The Value of Activism: A Hedge Fund Investor's Perspective*

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Abstract

This paper examines the value of hedge fund activism from the perspective of activist hedge funds' investors. On average, an activist hedge fund's equity holdings of intervention targets do not perform differently from *its own* non-target holdings. However, its target holdings outperform its non-target holdings in the first quarter of intervention, especially if it has prior intervention experience or is familiar with the target industries. Interestingly, its target holdings contribute significantly less to its overall equity portfolio return than do its non-target holdings even when the former outperform the latter, suggesting that activist hedge funds may be underinvesting in activism.

JEL Classification: G23, G11, G14

Key words: hedge fund, shareholder activism, portfolio management

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News articles referencing hedge fund activism exploded from practically nonexistent in 1990 to almost 25,000 by 2014 (Tonello 2016). Academic articles on this new phenomenon of corporate governance have kept pace but have centered on its impact on target firms.[1] To what extent corporate engagement benefits activist hedge funds' own investors has not been rigorously examined. This, however, ought to be of natural concern to such investors given the nearly 200 billion dollars under management by activist hedge funds (Black 2017) and the significant cost of intervention.[2] Moreover, this should also concern investors of hedge funds in general, given the increasing number of hedge funds trying their hand at activism.[3]

The precise aim of this paper is to address this concern. We investigate the value of activism to activist hedge funds' own investors, by comparing the returns each activist hedge fund realizes from its equity investment in intervention targets to the returns *the same activist hedge fund* realizes from its equity investment in non-target firms. This within-fund comparison has a couple of important advantages over the common approaches taken in the literature to determine the value of hedge fund activism.

First, using the same fund's non-target holdings as the benchmark, we automatically control for activist hedge fund managers' general investment skills, such as stock picking and market timing. As a result, we can more confidently attribute any performance differences between

[1] The following are just a few examples of studies that examine the impact of hedge fund activism on various performance measures and policies of target firms: Brav, Jiang, Partnoy and Thomas (2008a) and Cremers, Giambona, Sepe and Wang. (2015) examine the impact on share price; Klein and Zur (2011) on bond price; Sander, Sander and Wongsunwai (2014) on bank loans; Brav, Jiang and Kim (2015) on firm productivity and labor outcomes; Aslan and Kumar (2015) on product market competition; Kalay, Karakas and Pant (2014) on the value of shareholder voting rights; Brav, Jiang, Ma and Tian (2018) on corporate innovations; and Agrawal and Lim (2018) on employee pension plans.

[2] Gantchev (2013) estimates that an intervention, from negotiating demands to seeking board representation to waging a proxy contest, on average costs $10.71 million, and monitoring costs consume more than two-thirds of the gross returns to the activist hedge fund.

[3] By the end of our sample period, nearly five hundred different hedge funds have attempted corporate engagement at least once during our sample period, and that number has only grown since then.

targets and non-target stocks specifically to activism. Despite the growing number of studies on hedge fund activism, those that focus on the performance of activist hedge funds rather than their target firms are rare. Two exceptions are Brav, Jiang, Partnoy, and Thomas (henceforth BJPT) (2008b) and Boyson and Mooradian (2007). Both show that activist hedge funds outperform non-activist hedge funds as well as some stock market index benchmark, such as the S&P 500. However, the results of these studies cannot serve as conclusive evidence that corporate engagement adds value to the activist hedge funds' own investors, because these studies cannot rule out the possibility that the outperformance of activist hedge funds to non-activist hedge funds is due to activist hedge fund managers' superior investment skills rather than to their efforts or skills in corporate engagement. In other words, these studies leave open the possibility that activist hedge funds could do even better by focusing on stock picking and market timing and avoid partaking in costly corporate engagement altogether. In contrast, we compare target and non-target holdings within each activist hedge fund, so that differences in the general investment skills of activist hedge fund managers would have no bearing on the result, and any difference in the stock performance between target and non-target firms uncovered can be more cleanly attributed to activist hedge fund managers' efforts or skills in activism.

The second advantage of making within-fund comparisons is that it is of more practical value to investors, who cannot invest in one fund's target holdings and another fund's non-target holdings, but in funds as a whole. Previous studies such as Clifford (2008) and Gantchev (2013) pool the target and non-target holdings across activist hedge funds and then compare the average returns of the two groups. Such comparison blurs the effect of activism when investment ability and/or activism style (for example, aggressive versus friendly) is not uniform across activist hedge fund managers. Consequently, it is not surprising that those studies find opposite results.

Moreover, comparing one fund's target holdings to another fund's non-target holdings sheds little light on how much investors can benefit from hedge funds' investment in corporate engagement, as investors can only invest in funds as a whole. In contrast, by making within-fund comparisons, this paper offers meaningful insight into whether investors in activist hedge funds should support or be concerned about the commitment of capital toward not simply investing in firms but investing for the purpose of intervening in their management.

To make the within-fund comparisons, we first match hedge fund interventions identified by Schedule 13D filings from 1997 to 2012 to the equity holdings of activist hedge funds obtained from the Thomson Reuters Institutional Holdings database.[4] Then, for each activist hedge fund, we divide its equity holdings into three groups: a *Target* group, consisting of firms in which it has launched an intervention; a *Block* group, consisting of non-target block holdings (of more than five percent of the outstanding shares of non-target firms); and a *Non-block* group, consisting of all remaining holdings (of less than five percent of the outstanding shares of non-target firms). We form equal-weighted portfolios for each group and compare the performance of the *Target* group respectively to the performance of the other two groups. We measure the performance of equity holdings using raw returns from the CRSP database and characteristic-adjusted returns, calculated as the difference between a stock's raw return and the return of its corresponding Fama-French 25 value-weighted size and book-to-market portfolio.

We find that, on average, there is *no* significant difference between the target holdings and the non-target holdings *of the same activist hedge fund*, both in terms of raw and characteristic-adjusted returns. Nevertheless, the literature indicates that target stocks perform particularly well

[4] Consistent with the hedge fund activism literature and for the sake of brevity, we use the term "activist hedge fund" to refer to the hedge fund family that has filed a Schedule 13D, which is the public disclosure within ten days of crossing the 5% ownership threshold of a public firm's shares with intention to intervene in its management.

under certain circumstances, for example the price bump around the announcement of intervention is well documented. We therefore divide the *Target* group into two subgroups based on how long the intervention has been ongoing. We find that target holdings outperform non-target holdings in the first quarter of intervention, particularly in the first month, up to 1.70% (1.43%) per month in raw (characteristic-adjusted) returns. These performance differences do not persist, however, and become insignificant after the first quarter. We also examine whether the performance of target holdings is related to an activist hedge fund's intervention experience. For each activist hedge fund, we identify its first target. We then compare, separately, the performance of its first target and the performance of its later targets to the performance of its non-target holdings. We find that while an activist hedge fund's first target does not perform differently from its non-target holdings, its later targets do significantly outperform the latter, suggesting that activist hedge funds become better at generating value from activism through experience. Finally, we explore whether the performance of target holdings is related to an activist hedge fund's familiarity with the industries to which its target firms belong. We consider an activist hedge fund to be more familiar with its target industries if it holds an above median number or portfolio weight of stocks in those industries. We find for such a fund, its target holdings tend to outperform its non-target holdings.

In addition to performing portfolio analyses to examine within-fund performance differences between target and non-target holdings, we also perform regression analyses to control for fund characteristics, such as size, number of stocks held and number of industries held. The results of the regression analyses corroborate those of the portfolio analyses: an activist hedge fund's target holdings tend to outperform its own non-target holdings in the first month of intervention, and its later targets (as opposed to its first target) also tend to outperform its non-target holdings.

Naturally, the investors of an activist hedge fund would prefer the fund to allocate more capital toward its target holdings when they outperform its non-target holdings. To examine whether an activist hedge fund actually allocates capital according to the relative performances of its target versus non-target holdings as revealed by the equal-weighted portfolios analyses above, we now form asset-weighted portfolios, one each for its *Target*, *Block*, and *Non-block* holdings. The asset-weighted portfolio returns reflect the contribution of each group of holdings to the performance of the activist hedge fund's overall equity portfolio. We find that the asset-weighted performance of the *Target* group is significantly lower than that of the other two groups, even in circumstances under which the activist hedge fund's target holdings generate higher equal-weighted returns than do its non-target holdings. Taken together, the results from the equal-weighted and asset-weighted portfolio analyses suggest that activist hedge funds may be *under*-investing in activism.

We pose two potential explanations for why activist hedge funds appear under-invested in activism. First, share accumulation may generate a sizable impact on stock price, in which case the acquisition of additional shares at significantly higher cost would lower the returns from intervention. We find a negative relationship between an activist hedge fund's overall equity portfolio weight in target holdings and the performance of those holdings relative to its non-target holdings. In other words, when an activist hedge fund increases its portion of capital invested in target holdings, the return it earns from those holdings actually declines relative to the return it earns from its non-target holdings. Second, underinvestment in activism may be related to simply the inability to purchase more shares, as we find that low portfolio weight in target holdings is commonly associated with low target stock liquidity around the announcement month. In other

words, activist hedge funds may have every intention to acquire larger target stakes but are precluded from doing so.[5]

Finally, we examine how activist hedge funds respond to capital flows in terms of allocation between target and non-target holdings. We find that capital flows do have a statistically and economically significant impact on activist hedge funds' investment in activism. Interestingly, we find that the response of activist hedge funds to capital inflows versus outflows is not symmetrical. Following capital inflows, activist hedge funds are more likely to acquire new targets, rather than strengthen existing target positions. They also maintain the same overall equity portfolio weight allocated toward activism. In contrast, following capital outflows, activist hedge funds are more likely to exit from targets and reduce the portfolio weight allocated toward activism.

The aforementioned analyses are all conducted using the full sample. We explore as a robustness test whether the within-fund performance differences between target and non-target holdings that we found using the full sample are more prominent in the earlier or later part of our sample period. We divide our sample into two sub-periods separated by the recent financial crisis. Interestingly, we only observe the within-fund outperformance of target holdings relative to non-target holdings in the pre-crisis period. When we divide the sample more symmetrically at the year 2005, we again only observe the target outperformance in the earlier period. This may be attributable to the increased competition among activist hedge funds and the improvement in the performance of activist hedge funds' non-activism equity investments in recent years.

[5] Some other possible reasons that we do not explore in the current study include activist hedge funds' ability to influence target management without needing a large stake and their preference for diversification between target and non-target firms. Moreover, the optimal portfolio weight allocated to each target is fund-target specific andalso beyond the scope of the current study.

