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The Costs of Shareholder Activism: Evidence from a Sequential Decision Model*

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Abstract

This paper provides benchmarks for monitoring costs and evaluates the net returns to shareholder activism. I model activism as a sequential decision process consisting of demand negotiations, board representation, and proxy contest and estimate the costs of each activism stage. A campaign ending in a proxy fight has average costs of \$10.71 million. I find that the estimated monitoring costs reduce activist returns by more than two-thirds. The mean net activist return is close to zero but the top quartile of activists earns higher returns on their activist holdings than on their non-activist investments. The large-sample evidence presented in this paper aids in understanding the nature and evolution of activist engagements.

Keywords: Shareholder activism, Hedge funds, Institutional investors, Monitoring, Corporate Governance

JEL classification: G23, G32, G34

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1. Introduction

Does shareholder activism generate positive *net* returns for the activist? Answering this question will help us evaluate the potential for activism to mitigate agency costs due to the separation of ownership and control. Activist shareholders occupy an important ‘middle ground’ between internal governance by blockholders and the board of directors and external governance by the market for corporate control. As a result, the presence of an activist can be crucial for the proper functioning of a firm’s corporate governance system.

Several recent studies on hedge fund activism have shown that activists generate significant abnormal returns both in absolute terms and in comparison to non-activist investing.¹ Brav, Jiang, Partnoy, and Thomas (2008) report that the average hedge fund activist in 2001–2006 earned a 14.30% higher return than the size-adjusted value-weighted portfolio of stocks. Klein and Zur (2009) compare the hostile activist campaigns of hedge funds to those of other entrepreneurial activists, and find that the market reacts more favorably to hedge fund activism. Clifford (2008) demonstrates that hedge funds earn significantly higher holding period returns from activist investing than from their passive holdings. Becht, Franks, Mayer, and Rossi (2008) show that the activist investments of the U.K. Hermes Focus Fund significantly outperform the market.

Do these substantial returns cover the costs of executing an activist campaign? In addition to unobservable costs such as the time and effort of negotiating with a target, an activist bears disclosure, legal and other fees of hiring proxy advisors, corporate governance experts, investment banks, public relations, and advertising firms. The existing literature on shareholder activism lacks a reliable measure for these costs and ignores them in the calculation of activist returns. Consequently, prior work may have overestimated the returns generated by activism.

A shareholder’s incentives to actively monitor are determined by a trade-off between the private costs of monitoring, which are fully internalized by the activist, and the public benefits of monitoring, which are shared among all firm shareholders (Grossman and Hart, 1980; Shleifer and Vishny, 1986). The theoretical literature has emphasized the importance of monitoring costs in

¹Even though hedge funds have initiated the majority of activist campaigns since 2000, most hedge funds are non-activist. Kahan and Rock (2007, p. 1046) report estimates by J.P. Morgan that only 5% of hedge fund assets in 2006 were allocated to shareholder activism.

determining this incentive trade-off.² However, the empirical literature has faced some challenges in measuring the cost function of an activist shareholder.

The first challenge has been finding the right institutional setting to analyze an activist's incentive trade-off. Most earlier work focuses on pension funds, mutual funds, and labor unions and shows that these institutional monitors are severely restricted by regulatory rules and conflicts of interest.³ More recent studies of hedge fund activism (see Kahan and Rock, 2007; Gillan and Starks, 2007; Yermack, 2010) have contrasted hedge funds to other institutional activists. Hedge funds are arguably better positioned to be active monitors because they suffer from fewer conflicts of interest, face fewer regulatory restrictions, and have a better-aligned incentive structure.

A second challenge in measuring the costs of activism has been the lack of empirical data. Most evidence about monitoring costs is anecdotal and limited to proxy solicitations—the most public activist approach. Stephen M. Bainbridge of the University of California Los Angeles (UCLA) School of Law estimates the costs of a proxy contest at \$1.8 million based on a survey conducted in the late 1980s but points out that “costs almost certainly are much higher today.” Hedge fund activists estimate proxy costs at “upwards of \$10,000,000.”⁴ However, most activist campaigns rely on less confrontational approaches such as informal demand negotiations and board representation, whose costs are unobservable and cannot be estimated from public data.

