

Living with the Frenemy: Common Ownership and Hedge Fund Activism

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Abstract

Mutual funds do not always join hands with hedge funds in activism campaigns. In this study, we explore how the incentive divergence between hedge funds and mutual funds affects hedge funds' activism (HFA) campaign decisions, objectives, and tactics. Such divergence arises when hedge funds aim at single-target value maximization while mutual funds that simultaneously hold a target and its same-industry peers pursue joint portfolio maximization. We find that hedge fund activists are less likely to target firms with connected peers (through a common mutual fund blockholder), and the effect is more pronounced when a higher fraction of firm shares is held by actively managed mutual funds and when the firm operates in an industry of higher common ownership concentration. We also find that hedge funds pursue more specific objectives but choose less confrontational tactics when targeting firms with connected peers, consistent with hedge funds' cost-benefit trade-offs. Additionally, targets with connected peers experience higher market reaction on campaign announcement and greater post-activism operational performance improvement. To further establish causality, we use the annual reconstitution of the Russell indices as the instrumental variable of mutual fund common ownership. Collectively, our findings suggest common ownership constitutes a subtle cost deterring activism intervention by hedge funds.

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1. Introduction

The literature has explored the decision-making process of hedge fund activists, in terms of their target selection, intervention timing, and tactic choices. Because activists' decision-making process, especially their target selection, is unobserved, exploring this process is worthwhile but fairly difficult to directly test. Many of the studies to date focus on what type of companies that activist hedge funds target at, and relates targets' characteristics to their propensity to be targeted by hedge fund activists. Brav et al. (2010) summarize those target companies' characteristics including market value of equity, Tobin's Q, growth, profitability, capital structure, payout policy, investment choices, industry competition, shareholder sophistication, liquidity, and also governance metrics. One significant feature of those studies is that they generally isolate the target firms and document how characteristics of target firms per se determine their probability of being targeted by activists. However, firms operate in a network-based environment. They compete or cooperate with industry peers, and they rely on their suppliers and customers for future development. Additionally, they would be influenced by their blockholders' interests. Putting target companies into a network-perspective environment and studying hedge fund activists' target-selection and decision-making process is an interesting research avenue; nevertheless, this area remains underexplored. That is, activists consider not only the wealth of the target firm, but also the potential wealth impact of the target firm on its related parties, because those related parties determine activists' costs and benefits of initiating a campaign.

Powerful shareholders, and their interest in the target firm, are non-negligible for hedge fund activists in their decision-making consideration. In a letter to shareholders, William Ackman of Pershing Square stated, "We review the **ownership structure** of a company before we invest to look for **large holders who might be opposed to the type of corporate changes** we intend to advocate, whether a company is in the S&P 500 or other major stock market indices, or whether the owners are hedge funds or passive investors has not played a meaningful role in our analysis."¹ Apparently, activists would take into consideration one category of the target company's related parties, namely, large holders or blockholders. The reason why blockholders are relevant and important is because although hedge fund activists usually own a substantial stake, they still need to seek help or avoid direct conflicts from other fellow institutional shareholders of the target.

¹ Emphasis added. See details at <https://assets.pershingsquareholdings.com/2014/09/Pershing-Square-2015-Annual-Letter-PSH-January-26-2016.pdf>.

Forming alliances with fellow shareholders significantly reduces activists' coordination and intervention costs, whereas avoiding direct conflicts reduces activists' opportunity costs. For activists, other shareholders of the target could swing between being friends and enemies, depending on their interests. Knowing the attitude of fellow shareholders toward activism intervention could help the activists better determine whether engagement is too costly and how to determine their tactics accordingly.

Conventionally, when hedge fund activists initiate intervention, fellow institutional shareholders usually offer help because they can free ride on activism and share the potential benefits of improved governance, strategies, and valuation, without generating additional costs. Indeed, many studies directly or indirectly confirm this argument. Activists sometimes act as a wolfpack (Coffee & Palia, 2016; Wong, 2020) or seek coordination by co-filing Schedule 13Ds (22% according to Brav et al., 2008). Activists also tend to target firms with higher institutional holdings (Brav et al., 2008), and more specifically, they tend to use more aggressive tactics, such as proxy fights, and to seek board representations when the passive ownership of the target is higher (Appel et al., 2019). Activists do have knowledge about the shareholder base of the potential target and they are more likely to pick a target with relatively a more pro-activist shareholder base when initiating proxy contests (Brav et al., 2019).

However, fellow institutional shareholders' facilitation effect holds only if we assume other shareholders share the common objective of improving a target's value with hedge fund activists. When heterogeneous objectives exist, an alliance cannot always be achieved. Institutions, which are usually diversified sophisticated investors, seek for the joint value maximization with regard to their heterogeneous portfolio positions. In such cases, misalignment of interests between hedge fund activists and other fellow shareholders arises, given the fact that hedge fund activists' objective is to maximize the concentrated investment in a specific target firm (Brav et al., 2008; Schneider, 2015). Such misalignment either causes reluctant cooperation when a single target stock return has little influence on fellow institutions' giant portfolio, or leads to divergence when the target's value enhancement negatively affects other firms within the fellow institution's portfolio. The incentive-divergence problem is especially prominent when the fellow institution is a common blockholder (simultaneously holds over 5% in each firm, co-blockholder hereafter) of the target firm and its industry peers. When a co-blockholder exists, the target firm is connected with its industry peers through the very co-blockholder.

Common ownership is becoming an international and fast-rising trend, attracting academic attention as well. With regard to the effect of common ownership on corporate conduct, studies argue that because co-blockholders' objective is to maximize the joint value of the overall portfolio (Admati et al., 1994; Hansen & Lott, 1996; Gordon, 2003), they do not want portfolio firms to compete aggressively. Intensified competition reduces co-blockholders' overall payoffs, because product market performance improvement of one firm usually comes at the cost of the others (Robin, 2006; Azar, 2012, 2017). Most of the studies on the anti-competitive effect of common ownership are analytical models; only a few test the effect empirically. In the airline industry, within-route changes in common ownership concentration and route-level changes in ticket prices are positively related (Azar et al., 2018). Similar findings are documented in hospital industry (Liu, 2019). Using a more generalizable sample, Anton et al. (2018) find that managers are less incentivized to compete when an industry tends to be concentrated with common ownership.

To the extent that co-blockholders' divergent objective and voting power has become large enough to be decisive for hedge fund activism (HFA hereafter) campaigns, investigating to what extent and how the existence of co-blockholders affects HFA campaign decisions, objectives, and tactics, in terms of cost-benefit tradeoffs that activists face, is worthwhile.

We argue that misalignment of interests triggers co-blockholders to be anti-cooperative when hedge fund activists initiate an activism campaign over a firm with connected industry peers through common ownership. Such conflict is strengthened by the fact that an HFA campaign creates long-lasting value for the target but does not necessarily have positive externalities on the target's industry peers. On average, the target's same-industry rival firms experience negative and real shareholder wealth loss (Aslan & Kumar, 2016). In some cases, an HFA campaign transfers wealth from peers to the target, but for co-blockholders there is no difference of moving money from one pocket to the other. Such cases represent imperfect alignment. In most other cases, if hedge fund activists seek for aggressive competition, intensified competition would reduce product prices, so would be the combined profits of target and its peers. Divergence of interests then arises in these cases. Foreseeing the probability of resistance from co-blockholders, hedge fund activists are rigorous in selecting targets. We hypothesize and find evidence that hedge fund activists are less likely to target firms with connected industry peers.

However, this finding could be driven by the possibility that firms with connected industry peers are well governed already, so there is no need for hedge fund activists to initiate activism

campaigns to improve operations, management, and governance. Or co-blockholders could be able to diversify away the risk that one of their portfolio firms is to be targeted by hedge fund activists by divesting from the potential target's same-industry peers, leaving the potential target without connected industry peers. To address those endogeneity concerns, we have conducted both channel tests and an instrumental variable approach to facilitate identification.

We first exploit variations in the ownership structure of firms that would affect co-blockholders' incentive of resistance. Using firm-level active mutual fund share percentage as a proxy for shareholders' incentive of involvement in corporate governance and policies, we find the effect of deterrence on activist campaigns is stronger for firms with a higher fraction of active mutual fund shares. Then, we examine variations in industry-level ownership concentration. We argue that industries with higher ownership concentration are more anti-competitive. At the same time, the return potential or improvement capacity for firms operating in those industries is higher. This setting provides us a chance to directly test hedge fund activists' trade-off between benefits and costs. We find that co-blockholders' resistance effect dominates, and that the probability of being targeted is incrementally lower when a firm has connected industry peers and also operates in a high common-ownership-concentrated industry.

Then, we utilize an instrumental variable approach to further establish causality. The instrumental variable we use is the annual reconstitution of Russell 1000 and Russell 2000 indices. Annual reconstitution of Russell indices is documented to be highly correlated with institutional investors' holding position. Specifically, in the first stage, we use the change in membership from Russell 2000 to Russell 1000 and vice versa, and the indicator of Russell 2000 membership as instruments for common ownership. In the second stage, we rerun the main regression using fitted values from the first stage, and estimate the effect of common ownership on the HFA campaign decision. The deterrence effect of common ownership on an HFA campaign generally holds both qualitatively and quantitatively.

If hedge fund activists are rational, then whenever they decide to target a firm, they expect gains to outweigh costs. Then, when they target firms with connected industry peers, the expected gains should be higher than when they target firms without, because the costs related to potential resistance of co-blockholders are higher in the first case. Short-term market reaction to an activism campaign announcement should directly reflect market perception of the expected gains of an activism campaign. We find indeed, the market reacts more positively when activists target firms with connected industry peers, indicating that market expects those campaigns to generate more

positive returns. In addition, on average, industry peers of targets with connected industry peers react more negatively to activism campaigns than industry peers of targets without connected industry peers around campaign announcement. This finding indicates that, on average, industry peers of targets with connected industry peers experience more negative externalities, which are likely consequence of product market competition driven wealth reallocation. The market expects campaigns targeting firms with connected industry peers to pressure targets to compete more aggressively, thus leading to market share loss for average industry peers. Moreover, taking the last available position of co-blockholders' industry portfolio as given, we test the pseudo wealth change of co-blockholders' industry portfolio. Co-blockholders' cumulative portfolio returns of keeping industry portfolio consists of targets and its connected peers strictly underperforms the returns if they only hold the targets. Findings of average industry peer reaction to campaign announcements and pseudo co-blockholders' wealth change corroborate the argument that hedge fund activists may break the existing competition equilibrium within an industry, causing wealth loss of co-blockholders.

We also examine whether hedge fund activists that target a firm with connected industry peers pursue different objectives and use certain tactics consistent with their cost-benefit trade-off when they face co-blockholders' potential resistance. From the benefit perspective, because of the anti-competitive effect of common ownership, targets with connected peers likely benefit from competing proactively. Accordingly, hedge fund activists are likely to pursue specific rather than general objectives to push the targets to be more aggressive in product market competition. We find results consistent with the benefit argument that when targeting firms with connected peers, hedge fund activists are more likely to pursue specific objectives, including changes in capital structure, business strategy, sale of the target, and governance, instead of general objectives, such as improving valuation. In particular, they are more likely to go after business strategy that is closely related to product market strategy. From the cost perspective, fearing potential resistance from co-blockholders, hedge fund activists are likely to design their tactics accordingly to ensure campaign success. In addition, hedge fund activists would be more willing to communicate with and persuade the existing management to implement their proposals or to gain board seats in a friendly way rather than to involve in a costly proxy fight. We find that in targeting firms with connected peers, hedge fund activists are less likely to adopt confrontational tactics. Moreover, using a difference-in-difference-in-differences analysis, we further document that post activism, targets with connected peers experience higher operational improvement and incentivize managers more. These results collectively suggest that with the help of hedge fund activists,

targets with connected peers are catching up in operating performance with matched controls and with targets without connected peers.

Our study complements a broad literature that examines hedge fund activism. First, prior literature views the role of fellow shareholders in hedge fund activism campaigns as homogeneous, except for Brav et al. (2019), to our best knowledge. We argue that heterogeneity in ownership structure matters for HFA campaign decisions, objectives, and tactics. Co-blockholders who simultaneously hold same-industry peers are less likely to support hedge fund activists, because HFA campaigns would break the industry equilibrium and may negatively affect co-blockholders' vested interest. In choosing a target, hedge fund activists not only evaluate the target performance, but also analyze the target's ownership structure, and then decide accordingly. Our study differs significantly from Brav et al. (2019). Though both studies focus on how pre-activism shareholder structure affects hedge fund activists' target selection, the shareholder structures that the two studies explore are quite different. Though not the focus of their paper, Brav et al. (2019) document the general phenomenon whereby passive funds are less likely to support hedge fund activists. They attribute the heterogeneous voting pattern to mutual funds' value consideration, and they only partition mutual fund characteristics to be passive versus active. However, whether the mutual fund is passive or active is not the focus of our study. Rather, we emphasize that mutual funds' portfolio structure affects their attitude toward the activists. In testing for the probability of supporting the activists, Brav et al. (2019) note that a history of past pro-activism (or self-revealed pro-activist types) is a strong predictor of future support. Our main test is how the existing mutual fund portfolio structure (co-blockholder or not) provides economic incentive to the funds to oppose the interference of activists. Moreover, Brav et al. (2019) focus more on the extreme case—a proxy contest. Our focus is more general. The two studies somewhat complement each other. Brav et al. (2019) emphasize activists' selection of friends; we argue activists' avoidance of enemies.

Second, prior literature has generally explored the governance role of hedge funds and mutual funds separately, with two exceptions. Appel et al. (2019) document the role of passive investors in mitigating free-rider problems in activism campaigns and Kedia et al. (2020) find “activism friendly” institutions is associated with target's long-term returns. We extend the literature by studying the interaction between hedge funds and mutual funds, which contributes to the literature of exploring the “boundaries” between activist investors and other shareholders.