Our study contributes to the literature on hedge fund activism, being the first to examine whether activist hedge funds actually create value for their own investors by means of corporate engagement. The rest of the literature mostly examines whether activist hedge funds create value for the shareholders of target firms, by comparing the stock performance of target firms and to that of similar non-target firms. More recently, studies have compared activist hedge funds with non-activist hedge funds or compared the target and non-target holdings of all activist hedge funds lumped together. The former studies cannot conclusively attribute any performance differences between activist and non-activist hedge funds to activism, while the latter studies cannot make a statement about whether the performance differences between target and non-target holdings of all activist hedge funds actually benefits the investors of any particular activist hedge fund, as investors can only invest in funds as a whole and cannot choose to invest in just their target (or non-target) holdings. Our empirical analyses reveal with much more clarity the benefit of corporate engagement per se to activist hedge funds' own investors, by comparing the performance of each activist hedge fund's equity investment in intervention targets with that of *its own* equity investment in firms it is holding simply for investment purposes with no intention to intervene in their management. What we find is that for the same activist hedge fund, while its target holdings do not tend to perform differently from its non-target holdings on average, they do perform better than the latter under certain circumstances.

Our study is also a meaningful addition to the strand of studies within the hedge fund activism literature that explores the impact of hedge fund activism on different market participants. For example, BJPT(2008a) and Klein and Zur (2011) respectively examine how hedge fund activism affects the shareholders and bondholders of target firms. More recently, Gantchev, Gredil and Jotikasthira (2018) and Feng, Xu and Zhu (2018) respectively examine how the *threat* of hedge

fund activism affects the shareholders and creditors of potential target firms. Our study, on the other hand, shifts the focus away from the investors in (potential or actual) target firms to the investors in activist hedge funds.

I. Data and Summary Statistics

Our sample of hedge fund activism events extends that in BJPT (2008a) to cover years from 1997-2012. Here we provide a brief description of the collection procedure and refer interested readers to the original paper for details. Hedge fund activism events are first identified from a complete list of Schedule 13D filings. Section 13D of the Securities and Exchange Act of 1934 requires an investor to file a Schedule 13D within ten days of acquiring more than five percent of a public company's stock with the intention to influence management. The filing includes information on the identity of the filer or activist investor, the identity of the target firm, the ownership percentage held in the target firm, and the purpose for shareholding. The activist investor must continue to file amendments when the size of its ownership stake or its reason for activist shareholding changes materially.

Following the hedge fund activism literature and for succinctness, we use the term "activist hedge fund" to refer to the reporting hedge fund family. For each activist hedge fund in our sample, we obtain its quarterly equity holdings information from the Thomson Reuters Institutional Holdings database. Activist hedge funds report holdings every quarter. We follow the literature in assuming that the holdings are maintained in the intervening months between reporting dates. For each holding, we collect its monthly return and shares outstanding information from the CRSP database. We use several filters to minimize the impact of outliers and reporting errors. First, we exclude a stock if the shares held by an activist hedge fund, as reported in the Thomson Reuters

Institutional Holdings database, exceed the total shares outstanding as reported in CRSP. Second, we remove penny stocks (with share price below five dollars). Third, we exclude funds with less than ten million dollars of assets under management.[6]

We collect information on activist hedge fund characteristics from several mainstream hedge fund databases, including Hedge Fund Research (HFR), Lipper TASS, BarclayHedge, and EurekaHedge. As there is no common identifier between these datasets and our sample of hedge fund activism events, we manually match funds by name. When names reported in different datasets are similar but not identical, we use the Capital IQ database and search the Internet to determine whether they represent the same fund.

We use raw returns from CRSP and calculate characteristic-adjusted returns to measure the performance of activist hedge funds' equity holdings. We calculate a stock's characteristic-adjusted return as the difference between its raw return and the return of its corresponding Fama-French (FF) 25 value-weighted size and book-to-market portfolio.[7]

Table I presents summary statistics for our sample. Over the 1997 to 2012 sample period, there are 222 unique activist hedge funds, 1,022 unique target firms and 22,826 fund-month observations. To put these numbers in perspective, BJPT (2008b) covers 103 activist hedge funds and Boyson and Mooradian (2007) covers 89.

[Insert Table I here]

Panel A of Table I summarizes the number of unique targets per activist hedge fund. On average, over the sample period, an activist hedge fund targets five to six different firms. Given

[6] The second filter reduces the potential for bias due to the high returns of penny stocks. Before the third filter is applied, family size is about eight million dollars at the first percentile and jumps to $41M by the fifth percentile. The third filter therefore removes the smallest funds. The fund literature (especially that on mutual funds) commonly applies a filter of five million dollars for individual funds. It is reasonable to apply a higher cutoff for fund families.
[7] We use the *ceq* variable from the CRSP/Compustat merged database for a stock's book value. For financial stocks (SIC codes starting with a six), we use the FS format of the variable. For all other stocks, we use the INDL format.

that the median is two target firms and the standard deviation is 10.69 target firms, intervention frequency varies significantly across activist hedge funds.

Panel B of Table I summarizes activist hedge funds' holding period of target firms in number of months. Note that more than one activist hedge fund can hold the same target, and one activist hedge fund can hold the same target more than once. The mean holding period is about three years, and the median is about two years. The long activism investment horizon is consistent with the literature.

Panel C of Table I describes the performance of activist hedge funds' equity portfolios. The asset-weighted mean (median) monthly raw return is 1.10% (1%) and the characteristic-adjusted return is 0.41% (0.27%). The activist hedge funds in our sample tend to be large, with mean (median) equity portfolio value of $1.8 billion ($0.5 billion). On average, they hold about 130 stocks in a given month, although there is significant variation, with some funds holding well over 100 stocks and others only a handful.

To examine the value of activism from the perspective of the activist hedge funds' own investors, we divide each activist hedge fund's equity holdings in each month into three groups: a *Target* group, consisting of firms in which it has launched an intervention; a *Block* group, consisting of non-target firms in which it is a blockholder (of more than five percent of the outstanding shares); and *Non-block*, which is the rest of its equity portfolio, consisting of non-target firms in which it is not a blockholder (owns less than five percent of the outstanding shares). Comparing the target and non-target holdings within each activist hedge fund in each month prior to pooling across all activist hedge funds allows us to better control for differences in the investment skills and activism styles of the fund managers in the cross-section and the time-series. Moreover, comparing target holdings to non-target block and non-block holdings separately

(rather than to all non-target holdings) allows us to detect the return difference between target and non-target holdings that is due to block holding alone (absent of activism, see Edmans, Fang and Zur. 2013).

Panel D of Table I summarizes the number of stocks and portfolio weights invested in each group of holdings. Note that a fund may not always have stocks in all three groups. On average, a fund has 1-2 target holdings per month, which account for almost 7% of total equity portfolio value; 4-5 non-target block holdings, which account for 14% of total equity portfolio value; and over 100 non-target non-block holdings, which account for the remaining equity portfolio value. For most activist hedge funds, therefore, activism plays only a small role in the overall investment activity.

II. The Performance of Intervention Targets: A Within-fund Examination

A. Portfolio Analysis

While the impact of hedge fund activism on target firms' share price has been well documented, whether an activist hedge fund's equity investment in its intervention targets generates higher returns than its equity investment in non-target firms is not clear. In this section, we compare within each activist hedge fund, the performance of its target holdings and its own non-target holdings. This within-fund comparison approach allows us to hold constant fund managers' general investment skills. As such, we can more confidently attribute any differences between the performance of target and non-target stock specifically to activism. In more detail, for each activist hedge fund in each month, we form three equal-weighted portfolios, one for target holdings (*Target*), one for non-target block holdings (*Block*) and one for non-target non-block holdings (*Non-block*), and calculate the following pairs of cross-group return differences: *Target*

minus *Block* and *Target* minus *Non-block*. We then average across all fund-months. Table II presents the results.

[Insert Table II here]

In terms of raw returns, *Target* underperforms *Block* by -0.20% per month, but the difference is not statistically significant. On the other hand, *Target* outperforms *Non-block* by 0.13% per month, although the difference is also not statistically significant. In terms of characteristic-adjusted returns, *Target* underperforms *Block* and *Non-block* by -0.33% per month and -0.07% per month, respectively, and both differences are statistically insignificant.

While on average an activist hedge fund's equity investment in intervention targets do not perform differently from its equity investment in non-target firms, the literature indicates that target firms may generate superior performance under certain circumstances. To examine these possibilities, we further divide each activist hedge fund's equity holdings in the *Target* group and respectively compare the subgroups to its equity holdings in the *Block* and *Non-block* groups.

We first examine the return difference between an activist hedge fund's target and non-target holdings shortly after the announcement of intervention. Given that the literature consistently documents significant price bumps in target stocks around intervention announcements, an activist hedge fund's target holdings may outperform its non-target holdings in the outset of its interventions. To examine this possibility, for each activist hedge fund in each month, we divide its *Target* group holdings into two subgroups. Specifically, we form a "$\leq X$ *months*" portfolio that consists of target stocks held for up to X (where X=1, 3 or 6) month(s) since the 13D (intervention announcement) date and a "> X *months*" portfolio that consists of the remaining target stocks (that is, target stocks held for more than X months since the 13D date). We

then respectively compare the returns of these subgroup portfolios to those of the activist hedge fund's non-target (*Block* and *Non-block*) portfolios. Table III presents the results.

[Insert Table III here]

Panel A of Table III shows that an activist hedge fund's target holdings outperform respectively its *Block* and *Non-block* counterparts in the first month of intervention by 1.7% (1.43%) and 1.55% (1.24%) in terms of raw (characteristic-adjusted) returns. These differences are both economically and statistically significant. These results are consistent with the literature's finding that a target firm's stock price reacts positively to the 13D announcement of hedge fund intervention. After the first month, however, both the raw and characteristic-adjusted returns of target holdings are slightly lower than those of non-target stocks, but the differences are economically small and mostly statistically insignificant. These results are also consistent with the literature's finding that there is no reversal in the stock performance of target firms.

Panel B of Table III compares an activist hedge fund's target holdings and its non-target holdings in and after the first three months of activism. In terms of raw returns, the results are similar to those in Panel A. In the three months immediately following 13D announcement of intervention, an activist hedge fund's equity holdings of target firms outperform its equity holdings of non-target firms. Thereafter, however, return differences become economically and statistically insignificant. In terms of characteristic-adjusted returns, target stocks outperform non-target stocks, but the differences are statistically insignificant.

Panel C of Table III compares an activist hedge fund's target holdings and its non-target holdings in and after the first six months of activism. While targets still outperform non-target holdings during this period, the differences are not statistically significant and remain insignificant thereafter. Overall, the results in Table III suggest that an activist hedge fund's target holdings can

generate greater returns than its non-target holdings in the first quarter of intervention and especially in the first month. As intervention continues on, however, intervention targets do not perform differently than the same activist hedge fund's non-target holdings.