This paper complements recent work on hedge fund activism by providing cost benchmarks for evaluating the *net* returns to activism. To account for the large heterogeneity of activist events, I estimate the costs associated with three common activist approaches: demand negotiations, board

²See Admati, Pfleiderer, and Zechner (1994), Kahn and Winton (1998), and Maug (1998) for theoretical models of the incentive trade-off of a monitor in terms of liquidity, risk aversion, or information acquisition. More recent theory work on activist monitoring includes Edmans and Manso (2011) and Cohn and Rajan (2011).

³Romano (2001), Kahan and Rock (2007), Davis and Kim (2007), and Cohen and Schmidt (2009) discuss regulatory constraints and incentive biases preventing mutual funds and pension funds from active monitoring. Del Guercio (1996) considers the prudent man laws in distorting the incentives of institutional monitors. Agrawal (2012) studies conflicts of interest in unions. Karpoff (2001), Gillan and Starks (2007), and Yermack (2010) conclude that institutional activism by pension funds, mutual funds, and unions has had limited impact on firm governance and performance.

⁴See Stephen M. Bainbridge (<http://www.sec.gov/rules/proposed/s71903/bainbridge121903.htm>); Ralph V. Whitworth (<http://www.sec.gov/comments/s7-10-09/s71009-185.pdf>); Carl Icahn (<http://dealbook.nytimes.com/2009/03/30/were-not-the-boss-of-aig/>).

representation, and proxy contest. I find that a campaign ending in a proxy fight has average costs of \$10.71 million. Subtracting costs reduces the mean abnormal activist return by two-thirds suggesting that costs play a major role in an activist's decision-making behavior.

The approach taken in this paper involves two interrelated parts. First, I model activism as a sequential decision process consisting of three consecutive stages of demand negotiations, board representation, and proxy contest, and define the activist's break-even constraint for monitoring for each stage. Then, I examine this trade-off condition in a discrete-choice framework and estimate the costs of activism implied by the observed decisions of hedge fund activists in 2000–2007.

The starting point of this paper is a novel definition of activism as a sequence of escalating decision steps, in which an activist chooses a more hostile tactic only after less confrontational approaches have failed. A typical campaign starts with the announcement of activist intentions (usually reported in a regulatory filing), followed by communication of specific demands to the target. Initial negotiations between the activist and the target are rarely successful. The activist may choose to terminate his campaign after failed negotiations, or pursue a more direct approach by requesting a board seat. In most instances, the activist is denied board representation, in which case he has the option to solicit input from other shareholders, and eventually wage a proxy fight.

The activist's decision problem is modeled as a basic trade-off between the expected benefit from campaign continuation with a specific approach and the expected cost of activist involvement. This decision can be described by the activist's break-even profit constraint for monitoring and consists of two steps. First, the activist estimates a net continuation benefit by comparing his expected reward from the campaign to the cost of intervening with a particular tactic. Then, he compares this net benefit to the market value of his current ownership stake. The activist's continuation decision defines a minimum cost threshold, at which he is indifferent between continuation and exit.

I study the activist's break-even condition as a discrete-choice problem under the assumptions of random utility theory. The activist's decision is summarized by the expected gross return in a successful campaign, which relies on an estimate of its benefit, and the activist's marked-to-market investment in the target, which captures the opportunity cost of the campaign. The expected reward in a successful intervention equals the target's potential value if the activist's demands are

successfully implemented. Empirically, I estimate the potential benefit from an activist engagement based on the difference in Q ratios between the target and a matched peer, and calibrate it to the actual valuation improvement in successful activist events.

The estimation procedure consists of a backward sequence of conditional logistic regressions corresponding to the activist’s break-even constraints for each stage of a campaign. These profit conditions also provide the structural parameters required for identification of the absolute magnitude of monitoring costs and estimation of net returns.

