bi-weekly short interest around short-selling campaigns. Short Target × Post equals one for targeted firms following the announcement of a campaign. The sample includes observations from 10 periods before the announcement of a campaign to 10 periods after. Column (2) includes event fixed effects. Robust standard errors are clustered by event and reported in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable:	Short Interest	
	(1)	(2)
Short Campaign	0.0200***	0.0192***
	(0.0032)	(0.0031)
Constant	0.1137***	
	(0.0052)	
Event FE	No	Yes
Observations	6,183	6,183
R^2	0.0102	0.8515

Table A6: **Director, Shareholder, and Stakeholder Responses–Controlling for Short Interest**

This table reports estimates of equation (1) with an additional control for short interest. *Target* is an indicator for whether company is targeted by a short campaign. *Post* is an indicator for post-campaign years. In columns (2), (4), and (6) *Post* is replaced with a set of event-time dummy variables (t=-5 is the reference group). In columns (1) and (2) the dependent variable is Forced CEO Turnover, an indicator for whether a firm experiences forced CEO turnover in year t. CEO turnover analysis is performed in the Execucomp sample. In columns (3) and (4) the dependent variable is Director Turnover, an indicator for whether a firm experiences director turnover in year t. In columns (5) and (6) the dependent variable is Litigation, an indicator for whether a firm was subject to a lawsuit in year t. The sample covers all targets of short campaigns as well as matched control firms for the period of five years before and after a campaign. Following Brav et al. (2008), matched firms are chosen based on 3-digit SIC codes and MV and BM deciles. If no match is found, we change the matching criteria to 2-digit SIC codes and MV and BM quintiles, or 2-digit SIC codes and MV and BM terciles if necessary. All regressions include short-campaign fixed effects. Standard errors are clustered at the short-campaign level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable:	Forced CEO Turnover	Director Turnover	Litigation
	(1)	(2)	(3)
Short Target × Post	0.0226***	0.0164	0.0774***
	(0.0071)	(0.0223)	(0.0237)
Short Interest	0.0912***	0.1200	0.4556***
	(0.0248)	(0.1183)	(0.1203)
Event FE	Yes	Yes	Yes
Uninteracted Terms Included	Yes	Yes	Yes
Observations	17,893	17,442	17,893
R^2	0.030	0.037	0.159

Table A7: **Firm Outcomes and Policies–Controlling for Short Interest**
This table reports estimates of equation (1) with an additional control for short interest. *Target* is an indicator for whether company is targeted by a short campaign. *Post* is an indicator for post-campaign years. In columns (2), (4), (6), and (8) *Post* is replaced with a set of event-time dummy variables (t=-5 is the reference group). In columns (1) and (2) the dependent variable is ROA (EBITDA to lagged total assets). In columns (3) and (4) the dependent variable is Bankruptcy, an indicator for whether the firm experienced a delisting due to bankruptcy or liquidation in year t. In columns (5) and (6) the dependent variable is Investments (Capex and R&D to lagged total assets). In columns (7) and (8) the dependent variable is Payouts (total dividend payments to net income before extraordinary items). The sample covers all targets of short campaigns as well as matched control firms for the period of five years before and after a campaign. Following Brav et al. (2008), matched firms are chosen based on 3-digit SIC codes and MV and BM deciles. If no match is found, we change the matching criteria to 2-digit SIC codes and MV and BM quintiles, and 2-digit SIC codes and MV and BM terciles if necessary. All regressions include short-campaign fixed effects. Standard errors are clustered at the short-campaign level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Dependent Variable:	ROA	Bankruptcy	Investments	Payouts
	(1)	(2)	(3)	(4)
Target × Post	-0.0236	0.0028*	-0.0086**	-0.0433
	(0.0159)	(0.0017)	(0.0037)	(0.0264)
Short Interest	-0.0541	0.0088	0.0316*	-0.6150***
	(0.1097)	(0.0058)	(0.0186)	(0.1113)
Event FE	Yes	Yes	Yes	Yes
Uninteracted Terms Included	Yes	Yes	Yes	Yes
Observations	16,362	16,631	16,536	15,740
R^2	0.289	0.028	0.320	0.209

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