While our results are in line with those of previous studies, such as BJPT (2008b) and Bebchuk, Brav and Jiang (2015) which also document superior returns of hedge fund activism targets in a short window of time around the 13D announcement of intervention, they are more telling of the impact an activist hedge fund's efforts in corporate engagement has on its own investors. An important difference between our study and previous studies is that whereas previous studies benchmark the intervention targets of all activist hedge funds as a group against the market or the rest of the industry, we benchmark the target stocks against the non-target stocks *within each activist hedge fund* before average across funds. Our results therefore can speak to whether it benefits the investors of an activist hedge fund when the fund diverts capital away from simply holding firms to also intervening in their management. Our results suggest that, yes, investors may benefit from such efforts, but the window of opportunity is short. While an activist hedge fund's target holdings tend to outperform its non-target holdings at the beginning of intervention, that is no longer the case by the second quarter of intervention.

Past intervention experience might also affect the performance of an activist hedge fund's current target holdings, but the direction is not clear. On the one hand, if a fund picks the most profitable targets first, then its earliest targets (when it has not had as much intervention experience) would have the highest returns. On the other hand, identifying profitable targets may be a skill that must be acquired through experience, in which case a fund's most recent targets would have the highest returns. To see which of the two is more plausible, we divide each activist hedge fund's *Target* holdings in each month into two subgroups based on whether a holding

represents the fund's first experience with intervention. We then compare the performance of an activist hedge fund's first target and its later targets respectively with the performance of its *Block* and *Non-block* holdings. Because our earlier analyses show that an activist hedge fund's target holdings outperform its non-target holdings mainly in the first quarter of intervention, here we only present the comparison results for this window of time.

Panel A of Table IV indicates no significant return difference between an activist hedge fund's first target and its non-target holdings. In contrast, a fund's later targets outperform both its non-target block holdings (by 0.83% per month in raw return and 0.49% per month in characteristic-adjusted return) and its non-target non-block holdings (by 0.73% per month in raw return and 0.34% per month in characteristic-adjusted return), and the differences in raw returns are statistically significant. The results lend support to the "activism is an acquired skill" hypothesis. That is, through past intervention, a fund learns to identify targets and intervene in their management in ways that generate higher returns than it can from simply holding onto non-target stocks.

[Insert Table IV here]

The results in Panel A of Table IV add to studies on how intervention experience contributes to the stock performance of target firms. Boyson, Ma, and Mooradini (2015) document that as activist hedge funds accumulate intervention experience, they become more aggressive in engaging target firms, and the stocks of their target firms tend to outperform the stocks of non-target peer firms more than do the stocks of the target firms of activist hedge funds with less intervention experience. Our results are consistent with their finding. We find that only when an activist hedge fund has had intervention experience do its target holdings generate significantly higher returns than its non-target holdings. In terms of characteristic-adjusted returns, however,

even for an activist hedge fund with intervention experience, its target holdings do not perform differently from its non-target holdings.

Activist hedge fund managers may also learn how to select profitable targets by acquiring knowledge of the industries to which potential targets belong. We test this "information advantage" hypothesis by using an activist hedge fund's number of stocks held and the portfolio weight invested in a target industry to proxy for its knowledge of that industry. More specifically, we divide each activist hedge fund's *Target* holdings in each month into two subgroups based on whether its number (or portfolio weight) of non-target stocks in the same industry as the target is above or below the monthly sample median. We then compare the performance of the two subgroups respectively with the same fund's non-target holdings before averaging across all fund-months.

Panels B and C of Table IV respectively report the results based on the two proxies for an activist hedge fund's knowledge of target industries. According to Panel B, when an activist hedge fund holds more stocks in target industries, its target holdings tend to outperform its non-target blockholdings (non-block holdings) by 0.94% (1.08%) per month in raw returns and 0.60% (0.75%) per month in characteristic-adjusted returns. In contrast, when an activist hedge fund holds few stocks in target industries, there is no significant difference between the performance of its target holdings and that of its non-target holdings. The results shown in Panel C, based on the alternative proxy for an activist hedge fund's knowledge of target industries are similar. Only when more weight of an activist hedge fund's overall equity portfolio is invested in holding non-target firms that belong to the same industries as its target firms do its target holdings tend to perform better than its non-target holdings. Panels B and C of Table IV therefore suggest industry knowledge to be helpful in the selection of better performing targets.

Overall, the equal-weighted portfolio analyses in this section reveals that, on average, an activist hedge fund's equity investment in intervention targets neither generates better nor worse returns than its equity investment in non-target firms. In a short period (one to three months) after the announcement of intervention, however, target stocks do tend to outperform the same activist hedge fund's non-target stocks, and the outperformance is mainly observed for the fund's later targets (when the fund has had prior intervention experience) and targets that belong to industries in which the fund has more knowledge (from its investment in non-intervention targets in those industries). The takeaway from these analyses is that activist hedge funds with intervention experience and better knowledge of an industry, may be able to achieve greater returns for its investors by selecting better performing targets.

B. Regression Analysis

We conduct regression analyses to see whether their results would corroborate the results from the equal-weighted portfolio analyses above. Regression analyses have the advantage of allowing us to explicitly control for fund characteristics and any unobservable fund- or time-invariant factors that can potentially affect funds' returns to activism. Our baseline regression takes the following form:

$$\begin{aligned} Performance\ Difference_{i,t} = {} & \beta_0 + \beta_1 First\ Month_{i,t} + \beta_2 First\ Target_{i,t} + \\ & \beta_3 Asset\ Weight\ in\ Activism_{i,t} + \\ & \beta_4 Number\ of\ Stocks\ in\ Activism_{i,t} + \\ & \beta_5 Number\ of\ Industries\ in\ Activism_{i,t} + \beta_6 Family\ Size_{i,t-1} + \\ & \beta_7 Number\ of\ Stocks_{i,t} + \beta_8 Number\ of\ Industries_{i,t} + \\ & Year\ FE + Family\ FE + e_{i,t} \end{aligned} \quad (1)$$

The dependent variable is the performance differences (in raw and characteristic-adjusted returns) between a fund's target holdings and, respectively, its non-target block holdings and non-target non-block holdings. In light of the results from the equal-weight portfolio analyses, we include a *First Month* indicator, which equals one if at least one of fund *i*'s interventions is still within the first month of intervention in month *t* and zero otherwise, and a *First Target* dummy, which equals one if fund *i* is holding its first target in month *t* and zero otherwise. We control for the weight of an activist hedge fund's equity portfolio in target stocks, the number of target stocks in its equity portfolio, and the number of industries to which the target stocks belong. We also include general fund characteristics, such as size, total number of equity holdings and total number of industries held. All regressions include year fixed effects and fund fixed effects, with standard errors clustered at the fund level and the year level.

[Insert Table V here]

Panel A of Table V reports the regression results, where the difference in raw returns is the depended variable. In regressions (1) and (2), the coefficient on the *First Month* dummy is positive and significant, suggesting that target holdings respectively outperform non-target block holdings and non-target non-block holdings by 1.59% and 0.98% per month. These results are consistent with the finding from the portfolio analyses that an activist hedge fund's target holdings generate higher returns than do its non-target holdings in the immediate month following the 13D announcement of intervention. In regressions (3) and (4), we replace the *First Target* dummy with a measure of an activist hedge fund's intervention experience—the number of unique firms it has targeted as of month *t*. Performance differences between the same activist hedge fund's target and non-target holdings are greater in the first month of intervention. Panel B of Table V repeats the same regressions as those in Panel A but uses the difference in characteristic-adjusted returns has

the depended variable. Here, too, we find that an activist hedge fund's target holdings generate significantly higher characteristic-adjusted returns in the first month of the announcement of intervention compared to its non-target (block or non-block) holdings. In all regressions in Panel B, the coefficient on the *First Target* dummy and the coefficient on the *Past Activism Experience* dummy are never significant. While the results from the equal weighted portfolio analyses indicate that an activist hedge fund's later targets tend to outperform its non-target holdings, the results from the regression analyses reveal that the impact of intervention experience on target outperformance is not significant after controlling for other fund characteristics.

III. The Value of Activism: An Activist Hedge Fund's Own Investors' perspective

A. Value to Investors

In the preceding section, we show that under certain circumstances, an activist hedge fund may be able to generate higher returns for its investors by means of corporate engagement than if it were to only hold firms for general investment purposes without intervening in their management. This begs the question of whether an activist hedge fund indeed allocates more capital toward intervention targets when these circumstances are met, leading to an improvement in the performance of its equity portfolio as a whole and therefore greater value for its investors. To address this question, we now form for each activist hedge fund in each month, three asset-weighted portfolios, one for each of its three groups of equity holdings (*Target*, *Block* and *Non-block*), where the weight of each holding is the fraction of its overall equity portfolio value invested in that stock. (In other words, the weight of each holding is the fraction of fund assets invested in that stock.) The return of each asset-weighted portfolio reflects, then, the contribution of each group of holdings to the activist hedge fund's total profits earned from its equity portfolio that

month. One group's having a larger equal-weighted but a smaller asset-weighted portfolio return than another would indicate underinvestment in the former, as the activist hedge fund would be able to increase its overall equity portfolio return by allocating more capital toward the former.

Table VI compares the asset-weighted performance of an activist hedge fund's target holdings respectively with that of its non-target block holdings and non-target non-block holdings. Panel A shows the full sample results. The monthly raw (characteristic-adjusted) return differences are -0.14% (-0.08%) and -0.46% (-0.18%) per month, respectively, and highly statistically significant. These negative return differences suggest that the contribution of an activist hedge fund's target holdings to its overall equity portfolio return is much lower than the contribution of its non-target (block or non-block) holdings. In light of Table II, which shows that an activist hedge fund's target holdings do not on average perform differently from its non-target holdings, the negative asset-weighted return differences here is likely to driven mainly by the low asset weight invested in target holdings (only 6.7% of an activist hedge fund's overall equity portfolio value according to Table I).

[Insert Table VI here]

More interesting is how activist hedge funds allocate capital between target and non-target holdings when the former outperform the latter. According to the equal-weighted portfolio analyses, an activist hedge fund's target holdings perform better than its non-target holdings in the first one to three months after the announcement of intervention and when it is heavily invested in the target industries. Panel B of Table VI compares the asset-weighted returns of an activist hedge fund's *Target* portfolio with that of its *Block* and *Non-block* portfolios, respectively, in the first quarter intervention. The differences are mostly negative and statistically significant. For example, the monthly raw (characteristic-adjusted) return difference is -0.12% (-0.43%) between *Target* and

Block and -0.58% (-0.21%) between *Target* and *Non-block*. Panel C of Table VI examines the performance differences in the first quarter of intervention between an activist hedge fund's target holdings from industries in which it is heavily invested (in terms of holding a greater number of or investing a greater overall equity portfolio weight in non-target firms from those industries) to it non-target block and non-block holdings, respectively. The results are similar to those from Panel B: the asset-weighted return of an activist hedge fund's *Target* portfolio is significantly smaller than that of its *Block* and *Non-block* portfolios.