The main contribution of this paper is providing cost benchmarks to assess the *net* returns to activism. I separately estimate the costs of three common activist approaches—demand negotiations, board representation, and proxy contest. The proxy contest stage has the highest cost, equal to \$5.94 million for the average campaign during 2000–2007. The demand negotiations stage is the second most expensive stage of the activist process, with average costs of \$2.94 million. The least expensive tactic is board representation, which adds \$1.83 million to the cost of the average campaign. These estimates represent a first attempt in the literature to quantify the costs of these common activist tactics.

I calculate net abnormal activist returns in excess of the value-weighted portfolio of stocks (VW returns) and in excess of characteristic portfolios based on size, market-to-book, and stock return momentum (DGTW returns).⁵ The mean annualized VW abnormal return is 4.02% while the mean DGTW abnormal return is 7.61%. Costs consume more than two-thirds of gross activist returns. The mean VW abnormal return drops to 0.23% while the mean DGTW abnormal return becomes 2.38% after subtracting costs. The results suggest that the top quartile of activists earns higher returns on their activist holdings than on their non-activist portfolios.

Another contribution of this paper is the introduction of a large hand-collected data set of hedge fund activist campaigns between 2000 and 2007. This data set contains detailed information about the negotiation tactics employed by activists in 1,164 distinct campaigns summarized in 5,645 individual filings by 171 hedge funds and 1,023 unique targets. In addition to data from regulatory filings, the sample includes activist events reported in the business press as described in Brav et al.

⁵The calculation of characteristic-based returns follows the approach in Daniel, Grinblatt, Titman, and Wermers (1997).

(2008).⁶

The comprehensive data set used in this paper provides new large-sample evidence, which aids in understanding the nature and evolution of activist engagements. I document that more than two-thirds of activists quit before making formal demands to their targets. From the sample of activists who announce specific demands, less than 20% proceed to request a board seat and only 10–12% threaten a proxy contest. Only 7% of activist campaigns end up in a proxy fight.

Activists are most successful when demanding a sale (or privatization) of a target, restructuring of inefficient operations, and additional disclosure, but less successful when asking for higher dividends (or repurchases), Chief Executive Officer (CEO) removal, or executive compensation changes. In terms of the implementation of their demands, 29.17% of activists achieve their objectives. In terms of holding period returns, only the top quartile of activists earns returns higher than the returns on their non-activist holdings.

I also show that more confrontational activist tactics have higher success rates. The most successful activist stage is the proxy contest, in which 57.38% of activists achieve their objectives. Board representation is effective in 39.33% of the cases while demand negotiations are successful in only 6.76% of the campaigns. Even though proxy contests are successful in the majority of activist events, only 7% of campaigns reach the proxy stage suggesting that the high costs of proxy solicitations deter some activists from pursuing their investment objectives. The evidence in this paper provides support for the recently failed effort by the U.S. Securities and Exchange Commission (SEC) to reduce the costs of using the proxy process (often referred to as ‘proxy access’).

The rest of the paper proceeds as follows. Section 2 presents a new definition of activism as a sequential decision process and models the activist’s break-even profit constraint. Section 3 discusses the empirical design, identification, and estimation of target valuations. Section 4 describes the activist sample. Section 5 reports the main empirical results and Section 6 presents robustness analysis. Section 7 concludes.

⁶Schedule 13D and proxy statements are the main data sources in this study. Schedule 13D is filed by any investor who acquires more than 5% of the voting stock of a public company with the intention of influencing its operations or management. See Appendix A for a detailed description of this filing.

2. Model framework

2.1. Activism as a sequential process

Gillan and Starks (2007, p. 55) define shareholder activists as “investors who, dissatisfied with some aspect of a company’s management or operations, try to bring about change within the company without a change in control.” Tirole (2006, p. 27) provides the following definition: “Active monitoring consists in interfering with management in order to increase the value of the investors’ claims.” Both definitions comprise “a continuum of possible responses to corporate performance and activities” but do not consider activism as a decision process consisting of a sequential set of tactics.