Lastly, we also contribute to the recent empirical literature that investigates the causes and consequences of “common ownership”. We identify a potential social cost whereby anti-competitive effects of common ownership (Anton et al., 2018; Azar et al., 2018) by mutual fund families transfer to resistance of hedge fund activism campaigns, causing potential HFA targets to lose the chance to improve.

The rest of the paper is organized as follows. Section 2 provides institutional background and an anecdote. Section 3 discusses related literature. Section 4 explains our data and statistics. Section 5 describes our empirical design and tests, and section 6 concludes.

2. Institutional Background and Anecdotal Evidence

On May 13, 2015, Trian Fund Management, L.P., led by Nelson Peltz, lost its proxy battle against DuPont in its efforts to get four board seats at DuPont. Though Institutional Shareholder Services (“ISS”) and Glass Lewis recommended Trian’s board nominees Nelson Peltz and John H. Myers, Trian lost the chance to get inside DuPont’s boardroom by a very small margin. Criticisms over Trian Fund’s failure include inappropriate target choice, retail investors’ involvement that makes the battle unpredictable, and DuPont management team’s recent promising movements. But the reason for losing the battle may not rest solely on the side of Trian Fund. Voting records show that mutual fund families Vanguard, BlackRock, and State Street were instrumental in swinging Trian’s vote; they all sided with the company—a blow that Trian couldn't overcome. Mutual funds were not passive (Appel et al., 2019) and they also did not go with the activists, contradicting the conventional view that hedge fund activists normally gain support from other institutional investors in initiating HFA campaigns. Further, Vanguard, BlackRock, and State Street are also the largest shareholders of Trian’s major competitor, Monsanto. In fact, the top 10 shareholders of DuPont and Monsanto overlap to a large extent.

Common ownership arises when a blockholder of a focal firm is also a blockholder of that firm’s same-industry peers. In this case, the shared blockholder is a “co-blockholder” and Monsanto is DuPont’s connected industry peer. Common ownership is the natural result of recent consolidation and increasing concentration in the asset-management industry. One observation is that the ownership structure is strikingly similar across most US corporations: The top shareholders across the major players in many industries are often the same. Large mutual fund families BlackRock, Vanguard, State Street, and Fidelity are among the major holders of the largest corporations in many industries. With more than \$3.5 trillion in assets under management, BlackRock was the “single largest shareholder of one in five corporations in United States, often including the largest

competitors in the same industry” by 2011(Davis, 2013). In fact, the US has never before witnessed corporate ownership this concentrated under the control of such a small number of financial institutions, even at the height of “finance capitalism” in the early 20th century.²

To maximize joint portfolio value, co-blockholders Vanguard, BlackRock, and State Street do not want DuPont to compete aggressively with its industry peers, such as Monsanto, which may be why they voted against Trian Fund. Because intensified competition may increase DuPont’s relative competitive edge and value, but would also lower the product prices and, correspondingly, joint profits of DuPont and its peers. However, pushing DuPont to invest aggressively in R&D and to further incentivize the CEO to gain market share in order to achieve “best in class revenue growth” is the main goal of Trian Fund in initiating the activism campaign. The market seems disappointed by Trian’s failure in the proxy fight, with a drop of over 5% in DuPont’s stock on the day post voting. Anti-competition co-blockholders beat hedge fund activists who favored competition, causing DuPont to miss the chance of change in operations and management. Indeed, the long-term stock market performance of DuPont reflects such social costs, with the price continuing to drop over 20% until October 2015, at which time the CEO finally stepped down.

3. Literature Review and Hypothesis Development

3.1 Alliance in Hedge Fund Activism

Prior literature generally views the role of other fellow institutional investors in HFA campaigns as homogenous. In other words, fellow institutional investors normally cooperate with hedge funds, because they would share the payoffs of intervention post campaign.

Theoretical work has established that activists face the classic free-rider problem whereby they bear all the costs of initiating intervention but have to share the profits with other shareholders (Grossman & Hart, 1980). To overcome the free-rider problem, activists need to accumulate a significant fraction of shares (Shleifer & Vishny, 1986) or act collectively as a “wolf pack” (Coffee & Palia, 2016; Brav et al., 2016; Wong, 2020). However, given their minority stakes in the target firms, hedge fund activists usually rely on the understanding and support of fellow shareholders to implement their changes (Brav et al., 2008; Brav et al., 2010). Fellow shareholders with concentrated ownership ease the communication and coordination, which rally backing for activists (Bradley et al., 2010). In fact, hedge fund activists are more likely to target firms with high institutional ownership when weighing proxy contests (Fos, 2017). Among other fellow

² One extreme example. As of the second quarter of 2017, among United Airline’s top 100 investors, which collectively hold more than 91% of outstanding shares, only 5 don’t also hold stock in another top-4 airline.

institutional investors, index tracking passive institutions are restrained from selling their poorly performing stocks in their portfolios, making them more willing to act as influential partners of hedge funds in an activist campaign. Appel et al. (2019) find activists are more likely to pursue changes to corporate control rather than incremental changes to corporate policies when a larger fraction of the target company's stock is held by passively managed mutual funds. Activism friendly institutions also affect the eventual success of hedge fund activism (Kedia et al., 2020). The cooperation between hedge funds and other institutional investors goes beyond economic incentive. The presence of funds whose managers are socially connected to the lead activist are more likely to contribute to the activist's ultimate campaign success (He & Li, 2018).

Anecdotally, alliance between hedge fund activists and other institutional investors indeed exists. James Rossman claimed that "activists realize they can influence concentrated shareholder base at many companies, and they're tapping into the desires of shareholders to see change take place."

³ Sometimes large institutions even approach activists and offer ideas before a campaign has begun.⁴ With less than 1% of Microsoft's stock, ValueAct successfully obtained a seat on the board, knowing that some of the largest and oldest shareholders supported the need for change at the company: "Institutional investors want to share the sick children in their portfolio with someone who can help make them better."⁵

Internationally, Becht et al. (2017) find hedge fund activists seek targets with high institutional ownership, especially for targets with high US institutions' ownership, because those institutions are cooperative.

3.2 Frenemy in Hedge Fund Activism

However, the interests between hedge funds and other institutional investors may not always be aligned. Institutional investors are heterogeneous in their investment pattern, expertise, preferred governance mechanism, horizon, and interest (Edmans & Holderness, 2017). Institutional shareholders usually exert governance through the "Wall Street Walk," the credible threat of exit (Admati & Pfleiderer, 2009), or they do not actively buy or sell shares to influence managerial decisions (Appel et al., 2019), or they sell at the first sign of trouble rather than manage problems

³ Head of corporate preparedness at Lazard, *The New York Times*, March 18, 2014.

⁴ William A. Ackman, founder of Pershing Square Capital noted, "Periodically, we are approached by large institutions who are disappointed with the performance of companies they are interested in to see if we would be interested in playing an active role in effectuating change."

⁵ Bruce H. Goldfarb, chief executive of Okapi Partners, a proxy solicitation firm. See "New alliances in the battle for corporate control," *The New York Times*, March 18, 2014.

(*The Economist*, 2015).⁶ Sometimes, when mutual fund managers compete for investor capital, their threat of exiting loses credibility, weakening the voice channel (Dasgupta & Piacentino, 2015). However, with regard to involvement in corporate governance, hedge fund activists usually invest with the intention of intervention by implementing changes to operations, management, and governance.

Recent consolidation and increasing concentration in the asset-management industry might further create conflicts of interests between hedge fund activists and mutual funds. The increasingly pronounced ownership links (common ownership) between firms, especially when mutual funds simultaneously hold same-industry peers, affects corporate behavior and also has externalities on HFA campaigns.

The extent to which co-blockholders affect firm behavior and the equilibrium outcome of industry competition has a solid theoretical foundation. If shareholders all hold a single firm, unanimous indifference or profit maximization is arrived (Fisher, 1930; DeAngelo, 1981), whereas when identical shareholders hold equal fractions of shares in all firms or they are fully diversified, the maximization of economy-wide profits can be agreed upon (Rotemberg, 1984). For the world in between, partially diversified shareholders pursue the objective to maximize the joint value of their portfolio as opposed to any particular individual firm profit maximization (Admati, Pfleiderer, & Zechner, 1994; Hansen & Lott, 1996) in an economy with an incomplete market (Hart, 1979). Consequently, Gordon (2003) advances the literature by arguing the objective function for a firm would change if it internalizes between-firm externalities by aggregating shareholder preference to the extent that its influential shareholders hold shares in industry competitors.

Given that stand-alone firm profit maximization may not always coincide with portfolio value maximization (Hart, 1979), diversification can reduce competition in the product market (Farrell, 1985; Gordon, 2003; Robin, 2006), leading to the monopoly. The reasoning is that a firm's aggressive competing strategy and capacity expansion may hurt other portfolio rival firms of the common blockholder, because the market share increase of one firm comes at the expense of other firms and thus at the expense of joint profits. Assuming firms have some market power and engage in strategic interaction with their industry competitors, Azar (2012, 2017) develops a model of firm behavior in the context of oligopoly. He argues portfolio diversification generates tacit

⁶ <https://www.economist.com/news/leaders/21642169-why-activist-investors-are-good-public-company-capitalisms-unlikely-heroes>.

collusion, because the profit margin is positively correlated with common ownership. Using data of the US airline industry to overcome the formidable identification challenge, Azar et al. (2018) explicitly document a positive correlation between within-route changes in common-ownership concentration and route-level changes in ticket prices, which they attribute to the hidden social cost of reduced product market competition. A possible channel of the monopoly outcome established theoretically and empirically by Antón et al. (2017) is that executives are paid less for their own firm's performance and more for their rivals' performance if an industry's firms are controlled by shareholders with larger financial stakes in competitors. Similarly, He and Huang (2017) find institutional cross-ownership facilitates product market collaboration.⁷

Unlike large mutual fund families that are required by law to maintain a diversified portfolio and retain liquidity, hedge fund managers usually concentrate their investments in certain companies, and they have strong incentives to generate positive returns because their compensation depends primarily on performance (Brav et al., 2008; Schneider, 2015). They tend to have “skin in the game” (Brav et al., 2010) by investing a substantial amount of personal wealth into their funds. Hedge funds aim to produce absolute returns that are “market neutral” (McClellan, 2006) or largely uncorrelated with financial market trends (Papier, 2005) and to generate high alpha (Till & Gunzberg, 2005).

Taking the above arguments and facts together, whether hedge funds and mutual funds would cooperate in an activism campaign is ambiguous. As long as divergence of economic incentives exists, hedge fund activists may not be able to get support to advance the campaign. If we view mutual fund investors as homogenous, they should join hedge fund activists, because they share the objective of maximizing target firm value. Those fellow mutual funds can take advantage of hedge fund activists' expertise “as a force in U.S. markets and boardrooms”⁸ and share the benefits of post-campaign target performance improvement. However, if we decompose the mutual funds by their portfolio constitutions at the industry level, those investors who simultaneously hold industry peers/competitors would have distinct objectives from those who do not, because the former institutions have the goal of maximizing their portfolio payoffs rather than a stand-alone target's profits (Admati et al., 1994; Hansen & Lott, 1996).

⁷ Schmalz (2018) provides a comprehensive review of theoretical research on common ownership concentration and corporate conduct, with descriptive statistics of the current U.S. firms' ownership structure.

⁸ <https://www.economist.com/news/leaders/21642169-why-activist-investors-are-good-public-company-capitalisms-unlikely-heroes>.

If these common shareholders are dominant shareholders in both industry peers, their lack of incentive to cooperate and their power to confront is non-negligible for hedge fund activists. In some cases, an HFA campaign leads to within industry wealth reallocation that post-activism performance improvement of the target may come at the cost of its industry peers. Aslan and Kumar (2016) document that hedge fund activism has negative and real stockholder wealth effects on the average rival firms of the same industry. More prevalently, hedge fund activists usually urge the target firm to make changes in productivity, capital redeployment, labor efficiency, and product differentiation (Brav et al., 2015), and they push the target to compete more aggressively in the product market. Co-blockholders of same-industry peers would suffer from such an increase in competition. The product price would be lower, as would the combined profits of the two firms. Such an outcome is strictly out of tune with the economic interests of co-blockholders who pursue combined profit maximization. Activists' competition favoritism constitutes the source of imperfect alignment of interest or interest disagreement. Moreover, as large institutions, co-blockholders usually hold a sufficient fraction of shares. Co-blockholders' divergent economic interest together with their voting power make an activism campaign less likely to pass the ballot, especially if it is aimed at tougher competition. Whether targeting a firm with connected industry peers (through co-blockholder(s)) in the first place is worthwhile is questionable for hedge fund activists. The incentive-divergence effect is reinforced given the widespread common dominant shareholders of US corporations nowadays. Consequently, we predict that the presence and strength of common dominant shareholders affects hedge fund activists' campaign decision:

H1: *Hedge fund activists are less likely to target firms with connected industry peers (through the co-blockholder(s)).*

When hedge fund activists initiate an activism campaign, they trade off benefits and costs related to whether or not the targets have connected industry peers. Targets with connected industry peers have higher product market performance potential than those that without, because anticompetitive shareholder incentives from co-blockholders are translated into firms' anticompetitive behavior (Azar, 2012, 2017; Azar et al., 2018) prior to hedge fund intervention. Hedge fund activists expect to gain higher profits by influencing operational issues such as pushing the targets to compete and invest aggressively in order to improve the target's product market share and status. Consequently, hedge fund activists pursue consistent objectives in their campaigns, and such objectives are likely to be more related to product market competition. On the other hand, hedge fund activists also consider the costs related to potential resistance from co-blockholders. Expecting a lower likelihood of gaining support in adversarial tactics such as proxy contests,

hedge fund activists would rather use friendlier tactics to avoid a costly fight, persuading targets' management to implement changes through collegial communication or a shareholder proposal, or through gaining board representation in a nonconfrontational manner. Friendly tactics better guarantee campaign success. We thus hypothesize the following regarding hedge fund activists' objectives and tactics:

H2: *When targeting a firm with connected industry peers, hedge fund activists are more likely to pursue business-strategy-oriented objectives and are more likely to use less confrontational tactics.*

4. Data and Key Variables

4.1 Overall Sample Selection

The sample examined in this study starts from the merged sample of Thomson Reuters S12 and CRSP from 1993 to 2014. We choose 1993 as the starting year as we collect hedge fund activism data from 1994, thus leaving one year for the calculation of pre-activism mutual fund holdings. Financial data is obtained from Compustat, and market data is obtained from CRSP. Analyst following data is subtracted from I/B/E/S.