Altogether, the results from the asset-weighted portfolio analyses indicate that an activist hedge fund's equity investment in intervention targets contributes significantly less to its total profits than do its equity investment in non-target firms. This remains true even when its target holdings outperform its non-target holdings, suggesting that activist hedge funds tend to *underinvest* in activism on average. That is, an activist fund may be able to increase profits for its investors by allocating more capital toward its intervention targets, especially those in the early stages of intervention and those from industries of which the fund managers is more familiar.

B. A Discussion of the Underinvestment in Activism

We explore possible reasons for an activist hedge fund's tendency to underinvest in activism. First, the regression analyses in Section II.B reveal a negative relationship between an activist hedge fund's overall equity portfolio weight invested in target holdings and the performance of those holdings relative to its non-target holdings. In both panels of Table V, the coefficient on the portfolio weight invested in target holdings is negative and highly significant, indicating that the performance of target holdings relative to non-target holdings declines with the portion of an activist hedge fund's overall equity portfolio invested in the former. One reason for

this may be that an activist hedge fund's attempt to accumulate more target shares has a significant impact on the target firm's share price. The acquisition of additional target shares at higher prices would reduce the overall returns to intervention. Another reason may be that the amount of capital invested in a target is a reflection of the difficulty of intervention. That is, the activist hedge fund may have perceived a need for holding a larger stake in order to effectively counter pushback from management. Boyson and Pichler (2018) find that managers often make use of defensive mechanisms such as poison pills to ward off activist hedge funds, which in turn can be met with counter-resistance measures by the latter. Note, however, that we use an activist hedge fund's total equity portfolio weight invested in *all* targets in the regression analysis. The optimal weight for each target is likely to be fund-target specific and is therefore beyond the scope of this study.

An activist hedge fund may also be underinvesting in target firms for the simple reason that it cannot accumulate additional target shares. We explore this possibility by examining the liquidity of target stocks around the announcement of intervention. For each target stock, we calculate its Amivest liquidity ratio (*LR*, the inverse of the Amihud (2002) illiquidity ratio) and its squared-root variant (*SRLR*) in each month. We then sort the target stocks into terciles according to their weights in activist hedge funds' equity portfolios in the intervention announcement month. Finally, we calculate the average liquidity for each group in each month over a [-3, +3] month window around the intervention announcement month. Figure 1 presents the results.

[Insert Figure 1 here]

We find that target stocks with a higher portfolio weight are also more liquid. The differences between the high-portfolio weight group and the low-portfolio weight group are statistically significant, as shown in Panels A and B of Table VII. However, we do not find that stock liquidity changes significantly around the intervention announcement month within each

group, as shown in Panels C and D of Table VII. These results indicate that activist hedge funds allocate more capital toward holding target stocks that are more liquid and suggests that the lack of liquidity may be one reason why an activist hedge fund underinvests in a target stock.

[Insert Table VII here]

In short, while a thorough investigation of why activist hedge funds do not commit more capital to their intervention targets is beyond the scope of this paper, preliminary analyses suggest the diminishing marginal returns from intervention and the lack of available shares for purchase in the intervention announcement window as potential explanations.

IV. The Allocation of Capital Flows

Thus far, we have shown that an activist hedge fund tends to under-allocate its equity portfolio toward target holdings, even when they outperform its non-target holdings. A related question is how it would allocate new capital. Would it mainly increase the stakes in current targets, launch new interventions, invest more in currently held non-target firms, or invest in new non-target firms? We run the regressions in equation (2) to test for these possible responses to capital flows.

$$Y_{i,t} = \beta_0 + \beta_1 Fund\ Flow_{i,t-1} + \beta_2 Family\ Size_{i,t} + \beta_3 Family\ Age_{i,t} + \beta_4 Number\ of\ Funds\ in\ Family_{i,t} + e_{i,t}, \quad (2)$$

where $Y_{i,t}$ is one of four variables that capture an activist hedge fund's capital allocation behaviors. The first variable is *Number of Targets*, which measure how many targets or intervention campaigns activist hedge fund *i* has in month *t*. The second variable is *Maintains Existing Targets*, which is a dummy variable that equals one if intervention remains ongoing in all of the activist hedge fund's existing targets and zero otherwise. The third is *Average Target Stake*, which is the

percentage of a target's outstanding shares held by the activist hedge fund averaged across all the targets held by the activist hedge fund. The fourth variable is *Portfolio Weight in Targets*, which is the activist hedge fund's equity portfolio weight in target holdings.

The key right-hand side variable is *Fund Flow*, which is defined as in Sirri and Tufano (1998):

$$Flow_{i,t} = \frac{AUM_{i,t} - AUM_{i,t-1} \times Return_{i,t}}{AUM_{i,t-1}}, \quad (3)$$

where AUM is the total equity value of the fund. We control for fund family size, age, and number of funds in the family. In all regressions, family fixed effects and year fixed effects are included. Note that because we can only observe changes in holdings on a quarterly basis, all regressions in Equation (2) are conducted at the quarterly frequency.

Our analyses are related to the literature on hedge fund flows. Whereas that literature typically examines the impact of fund performance on fund flow, e.g. Naik, Ramadorai, and Stromqvist (2007), Fung, Hsieh, Naik and Ramadorai (2008) and Getmansky, Liang, Schwarz and Werners (2015), we examine the impact of fund flow on an activist hedge fund's allocation between its intervention target holdings and its non-target holdings. As such, we restrict our sample to months in which a fund is holding at least one target.

Table VIII Panel A reports the results from these regressions. The coefficient on *Fund Flow* is positive and statistically significant in all regressions. In other words, capital flows do have an impact on an activist hedge fund's investment of resources in corporate engagement. More specifically, a one standard deviation (16.5%) increase in fund flows implies 0.14 more targets, 0.25% higher share ownership of existing targets and 0.90% more equity portfolio weight in target holdings. An activist hedge fund is also more likely to continue all of its current interventions following an increase in capital flow.

[Insert Table VIII here]

We also examine whether the allocation between target and non-target holdings is symmetrical in the direction of capital flow. Table VIII, Panel B reports the results from estimating the regressions in Equation (2) but replaces *Fund flow* with *Inflow*, which equals max(*Fund flow, 0*). An activist hedge fund that experiences an inflow of capital significantly increases the number of intervention targets and is more likely to maintain all existing targets. Interestingly, it does not significantly increase its ownership stakes in existing targets and only marginally increases its equity portfolio weight in target holdings.[8] These results are consistent with our previous finding that an activist hedge fund's marginal return from a target and corporate engagement in general is decreasing in the scale of investment.

Table VIII, Panel C reports the results from estimating the regressions in Equation (2) but replaces *Fund flow* with *Outflow*, which equals the absolute value of min(*Fund flow, 0*). An activist hedge fund that experiences an outflow of capital reduces its number of targets and is less likely to maintain all of its current targets. Moreover, it decreases its ownership stake in existing targets and the weight of its equity portfolio in target holdings. An activist hedge fund therefore tends to scale down its investment in corporate engagement following outflows of capital.

In short, the takeaway from this section is that capital flow is an important determinant of the intensity with which an activist hedge fund is involved in corporate engagement. Whereas inflows mainly lead to the initiating of new campaigns, outflows lead to the exiting from current targets and an overall reduction in the commitment of resources to corporate engagement.

V. Additional Analyses

[8] The marginal increase is 0.7% for a one standard deviation increase in inflow and is statistically significant at the 10% level.

A. Time-series Analyses

Hedge fund activism is becoming increasingly prevalent. Both the number of hedge funds that have attempted corporate engagement at least once and the number of unique firms that have been targeted by a hedge fund for intervention have grown more than three-fold from the beginning of the sample period to recent years. How has the return to hedge fund activism varied over this time? On the one hand, the return to hedge fund activism may be increasing as hedge funds gain experience in engaging target management. On the other hand, the increased competition among hedge funds to profit from corporate engagement may have driven down the return to hedge fund activism. The recent financial crisis may have served up a greater number of potentially undervalued targets, which would explain its coinciding with the greatest number of activist hedge funds and the greatest number of target firms.[9] We examine in this section time-series variations in the return an activist hedge fund earns from its intervention targets relative to the return it earns from its non-target holdings.

We divide our sample period into two sub-periods: the "pre-crisis" period from 1997 to 2007 and the "post-crisis" period from 2008 to 2012. In Table IX, we repeat the portfolio analyses in Section II.A for each sub-period. That is, for each activist hedge fund in each month, we construct an equal-weighted portfolio for each of its three groups of holdings, and compare the return of the *Target* portfolio respectively against the return of the *Block* portfolio and the return of the *Non-block* portfolio. Table IX Panel A presents the results from this comparison. Consistent with our earlier findings, in either sub-period, an activist hedge fund's target holdings neither outperform nor underperform its own non-target holdings.

[9] The total number of activist hedge funds peaked in 2007 and 2008 (140 and 132, respectively), as did the number of targets (353 and 340, respectively). For comparison, there were only 31 activist hedge funds and 111 targets in 1997. See Table A.I in the Appendix for a more detailed distribution of the number of activist hedge funds and target firms by year.

[Insert Table IX here]

Previous analyses indicate that an activist hedge fund's target holdings outperform its own non-target holdings if it is only the first quarter of intervention, if the fund has had intervention experience or if the fund is familiar with industries to which its target firms belong. We test whether this outperformance of target holdings relative to the same activist hedge fund's non-target holdings is present in both sub-periods. Panel B, however, shows that target holdings outperform the same activist hedge fund's non-target holdings in the first three months of intervention only in the pre-crisis period. The *Target* portfolio has on average a 1.25% higher raw return and a 0.94% higher characteristic-adjusted return per month compared to the *Block* group, and the differences are statistically significant. Similarly, the *Target* portfolio has on average a 0.93% higher raw return and a 0.58% higher characteristic-adjusted return per month compared to the *Non-block* portfolio. In contrast, in the post-crisis period, an activist hedge fund's target holdings on average perform worse than its non-target holdings, although the differences are not statistically significant. We observe similar findings for the two sub-periods when examining the performance of an activist hedge fund's later targets (Panel C), targets in industries in which it hold more non-target stocks (Panel D), and targets in industries in which it allocates more equity portfolio weight (Panel E). In each case, these target holdings outperform the same activist hedge fund's non-target (block or non-block) holdings only in the pre-crisis period. In the post-crisis period, the performance differences between these target holdings and the same activist hedge fund's non-target (block or non-block) holdings are mostly insignificant.