Contrast these broad definitions to the way in which activists describe the monitoring process as a sequence of escalating decision steps.⁷ Appaloosa Management writes to Beverly Enterprises: “Although we continue to prefer *pursuing a negotiated transaction* with the Company, your actions have left us no choice but to *nominate a slate of directors* for election at your upcoming annual meeting. [...] Our nominees, if elected, will, subject to their fiduciary duties, be committed to going forward with a process that would give due consideration to our offer as well as any other proposals the Company may receive.”⁸

Another example comes from a letter by Seymour Holtzman of Jewelcor Management to the Chairman of Thistle Group, “My reason for *proposing a slate of Directors* is for the purpose of hiring an investment banker to seek out an attractive merger partner who would be willing to pay a significant premium for our stock. [...] Moreover, if you were to assure the shareholders of your willingness to do this, I would give serious consideration to withdrawing my proposed slate of Directors. I know that you and your family are larger shareholders and I hope you will act in the best interest of all of the shareholders, so the Company will not have to waste time and money in a *proxy contest*.”⁹

The above anecdotal statements underscore two common patterns in the data. First, activists consider a range of tactics in their discussions with a target—demand negotiations, board represen-

⁷See also Appendix B describing Carl Icahn’s campaign at Time Warner Inc.

⁸Full letter available at http://www.sec.gov/Archives/edgar/data/1006438/000089534505000135/exhi99_10.txt.

⁹Full letter available at <http://www.sec.gov/Archives/edgar/data/1056590/000105659002000009/exhibitc.txt>.

tation, and proxy threat/fight. Second, these tactics form an escalating sequence from less hostile to more confrontational. An activist chooses a more hostile tactic only after less confrontational approaches have failed to produce results.

A typical campaign starts with the announcement of activist intentions, usually reported in Schedule 13D. This regulatory form (also known as a “beneficial ownership report”) must be filed with the SEC by anyone who acquires more than 5% of the voting stock of a public company with the intention of influencing its operations or management.¹⁰ The majority of initial 13D filers terminate their campaigns without announcing demands. These hedge funds may have filed Schedule 13D for legal reasons or in anticipation of an activist engagement but decided against it. This sample of activists is instrumental in estimating the costs of the first stage of the activist process (demand negotiations).

Insert Figure 1

Shortly after the initial filing of Schedule 13D, the activist formally communicates a set of specific demands (such as a sale of the company, restructuring of inefficient operations, additional share repurchases, etc.) to the management of the target. The formal announcement of activist demands marks the beginning of the first stage of the activist process—demand negotiations. This first stage is rarely successful despite its high costs in terms of the activist’s time and effort. Upon failure of initial demand negotiations, the activist may choose to terminate the campaign, or request board representation, which allows for a more direct interaction with the target’s management. This second stage of the activist process starts with an official request for board representation, most often accomplished by a nomination notice, a shareholder proposal, or a publicly filed letter. Board representation has a higher success rate than demand negotiations but increases the overall costs of a campaign. As a result, only one-fifth of initial 13D filers request a board seat.

If the activist does not obtain board representation, he may start soliciting input from other shareholders by filing a preliminary proxy statement (stage 3), and eventually wage a proxy fight (stage 4). The proxy contest stage has the highest success rate in terms of implementing the

¹⁰In addition to data from regulatory filings, the sample includes nonpublic activist campaigns (i.e., events below the filing threshold of 5%) reported in the press, as described in Brav et al. (2008).

activist’s demands but is also the most costly. As a result, less than one-tenth of the original 13D filers initiate proxy contests.

Defined in this way, the activist process evolves from private to more public forms of engagement. There is some anecdotal evidence describing the legal and disclosure costs of the proxy contest stage. However, most of the costs of the demand negotiations and board representation stages are unobservable and cannot be estimated from publicly available information.

2.2. The activist’s decision problem

Ralph V. Whitworth of Relational Investors describes their decision whether to initiate a proxy contest as follows: “Although the credible ability to initiate a proxy contest under the existing rules has been effective for Relational in many cases, in others, costs and procedural burdens resulted in our electing not to use the process even though we were convinced that improved board composition would create value for all shareholders. In the latter set of cases, the projects are often abandoned or not taken in the first instance.”¹¹

The above statement describes the decision problem of an activist as a basic trade-off between the expected benefit from an activist intervention (with a specific tactic) and the expected cost of the engagement. The activist’s choice set, denoted below by $n \in \{0, 1, 2, 3\}$, corresponds to commonly observed activist tactics, as described in the sequential definition of activism. Specifically, 0 = activist intentions but no specific demands, 1 = demand negotiations, 2 = board representation, 3 = (threatened) proxy contest. The activist selects more confrontational tactics only if less hostile approaches fail to convince the target to implement the proposed demands. Intuitively, more aggressive tactics have a higher probability of success but increase the overall cost of a campaign.