4.2 Hedge Fund Activism Data

Generally, we follow the strategy of Brav et al. (2008) to construct an extension of their sample based mostly on Schedule 13D filings, the mandatory federal securities law filings under Section 13(d) of the 1934 Exchange Act that investors must file with the SEC within 10 days of acquiring more than 5% of any class securities of a publicly traded company if they have the interest in influencing the management of the company.⁹ 13D filings contains information of the filer identity (Item 2 "Identity and Background"), the actual percentage holdings of the filer in the target firm (Item 5 "Interest in Securities of the Issuer"), the purpose of the transaction and intention and tactics in further acquisition or disposition of shares, engaging in merger, reorganization or liquidation, sale or transfer of material amount of assets, changes in the present board of directors or management, a material change in present capitalization or dividend policy, any other material change in business or corporate structure, changes in certificate of incorporation or bylaws, delisting, termination of registration pursuant to Section 12(g) involving the target firm

⁹ In contrast, passive institutional investors that acquire more than 5% but less than 10% of the company's stock and do not intend to seek to influence control at the target company, but are merely investing in the ordinary course of business, are required to file Schedule 13G within 45 days of the end of the calendar year in which they cross the ownership threshold.

or its subsidiaries (Item 4 “Purpose of Transaction”). We follow the activism campaign list shared by Alon Brav covering the period 1994 to 2014, and download all the 13D filings from EDGAR, then manually identify hedge funds’ ownership, categorize the objectives and tactics of hedge fund activists.¹⁰ We gather information from Factiva search using the hedge fund and target firm names if 13D filings fail to provide hedge fund’s motives and tactics. This procedure leads to a list of 3278 hedge fund activism events with 13D filing.

Next, there are some large-cap targets for which the hedge funds are not able to acquire a 5% stake but still initiate activism campaign, we hand collect the event date by using Factiva news search using different combination of fund name, fund partner name, company name, “activist”, and “hedge fund” as key words. The event date is set as the first available date that a hedge fund makes the intervention intention publicly visible. All other information regarding fund motives and tactics are collected from the news as well. This process generates a list of 420 hedge fund activism events not accompanied by 13D filing. After determining the event dates, we construct a firm-fund-year level dummy variable “Indicator of HFA Campaign” equals to 1 if the firm is targeted by a hedge fund during a year, and 0 otherwise. Requiring for mutual fund holding information and control variables, there are 3471 events left for empirical tests.

Then we categorize hedge fund stated objectives into five non-mutually exclusive categories following Brav et al. (2008, 2010, & 2015): undervaluation where a hedge fund believes that the company is undervalued without more aggressive tactics other than working or communicating with the management; payout policy or capital structure where a hedge fund proposes changes of reducing excess cash, increasing leverage, repurchasing stocks, paying dividend to shareholders, reducing seasonal equity offering or proposing debt restructuring; business strategy where a hedge fund pursues for improvement in general operating efficacy, spin-off or refocus of strategy, merger or acquisition, and better growth strategy; sale of the target where the hedge fund attempts to force a sale of the target to maximize shareholder value; corporate governance where the hedge fund seeks change of top management, board composition, compensation and information disclosure.¹¹ Furthermore, if a hedge fund pursues any of the specific objectives, i.e. capital structure, business strategy, sale of the target, governance, then we treat such campaigns with

¹⁰ We sincerely acknowledge prof. Alon Brav in sharing the lists of hedge fund activism lists for our comparison. Sometimes the filer may provide additional information such as letter to shareholders/board as Exhibits. This supplementary information also helps identify the objective and tactics.

¹¹ See Brav et al. (2008) for detailed description.

specific objectives. Otherwise, if a hedge fund only discusses about general undervaluation, then we treat such campaigns with only general objectives.

The classification for seven non-mutually exclusive tactics also follows the definition of Brav et al. (2008, 2010, & 2015). First tactic category refers to the situation where a hedge fund states its intention of regular communication. Such tactic is the friendliest way and usually is conducted privately. The second category includes cases in which a hedge fund seeks board representation without a proxy contest or confrontation with the existing management or board. The third category refers to events that a hedge fund makes formal shareholder proposals, or publicly criticizes the target and demands for change. The first three categories are relatively friendly tactics, while the following four categories are confrontational to the target's current management. The fourth category includes events in which a hedge fund threatens to wage a proxy fight in order to gain board representation, or to sue the company for breach of fiduciary duty. The fifth category refers to cases when a hedge fund actually launches a proxy contest in order to replace the board. The remaining two categories include situations when a hedge fund sues the company or intends to control the company with a takeover bid. One campaign can have more than one tactic or both friendly and confrontational. If a hedge fund uses any of the confrontational tactics, we then coded the type of tactic as confrontational regardless of whether the hedge fund uses friendly tactics. The information of stated objectives and tactics are hand collected from 13D filings Item 4 "Purpose of Transaction" together with Factiva news search if the filings do not provide sufficient information and if the campaign is without 13D filings.

4.3 Common Ownership Measure

For each quarter in 1993-2014, we use Thomson Reuters S12 mutual fund holdings data to compute mutual fund holdings in a stock as a percentage of its market capitalization. Mutual fund family information is obtained from CRSP mutual fund databases and we link fund family details with fund holdings through WRDS MFLINK. We define a mutual fund as blockholder if the fund holds more than 5% of a firm's outstanding shares. Co-blockholder arises when a mutual fund simultaneously holds more than one blocks in the same four-digit SIC industry at a given quarter. Using S12 mutual fund holdings data rather than 13F data is to partially address potential endogeneity, because 13F incorporates some information of hedge fund holdings because as it is reported at institutional investment manager level. S12 mutual fund holdings is much cleaner, though the effect of common ownership is understated as other types of institutions may also

constitute to the existence and intensity of common ownership, such as large pension funds, insurance companies, banks and corporations.¹²

To determine a firm's common ownership status in given year, we follow He & Huang (2017) to construct five measures. Co-blockholder, is a dummy variable equals to one if the firm has any common mutual fund blockholder (Co-blockholder) with any same-industry peer in any of the four quarters in a given year and zero otherwise. NumConnectedPeer, is the number of unique same-industry peers that share any common mutual fund blockholder with the focal firm. NumComFund, is the number of unique mutual funds that simultaneously block hold the focal firm and its industry peers. The first variable Co-blockholder measures the existence of common ownership, while NumConnectedPeer and NumComFund measures the extent to which a focal firm is connected to other same-industry peers through common mutual funds. The next measure, AvgPeer, is the number of same-industry peers simultaneously-held by the average co-blockholder. We first calculate the number of same-industry peers (other than the focal firm) block-held by each co-blockholder during a given quarter, then we take the average across all co-blockholders. This measure captures the intensity of common-holding activities for the average co-blockholder and the incentive to influence focal firm management and policies. The last measure, TotalComOwnp, is the sum of all co-blockholders' percentage holdings in the focal firm. This measure captures the potential aggregate power and influence of all common-holding mutual funds on focal firm management. To convert all quarterly level measures into annual basis except for Co-blockholder, we first calculate the quarter level measure and then take the average across four quarters in a given year.

4.4 Control Variables

To control for the characteristics of target companies, we use several dimensions of measures following Brav et al. (2008, 2010, & 2015). The first dimension includes size (MV), book-to-market (BM) and Q (Q) because hedge funds are usually viewed as "value investors". Then we control for the operational performance, measured by sales growth (GROWTH), return on assets (ROA), and cash flow generations (CF). The third dimension refers to capital structure, measured by leverage (LEV), cash-to-asset ratio (CASH), dividend yield (DIVYLD), and payout ratio (PAYOUT). The next dimension measures the firms' investment characteristics, including research and development spending (R&D), capital expenditure (CAPEX), and segment

¹² We also construct the common ownership based on 13F data, the existence of Co-blockholder is as high as 47% for U.S. public firms if all institutional investors are under consideration, and this figure is much higher than if common ownership is calculated at mutual fund level.

diversification (SegHHI). We also consider governance characteristics, measured by Gompers, Ishii & Metrick (2003) (GINDEX), institutional ownership (INST) and analyst following (ANALYST). Because the G-index is only available for large firms till 2006 which constitutes a small subset of our full sample, we report the results including G-index separately. The rest control variables capture the trading liquidity (AMIHUD) following Amihud (2002) because higher liquidity makes it easier for activists to accumulate a stake within a short period of time. We also control for annual buy-and-hold stock return (BHRET) to capture the stock market performance of a firm because hedge funds are more likely to target poorly performing firms.

4.5 Summary Statistics

Given the fact that hedge fund activism campaigns are relative rare events, we utilize a matching procedure to account for any possible heterogeneity across covariates to ensure we are comparing similar firms. Practically, we follow Brav et al. (2008) and Brav et al. (2013) to match treatment firms (firms that are targeted by hedge fund activists) with firms of the same two digit SIC industry classification and same MV and BM quintiles as the control group. For treatment firms that cannot be matched with industry/MV/BM firms, we first match them on industry and year, and then we get the closest MV and BM ranked firms.

Table 1 provides the summary statistics for the matched sample. 11.6% firms are targeted by hedge fund activists at least once in a year. About 13% of firm years, a firm has at least one Co-blockholder. On average, a firm has 0.3 unique connected industry peers through any co-blockholder in a year. The average number of co-blockholders that simultaneously block hold the focal firm and its same-industry peers during a year is 0.1. The annual average number of same-industry peers simultaneously-held by the average co-blockholder is 0.26. The annual average total co-blockholders' ownership in a focal firm across four quarters is 0.8%. The rest of the table summarizes the control variables. For example, the mean market valuation for sample firms is about \$2 million, with a book-to-market about 1.226. Return on assets is 4% and payout ratio is about 5%. Generally, there are 6 analysts following a firm and the average percentage by total institutional holdings is about 41%. The annual buy-and-hold return is over 13%, indicating that firms are generally performing well. While G-index is only available for large firms till 2006, the average number of takeover defenses is 9.

[Insert Table 1 Here]

Table 2 reports the comparison of covariates between treatment firms and control firms. Target firms tend to be smaller in size and have lower book-to-market and lower Q compared with

matched control firms. These features are generally consistent with the notion that hedge fund activists are “value investors” and they are targeting firms with the expectation to profit from potential improvement in market valuation. Target firms generally have significantly higher leverage and lower cash-to-asset ratio than matched peers. Targets’ dividend payout is significantly lower than peers, measured by dividend yield, which is not surprising, because in many cases, hedge fund activists initiate a campaign to pressure the target to repurchase shares and increase dividends. With regard to investment, target firms have significantly lower R&D expenses and are more diversified than peers, measured by Herfindahl-Hirschman indices (SegHHI, HHIindex of sales in different business segments as reported by Compustat Segment data). Target firms have significantly higher institutional ownership, consistent with prior studies that on average hedge fund activists rely on the support of fellow institutional investors to implement changes. Number of analysts’ following indicates the sophistication of shareholder clientele. Targets tend to have a slightly smaller number of analysts’ following, about 0.3 less analysts. But on average, there are more than 6 analysts following the target firms, suggesting rather sophisticated investor base.

[Insert Table 2 Here]

5. Empirical Design and Tests

5.1 Campaign Decision

Hedge funds are characterized as “offensive” in their activism (Amour & Cheffins, 2012; Cheffins & Armour, 2011) that they are strategically proactive (Kahan & Rock, 2015). Distinguished from other institutional investors who invest first and then become active if they are dissatisfied with the firm, hedge fund activists discreetly choose their targets and devote expertise and networking in the selection process (Sorkin, 2005; Schneider, 2015).

We first assess whether and to what extent other fellow institutional investors especially large mutual funds’ simultaneous holding of same-industry peers affects hedge fund activists’ campaign decision, i.e. Hypothesis One, by testing various forms of the following model using HFA campaign level Logistic regression:¹³

$$Y_{it} = \alpha + \beta ComMeasure_{it-1} + Controls_{it-1} + Year_t + \epsilon_{it} \quad (1)$$

¹³ We also conducted probit regression analysis and the results are both quantitatively and qualitatively similar.

where $Y_{it} = 1$ if the firm is targeted by a hedge fund in a given year and 0 otherwise. *ComMeasure* is one of the five distinct measures capturing different aspects of mutual fund common ownership in the focal firm: Co-blockholder; NumConnectedPeer; NumComFund; AvgPeer; and TotalComOwnp. Control variables include controls for the firm's "value", operational performance, capital structure, governance, liquidity and stock performance. We include year fixed effects to control for any possible trend in common ownership by mutual funds to ensure our estimates capture within-year variation in common ownership. Standard errors are clustered at firm level. All continuous variables are winsorized at the 1% and 99% percentiles. The regression is conducted of the matched sample where matched control firms for each target firm are assigned from the same year, same SIC 2-digit industry, and same 5×5 size and book-to-market sorted portfolios.