We check whether these results are driven by the particular sample split. We repeat the tests in Table IX, but split the sample period into two sub-periods with more comparable number of observations. Specifically, we define 1997-2005 to be the "earlier period" and 2006-2012 to be

the "later period." Table A.II in the Appendix reports the results, which are qualitatively similar to those reported in Table IX: the outperformance of an activist hedge fund's target holdings relative to its non-target holdings as revealed by the analyses in Section II.A is more prominent in the earlier part of the sample period. Moreover, due to the growing prevalence of hedge fund activism, all tests in the later period have a slightly higher number of observations. This rules out the possibility that the insignificant return differences between an activist hedge fund' target holding and its non-target holdings in the post-crisis period as presented in Table IX are due to small sample size.

[Insert Table A.II here]

There are several possible reasons why an activist hedge fund's target holdings do better than its non-target holdings only in the pre-crisis period. The increasing number of activist hedge funds means greater competition for profitable targets, driving down the average return of intervention for any one fund. At the same time, activist hedge fund non-target holdings may be doing better in recent years. One interesting observation from Tables IX and A.II is that during the later period of the sample, the return difference between an activist hedge fund's *Target* portfolio and its *Block* portfolio is almost always lower than that between the former and its *Non-block* portfolio. It is possible therefore that in recent years, blockholding alone can generate strong returns for an activist hedge fund without its intervening in corporate management. This is consistent with evidence that corporate managers are both increasingly aware of and better able to deal with the threat of hedge fund activism. Managers are on the lookout for activist hedge funds and ready to take proactive steps to boost stock price in effort to avoid being targeted for

intervention.[10] This is also consistent with evidence on the growing effectiveness of passive blockholding as a governance mechanism.[11]

We also repeat the asset-weighted portfolio analyses in Section III.A for each sub-period in Table X. Consistent with the results presented in Table VI, we find *negative* asset-weighted (raw and characteristic-adjusted) return differences between an activist hedge fund's target holdings and its own non-target holdings, even when the former outperform (have higher equal-weighted return than) the latter, but mainly in the pre-crisis period. These asset-weighted return differences become insignificant in the post-crisis period. It is possible that activist hedge funds are becoming more efficient in their allocation of capital between target and non-target holdings.

[Insert Table X here]

B. An Activist Hedge Fund's Overall Equity Portfolio Performance

Finally, we examine the performance of an activist hedge fund's overall equity portfolio as measured by the asset-weighted average return of all of its equity holdings. Specifically, we run the following regression, where the *Activism* dummy equals one if activist hedge fund *i* has at least one ongoing intervention in month *t* and zero otherwise. The other variables are as previously defined.

[10] See Lipton (2014) and Goldstein (2015) who advise firms on how to foresee and forestall hedge fund interventions. Feng, Xu and Zhu (2018) show that firms under the threat of hedge fund intervention take various measures to boost stock price.

[11] As the stock market becomes more liquid and managerial compensation more closely tied to stock price, the presence of passive blockholders becomes an effective governance mechanism, as these blockholders can easily exit their position and managers are more sensitive to the negative impact of their exit on stock price. See Bharath, Jayaraman, and Nagar (2013) and Edmans, Fang and Zur (2013) for a detailed analysis of governance by (passive) blockholders.

$$Fund\ Performance_{i,t} = \beta_0 + \beta_1 Activism_{i,t} + \beta_2 First\ Month_{i,t} + \beta_3 Family\ Size_{i,t-1} +$$
$$\beta_4 Number\ of\ Stocks_{i,t} + \beta_5 Number\ of\ Industries_{i,t} +$$
$$Year\ FE + Family\ FE + e_{i,t}. \quad (4)$$

Table XI presents the regression results. In regressions (1) and (2), fund performance is measured by raw returns. The coefficient on the *Activism* dummy is positive and significant, suggesting that activist hedge funds that have at least one ongoing intervention outperform those that do not. Note that this is distinct from the main finding of BJPT (2008b) and Boyson and Mooradini (2007) that activist hedge funds outperform non-activist hedge funds. In our study, we only include hedge funds that filed at least one 13D during our sample period. What columns (1) and (2) of Table XI suggest is that among the activist hedge funds in our sample, those holding at least one target earn higher returns than those that are not holding any target in that month (but have either held a target in the past or will hold one in the future).

[Insert Table XI here]

In regressions (3) and (4), fund performance is measured by characteristic-adjusted returns. The insignificant coefficient on the *Activism* dummy suggests that on average there is no difference in the characteristic-adjusted equity portfolio return of an activist hedge fund holding at least one target and that of a fund holding none. However, the positive and significant coefficient on the *First Month* dummy indicates that the former performs marginally better when at least one of its interventions is still in the early stage (within the first month of the announcement of intervention).

In all regressions, the coefficient on fund family size is negative and significant, consistent with the hedge fund literature and indicating that hedge funds in general suffer from diseconomies of scale. The positive and significant coefficient on the number of stocks suggests that there is some diversification benefit. However, at the industry level, the effect of spreading investments

across a greater number of industries is negative. Taken together, the coefficients on the two variables suggest that it would be beneficial for funds to concentrate their investment in a few industries but hold a diversified portfolio of firms within those industries.

VI. Conclusion

While it has been documented that activist hedge funds generate value for the shareholders of their target firms, in this paper we ask whether they generate value for their own investors by means of intervening in the management of their intervention targets. We construct a comprehensive dataset by manually combining data gathered from various sources, on activist hedge funds' intervention campaigns, equity holdings and characteristics, and compare *within each activist hedge fund* the return it earns from holding intervention targets to the return it earns from holding firms for general investment purposes without intervening in their management. We find that on average an activist hedge fund's target holdings do not perform differently from its non-target holdings. The former, however, do generate higher returns than the latter if it is still in the first quarter of intervention or if the activist hedge fund has had intervention experience or is familiar with the industries to which the target firms belong. Even under these circumstances, an activist hedge fund's target holdings contribute significantly less to its total profits from its overall equity portfolio, suggesting that activist hedge funds may be underinvesting in activism.

The results of our study should be of interest to investors in hedge funds. On the one hand, we do find evidence that hedge funds may be able to generate greater profits for their investors by means of corporate engagement rather than to only hold firms for general investment purposes without intervening in their management. On the other hand, investors should be aware that an activist hedge fund's target holdings tend to outperform its non-target holdings only in the

beginning months of intervention and if the activist hedge fund has had intervention experience or is familiar with the industries to which its intervention targets belong.

Moreover, the results from our time-series analyses suggest that it has become more difficult over time for an activist hedge fund's target holdings to generate superior returns relative to its non-target holdings. Taken together, the results of our various analyses suggest that it is perhaps more appropriate to interpret the superior performance of activist hedge funds documented by previous studies (such as BJPT (2008b) and Boyson and Mooradian (2007)) as evidence of activist hedge fund managers' superior general investment skills rather than the value of their intervening in corporate management. Hedge funds in general should exercise caution in pursuing corporate engagement as an investor wealth-maximizing strategy.

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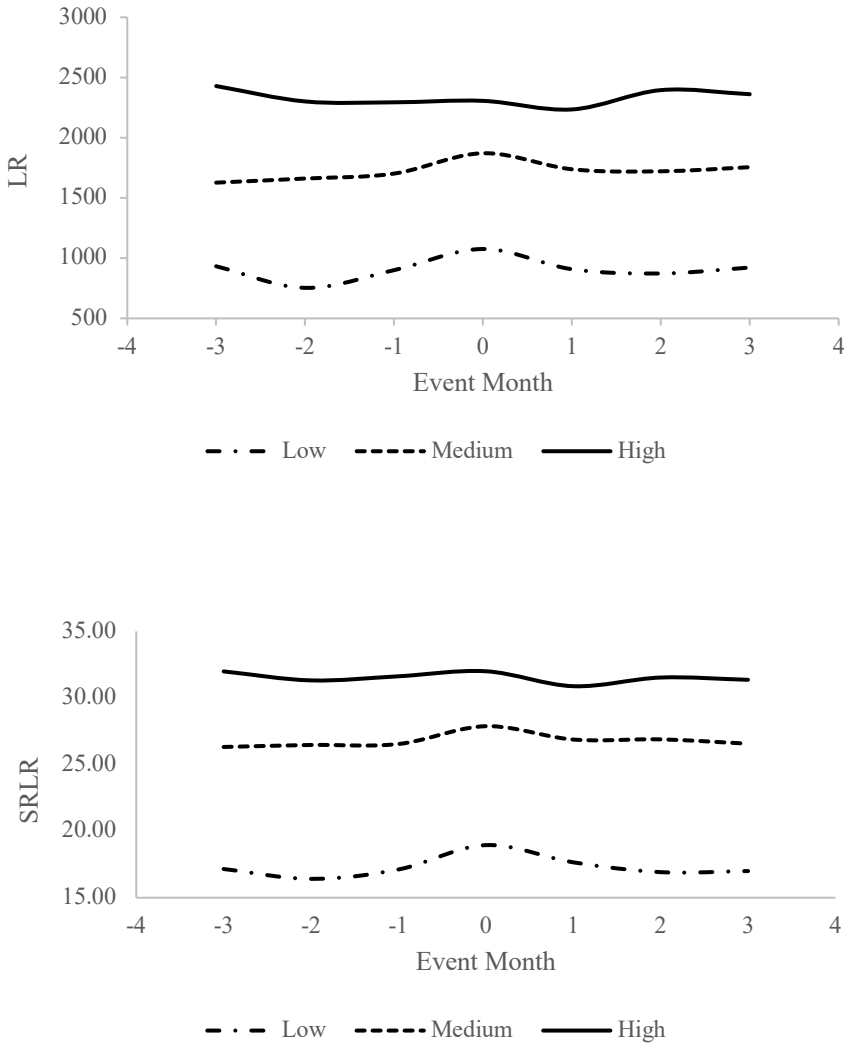

Figure 1. Target Stock Liquidity Around Intervention Announcement

This figure plots the average stock liquidity of target firms over a [-3, +3] month window around the intervention announcement month. The measures of liquidity are the Amivest liquidity ratio (*LR*)

$$LR = \frac{1}{N}\sum_{j=1}^{N}\frac{Price_i \times Volume_{i,j}}{|Return|_{i,j}} \ ,$$

and its square-root variant (*SRLR*)

$$SRLR = \frac{1}{N}\sum_{j=1}^{N}\sqrt{\frac{Price_{i,j} \times Volume_{i,j}}{|Return|_{i,j}}} \ .$$

We sort target firms into terciles based on their weight in the activist hedge fund's overall equity portfolio in the intervention announcement month. The solid, dashed and dash-dotted lines respectively plots the the monthly average stock liquidity for targets in the highest, middle and lowest portfolio weight tercile.