The activist’s break-even profit constraint for monitoring compares the expected benefit from campaign continuation against its costs. The expected benefit in a successful campaign is based on an estimate of the target’s maximum potential value, which equals its valuation if the activist’s demands are successfully executed. This continuation value corresponds to the difference between the target’s fundamental value, V_i , and its current market value, M_i , and is a sufficient statistic for

¹¹Letter from Ralph V. Whitworth, Principal of Relational Investors LLC, to the SEC, August 14, 2009 (<http://www.sec.gov/comments/s7-10-09/s71009-185.pdf>).

the profitability of the campaign. In the empirical analysis, the continuation benefit is measured by the difference in Q ratios between the target and a matched peer and is robust to a variety of definitions and estimation procedures.

The costs of an activist campaign include disclosure, legal and other fees of hiring proxy advisors and solicitors, corporate governance experts, investment banks, public relations and advertising firms, in addition to unobservable costs such as the time and effort of the activist. This study assumes that costs vary with the choice of tactic but are independent of campaign characteristics, i.e., the costs of each stage are fixed across activists. The empirical analysis relaxes this assumption by including activist fixed effects such as experience, preference for confrontation, and ‘busyness’ in the estimation of costs.

The activist’s decision involves two consecutive steps. First, he estimates a net continuation benefit by comparing his expected return from campaign continuation to the cost of intervening with a particular tactic. Then, he compares this net benefit to the current market value of his ownership stake, which reflects the market’s perception of the target’s value improvement so far.¹² A binding break-even profit constraint defines a minimum cost threshold associated with the stage, at which the activist terminates the campaign. Using the exit decisions of activists in the sample period, I am able to derive a sequence of cost thresholds implied by the investors’ observed decision-making behavior.

Consider the activist’s decision at stage n . Upon failure of this stage, he has to decide whether to sell at the current market valuation, M_{in} , or continue with a more confrontational tactic ($n + 1$), which has a higher probability of success but will increase the cost of the campaign. At stage ($n + 1$), the activist eliminates the target’s discount from fundamental value with some probability, $p_{i,n+1}$, or fails with a complementary probability. In the latter case, he is faced with a similar choice between continuation and exit.¹³

¹²Note also that an unsuccessful exit by an activist is typically penalized by the market. Brav et al. (2008) show that the market reacts very negatively to hedge fund exits in failed campaigns resulting in negative abnormal returns of -4% in the (-20, +20) window around exit.

¹³The model assumes that each stage of the activist process has a fixed duration, which allows me to replace the time subscript t with the stage subscript n in the rest of this section. See the empirical analysis for evidence supporting this assumption.

The activist's problem can be summarized by the expected utility of each alternative. The activist compares his utility from continuation, U_{in}^{cont} , to the utility from selling at the current market valuation, U_{in}^{exit} :

$$\begin{aligned} U_{in}^{cont} &= -c_{n+1} + p_{i,n+1}E(\pi_{i,n+1}V_{i,n+1}) + (1 - p_{i,n+1})E[\max\{\pi_{i,n+1}M_{i,n+1}, U_{i,n+1}^{cont}\}] \\ U_{in}^{exit} &= \pi_{in}M_{in}. \end{aligned} \quad (1)$$

Here, π_{in} denotes the current activist ownership, and c_{n+1} is the cost of stage $n + 1$.¹⁴ $U_{i,n+1}^{cont}$ is the utility from continuation to the subsequent stage, if applicable. The activist's break-even constraint can be written as:

$$U_{in}^{cont} = U_{in}^{exit} \iff \tilde{U}_{in} = U_{in}^{cont} - U_{in}^{exit} = 0. \quad (2)$$