Equation (1) tests whether having connected same-industry peers through a common mutual fund and intensity of common ownership would influence the probability of a firm being targeted by the hedge fund activists. Table 3 reports the regression results of HFA campaign decision. Each measure of common ownership is put into the regression separately. Panel A shows the full sample regressions. All five measures of common ownership significantly load at 1% or 5% level in the regressions. The coefficients all load significantly negative, suggesting that when a firm has connected same-industry peers through co-blockholders or when the intensity of such common ownership increases, the probability of the firm being targeted by hedge fund activists decreases. The results are consistent with the argument that co-blockholders who simultaneously hold both the focal firm and its same-industry peers are less likely to cooperate with hedge fund activists. Activists trade off the potential costs of co-blockholders' resistance and thus are less likely to target firms sharing co-blockholders with same-industry peers. In terms of economic significance, holding all other variables at the mean, column (1) implies that the probability of being targeted by hedge fund activists during a year is reduced by 2% when the firm has any co-blockholder with its same-industry peers. The magnitude of this effect is economically meaningful.

Other control variables are generally consistent with prior literature. When a firm is larger and has higher Q, it is less likely to be targeted by hedge fund activists. When a firm is slower in generating sales growth and cash flows, or has higher leverage, or holds excess cash and pays less dividends, it is more likely to be targeted by activists. A firm investing more in research and development is less likely to be targeted, suggesting that hedge fund activists are not myopic and they invest with long-term horizon. Higher institutional ownership accompanies higher probability of being targeted, which is consistent with general consensus that, on average fellow institutional investors

offer support to activists in their campaign. This sharp opposite of signs between coefficient on general institutional ownership and coefficients on the common ownership measures offers interesting inference. Though on average fellow institutional investors play a helping role, they are less likely to cooperate with or they may even fight against hedge funds when they have dispute in objectives with regard to single target value maximization.

Because G-index is only available for the largest 2000 companies till 2006, but most of the HFA targets tend to be smaller in size, we report a subsample of firms with G-index available separately in Table 1 Panel B, and rerun equation (1) by adding G-index as a control variable. With no surprise, the sample size drops sharply from 29,816 firm years to only 5,131 firm years, but the coefficient on Co-blockholder still loads significantly negative at 5% level. The coefficients on other measures of common ownership load consistently negative, though not significant. Still, the overall results are consistent with prediction.

We also partition firms into quintiles based on firm size and explore whether the deterrence effect of common ownership holds at different size quintiles. Results are reported at Table 3 Panel C. All coefficients of common ownership measures are negative and 11 out of 25 coefficients are significant.

[Insert Table 3 Here]

5.2 Identification

Our findings of the deterrence effect of common ownership on HFA campaigns could be driven by alternative explanations. With block holding by mutual funds, the focal firm could be well governed that incremental improvement by HFA campaign might be marginal. It is less likely to be the case though, since we have controlled for the level of institutional ownership in all the regressions and the direction on common ownership and institutional ownership all significantly load opposite. Higher institutional ownership is associated with higher probability of being targeted by hedge fund activists, indicating that the level of institutional ownership does not necessarily signal the quality of firm governance.

Another concern is reverse causality that co-blockholders could be able to foresee the probability of their portfolio firms being targeted by activists and then diversify away the risks of potential portfolio wealth loss, by divesting from this target's same-industry peers prior to the campaign. Consequently, the target naturally becomes a standalone firm without connected industry peers.

However, in reality, mutual fund managers are less likely to have the information to predict potential activism campaign, not only because activists usually act secretly and even act like a wolf pack to hide their visibility but also because hedge fund activists are not subject to mandatory disclosure of their holding status till the last minute. Moreover, even mutual fund managers could precisely predict the activism campaign, they are usually subject to restrictions of divesting from focal target's industry peers. Mutual funds must adhere strictly to a stated investment objective, develop and maintain a diversified portfolio and retain liquidity (Schneider, 2015). Sometimes, mutual funds even closely keep track of certain indices to construct their portfolios. They are restrained from timely divestiture of certain firms.

We use both channel tests and instrumental variable approach to address those endogeneity concerns. Channel tests further explore how variations in ownership structure of focal firm/industry interact with common ownership, while instrumental variable approach attempts to establish the causality inference.

5.2.1 Active Share

We propose that a firm with connected same-industry peers through mutual fund common ownership is associated with lower likelihood of being targeted by hedge fund activists. Then the deterrence effect should be stronger if mutual fund managers have higher incentive to actively participate in the focal firm's operations and governance. We argue that the more actively managed fund, the stronger incentive for fund managers to be involved in corporate governance and policies (Aghion, Van Reenen & Zingales, 2013), either through voice or exit. As opposed to actively management fund, passively managed funds seek to deliver the performance of benchmark without too much involvement in an individual stock's performance, though they have some governance role documented by Appel, Gormley & Keim (2019). We hypothesize that when a higher fraction of a firm's shares is held by actively managed mutual funds and when the firm also shares any co-blockholders with its same-industry peers, co-blockholders' incentive to dispute with hedge fund activists is stronger.

We measure the fraction of actively managed mutual fund shares in a given firm following the method of Gremers & Petajisto (2009) and Petajisto (2013) that measure the portion of a fund's portfolio holdings that differ from its benchmark holdings, or "assets deployed differently than in the index":

$$Active\ share_{iq} = \sum_{j=1}^j Active\ share_{ijq} * Ownership_{ijq} \quad (2)$$

where i denotes for a firm, q denotes for a given quarter, j denotes for a fund. The *Active share* is first calculated at quarter level, then converted to annual level by average across four quarters. We partition firms into groups with high vs. low *Active share*. Then we interact *Active share* with common ownership measures to test the incremental deterrence effect of mutual funds' participation incentive on HFA campaign. The equation (1) is then revised as follows:

$$Y_{it} = \alpha + \beta ComMeasure_{it-1} * Active\ share_{it-1} + \gamma ComMeasure_{it-1} + \theta Active\ share_{it-1} + Controls_{it-1} + Year_t + \epsilon_{it} \quad (3)$$

As reported by Table 4 column (1), the coefficient on interaction of Active share and Co-blockholder is significantly negative with value -0.334 while the main effect of Co-blockholder is insignificant, indicating that active co-blockholders are the main force that deters hedge fund activism campaign decision.

5.2.2 Common Ownership Concentration

Next we explore how industry level common ownership concentration interacts with a firm's actual connectiveness with its same-industry peers, influencing hedge fund activists' campaign decision. Industry level common ownership concentration is a natural result of institutional investors' expanding and diversification in recent years. Higher common ownership concentration in a specific industry has anti-competitive effects and leads to monopoly at the market level (Azar et al., 2018; Schmalz, 2018; Anton et al., 2018). If a firm operates in a high ownership concentration industry, we expect the potential rewards for the firm to compete more aggressively with its same-industry peers to be higher. Because the first mover breaking the monopoly equilibrium can benefit more, so would be the hedge fund activists who initiate a campaign. However, higher industry level common ownership concentration is also associated with higher resistance from co-blockholders, since those co-blockholders would rather enjoy monopoly profits than cooperate with hedge funds to improve single target performance at the cost of other connected firms. Moreover, co-blockholders' collective power would be stronger in ownership concentrated industries. We expect the potential resistance from co-blockholders to be stronger for a firm operates in higher common ownership concentration industry and also has connected same-industry peers.

We test the following equation:

$$Y_{it} = \alpha + \beta ComMeasure_{it-1} * HighMHHId_{it-1} + \gamma ComMeasure_{it-1} + \theta HighMHHId_{it-1} + Controls_{it-1} + Year_t + \epsilon_{it} \quad (4)$$

We measure industry ownership concentration using *MHHId* developed by O'Brien & Salop (2000) and empirically used by Azar et al. (2018) and Anton et al. (2018) which captures the incremental industry level concentration above general *HHI*:

$$MHHId = \sum_j \sum_{k \neq j} s_j s_k \frac{\sum_i \gamma_{ij} \beta_{ik}}{\sum_i \gamma_{ij} \beta_{ij}} \quad (5)$$

where β_{ij} is the ownership share of firm j accruing to shareholder i , γ_{ij} is the control share of firm j exercised by shareholder i . s_j is the market share of firm j , while s_k is the market share of firm j 's industry peer k . Equation (5) is a transformation of a firm's objective function by taking into the externalities of common ownership to the extent of the firm's shareholders' holdings in other same-industry peers.¹⁴ To calculate *MHHId*, we use Thomson Reuters 13F institutional investor stock holding data and take into account of powerful institutional investors at the management firm level that own more than 1% ownership in a given firm. 13F also provides information of number of shares of voting rights, and we use number of shares with voting rights to measure γ_{ij} . *MHHId* measures ownership concentration not only at industry level but also includes all institutional investors including mutual funds, pension funds, insurance companies, banks and or other institutions. Moreover, we first calculate *MHHId* at quarter level and then covert to annual average. We then partition the firms to high vs. low *MHHId* using sample median.¹⁵

Regression results are shown in Table 4 column (2). Both coefficient on *high MHHId* and coefficient on the interaction between Co-blockholder at firm-mutual fund level and *high MHHID* at industry level are significantly negative at 1% level. This result indicates that hedge fund activists are less likely to target firms operating in common ownership concentrated industries and such effect is stronger if the focal firm has any connected industry peers. This setting also helps directly test hedge fund activists' cost-benefit trade-offs in selecting their targets. Though firms operate in ownership concentrated industries have higher improvement potential, the potential

¹⁴ Azar et al. (2018) provides a detailed illustration of how to get the *MHHId* from the firms' objective function.

¹⁵ The average *MHHId* across all industries including those are not in the sample is 14.4%, which is almost a quarter of traditional *HHI*, and this result is consistent with Anton et al. (2018).

costs from co-blockholders' resistance outweighs the potential benefits from targets' improvements in operations and valuation.

[Insert Table 4 Here]

5.2.3 Instrumental variables Approach

Prior channel tests are more consistent with the argument that conflict of interests between hedge fund activists and co-blockholders deters HFA campaign instead of good governance or risk diversification argument. However, we could not rule out other possibilities. So, we further utilize an instrumental variable approach to facilitate identification.

The setting we use is the annual reconstitution of Russell 1000 and Russell 2000 indices, which is a plausible exogenous change on a firm's shareholder structure, following Chang et al. (2014), Appel et al. (2019) and Schmidt & Fahlenbrach (2017). The reconstitution of the two indices are conducted each last trading day of May, based on market capitalization.¹⁶ Since the two indices are value weighed, the firms rank lowest of Russell 1000 index have significantly lower institutional ownership than those rank highest of Russell 2000 because the higher a firm ranks in an index the higher weight attributed to that firm. Consequently, a firm's ranking switching from Russell 1000 to Russell 2000 and vice versa has significant effects on its mutual fund ownership given the fact that many mutual funds stick to certain benchmark portfolios. However, a firm's index ranking change has no effect on the HFA campaign decision because hedge fund activists are not passive investors and they do not follow certain indices. We use a two-step instrumental variable approach to estimate the causal effect of common ownership on hedge fund activism campaign decision. In the first stage, we estimate the following equation:

$$\begin{aligned}
 ComMeasure_{it-1} & \\
 &= \alpha + Change2t1_{it-1} + Change1t2_{it-1} + Rus2000_{it-1} + Controls_{it-1} \\
 &+ Year_t + \epsilon_{it} \tag{6}
 \end{aligned}$$

where $Change2t1_{it-1}$ equals one if a firm's rank switches from the Russell 2000 to Russell 1000 from year $t - 2$ to $t - 1$ and zero otherwise. $Change1t2_{it-1}$ equals one if a firm's rank switches from the Russell 1000 to Russell 2000 from year $t - 2$ to $t - 1$ and zero otherwise. $Rus2000_{it-1}$ is an indicator variable equals one if a firm belongs to Russell 2000 index in year $t - 1$.

¹⁶ Since 2007, Russell changes its index assignment rules. See details at Appel et al. (2020).

Then in the second stage, we rerun equation (1) using the fitted value from the first stage and the results are reported in Table 5. With regard to the validity of instruments, the instrumental variables are relatively significantly related to common ownership measures in the first stage, with partial F-tests larger than 40 in all first stage regressions. The coefficients of second stage regression are all significantly negative, consistent with main regression reported in Table 3 that hedge funds are less likely to target firms with connected same-industry peers.

Note that Russell 1000 and Russell 2000 incorporate the largest firms, but many of the activism targets are small in size. Restricting treatment and control firms to be Russell 1000 and Russell 2000 members significantly reduces our sample size. Such restriction influences the first stage regression as well because it is harder for institutions to cross 5% blockholding threshold. This means IV regression results understate the deterrence effect of common ownership on HFA campaign decision. Still, we get the consistent results with main regression in Table 3.

[Insert Table 5 Here]

5.3 Campaign Objectives and Tactics

We then test whether common ownership affects the types of HFA campaigns in terms of objectives and tactics. We argue that the presence and intensity of common ownership affects the types of campaigns by changing hedge fund activists' expected benefits and costs. Benefits come from expectation of target's improvement in competitive edge while costs come from the potential resistance from co-blockholders. Since mutual fund managers pursue for portfolio return maximization, they would prefer less competition between industry peers if they simultaneously hold those peers. Intensified competition comes at the costs of price reduction and additional expenditure which all decrease the portfolio return. However, with the existence of anti-competitive common ownership, hedge fund activists would expect higher potential of operational improvement and value maximisation by pushing the targets to compete aggressively in product market. If hedge fund activists are rational, then for actual HFA campaigns, expected benefits should be higher than expected costs. We expect that hedge fund activists' stated campaign objectives and utilized tactics should be consistent with operational and product market strategies, by taking into consideration of minimizing costs of co-blockholders' resistance. To analyse campaign types and activists' tactics, we restrict the sample to actual HFA campaigns and categorize the events into two groups based on existence of co-blockholders.