Table I
Summary Statistics

This table presents summary statistics for our sample, which covers 222 unique activist hedge funds and 1,022 unique target firms from January 1997 to May 2012. Here and in later tables, activist hedge "fund" refers to the fund family that has filed a Schedule 13D, which is the required public disclosure of more than five percent ownership of a public firm's shares with the intention to influence management. Panel A describes the number of unique target firms per activist hedge fund. Panel B describes the holding period (in months) of target stocks. Panel C describes activist hedge funds' equity portfolio, in terms of return, value and number of holdings. Return is the asset-weighted average raw return of all portfolio holdings. Characteristic-adjusted return is the asset-weighted average difference between the raw return and the corresponding Fama-French 25 size and book-to-market portfolio return for all portfolio holdings. Panel D divides the equity holdings of each activist hedge fund into three groups: *Target*, consisting of intervention targets; *Block*, consisting of blockholdings (of more than 5% of the shares) of non-target firms and *Non-block*, which is the rest of its equity portfolio, consisting of non-block holdings (of not more than 5% of the shares) of non-target firms. For each group, we report the number of stocks and their weight in the activist hedge fund's overall equity portfolio.

Panel A. Number of unique target firms per activist hedge fund

N	Mean	Std	Q1	Median	Q3
222	5.40	10.42	1	2	5

Panel B. Holding period of target stocks (in months)

N	Mean	Std	Q1	Median	Q3
1252	35.20	36.41	11	23	44

Panel C. Activist hedge fund characteristics

	N	Mean	Std	Q1	Median	Q3
Return (%)	22826	1.10	7.45	-3	1	5
Characteristic-adjusted Return (%)	22368	0.41	4.21	-1.31	0.27	1.93
Size ($million)	22826	1,786.78	3,611.77	185.46	523.46	1,624.32
Number of stocks	22826	132.82	301.86	18	41	97

Panel D. Activist hedge fund equity portfolio

Group		N	Mean	Std	Q1	Median	Q3
Target	Number of stocks	22826	1.07	3.16	0	0	1
	Portfolio weight	22826	6.91	15.84	0	0	4.78
Block	Number of stocks	22826	4.30	10.26	0	2	4
	Portfolio weight	22826	14.05	19.44	0	5.55	20.28
Non-block	Number of stocks	22826	127.46	299.30	15	38	90
	Portfolio weight	22826	79.04	25.81	68.61	89.60	99.34

Table II
Within-fund Target versus Non-target Performance: Equal-weighted Portfolios

This table summarizes the return differences between an activist hedge fund's target holdings and its own non-target holdings. Specifically, we divide each activist hedge fund's equity holdings in each month into three groups: *Target*, which consists of target stocks; *Block*, which consists of block holdings of non-target stocks; and *Non-block*, which includes all other equity holdings (that is, non-block holdings of non-target stocks). We then form an equal-weighted portfolio for each group of stocks and respectively calculate the return difference between the *Target* portfolio and each of the other two portfolios. This table summarizes the return differences after averaging across all fund-month observations. ***, **, and * denote 1%, 5% and 10% statistical significance, respectively.

	Mean	Median	SD	*t*	N
			Raw Return		
Target – Block	-0.20	-0.33	16.48	-1.02	6914
Target – Non-block	0.13	-0.46	13.45	0.89	8690
			Characteristic-adjusted Return		
Target – Block	-0.33	-0.49	16.76	-1.56	6241
Target – Non-block	-0.07	-0.63	13.38	-0.44	8153

Table III
With-fund Target versus Non-target Performance: At the Beginning of Intervention

This table examines whether an activist hedge fund's target holdings tend to outperform its non-target holdings at the outset of intervention. Specifically, we divide each activist hedge fund's *Target* holdings in each month into two subgroups: those still in the first *X* months of intervention and those that have been undergoing intervention for more than *X* months. Panels A through C present the results for *X* = 1, 3 and 6 month(s), respectively. We form an equal-weighted portfolio for each *Target* subgroup and compare its return to the same activist hedge fund's *Block* and *Non-block* holdings. This table summarizes the return differences after averaging across all fund-month observations. ***, **, and * denote 1%, 5% and 10% statistical significance, respectively.

Panel A. Return differences in the 1st month of intervention versus after

	In the 1st month							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	1.70***	17.4	3.22	1095	1.43***	16.4	2.67	939
Target – Non-block	1.55***	16.7	3.34	1305	1.24**	16.5	2.56	1158
	After the 1st month							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.38*	16.4	-1.89	6604	-0.04	2.42	-0.48	5966
Target – Non-block	-0.03	16.4	-0.24	8294	-0.13*	2.34	-1.87	7779

Panel B. Return differences in the first 3 months of intervention versus after

	In the first 3 months							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.66*	17.1	1.68	1891	0.26	16.4	0.63	1617
Target – Non-block	0.66**	15.8	1.99	2294	0.28	16.3	0.82	2041
	After the first 3 months							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.37*	16.4	-1.80	6271	-0.09	2.45	-1.49	5684
Target – Non-block	-0.04	13.4	-0.28	7867	-0.18***	2.43	-3.32	7387

Panel C. Return differences in the first 6 months of intervention versus after								
	In the first 6 months							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.21	16.8	0.64	2736	0.01	16.4	0.02	2350
Target – Non-block	0.29	14.5	1.15	3365	0.02	14.2	0.07	3024
	After the first 6 months							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.37*	16.4	-1.70	5814	-0.05	2.52	-0.89	5310
Target – Non-block	0.00	13.6	0.01	7259	-0.14***	2.62	-2.93	6851

Table IV
Within-fund Target versus Non-target Performance: Double Sorting Targets

This table explores the circumstances under which an activist hedge fund's target holdings tend to outperform its non-target holdings. Based on the results presented in Table III, we focus on the first three months of intervention. In Panel A, we sort each activist hedge fund's target holdings in each month into two subgroups, based on whether a target represents the activist hedge fund's first intervention, which we call "starter" target, or a subsequent intervention, which we call "later" target. In Panels B and C we examine the impact of an activist hedge fund manager's knowledge of target industries. We sort each activist hedge fund's target holdings in each month into two subgroups, based respectively on whether the number (Panel B) and weight (Panel C) of non-target stocks in the activist hedge fund's portfolio belonging to the same industry as the target is higher than that month's median. We form an equal-weighted portfolio for each *Target* subgroup and compare its return to the same activist hedge fund's *Block* and *Non-block* holdings. This table summarizes the return differences after averaging across all fund-month observations. ***, **, and * denote 1%, 5% and 10% statistical significance, respectively.

Panel A. Starter versus later target

	Starter target							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.36	18.8	-0.33	298	-1.16	19.5	-0.94	249
Target – Non-block	0.38	13.7	0.56	410	0.14	13.6	0.20	364
	Later target							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.83**	16.7	1.99	1610	0.49	15.7	1.17	1383
Target – Non-block	0.73**	16.2	1.97	1912	0.34	15.6	0.89	1701

Panel B. Number of Stocks Held in Target Industries

	High number of stocks							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.94**	17.9	2.06	1567	0.60	14.3	1.27	1340
Target – Non-block	1.08***	15.3	3.06	1894	0.75**	16.5	2.11	1684
	Low number of stocks							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.20	17.2	-0.35	630	-0.51	14.2	-0.83	528
Target – Non-block	-0.18	14.6	-0.29	740	-0.59	16.9	-0.88	641

Panel C. Weight of equity portfolio value invested in target industries								
	High percentage of equity portfolio value							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.88*	17.9	1.93	1547	0.57	17.3	1.20	1325
Target – Non-block	1.05***	15.4	2.95	1875	0.74**	14.7	2.07	1668
	Low percentage of equity portfolio value							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.13	14.6	-0.24	655	-0.46	14.1	-0.77	552
Target – Non-block	-0.18	16.5	-0.30	765	-0.53	16.8	-0.82	667

Table V
Within-fund Target versus Non-target Performance: Regression Analyses

This table reports the estimation results for the regression in Equation (1). The dependent variable is activist hedge fund *i*'s equal weighted return difference in month *t* between its target holdings and its non-target block holdings (Columns (1) and (3)) and between its target holdings and its non-target non-block holdings (Columns (1) and (4)). Independent variables include the following: *First Month* is an indicator which equals one if it is still within the first month of intervention and zero otherwise. *First Target* is an indicator variable which equals one if it is the activist hedge fund's first intervention and zero otherwise. *Asset Weight in Activism* is the activist hedge fund's total equity portfolio weight in target holdings. *No. of Stocks in Activism* is the activist hedge fund's total number of target holdings. *No. of Industries in Activism* is the number of industries to which target firms belong. *Past Activism Experience* is the number of unique firms the activist hedge fund has targeted in the past. We control for fund family size, total number of stocks held and the number of industries to which all holdings belong. All regressions include fund fixed effects and year fixed effects, which are not reported here in the interest of space. Following Petersen (2009), we cluster standard errors at the fund level and at the year level. Parentheses enclose *t*-statistics, and ***, ** and * denote 1%, 5% and 10% statistical significance, respectively.

Panel A. Raw Returns				
	(1)	(2)	(3)	(4)
	Target - Block	Target – Non-block	Target - Block	Target – Non-block
First Month	1.5914***	0.9839**	1.5503***	0.9431*
	(3.95)	(1.97)	(3.73)	(1.83)
First Target	-0.3605	0.6755		
	(-0.35)	(1.00)		
Asset Weight in Activism	-0.0953***	-0.0429***	-0.0987***	-0.0461***
	(-3.05)	(-3.27)	(-3.12)	(-3.53)
No. of Stocks in Activism	0.1882	-0.0318	0.2050	-0.0079
	(0.83)	(-0.25)	(0.82)	(-0.07)
No. of Industries in Activism	-0.2675	0.0419	-0.1660	0.0515
	(-0.94)	(0.20)	(-0.57)	(0.24)
Past Activism Experience			-0.0615*	-0.0188
			(-1.83)	(-0.49)
Log Lagged Family Size	0.1186	0.2251	0.0697	0.1441
	(0.20)	(0.60)	(0.12)	(0.37)
Log Number of Stocks	-0.0292	-0.1253	0.0593	-0.1225
	(-0.01)	(-0.12)	(0.03)	(-0.12)
Log Number of Industries	-0.5204	-0.0336	-0.6697	-0.0601
	(-0.21)	(-0.03)	(-0.27)	(-0.06)
Year FE	Yes	Yes	Yes	Yes
Family FE	Yes	Yes	Yes	Yes
Adj. R^2	0.0097	0.0059	0.0099	0.0058
N	6914	8690	6914	8690