The effect of common ownership on the campaign objectives is reported in Table 6 column (1) to column (4). We focus on both the specificity of activists' stated overall objectives and activists'

mention of changing target's business strategy. The specificity of stated objectives captures whether the hedge fund activists are pursuing for specific changes such as capital structure, business strategy, sale of the target and governance, rather than general improvement in valuation. Among specific strategies, business strategy objective is most closely related to product market competition, including objectives of investing, spending, cost management and operational improvement. In pursuing for business strategy objective, hedge fund activists may ask the targets to improve operating margin and ROA, to focus on core business, to divest from money-losing segments, to gain market share, and to compete with industry competitors. We find that existence of co-blockholders is positively associated with the likelihood of hedge fund pursuing for specific objectives rather than general valuation purpose. Coefficients on Co-blockholder are significantly positive. Moreover, hedge fund activists are more likely to pursue for business strategy objectives if targets have co-blockholders. These results indicate that hedge fund activists expect to gain more benefits by interrupting the current product market equilibrium caused by the anti-competitive common ownership and profiting from improvement of targets in their competitive edge.

We also analyse the effect of common ownership on the choices of tactics and results are reported in Table 6 column (5) to (8). If activists' stated objectives capture their expected benefits, then their choices of tactics would be the result of costs trade-off. Activists trade off between friendly and confrontational tactics to implement their objectives in order to ensure campaign success. Initiating confrontational tactics targeting a firm with connected same-industry peers would be costly for activists, not only in forms of money and time but also in terms of lower expected successful rate. Because co-blockholders are less likely to vote in favour of hedge fund activists in confrontational activities such as proxy contests, we expect that hedge fund activists are more likely to communicate friendly with management through direct talk or shareholder proposal in order to implement changes fluently and to gain board representation without proxy contests. Friendly tactics ensure campaign success at lower costs. We find evidence supporting our expectation that common ownership reduces the likelihood of utilizing confrontational tactics, and hedge fund activists are more likely to communicate with management.

[Insert Table 6 Here]

5.4 Market Reaction

The next question we explore is whether the stock market reacts differently to campaigns targeting firms with and without common ownership connected industry peers. Stock price reaction is the

direct measure of market expected wealth effects of an HFA campaign, i.e. market perception of value creation of HFA campaign. We conduct short-window event study to see market reaction to different types of campaigns with regard to existence of common ownership.

In Table 7 Panel A, we conduct non-parametric comparison of targets' market adjusted cumulative abnormal return (CAR) for campaigns targeting firms with connected same-industry peers vs. firms without, varying the return windows around HFA campaign announcement date. Following Brav et al. (2008), we first test the market reaction between [-20, 20] trading days around HFA event date and find that although on average CAR is positive for HFA campaigns, market reacts incrementally positive for HFA targets that have connected industry peers. The average [-20, 20] CAR is 6.9% for campaigns targeting firms with connected industry peers, an amount nearly doubles the average CAR for campaigns targeting stand-alone firms. The result of [-10, 10] trading day CAR comparison is similar. Though the difference in CAR is not significant for [-5, 5] trading day, CAR is still higher for campaigns targeting firms with connected industry peers.

We also control for the targets' size, book-to-market, leverage and return volatility in Table 7 Panel B. Consistent with non-parametric tests, targets with connected industry peers are associated with higher cumulative abnormal return. Taking all these results together, market rewards more for campaigns targeting firms with common ownership, foreseeing higher upward potential post intervention at the time of campaign initiation.

[Insert Table 7 Here]

If an HFA campaign benefits targets with common ownership more because of activists' promoted product market competition strategy, then it may not benefit those targets' industry rivals to the same extent or may even hurt targets' industry peers. Aslan & Kumar (2016) document that on average, industry rivals of HFA targets react negatively to HFA announcements, which the authors attribute as negative product market spillover effects of HFA. In prior section we find that hedge fund activists are more likely to pursue for business strategy related campaign objectives, consistent with their expected benefits. If indeed, an HFA campaign breaks the industry equilibrium and induces intensive competition, it would negatively impact the industry rivals of targets, especially for those that share co-blockholders with the targets prior to HFA campaign. Once the target takes the first move in competition, rivals would suffer. This HFA pro-competition effect would be less if targets and their industry rivals do not share common owners prior to an HFA campaign. To confirm this, we test short window market reaction of an HFA campaign on targets' industry peers and see how the market reacts differently to the potential product market

effect of an HFA campaign. We follow Lang & Stulz (1992) and Aslan & Kumar (2016) and use a portfolio approach. In detail, for each HFA campaign target, we place all its same-industry peers into one portfolio and treat the returns to this portfolio as a single observation. We give each industry rival equal weight in each portfolio. Portfolio CAR is measured as market adjusted cumulative stock return over window $[-5, 5]$ and $[-20, 20]$ where date 0 is defined as the HFA campaign announcement date.

Table 8 Panel A reports the results of short window market reaction of targets' same-industry peers. Partitioning targets with vs. without co-blockholders, we find that targets' same-industry peers react significantly different across the two groups. Portfolio CAR for industry peers of targets with common ownership is -0.4% during window $[-5, 5]$, while CAR for industry peers of targets without common ownership is slightly positive at 0.1%, and the difference is significant at 5% level. This confirms that market is expecting wealth shift from industry rivals to HFA targets and the effect is stronger if HFA targets have common ownership. Results are similar for CAR comparison during window $[-20, 20]$.

We further argue that industry peers should not be equally affected by HFA campaigns and we partition targets into four quadrants by interacting pre-HFA campaign targets' ownership connectiveness and competitive relationship with their same-industry peers. Results are reported in Table 8 Panel B. Consistent with results in Table 8 Panel A, we find that negative industry externalities concentrate on industry peers of targets with common ownership. When Co-blockholder=1, peer portfolio CARs are monotonically lower than the peer portfolio CARs when Co-blockholder=0. Partitioning industries into high competition vs. low competition using Herfindahl index, we find that negative externalities concentrate in the group that targets and their industry peers are subject to both high ownership connectiveness and intensive competition, with targets' peer portfolios 11-day CAR being -0.0019. We find similar results using Homberg et al. (2014) product market fluidity that captures similarity between a firm's products and the aggregate changes in the competitors' products. High fluidity indicates a firm's products are closer to its competitors'. We find that when a target has connected industry peers and the target's products are similar to its competitors', the target's industry peers react most negatively to the target's HFA campaigns, with 11-day portfolio CAR equals -0.0035. We also partition targets to firms operating in high vs. low common ownership concentrated industries and test HFA targets' industry peers' market reactions. We expect that hedge fund activists are faced with higher resistance when targeting firms operating in high common ownership concentrated industries so the negative externalities on peers would be lower. We find consistent results that both for high vs. low

ownership concentrated industries, we observe negative externalities on targets' peers but for the group that targets having ownership connection and operating in low ownership concentrated industries, the negative externalities on peers are the highest with targets' peer portfolio CAR equals -0.0023.

[Insert Table 8 Here]

5.5 Placebo Test of Co-blockholders' Wealth Change

Our argument that potential resistance from co-blockholders deters hedge fund activists' campaigns is based on the assumption that an HFA campaign would benefit the target but hurt co-blockholders' interests. In this section, we directly test whether co-blockholders indeed suffer if one firm of their portfolio is targeted by activists. If co-blockholders' wealth decreases after an HFA campaign, then it confirms that the HFA campaign negatively impacts co-blockholders' wealth. To test this, we have to pay attention to two points. One is co-blockholders are rational, they could adjust their portfolio at the time of HFA campaign announcement or afterwards to minimize portfolio loss. Consequently, the actual co-blockholders' portfolios we observed are the "adjusted" portfolios. We have to use the "as if" portfolios to test the impact of HFA campaigns on co-blockholders' wealth, where "as if" means we assume co-blockholders would not adjust their portfolios. Another point is we are doing two comparisons: co-blockholders' combined portfolio returns vs. non-co-blockholders' target returns; and co-blockholders' portfolio returns and non-co-blockholders' target returns pre- and post-HFA campaigns.

In detail, we use a "placebo test" method. To construct a counterfactual group, we assume one co-blockholder is not a co-blockholder so that the co-blockholder's portfolio only includes the HFA target. The treatment group is then the same co-blockholders' actual portfolio at the time of HFA campaign but only includes the HFA target and its connected industry peers. We also assume co-blockholders make no portfolio adjustment since the HFA campaign. In both groups, we do not consider other possible firms in a co-blockholder's overall portfolio so we only test the partial industry level wealth effect on a co-blockholder. If co-blockholders' portfolio return of simultaneous holding the targets and industry peers is lower than when they only hold the targets, then co-blockholders' wealth would be negatively affected by HFA campaigns.

Table 9 presents the results of pseudo wealth change of co-blockholders. Cumulative raw return is calculated separately for 3 months, 6 months and 12 months since the HFA campaign. The cumulative stock return for co-blockholders' portfolios for 3 months period is 8.6% if they only hold the target. Whereas the cumulative stock return for co-blockholders' portfolios for 3 months

period is 4.9% if they hold both the target and its connected industry peers and the difference is significant at 1% level. The portfolio construction assigns equal weight of each firm, following Aslan & Kumar (2016). Figure 1 shows clearly the trend of cumulative return of two groups that we constructed. The trends of the two groups are similar, however return for holding targets only is always higher than that of holding targets and connected industry peers, suggesting that the return gap between two portfolios is attributed to the decrease in performance of targets' connected industry peers. Co-blockholders' wealth is thus negatively affected and the effect would be even stronger when they could not easily divest from targets' industry peers.

[Insert Table 9 Here]

5.6 Post-activism Performance and Management Compensation

We also compare post-activism performance of targets with common ownership vs. those without, and adopt a difference-in-difference-in-difference approach. Basically, we first construct annual match of targets with same-industry and 5 × 5 market value, book-to-market peers. For each year, we first take the difference of performance measures between targets and matched controls. Then we compare the two difference between targets and matched controls by partitioning targets with and without common ownership. We repeat the process year-by-year and analyze the difference pre- and post-activism.

Table 10 reports various performance measures from -2 to +3 years around the activism campaign for targets with and without common ownership, compared with matched controls. We measure firm performance in four dimensions: ROA, margin, market share and market share growth. We observe the trend that targets on average experience performance recession two years before the activism campaign and recover after the campaign, compared with matched controls. However, targets with common ownership experience more significant drop comparing with targets without common ownership, but their performance exhibits no significant difference three years after the campaign, and all outperform their peers in ROA and margin. Those findings are consistent with the notion that hedge fund activists identify deterioration of product market performance induced by the anti-competitive common ownership and then push the targets to be more aggressive.

[Insert Table 10 Here]

Table 11 reports management compensation before and after HFA campaign. Before the activism campaign, targets with common ownership pay less to their CEOs compared with matched controls. But after activism campaign, targets significantly increase CEO total compensation

relative to matched controls. In addition, we find that targets generally sustain incentivizing CEO pre- and post- HFA campaign, and targets with common ownership incentivize more.

[Insert Table 11 Here]

5.7 Learning Effect

If targeting firms with connected industry peers is rather costly to hedge fund activists, then they would be less likely to select those targets if activists have similar experienced before. Or if expected benefits is not high enough, they would hesitate before making the decision. We test whether there is such learning effect. Results are presented in Table 12. In Panel A, to test the hedge fund level learning effect, we restricted the sample to actual campaigns and also restrict hedge funds to be multiple campaign initiators. We find that if hedge fund activists have targeted firms with connected industry peers before, they are slightly less likely to target firms with connected industry peers in the future. At the industry level, dividing the full sample across time, we find that the deterrence effect is getting stronger in the later years except for the period 2000 to 2005, with results presented in Panel B.

[Insert Table 12 Here]

5.8 Additional tests

In previous campaign decision tests, we construct the sample by matching treatment firms and control firms on industry, year MV and BM quintiles. To establish more rigorous matching, we further rerun the main tests using different matching procedures. In Table 13 Panel A, we construct the sample using propensity score matching, where in the logit model, we put in all the covariates that are documented by prior literature to be correlated with the probability of being targeted by hedge fund activists. In Panel B, we allow the treatment firms' non-treated years as controls. In both tests, the results hold.

[Insert Table 13 Here]

6. Conclusion

This study presents evidence of deterrence effect of mutual fund common ownership on hedge fund activism campaign decisions, objectives and tactics. In particular, when mutual funds simultaneously hold same-industry peers, their incentive is to maximize joint portfolio value, whereas hedge fund activists pursue single target firm profit maximization. Such conflicts of interests make it less likely for hedge fund activists to gain support from mutual funds in initiating activism campaign. We find that ex-ante, hedge fund activists are less likely to initiate an activism

campaign targeting a firm with common ownership connected industry peers. Ex-post, conditional on campaign initiation, hedge fund activists are more likely to pursue for specific objectives especially business strategy objectives when targeting firms with common ownership. However, they are less likely to use confrontational tactics in fear of potential resistance from co-blockholders, rather, they prefer to communicate and work with target management team to implement their appeals.

To better identify the causal inference, we use channel tests by varying the incentive of mutual fund intervention in corporate governance and also use annual reconstitution of Russell indices as instrumental variables for common ownership. The results further support our arguments.

Additionally, market reacts more positively for campaigns targeting firms with connected industry peers, varying the length of event windows. We also find concentrated negative externalities on same-industry competitors of targets with common ownership. Consistent with activists pursuing for business strategy when targeting firms with common ownership, we find that operational performance of targets with common ownership improves more as they are catching up in performance with matched controls and with targets that are standalone firms.

Overall, our study examines the interaction between hedge funds and mutual funds in their roles in corporate governance by identifying a potential hidden social cost of common ownership in the effect of deterring hedge fund activism.

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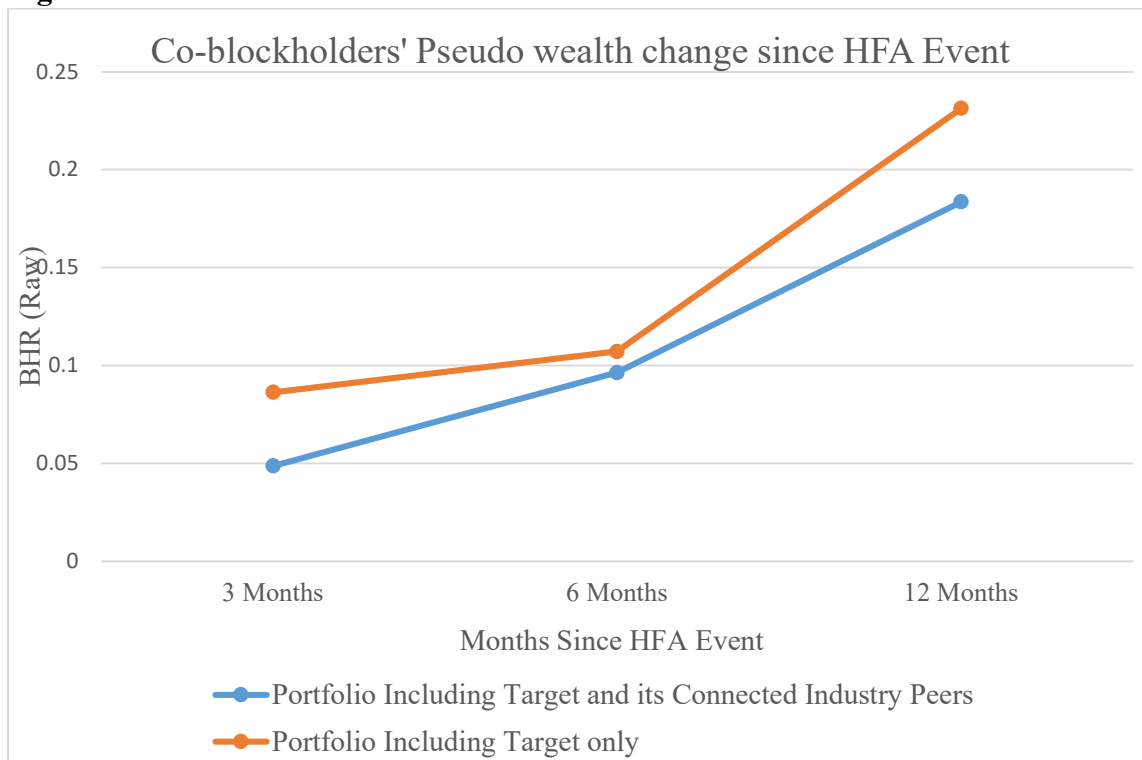
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Appendix

Variable	Definition
HFA Campaign	Dummy variable equals to one if a firm is targeted by hedge fund activists in a given year.
Co-blockholder	Dummy variable equals to one if a firm has any mutual fund blockholder simultaneously hold same-industry peers in any of the four quarters in a given year.
NumConnectedPeer	The number of same-industry peers that share any common mutual fund blockholders.
NumComFund	Number of unique mutual funds that simultaneously hold focal firm and its same-industry peers.
AvgPeer	Number of same-industry peers commonly-held by the average common-holding mutual fund.
TotalComOwnp	Sum of all common-holding mutual funds' percentage in the focal firm.
MV	Market capitalization.
BM	Book-to-market ratio defined as (book value of equity/market value of equity).
Q	Defined as (book value of debt + market value of equity)/ (book value of debt + book value of equity).
GROWTH	Growth rate of sales over the previous year.
ROA	Return on assets, defined as EBITDA/lagged assets.
CF	Cash flow, defined as (net income + depreciation and amortization)/lagged assets.
LEV	Book leverage ratio defined as debt/ (debt+book value of equity).
CASH	Defined as (cash + cash equivalents)/assets.
DIVYLD	Dividend yield, defined as (common dividend)/MV.
PAYOUT	Total payout ratio, defined as (common dividend payments + share repurchases)/MV
R&D	R&D (missing values are imputed as zeros) / lagged assets.
CAPEX	Capital expenditure scaled by lagged assets.
SegHHI	Herfindahl-Hirschman index of sales in different business segments as reported by Compustat.
BHRET	Buy-and-hold return during the 12 months before the announced activism.

AMIHUD	Amihud (2002) liquidity measure, defined as the yearly average (using daily data) of $\sqrt{ \text{Return} /(\text{DollarTradingVolume})}$.
INST	The portion of shares held by institutions.
ANALYST	Number of analysts covering the company from I/B/E/S.
GINDEX	Gompers, Ishii & Metrick (2003) governance index.
ActiveShare	Percentage of firm shares that are attributed as actively managed using Petajisto (2013) method.
MHHId	Industry level common ownership concentration using O'Brien & Salop (2000) method.
Change2t1	Change from membership of Russell 2000 to Russell 1000.
Change1t2	Change from membership of Russell 1000 to Russell 2000.
Russell2000	Indicator variable equals to one if the firm is member of Russell 2000 in a given year.

Figure 1.



Tables

Table 1. Summary Statistics

The sample consists of 29,816 firm year observations (industry, year, 5*5 MV-BM matched sample) during the period of 1994-2014. Variable definitions are provided in the Appendix. All continuous variables are winsorized at the 1th and 99th percentiles.

Variables	Mean (1)	P25 (2)	P50 (3)	Max (4)	S.D. (5)	N (6)
HFA Campaign	0.116	0.000	0.000	0.000	0.321	29816
Co-blockholder	0.126	0.000	0.000	0.000	0.332	29816
NumConnectedPeer	0.300	0.000	0.000	129.000	1.909	29816
NumComFund	0.101	0.000	0.000	4.000	0.303	29816
AvgPeer	0.260	0.000	0.000	129.000	1.814	29816
TotalComOwnp	0.008	0.000	0.000	0.499	0.025	29816
MV	2,009,116	57,910	195,589	50,500,000	6,642,964	29816
BM	1.226	0.283	0.544	0.945	3.808	29816
Q	2.180	0.575	1.195	18.626	2.959	29816
GROWTH	0.213	-0.029	0.085	0.247	0.668	29816
ROA	0.044	0.012	0.070	0.159	0.228	29816
CF	0.002	-0.008	0.043	0.117	0.239	29816
LEV	0.313	0.010	0.250	0.523	0.313	29816
CASH	0.148	0.022	0.076	0.212	0.177	29816
DIVYLD	0.080	0.000	0.000	0.320	0.165	29816
PAYOUT	0.053	0.000	0.000	0.227	0.159	29816
R&D	0.070	0.000	0.000	0.090	0.131	29816
CAPEX	0.048	0.006	0.025	0.058	0.070	29816
SegHHI	0.846	0.674	1.000	1.000	0.247	29816
BHRET	0.134	-0.244	0.037	0.345	0.652	29816
AMIHUD	0.480	0.057	0.183	0.570	0.734	29816
INST	0.412	0.139	0.361	0.672	0.303	29816
ANALYST	6.292	1.000	3.000	9.000	7.961	29816
GINDEX	8.919	7.000	9.000	11.000	2.547	5133

Table 2. Characteristics of HFA Target Firms

This table reports the characteristics target firms compared to a set matched control firms (firms in the same two-digit SIC industry and same MV and BM quintiles). Column (1) reports the mean of the characteristic for target firms. Column (2) reports the mean of characteristics for control firms. Column (3) reports the mean difference between treatment firms and control firms and Column (4) reports the T-statistics of the mean difference. Definition of variables are described in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

	Treatment Firms	Matched Control Firms	Difference	T-stat (diff)
	Mean	Mean		
	(1)	(2)	(3)	(4)
MV	12.285	12.416	-0.131***	-3.6922
BM	0.783	1.285	-0.502***	-7.3076
Q	1.573	2.260	-0.687***	-12.8947
GROWTH	0.146	0.222	-0.076***	-6.3294
ROA	0.045	0.044	0.001	0.2394
CF	-0.002	0.002	-0.004	-0.9873
LEV	0.343	0.309	0.034***	6.032
CASH	0.140	0.149	-0.010***	-3.0198
DIVYLD	0.011	0.025	-0.014***	-7.308
PAYOUT	0.019	0.017	0.002	1.6384
R&D	0.053	0.072	-0.019***	-8.1
CAPEX	0.052	0.047	0.005***	4.2142
SegHHI	0.820	0.849	-0.029***	-6.5364
BHRET	0.023	0.149	-0.126***	-10.7099
AMIHU	0.438	0.485	-0.047***	-3.5331
INST	0.517	0.398	0.119***	21.9405
ANALYST	6.052	6.324	-0.271*	-1.8863
GINDEX	9.087	8.893	0.194*	1.8582
N	3471	26345		

Table 3. Panel A HFA Campaign Decision

This table reports the logistic regression of common ownership measures on the probability of being targeted by hedge fund activists. The dependent variable is a dummy variable equals to one if the company is targeted by hedge fund activists during year t . In Panel B, GINDEX is included to reflect significant loss of observations due to data availability. All independent variables are lagged by one year. Variables are defined in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. P values are reported in the square brackets. Standard errors are clustered at firm level. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

	Indicator of HFA Campaign				
	(1)	(2)	(3)	(4)	(5)
Co-blockholder	-0.230*** [0.001]				
NumConnectedPeer		-0.062*** [0.006]			
NumComFund			-0.225*** [0.002]		
AvgPeer				-0.066** [0.013]	
TotalComOwnp					-2.589*** [0.003]
MV	-0.302*** [0.000]	-0.298*** [0.000]	-0.301*** [0.000]	-0.297*** [0.000]	-0.301*** [0.000]
BM	-0.112*** [0.000]	-0.112*** [0.000]	-0.112*** [0.000]	-0.112*** [0.000]	-0.112*** [0.000]
Q	-0.095*** [0.000]	-0.095*** [0.000]	-0.095*** [0.000]	-0.095*** [0.000]	-0.095*** [0.000]
GROWTH	-0.085* [0.077]	-0.083* [0.082]	-0.084* [0.081]	-0.084* [0.079]	-0.084* [0.080]
ROA	-0.255 [0.305]	-0.257 [0.301]	-0.253 [0.310]	-0.254 [0.306]	-0.252 [0.310]
CF	-0.524** [0.018]	-0.523** [0.018]	-0.529** [0.016]	-0.524** [0.018]	-0.531** [0.016]
LEV	0.256*** [0.001]	0.265*** [0.001]	0.259*** [0.001]	0.265*** [0.001]	0.259*** [0.001]
CASH	0.448***	0.439***	0.444***	0.442***	0.445***

	[0.006]	[0.008]	[0.007]	[0.007]	[0.007]
DIVYLD	-0.742	-0.715	-0.733	-0.717	-0.731
	[0.203]	[0.216]	[0.207]	[0.215]	[0.208]
PAYOUT	0.554	0.550	0.558	0.554	0.562
	[0.193]	[0.196]	[0.189]	[0.193]	[0.187]
R&D	-1.518***	-1.501***	-1.527***	-1.504***	-1.529***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
CAPEX	2.012***	1.992***	2.010***	1.993***	2.010***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
SegHHI	-0.390***	-0.387***	-0.392***	-0.389***	-0.392***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
BHRET	-0.196***	-0.196***	-0.196***	-0.196***	-0.196***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
AMIHUD	-0.128***	-0.125***	-0.126***	-0.125***	-0.125***
	[0.004]	[0.005]	[0.004]	[0.005]	[0.004]
INST	2.239***	2.207***	2.230***	2.197***	2.227***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
ANALYST	-0.006	-0.007	-0.007	-0.007	-0.007
	[0.207]	[0.192]	[0.189]	[0.188]	[0.182]
Constant	0.881	0.842	0.873	0.832	0.870
	[0.462]	[0.481]	[0.466]	[0.486]	[0.467]
Observations	29,816	29,816	29,816	29,816	29,816
Year FE	YES	YES	YES	YES	YES
Cluster	FIRM	FIRM	FIRM	FIRM	FIRM
Pseudo R-square	0.0734	0.0733	0.0732	0.0732	0.0732

Table 3. Panel B HFA Campaign Decision (Gindex added as control)

	Indicator of HFA Campaign				
	(1)	(2)	(3)	(4)	(5)
Co-blockholder	-0.267** [0.049]				
NumConnectedPeer		-0.044 [0.380]			
NumComFund			-0.236 [0.135]		
AvgPeer				-0.040 [0.498]	
TotalComOwnp					-2.455 [0.198]
GINDEX	0.042** [0.033]	0.043** [0.030]	0.042** [0.032]	0.043** [0.029]	0.042** [0.031]
Controls	YES	YES	YES	YES	YES
Observations	5,131	5,131	5,131	5,131	5,131
Year FE	YES	YES	YES	YES	YES
Cluster	FIRM	FIRM	FIRM	FIRM	FIRM
Pseudo R-square	0.112	0.111	0.111	0.111	0.111

Table 3. Panel C HFA Campaign Decision ---- by Size Quintile

This table reports the logistic regression of common ownership on the probability of a firm being targeted by hedge fund activists, partitioning the sample into quintiles. Firm size increases from Quintile 1 to Quintile 5. The dependent variable is a dummy variable equals to one if a firm is targeted by hedge fund activists during year t. All independent variables are lagged by 1 year. Variables are defined in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. P values are reported in in the square brackets. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