Panel B. Characteristic-adjusted returns				
	(1)	(2)	(3)	(4)
	Target - Block	Target – Non-block	Target - Block	Target – Non-block
First Month	1.6613***	1.0049*	1.6433***	0.9681*
	(3.00)	(1.79)	(2.86)	(1.66)
First Target	-0.6683	0.7064		
	(-0.56)	(0.94)		
Past Activism Experience			-0.0450	-0.0108
			(-1.19)	(-0.29)
Asset Weight in Activism	-0.1053***	-0.0288**	-0.1061***	-0.0315**
	(-2.91)	(-2.16)	(-2.89)	(-2.26)
No. of Stocks in Activism	0.3709	-0.0143	0.3723	0.0025
	(1.42)	(-0.11)	(1.30)	(0.02)
No. of Industries in Activism	-0.4714	0.0163	-0.3850	0.0193
	(-1.45)	(0.09)	(-1.20)	(0.09)
Log Lagged Family Size	0.3512	0.3287	0.3523	0.2581
	(0.48)	(0.78)	(0.50)	(0.59)
Log Number of Stocks	0.5493	-0.4080	0.6269	-0.4008
	(0.20)	(-0.29)	(0.23)	(-0.28)
Log Number of Industries	-1.7763	0.3533	-1.9027	0.3301
	(-0.68)	(0.23)	(-0.72)	(0.21)
Year FE	Yes	Yes	Yes	Yes
Family FE	Yes	Yes	Yes	Yes
Adj. R^2	0.0064	0.0027	0.0065	0.0026
N	6241	8153	6241	8153

Table VI
Within-fund Target versus Non-Target Performance: Asset-weighted Portfolios

This table repeats the portfolio analyses in Tables II and III but examines the asset-weighted rather than equal-weighted performance of an activist hedge fund's target holdings versus its own non-target holdings. The weight assigned to each holding is its weight in the activist hedge fund's overall equity portfolio. In Panel A, we compare for each activist hedge fund in each month, the asset-weighted return of its target holdings with that of its non-target non-block holdings, respectively. In Panel B, we identify target firms that are still in the first month or, alternatively, first three months of intervention and compare their asset-weighted return to the asset-weighted return of the same activist hedge fund's non-target block holdings and non-target non-block holdings, respectively. In Panel C, we focus on targets in the first three months of intervention and we further sort them based on whether they belong to industries in which the activist hedge fund is heavily invested, in terms of the number and portfolio weight of non-target stocks held in those industries. We then compare the asset-weighted returns of these *Target* subgroup portfolios with those of the same activist hedge fund's *Block* and *Non-block* portfolios. This table summarizes the asset-weighted return differences after averaging across all fund-month observations. ***, **, and * denote 1%, 5% and 10% statistical significance, respectively.

Panel A. Pooled analysis

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.14***	3.55	-3.39	6914	-0.08**	2.91	-2.26	6241
Target – Non-block	-0.46***	5.23	-8.14	8690	-0.18***	3.35	-4.96	8153

Panel B. First Few Months

First Month

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.07	2.81	-0.86	1095	-0.47**	16.8	-2.15	939
Target – Non-block	-0.54***	4.54	-4.32	1305	0.22	13.3	-1.47	1158

First three Months

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.12*	2.96	-1.71	1891	-0.43*	16.7	-1.93	1617
Target – Non-block	-0.58***	4.38	-6.32	2294	-0.21	13.3	-1.33	2041

Panel C. First 3 Months and Managers' Experience

Higher Number of Stocks in Industries of Activism Targets

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.07	2.90	-0.98	1567	-0.08	2.31	-1.21	1340
Target – Non-block	-0.61***	4.46	-5.94	1894	-0.18***	2.40	-3.11	1684

High Asset Weights in Industries of Activism Targets

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.07	2.91	-1.00	1547	-0.07	2.32	-1.18	1325
Target – Non-block	-0.60***	4.46	-5.80	1875	-0.18***	2.41	-2.98	1668

Table VII
Target Stock Liquidity around Intervention Announcement

This table examines target stock liquidity in the (-3 to +3) month window around intervention announcement month. For each target stock, we calculate its Amivest liquidity ratio and the square-root variant of that ratio as in Figure 1. We divide target stocks into terciles according to their weight in the activist hedge fund's overall equity portfolio in the intervention announcement month. Panels A and B show t-test results for the monthly difference in average stock liquidity between target holdings in the lowest portfolio weight tercile and those in the highest portfolio weight tercile in the (-3, +3) month window around the intervention announcement month. Panels C and D test for the change in average stock liquidity for the target holdings in the lowest portfolio weight tercile and those in the highest portfolio weight tercile, respectively, from one month before to the intervention announcement month and from the intervention announcement month to one month after. ***, **, and * denote 1%, 5% and 10% statistical significance, respectively.

Panel A. Amivest Liquidity Ratio (LR)

	(-3, +3) Month Window Around Intervention Announcement Month						
Portfolio Weight	-3	-2	-1	0	1	2	3
Low	932.6	753.3	900.5	1076.4	908.4	872.8	922.3
High	2429.2	2301.6	2294.3	2306.4	2235.1	2395.5	2361.6
Diff: High-Low	1496.6	1548.3	1393.8	1230	1326.7	1522.7	1439.3
t	5.16***	5.72***	4.99***	4.32***	4.81***	5.3***	4.96***

Panel B. Amivest Liquidity Ratio (squared-root variant, SRLR)

	(-3, +3) Month Window Around Intervention Announcement Month						
Portfolio Weight	-3	-2	-1	0	1	2	3
Low	17.15	16.41	17.12	18.95	17.66	16.92	17.00
High	31.99	31.32	31.62	32.00	30.88	31.53	31.36
Diff: High-Low	14.84	14.90	14.51	13.05	13.22	14.61	14.36
t	5.85***	6.07***	5.8***	5.13***	5.32***	5.67***	5.6***

Panel C. t-test: Low Portfolio Weight

	(-1, +1) Month Window Around Intervention Announcement Month						
				Btw -1 and 0		Btw 0 and 1	
	-1	0	1	Diff	t	Diff	t
LR	900.5	1076.4	908.4	175.9	0.78	-168.0	-0.76
SRLR	17.1	18.9	17.7	1.8	0.84	-1.3	-0.59

Panel D. t-test: High Portfolio Weight

	Event Time			Btw -1 and 0		Btw 0 and 1	
	-1	0	1	Diff	t	Diff	t
LR	2294.3	2306.4	2235.1	12.1	0.04	-71.3	-0.22
SRLR	31.6	32.0	30.9	0.4	0.13	-1.1	-0.4

Table VIII
Capital Flow and Investment in Targets

This table reports results from the regression analyses of the effect of capital flow on an activist hedge fund's allocation of its overall equity portfolio between target and non-target holdings. The dependent variable in each column measures the extent to which an activist hedge fund is invested in intervention targets. *Number of Targets* is the number of targets the activist hedge fund is holding. *Maintains Existing Targets* is a dummy variable that equals one if the activist hedge fund continues all existing interventions. *Average Target Stake* is the average percentage of target shares held by the activist hedge fund. *Portfolio Weight in Targets* is the weight of the activist hedge fund's overall equity portfolio in target holdings. The key explanatory variable are *Fund Flow* (Panel A), which is calculated as in Equation (3), following Sirri and Tufano (1998); *Fund Inflow* (Panel B), which equals max*(Fund flow, 0)*; and *Fund Outflow* (Panel C), which equals the absolute value of min*(Fund flow, 0)*. In all regressions, standard errors are clustered at the fund level. Parentheses enclose t-statistics, and ***, ** and * denote 1%, 5% and 10% statistical significance, respectively.

Panel A. Capital Flow and Investment in Targets

	Number of Targets	Maintains Existing Targets	Average Target Stake	Portfolio Weight in Targets
Fund Flow	0.855***	0.312***	1.426**	5.427***
	(3.035)	(6.747)	(1.991)	(2.820)
Family size	0.120	0.015	-0.150*	-0.243
	(1.204)	(0.934)	(-1.880)	(-0.871)
Family age	-0.023***	-0.008***	-0.054***	-0.061**
	(-4.864)	(-2.989)	(-2.828)	(-2.157)
No. of funds	0.012	0.000	0.077	0.050
	(0.317)	(0.017)	(0.973)	(0.387)
Fund FE	YES	YES	YES	YES
Adj. R^2	0.085	0.161	0.156	0.061
N	1138	1138	1138	1138

Panel B. Capital inflow and Investment in Targets

	Number of Targets	Maintains Existing Targets	Average Target Stake	Portfolio Weight in Targets
Inflow	2.165**	0.515***	1.237	10.394*
	(2.539)	(2.747)	(0.641)	(1.872)
Family size	0.129	0.019	-0.131	-0.180
	(1.335)	(1.212)	(-1.646)	(-0.667)
Family age	-0.022***	-0.008***	-0.056***	-0.060**
	(-4.832)	(-2.915)	(-2.777)	(-2.000)
No. of funds	0.013	0.000	0.078	0.055
	(0.346)	(0.034)	(0.973)	(0.423)
Fund FE	YES	YES	YES	YES
Adj. R^2	0.086	0.155	0.154	0.058
N	1138	1138	1138	1138

Panel C. Capital outflow and Investment in Targets				
	Number of Targets	Maintains Existing Targets	Average Target Stake	Portfolio Weight in Targets
Outflow	-0.719**	-0.331***	-1.786**	-5.391***
	(-2.506)	(-7.632)	(-2.191)	(-2.948)
Family size	0.124	0.016	-0.152*	-0.233
	(1.215)	(0.916)	(-1.907)	(-0.823)
Family age	-0.024***	-0.008***	-0.056***	-0.067**
	(-5.164)	(-3.107)	(-2.870)	(-2.351)
No. of funds	0.012	0.000	0.077	0.048
	(0.302)	(0.010)	(0.964)	(0.375)
Fund FE	YES	YES	YES	YES
Adj. R^2	0.080	0.159	0.156	0.059
N	1138	1138	1138	1138

Table IX
Time-series Analyses: Pre- versus Post-crisis

This table examines time-series variations in the return differences between an activist hedge fund's target holdings and its own non-target holdings. The sample period is split into two sub-periods, one before the recent financial crisis, from 1997 to 2007, and one after, from 2008 to 2012. Within each sub-period, we divide each activist hedge fund's equity holdings in each month into three groups: *Target*, which consists of target stocks; *Block*, which consists of block holdings of non-target stocks; and *Non-block*, which includes all other (that is, non-target and non-block) equity holdings. We then form an equal-weighted portfolio for each group and calculate the performance differences between the *Target* portfolio and each of the other two portfolios, respectively. Panel A presents the full sample results. Panel B presents the results for the first three months of intervention (see Table III's header). Panel C presents the results for the activist hedge fund's later targets (when it has had at least one intervention in the past). Panels D and E present the results for the activist hedge fund's targets belonging to industries in which an activist hedge fund is heavily invested in terms of, respectively, the number and portfolio weight of non-target holdings from those industries (see Table IV's header). ***, ** and * denote 1%, 5% and 10% statistical significance, respectively.