Size Quintile	(1) Common	(2) NumConnectedPeer	(3) NumComFund	(4) AvgPeer	(5) TotalComOwnp	(6) Number of obs
1	-0.183 [0.287]	-0.100* [0.056]	-0.195 [0.275]	-0.132** [0.047]	-2.348 [0.247]	4,938
2	-0.255* [0.056]	-0.014 [0.775]	-0.305** [0.038]	-0.016 [0.784]	-4.176** [0.019]	7,322
3	-0.135 [0.267]	-0.070* [0.093]	-0.122 [0.308]	-0.073 [0.135]	-0.898 [0.559]	6,209
4	-0.395*** [0.010]	-0.079* [0.062]	-0.379** [0.032]	-0.073 [0.135]	-5.329*** [0.009]	5,585
5	-0.089 [0.613]	-0.030 [0.557]	-0.379** [0.032]	-0.016 [0.736]	-0.054 [0.986]	5,762
Controls	YES	YES	YES	YES	YES	
YEAR FE	YES	YES	YES	YES	YES	
Cluster	FIRM	FIRM	FIRM	FIRM	FIRM	

Table 4 **Campaign Decision ---- Channel Tests**

This table reports the logistic regression of common ownership on the probability of being targeted by hedge fund activists by varying mutual funds' intervention incentive. Column (1) interacts firm level active share percentage with common ownership. Column (2) interacts industry level common ownership concentration with firm level common ownership. Variables are defined in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. P values are reported in the square brackets. Standard errors are clustered at firm level. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

VARIABLES	Indicator of HFA Campaign	
	(1)	(2)
Co-blockholder	0.012 [0.908]	-0.161* [0.093]
ActiveShare	-0.117* [0.052]	
Co-blockholder*ActiveShare	-0.334** [0.018]	
HighMHHId		-0.357*** [0.000]
Co-blockholder*HighMHHId		-0.545*** [0.000]
MV	-0.109*** [0.000]	-0.289*** [0.000]
BM	-0.051 [0.358]	-0.109*** [0.000]
Q	-0.186 [0.523]	-0.096*** [0.000]
GROWTH	-0.737*** [0.007]	-0.079* [0.095]
ROA	0.217** [0.024]	-0.381 [0.128]
CF	0.491** [0.016]	-0.436* [0.051]
LEV	-2.866** [0.017]	0.263*** [0.001]
CASH	0.474 [0.377]	0.496*** [0.003]
DIVYLD	-1.546***	-0.782

	[0.000]	[0.172]
PAYOUT	1.543***	0.569
	[0.000]	[0.185]
R&D	-0.189*	-1.302***
	[0.073]	[0.000]
CAPEX	-0.238***	1.952***
	[0.000]	[0.000]
SegHHI	0.135**	-0.314***
	[0.019]	[0.001]
BHRET	2.380***	-0.198***
	[0.000]	[0.000]
AMIHUD	0.135**	-0.131***
	[0.019]	[0.003]
INST	2.380***	2.121***
	[0.000]	[0.000]
ANALYST	-0.032***	-0.004
	[0.000]	[0.488]
Constant	-0.191	0.882
	[0.647]	[0.454]
Observations	22,349	29,816
Year FE	YES	YES
Cluster	FIRM	FIRM
Pseudo R-square	0.0800	0.0773

Table 5 Campaign Decision ---- Instrumental Approach

This table reports two stage Ivprobit regression of campaign decision on common ownership. In the first stage, we use change from Russell1000 to Russell2000, change from Russell2000 to Rusell1000 and indicator of Russell2000 membership as instruments for common ownership measures. Variables are defined in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. P values are reported in in the square brackets. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively. Standard errors are clustered at firm level.

	1st Stage	2nd Stage	1st Stage	2nd Stage	1st Stage	2nd Stage	1st Stage	2nd Stage	1st Stage	2nd Stage
	Common	HFA Campaign	NumConn ectedPeer	HFA Campaign	NumCom Fund	HFA Campaign	AvgPeer	HFA Campaign	TotalCom Ownp	HFA Campaign
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Common		-4.964*								
		[0.087]								
NumConnectedPeer				-2.690**						
				[0.013]						
NumComFund						-8.516**				
						[0.042]				
AvgPeer								-3.334**		
								[0.025]		
TotalComOwnp										-102.999**
										[0.019]
Change2t1	0.009		0.172**		0.02		0.121**		0.002	
	[0.716]		[0.024]		[0.337]		[0.064]		[0.151]	
Change1t2	0.005		-0.115		-0.029		-0.101		-0.002	
	[0.835]		[0.121]		[0.155]		[0.114]		[0.126]	
Rus2000	0.027**		0.061*		0.021**		0.034		0.002**	

	[0.023]		[0.098]		[0.038]		[0.289]		[0.013]	
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Exogeneity Test (p-value)	0.0251		0.0001		0.0011		0.0004		0.0004	
Partial F-test (Instruments, 1st stage)	43.72		50.35		40.12		48.6		40.84	
Observations	13251		13251		13251		13251		13251	
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Cluster	FIRM	FIRM	FIRM	FIRM	FIRM	FIRM	FIRM	FIRM	FIRM	FIRM
(Pseudo) R-square	0.1064	0.104	0.1206	0.1182	0.0985	0.0961	0.1169	0.1145	0.1001	0.0977

Table 6 Objectives and Tactics

This table reports the logistic regression objectives pursued and tactics used by hedge fund activists. Dependent variable of Column (1) to (2) is dummy variable equals to 1 if hedge fund activists pursue specific objectives. Dependent variable of Column (3) to (4) is dummy variable equals to 1 if hedge fund activists pursue business strategy objectives. Dependent variable of Column (5) to (6) is dummy variable equals to 1 if hedge fund activists use confrontational tactics. Dependent variable of Column (7) to (8) is dummy variable equals to 1 if hedge fund activists use friendly tactics. Variables are defined in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. P values are reported in in the square brackets. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

VARIABLES	(1) Specific Objective	(2) Specific Objective	(3) Business Strategy	(4) Business Strategy	(5) Confrontational Tactics	(6) Confrontational Tactics	(7) Communication	(8) Communication
Co-blockholder	1.080*** [0.000]	1.032*** [0.000]	0.994*** [0.000]	0.938*** [0.000]	-1.619*** [0.000]	-1.540*** [0.000]	0.967*** [0.000]	0.800*** [0.000]
Controls	NO	YES	NO	YES	NO	YES	NO	YES
Observations	3,571	3,557	3,571	3,546	3,571	3,569	3,486	3,482
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Cluster	FIRM	FIRM	FIRM	FIRM	FIRM	FIRM	FIRM	FIRM
Pseudo R-square	0.0232	0.0655	0.0219	0.0500	0.0290	0.112	0.0123	0.0836

Table 7 Panel A **Short Window Market Reaction to HFA Campaign Announcement**

This table reports non-parametric tests of market reaction to HFA targets with and without Co-blockholders, around HFA campaign announcement date. Cumulative abnormal returns (CAR) is measured as market adjusted cumulative stock return. Event windows [-5, 5], [-10, 10] and [-20, 20] are defined as trading days around day 0 where day 0 is set as the initial Schedule 13D filing date or first identifiable activism announcement by hedge fund activists. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

	Co- blockholder= 1 Mean (1)	Co- blockholder= 0 Mean (2)	Difference (3)	T-stat (4)
CAR [-20,20]	0.069	0.038	0.031***	2.8091
N	433	2713		
CAR [-5,5]	0.045	0.039	0.006	0.9341
N	432	2708		
CAR [-10,10]	0.061	0.041	0.020**	2.4194
N	432	2711		

Table 7 Panel B Short Window Market Reaction Regression

This table reports OLS regression of market reaction to HFA targets with and without Co-blockholders, around HFA event date. Cumulative abnormal returns (CAR) is measured as market adjusted cumulative stock return. Event windows [-5, 5], [-10, 10] and [-20, 20] are defined as trading days around day 0 where day 0 is set as the initial Schedule 13D filing date or first identifiable activism announcement by hedge fund activists. Variables are defined in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. P values are reported in in the square brackets. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

	(1)	(2)	(3)
	CAR [-20, 20]	CAR [-5,5]	CAR [-10,10]
Co-blockholder	0.030** [0.026]	0.005 [0.431]	0.019* [0.055]
MV	-0.008*** [0.006]	-0.001 [0.380]	-0.004** [0.048]
BM	0.020** [0.015]	0.009** [0.026]	0.015*** [0.008]
REV	-0.011 [0.474]	-0.001 [0.862]	-0.009 [0.443]
RETVOL	-0.012*** [0.000]	-0.006*** [0.000]	-0.007*** [0.000]
Constant	0.171*** [0.001]	0.067*** [0.002]	0.105*** [0.001]
Observations	3,143	3,137	3,140
R-squared	0.015	0.008	0.013
Cluster	FIRM	FIRM	FIRM
Cluster	YEAR	YEAR	YEAR

Table 8. **Short Window Market Reaction on Industry Peers Around HFA Announcement**
Panel A

This panel reports average market reaction of targets' same-industry peers around targets' HFA campaign announcement date. Common equals 1 if the HFA targets have connected industry peers through common ownership and 0 otherwise. Industry peers are defined as all firms with the same four-digit Standard Industrial Classification (SIC) code. Firms without complete data on the CRSP Daily Returns are not included in the sample. Each firm is assigned as equal weight in a portfolio. Portfolio cumulative abnormal returns (CAR) is measured as market adjusted cumulative stock return. Event windows [-5, 5] and [-20, 20] where day 0 is the initial Schedule 13D filing date or first identifiable activism announcement by hedge fund activists. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

	Common=1	Common=0	Difference	T-stat
	Mean	Mean		
	(1)	(2)	(3)	(4)
CAR [-5,5]	-0.004	0.001	-0.005**	-2.234
N	449	2,854		
CAR [-20,20]	-0.006	-0.004	-0.002	-0.420
N	449	2,854		

Table 8. Panel B Partitioned Industry Peer Reaction to HFA Announcement

This table presents average HFA target firms' industry peers' market reaction around HFA announcement. Targets are partitioned to different groups. For each industry peer, equal weight is assigned when constructing the peer portfolio. Common equals 1 if the HFA targets have connected industry peers through common ownership and 0 otherwise. Industry peers are defined as all firms with the same four-digit Standard Industrial Classification (SIC) code. Firms without complete data on the CRSP Daily Returns are not included in the sample. Cumulative abnormal returns (CAR) is measured as market adjusted cumulative stock return. High_Herfindahl Index equals to 1 if the industry that the target firm belongs to has higher than sample median Herfindahl Index and 0 otherwise. High_MHHIdelta equals to 1 if the industry that the target firm belongs to has higher than sample median Modified Herfindahl Index delta, and 0 otherwise. High_Fluidity equals to 1 if a target firm has higher product fluidity than industry median and 0 otherwise. Product fluidity measure is constructed using Homberg & Philips database. Event windows [-5, 5] where day 0 is the initial Schedule 13D filing date or first identifiable activism announcement by hedge fund activists. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

a: Partition targets based on industry competition

	COMMON=1	COMMON=0
High_Herfindahl Index=1	0.0018	0.0068
High_Herfindahl Index=0	-0.0019	-0.0004

c: Partition targets based on their relative product market competitive power

	COMMON=1	COMMON=0
High_Fluidity=1	-0.0035	0.0007
High_Fluidity=0	-0.0023	-0.0002

b: Partition targets based on institutional investors' industry level common holding intensity

	COMMON=1	COMMON=0
High_MHHIdelta=1	-0.0016	0.0007
High_MHHIdelta=0	-0.0023	0.0016

Table 9 **Placebo Test of Co-blockholders' Wealth Change**

This table presents the placebo test of Co-blockholders' wealth change, assuming if the Co-blockholders only hold the HFA targets (constituting as non-Co-blockholders) vs. if the Co-blockholders hold both the targets and their connected industry peers at HFA campaigns and make no portfolio adjustments afterwards. When constructing Co-blockholders' portfolios, firms are assigned equal weight. Returns are calculated as buy-and-hold raw return over 3, 6, and 12 months after HFA campaigns accordingly. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

Months since HFA	N	Target Return	Portfolio Return	Difference	T-stat
					H0: Mean(Difference)=0
	(1)	(2)	(3)	(4)	(5)
3 Months	528	0.086	0.049	0.038***	3.916
6 Months	528	0.107	0.096	0.011	0.759
12 Months	528	0.231	0.184	0.048	1.423

Table 10 Panel A Target Firm Performance before and after Hedge Fund Activism

This table reports various statistics of target performance in excess of a matched sample in years before and after being targeted by hedge fund activists. The matching is conducted on a "Year-by-Year" basis of firms in the same industry and same MV, BM quintile. Comparison is further conducted for targets with and without Co-blockholders. Year T is the event year of an HFA activism campaign. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

	ROA				Margin			
	Co- blockholder =1 Mean Diff	Co- blockholder =0 Mean Diff	Diff-in-Diff	T-stat	Co- blockholder= 1 Mean Diff	Co- blockholder= 0 Mean Diff	Diff-in-Diff	T-stat
T-2	0.007	0.019	-0.012	-1.237	0.019	0.031	-0.029	-1.244
T-1	-0.021	0.006	-0.027***	-2.815	-0.005	0.022	-0.027***	-2.818
T	-0.023	-0.013	-0.010	-1.011	0.008	0.018	-0.010	-1.001
T+1	0.001	0.014	0.014	-1.325	0.024	0.038	-0.014	1.337
T+2	-0.004	0.019	-0.023**	-2.069	0.000	0.023	-0.023**	-2.071
T+3	0.030	0.034	0.004	-0.344	0.033	0.037	-0.005	0.357

Table 10 Panel B Target Firm Performance before and after Hedge Fund Activism

	Market Share				Market Share Growth			
	Co- blockholder =1 Mean Diff	Co- blockholder =0 Mean Diff	Diff-in-Diff	T-stat	Co- blockholder= 1 Mean Diff	Co- blockholder= 0 Mean Diff	Diff-in-Diff	T-stat
T-2	0.000	0.002	-0.002***	-4.806	0.040	0.002	0.038	1.505
T-1	0.000	0.002	-0.002***	-4.938	-0.004	-0.012	0.008	0.334
T	0.000	0.002	-0.002***	-4.510	-0.005	-0.039	0.035	1.338
T+1	0.000	0.002	-0.002***	-4.381	-0.067	-0.044	-0.023	0.840
T+2	0.000	0.002	-0.002***	-4.210	-0.013	-0.058	0.045*	1.682
T+3	0.000	0.002	-0.002***	-3.840	0.000	-0.048	0.048	1.652

Table 11 Management Compensation before and after Hedge Fund Activism

This table reports various statistics of target company's management compensation in excess of a matched sample in years before and after being targeted by hedge fund activists. The matching is conducted on a "Year-by-Year" basis of firms in the same industry and same MV, BM quintile. Comparison is further conducted for targets with and without common ownership. Year T is the event year of an HFA activism campaign. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

	CEO Contracted Pay (\$1,000)				CEO Pay-for-Performance (%)			
	Co-	Co-	Diff-in-Diff	T-stat	Co-	Co-	Diff-in-Diff	T-stat
	blockholder=	blockholder=			blockholder=	blockholder=		
	1	0	1	0				
Mean Diff	Mean Diff	Mean Diff	Mean Diff					
T-2	-106.707	374.801	-481.507	0.896	0.056	-0.036	0.092	0.811
T-1	-536.043	8.669	-544.712	-1.236	0.055	-0.043	0.098	1.046
T	-476.290	417.400	-893.690*	1.706	-0.143	-0.163	0.021	0.280
T+1	812.332	596.827	215.505	0.392	-0.168	-0.110	-0.058	-0.604
T+2	1.677	393.376	-391.699	-0.793	-0.007	-0.138	0.132	1.251
T+3	-361.598	488.888	-850.486	-1.509	-0.066	-0.108	0.042	0.351

Table 12 Panel A. Learning Effect at Hedge Fund Level

This table reports hedge fund activists' campaign decisions if they have targeted firms with connected industry peers in the past. PastCTarget equals one if the hedge fund activists have targeted firms with connected industry peers ever in the past, and zero otherwise. The sample is restricted to actual HFA campaigns. Hedge fund activists that do not have past campaign information are deleted from the sample. All independent variables are lagged by 1 year. Variables are defined in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. P values are reported in the square brackets. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

VARIABLES	Dummy=1 if Targets have Connected Industry Peers
PastCTarget	-0.140 [0.271]
MV	-0.487*** [0.000]
BM	0.017 [0.900]
SegHHI	-0.121 [0.684]
GROWTH	-0.061 [0.585]
ROA	-1.231 [0.162]
CF	1.229 [0.120]
LEV	-0.262 [0.308]
CASH	-0.354 [0.512]
CAPEX	0.475 [0.705]
R&D	0.622 [0.460]
Q	0.061 [0.280]
DIVYLD	1.857 [0.677]
PAYOUT	-1.087 [0.478]
BHRET	-0.125 [0.399]
ANALYST	0.035** [0.015]
AMIHU	-0.245* [0.087]
INST	3.474*** [0.000]

Constant	2.987** [0.018]
Observations	2,573
Year FE	YES
Industry FE	YES
Cluster	FIRM
Pseudo R-square	0.134

Table 12 Panel B.**Learning Effect Across Years**

This table reports hedge fund activists' campaign decisions, partitioning sample into different periods. All independent variables are lagged by 1 year. Variables are defined in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. P values are reported in in the square brackets. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

VARIABLES	(1) On & Before 2000	(2) 2001-2005	(3) 2006-2010	(4) Since 2011
COMMON	-0.391*** [0.006]	0.080 [0.528]	-0.270*** [0.005]	-0.291** [0.033]
MV	-0.239*** [0.000]	-0.147*** [0.004]	-0.276*** [0.000]	-0.394*** [0.000]
BM	-0.051 [0.124]	-0.092*** [0.001]	-0.193*** [0.000]	-0.089*** [0.009]
SegHHI	-0.877*** [0.000]	-0.131 [0.442]	-0.255* [0.069]	-0.374** [0.023]
GROWTH	0.019 [0.785]	-0.240* [0.055]	-0.071 [0.351]	-0.076 [0.527]
ROA	-0.602 [0.158]	0.455 [0.365]	-0.655* [0.094]	0.232 [0.718]
CF	-0.743* [0.069]	-0.767* [0.065]	-0.342 [0.308]	-0.415 [0.459]
LEV	0.516*** [0.001]	0.308* [0.065]	-0.001 [0.991]	0.318** [0.041]
CASH	-0.234 [0.504]	0.864** [0.012]	0.489** [0.050]	0.167 [0.586]
CAPEX	1.152** [0.024]	2.073*** [0.002]	2.158*** [0.000]	1.944*** [0.001]
R&D	-1.546*** [0.002]	-1.925*** [0.007]	-1.510*** [0.002]	-1.188* [0.078]
Q	-0.066** [0.034]	-0.098*** [0.008]	-0.151*** [0.000]	-0.060** [0.029]
DIVYLD	-14.651*** [0.000]	-0.537 [0.652]	0.177 [0.766]	-0.607 [0.563]
PAYOUT	2.878*** [0.000]	-1.114 [0.236]	0.597 [0.348]	-0.278 [0.763]
BHRET	-0.213** [0.026]	-0.327*** [0.001]	-0.031 [0.719]	-0.339*** [0.001]
ANALYST	-0.042*** [0.003]	-0.046*** [0.000]	-0.014* [0.072]	0.027*** [0.000]
AMIHU	-0.086 [0.355]	0.109 [0.181]	-0.130* [0.083]	-0.439*** [0.000]
INST	2.274*** [0.000]	2.400*** [0.000]	2.322*** [0.000]	1.574*** [0.000]

Constant	0.775 [0.317]	-0.811 [0.213]	0.936* [0.060]	2.218* [0.087]
Observations	7,117	7,552	9,535	6,470
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Cluster	FIRM	FIRM	FIRM	FIRM
Pseudo R-square	0.0863	0.0771	0.0759	0.0546

Table 13. Panel A Campaign Decision ---- Propensity Score Matching

This table reports the logistic regression of common ownership on the probability of being targeted by hedge fund activists, using propensity score matching approach. Treatment firms are matched to control firms on dimensions that would influence hedge fund activists' campaign decisions. The matched sample is constructed through 1 to 1 match. The dependent variable is a dummy variable equals to one if there is hedge fund activism targeting the company during year t. All independent variables are lagged by 1 year. Variables are defined in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. P values are reported in in the square brackets. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Indicator of HFA Campaign				
Common	-0.141*				
	[0.085]				
NumConnectedPeer		-0.054**			
		[0.012]			
NumComFund			-0.139		
			[0.111]		
AvgPeer				-0.061**	
				[0.013]	
TotalComOwnp					-1.849*
					[0.070]
MV	-0.086***	-0.084***	-0.085***	-0.083***	-0.085***
	[0.008]	[0.009]	[0.008]	[0.010]	[0.008]
BM	0.015	0.014	0.015	0.014	0.017
	[0.764]	[0.780]	[0.755]	[0.779]	[0.730]
SegHHI	0.106	0.111	0.107	0.111	0.109
	[0.367]	[0.342]	[0.361]	[0.345]	[0.354]
GROWTH	-0.019	-0.016	-0.017	-0.016	-0.018
	[0.747]	[0.788]	[0.768]	[0.785]	[0.767]
ROA	0.245	0.241	0.247	0.245	0.245
	[0.458]	[0.465]	[0.454]	[0.458]	[0.458]
CF	-0.153	-0.147	-0.154	-0.150	-0.152
	[0.614]	[0.628]	[0.611]	[0.621]	[0.616]
LEV	0.067	0.064	0.067	0.063	0.065
	[0.517]	[0.536]	[0.516]	[0.538]	[0.525]
CASH	-0.369*	-0.380*	-0.371*	-0.377*	-0.373*
	[0.071]	[0.063]	[0.070]	[0.065]	[0.069]
CAPEX	0.359	0.325	0.349	0.328	0.350
	[0.438]	[0.482]	[0.450]	[0.478]	[0.448]
R&D	0.523	0.564	0.522	0.566	0.524
	[0.215]	[0.181]	[0.216]	[0.180]	[0.214]
Q	-0.065***	-0.066***	-0.066***	-0.066***	-0.065***
	[0.002]	[0.002]	[0.002]	[0.001]	[0.002]
DIVYLD	-3.545***	-3.549***	-3.557***	-3.552***	-3.565***
	[0.001]	[0.001]	[0.001]	[0.001]	[0.001]
PAYOUT	0.374	0.367	0.379	0.358	0.375
	[0.516]	[0.525]	[0.512]	[0.535]	[0.516]
BHRET	-0.088	-0.087	-0.088	-0.087	-0.088

	[0.138]	[0.145]	[0.140]	[0.142]	[0.141]
ANALYST	0.010*	0.010*	0.010*	0.010*	0.010*
	[0.062]	[0.066]	[0.063]	[0.065]	[0.064]
AMIHUD	-0.056	-0.055	-0.056	-0.055	-0.055
	[0.361]	[0.374]	[0.365]	[0.372]	[0.371]
INST	-0.219	-0.225	-0.225	-0.232*	-0.221
	[0.127]	[0.109]	[0.115]	[0.098]	[0.120]
Constant	1.219	1.192	1.211	1.185	1.212
	[0.411]	[0.421]	[0.414]	[0.424]	[0.414]
Observations	6,008	6,008	6,008	6,008	6,008
Year FE	YES	YES	YES	YES	YES
Cluster	FIRM	FIRM	FIRM	FIRM	FIRM
Pseudo R-square	0.093	0.098	0.092	0.097	0.093

Table 13. Panel B Campaign Decision ---- Allow Treatment Firms' Non-treated years as Controls

This table reports the logistic regression of common ownership on the probability of being targeted by hedge fund activists. Treatment firms are matched to control firms within the same MV and BM quintiles. Additionally, treatment firms' non-treated years are allowed to be control firms. The dependent variable is a dummy variable equals to one if there is hedge fund activism targeting the company during year t. All independent variables are lagged by 1 year. Variables are defined in Appendix. All continuous variables are winsorized at the 1th and 99th percentiles. P values are reported in in the square brackets. *, **, and *** denote significance at the 10%, 5% and 1% level, respectively.

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Indicator of HFA Campaign				
Common	-0.225*** [0.000]				
NumConnectedPeer		-0.061*** [0.006]			
NumComFund			-0.225*** [0.001]		
AvgPeer				-0.065** [0.012]	
TotalComOwnp					-2.631*** [0.001]
MV	-0.279*** [0.000]	-0.275*** [0.000]	-0.278*** [0.000]	-0.274*** [0.000]	-0.278*** [0.000]
BM	-0.110*** [0.000]	-0.111*** [0.000]	-0.110*** [0.000]	-0.110*** [0.000]	-0.110*** [0.000]
SegHHI	-0.370*** [0.000]	-0.367*** [0.000]	-0.372*** [0.000]	-0.368*** [0.000]	-0.372*** [0.000]
GROWTH	-0.084* [0.071]	-0.083* [0.076]	-0.083* [0.076]	-0.083* [0.073]	-0.083* [0.074]
ROA	-0.232 [0.332]	-0.234 [0.328]	-0.230 [0.336]	-0.231 [0.335]	-0.230 [0.336]
CF	-0.555*** [0.009]	-0.555*** [0.009]	-0.560*** [0.008]	-0.556*** [0.009]	-0.561*** [0.008]
LEV	0.261*** [0.001]	0.269*** [0.000]	0.263*** [0.001]	0.270*** [0.000]	0.263*** [0.001]
CASH	0.451*** [0.004]	0.442*** [0.005]	0.447*** [0.004]	0.445*** [0.004]	0.448*** [0.004]
CAPEX	1.944*** [0.000]	1.920*** [0.000]	1.942*** [0.000]	1.922*** [0.000]	1.943*** [0.000]
R&D	-1.524*** [0.000]	-1.509*** [0.000]	-1.533*** [0.000]	-1.512*** [0.000]	-1.534*** [0.000]
Q	-0.092*** [0.000]	-0.092*** [0.000]	-0.092*** [0.000]	-0.092*** [0.000]	-0.092*** [0.000]
DIVYLD	-0.739 [0.184]	-0.712 [0.197]	-0.731 [0.188]	-0.713 [0.196]	-0.729 [0.189]
PAYOUT	0.509 [0.204]	0.503 [0.209]	0.512 [0.201]	0.506 [0.206]	0.515 [0.198]

BHRET	-0.193*** [0.000]	-0.192*** [0.000]	-0.193*** [0.000]	-0.193*** [0.000]	-0.193*** [0.000]
ANALYST	-0.007 [0.145]	-0.007 [0.133]	-0.007 [0.131]	-0.007 [0.130]	-0.007 [0.127]
AMIHUD	-0.106** [0.014]	-0.103** [0.017]	-0.104** [0.015]	-0.103** [0.017]	-0.103** [0.016]
INST	2.165*** [0.000]	2.135*** [0.000]	2.159*** [0.000]	2.125*** [0.000]	2.156*** [0.000]
Constant	0.600 [0.613]	0.560 [0.637]	0.595 [0.617]	0.551 [0.642]	0.593 [0.618]
Observations	30,674	30,674	30,674	30,674	30,674
Year FE	YES	YES	YES	YES	YES
Cluster	FIRM	FIRM	FIRM	FIRM	FIRM
Pseudo R-square	0.0684	0.0683	0.0683	0.0682	0.0682