Panel A. Full Sample

	1997-2007							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.11	16.21	-0.42	4288	-0.12	16.51	-0.44	3859
Target – Non-block	0.01	12.29	0.07	5308	-0.16	12.26	-0.93	4950
	2008-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.36	16.91	-1.10	2626	-0.68*	17.16	-1.92	2382
Target – Non-block	0.31	15.09	1.19	3382	0.08	14.95	0.32	3203

Panel B. First Three Months of Intervention

	1997-2007							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	1.25***	16.59	2.76	1353	0.94**	15.78	2.01	1136
Target – Non-block	0.93***	14.52	2.60	1635	0.58	13.48	1.63	1428
	2008-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.82	18.09	-1.06	538	-1.36*	17.55	-1.70	481
Target – Non-block	-0.02	18.59	-0.03	659	-0.43	18.85	-0.57	613

Panel C. Later Targets

	1997-2007							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	1.56***	16.05	3.28	1139	1.24**	14.94	2.57	961
Target – Non-block	1.09***	14.67	2.71	1344	0.75*	13.44	1.91	1172
	2008-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.95	18.01	-1.14	471	-1.21	17.24	-1.44	422
Target – Non-block	-0.11	19.31	-0.13	568	-0.58	19.65	-0.68	529

Panel D. Above-median Number of Non-target Stocks belonging to Target Industries

	1997-2007							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	1.28**	17.88	2.41	1135	1.09**	17.02	1.97	946
Target – Non-block	1.07**	15.83	2.50	1363	0.72*	14.86	1.67	1182
	2008-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.03	18.14	0.03	432	-0.58	17.70	-0.65	394
Target – Non-block	1.10*	13.99	1.81	531	0.82	14.11	1.31	502

Panel E. Above-median Portfolio Weight of Non-target Stocks belonging to Target Industries

	1997-2007							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	1.27**	17.95	2.37	1123	1.08*	17.09	1.92	934
Target – Non-block	1.05**	15.86	2.44	1352	0.73*	14.91	1.67	1172
	2008-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.16	17.89	-0.18	424	-0.64	17.85	-0.71	391
Target – Non-block	1.03	13.97	1.69	523	0.78	14.10	1.23	496

Table X
Time-series Analyses: Asset-weighted Portfolios

This table examines time-series variations in the return differences between activism and non-activism holdings within the same activist hedge fund. The sample period is split into two sub-periods: 1997-2007 and 2008-2012. Within each period, we divide each activist hedge fund's equity holdings in each month into three groups: *Target*, which consists of target stocks; *Block*, which consists of block holdings of non-target stocks; and *Non-block*, which includes all other (or non-target and non-block) equity holdings. We then form an asset-weighted portfolio for each group and calculate the performance differences between the *Target* portfolio and the other two portfolios. Panel A presents the full sample results. Panel B presents the results for the first three months of intervention (see Table III's header). Panels C, D and E present the results for an activist hedge fund's later targets, targets from industries in which an activist hedge fund has more stocks invested, and targets from industries in which an activist hedge fund has more asset weight invested, respectively (see Table IV's header). ***, ** and * denote 1%, 5% and 10% statistical significance, respectively.

Panel A. Full Sample

	1997-2007							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.16***	3.06	-3.41	4288	-0.07*	2.47	-1.70	3859
Target – Non-block	-0.69***	4.62	-10.85	5308	-0.21***	3.10	-4.72	4950
	2008-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.12	4.23	-1.47	2626	-0.11	3.51	-1.51	2382
Target – Non-block	-0.09	6.04	-0.90	3382	-0.15**	3.72	-2.25	3203

Panel B. First Three Months of Intervention

	1997-2007							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.17**	2.51	-2.56	1353	-0.05	2.01	-0.84	1136
Target – Non-block	-0.84***	3.74	-9.04	1635	-0.18**	2.18	-3.19	1428
	2008-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.03	3.87	0.17	538	-0.19	3.26	-1.25	481
Target – Non-block	0.06	5.61	0.29	659	-0.17	2.92	-1.40	613

Panel C. Later Targets

1997-2007

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.17**	2.58	-2.25	1139	-0.07	2.06	-1.05	961
Target – Non-block	-0.79***	3.72	-7.76	1344	-0.19***	2.10	-3.03	1172

2008-2012

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.05	3.98	0.27	471	-0.15	3.36	-0.92	422
Target – Non-block	0.21	4.80	1.02	568	-0.16	2.88	-1.24	529

Panel D. Above-median Number of Non-target Stocks belonging to Target Industries

1997-2007

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.20***	2.40	-2.81	1135	-0.05	1.67	-0.90	946
Target – Non-block	-0.83***	3.83	-7.96	1363	-0.16***	2.17	-2.60	1182

2008-2012

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.26	3.90	1.41	432	-0.14	3.38	-0.84	394
Target – Non-block	-0.05	5.72	-0.20	531	-0.22*	2.87	-1.75	502

Panel E. Above-median Portfolio Weight of Non-target Stocks belonging to Target Industries

1997-2007

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.20***	2.41	-2.80	1123	-0.05	1.68	-0.86	934
Target – Non-block	-0.84***	3.84	-7.99	1352	-0.16**	2.17	-2.53	1172

2008-2012

	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.26	3.93	1.38	424	-0.14	3.39	-0.82	391
Target – Non-block	0.02	5.73	0.06	523	-0.21	2.88	-1.62	496

Table XI
An Activist Hedge Fund's Total Profits from its Equity Investments

This table reports the estimation results for the regressions in Equation (4). The dependent variable is fund family performance, which is calculated as the asset-weighted average return of all equity holdings. *Activism* is an indicator variable and equals one if activist hedge fund *i* has at least one ongoing intervention in month *t* and zero otherwise. The other explanatory variables are as defined in Table V. All regressions include fund fixed effects and year fixed effects, which are not reported here in the interest of space. Following Petersen (2009), we cluster standard errors at the fund level and at the year level. Parentheses enclose t-statistics, and ***, ** and * denote 1%, 5% and 10% statistical significance, respectively.

	Raw returns		Characteristic-adjusted returns	
	(1)	(2)	(3)	(4)
Activism	0.2923**	0.2506**	-0.0233	-0.0679
	(2.21)	(2.07)	(-0.31)	(-1.13)
First Month Dummy		0.3284		0.3520***
		(1.36)		(2.82)
Log Lagged Family Size	-0.7273***	-0.7274***	-0.3883***	-0.3885***
	(-4.74)	(-4.74)	(-3.37)	(-3.37)
Log Number of Stocks	1.3314***	1.3196***	0.6992***	0.6861***
	(3.87)	(3.85)	(2.82)	(2.79)
Log Number of Industries	-0.8677*	-0.8613*	-0.6713**	-0.6644**
	(-1.85)	(-1.84)	(-1.98)	(-1.96)
Year FE	Yes	Yes	Yes	Yes
Family FE	Yes	Yes	Yes	Yes
Adj. R^2	0.0833	0.0833	0.0205	0.0208
N	22826	22826	22804	22804

Appendix

Table A.I
Time-series Distribution of Activist Hedge Funds and Targets

This table shows the yearly number of activist hedge funds, total firms that have been targeted, and new firms that have been targeted targets over the 1997 to 2012 sample period. Note that our sample period stops in May of 2012 and therefore the numbers reported below for 2012 do not represent observations for the full calendar year.

Year	Number of Funds	Number of Targets	Number of New Targets
1997	31	111	69
1998	42	160	76
1999	39	146	51
2000	37	152	42
2001	33	127	37
2002	38	93	33
2003	44	129	44
2004	51	163	58
2005	78	222	104
2006	111	288	126
2007	140	353	156
2008	132	340	134
2009	95	242	52
2010	75	231	66
2011	76	233	71
2012	44	107	15

Table A.II
Time-series Portfolio Analyses: Alternative Sample Split

This table examines time-series variations in the return differences between an activist hedge fund's target holdings and its own non-target holdings. The sample period is split into two sub-periods with more comparable number observations: 1997-2005 and 2006-2012. Within each sub-period, we divide each activist hedge fund's equity holdings in each month into three groups: *Target*, which consists of target stocks; *Block*, which consists of block holdings of non-target stocks; and *Non-block*, which includes all other (that is, non-target and non-block) equity holdings. We then form an equal-weighted portfolio for each group and calculate the performance differences between the *Target* portfolio and each of the other two portfolios, respectively. Panel A presents the full sample results. Panel B presents the results for the first three months of intervention (see Table III's header). Panel C presents the results for the activist hedge fund's later targets (when it has had at least one intervention in the past). Panels D and E present the results for the activist hedge fund's targets belonging to industries in which an activist hedge fund is heavily invested in terms of, respectively, the number and portfolio weight of non-target holdings from those industries (see Table IV's header). ***, ** and * denote 1%, 5% and 10% statistical significance, respectively.

Panel A. Full Sample

	1997-2005							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.07	18.41	-0.19	2614	-0.06	18.74	-0.17	2359
Target – Non-block	0.43*	13.24	1.85	3219	0.05	13.15	0.23	3012
	2006-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	-0.28	15.19	-1.23	4300	-0.49*	15.44	-1.99	3882
Target – Non-block	-0.05	13.57	-0.27	5471	-0.14	13.51	-0.72	5141

Panel B. First Three Months of Intervention

	1997-2005							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	1.39**	17.67	2.22	800	1.03	16.39	1.61	650
Target – Non-block	1.09**	15.29	2.19	942	0.48	13.72	0.98	798
	2006-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.12	16.57	0.24	1091	-0.27	16.32	-0.51	967
Target – Non-block	0.36	16.14	0.81	1352	0.15	16.23	0.33	1243

Panel C. Later Targets								
	1997-2005							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	1.83***	16.69	2.87	683	1.45**	14.90	2.30	559
Target – Non-block	1.26**	15.46	2.27	781	0.63	13.61	1.20	659
	2006-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.08	16.64	0.15	927	-0.16	16.21	-0.28	824
Target – Non-block	0.37	16.68	0.74	1131	0.15	16.81	0.29	1042

Panel D. Above-median Number of Non-target Stocks belonging to Target Industries								
	1997-2005							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	1.52**	19.55	1.99	661	1.24	18.35	1.55	525
Target – Non-block	1.27**	17.03	2.08	781	0.63	15.60	1.04	652
	2006-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.51	16.69	0.92	906	0.18	16.47	0.31	815
Target – Non-block	0.94**	14.03	2.25	1113	0.83*	14.00	1.90	1032

Panel E. Above-median Portfolio Weight of Non-target Stocks belonging to Target Industries								
	1997-2005							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	1.48*	19.70	1.92	655	1.21	18.48	1.50	519
Target – Non-block	1.24**	17.12	2.02	775	0.66	15.73	1.07	647
	2006-2012							
	Raw return				*Characteristic-adjusted return*			
	Mean	SD	t	N	Mean	SD	t	N
Target – Block	0.44	16.53	0.79	892	0.16	16.55	0.27	806
Target – Non-block	0.91**	13.97	2.16	1100	0.80*	13.97	1.82	1021