For example, consider the activist's choice at the last decision stage—the decision node before the proxy contest stage. The activist compares his utility from the two available alternatives—continue to a proxy fight, U_{i2}^{cont} , or sell at the current market price, U_{i2}^{exit} , as follows:

$$\begin{aligned} U_{i2}^{cont} &= -c_3 + p_{i3}\pi_i V_{i3} + (1 - p_{i3})\pi_i M_{i3} \\ U_{i2}^{exit} &= \pi_i M_{i2}. \end{aligned} \quad (3)$$

The activist continues to the proxy stage if

$$\begin{aligned} \tilde{U}_{i2} &= -c_3 + p_{i3}\pi_i V_{i3} + (1 - p_{i3})\pi_i M_{i3} - \pi_i M_{i2} \geq 0 \\ \tilde{U}_{i2} &= \left(-\frac{c_3}{p_{i3}}\right)\left(\frac{1}{\pi_i M_{i3}}\right) + \left(\frac{V_{i3}}{M_{i3}}\right) - 1 \geq 0. \end{aligned} \quad (4)$$

The above transformation summarizes the activist's decision by two explanatory variables: the expected gross return from a successful campaign, $\left(\frac{V_i}{M_i}\right)$ (continuation decision), and the current value of the investment in the target, $\left(\frac{1}{\pi_i M_i}\right)$ (exit decision). The break-even condition assumes that the activist's best estimate of his continuation reward equals the target's current gap from potential firm value, i.e., the activist does not time the market. This assumption is reasonable if we believe that any attempt by the activist to manipulate the market's perception of his success will result in an immediate negative correction of the target's price to its current value.

¹⁴The empirical evidence in Section 5 supports the modeling assumption that the activist would not use ownership strategically to exert more pressure on the target. Hence, I drop the stage subscript for π .

More generally, the activist's stage-specific break-even constraint is

$$\tilde{U}_{in} = \chi_{n+1} \left(\frac{1}{\pi_i M_i} \right) + \left(\frac{V_i}{M_i} \right) - 1 = 0, \quad (5)$$

where

$$\begin{aligned} \chi_3 &= -\frac{c_3}{p_{i3}} \\ \chi_2 &= \max \left\{ \frac{-c_2 - (1 - p_{i2})c_3}{p_{i2} + p_{i3} - p_{i2}p_{i3}}, \frac{-c_2}{p_{i2}} \right\} \\ \chi_1 &= \max \left\{ \frac{-c_1 - (1 - p_{i1})c_2 - (1 - p_{i1})(1 - p_{i2})c_3}{p_{i1} + p_{i2} + p_{i3} - p_{i1}p_{i2} - p_{i1}p_{i3} - p_{i2}p_{i3} + p_{i1}p_{i2}p_{i3}}, \frac{-c_1 - (1 - p_{i1})c_2}{p_{i1} + p_{i2} - p_{i1}p_{i2}}, \frac{-c_1}{p_{i1}} \right\}. \end{aligned} \quad (6)$$

The next section rewrites the activist's stage-specific break-even condition into a discrete-choice model by adding an error structure, which reflects our imperfect knowledge of the utility from each decision alternative. This allows estimation of activist costs without imposing additional assumptions about the parameter distributions.

3. Econometric design

3.1. Random utility specification

The activist's break-even constraint for monitoring can be studied in a regression framework under the general assumptions of random utility theory. This step transforms the activist's decision into a discrete-choice problem, in which his choice between continuation and exit at each stage is summarized by the utility of each alternative.¹⁵

The activist knows the utility of campaign continuation (denoted by U_{in}^*) as well as the utility of exit ($U_{in'}^*$). The econometrician estimates the activist's representative utility, U_{in} and $U_{in'}$, respectively, based on some observable characteristics of each alternative such as the expected gross return of a successful campaign and the present value of the investment in the target. These estimates differ from the activist's true utility by an error term, which captures unobservable factors that vary among activists with the same representative utility such as preference for (or experience

¹⁵See Eckstein and Wolpin (1989) and Train (2003) for surveys of the literature on discrete-choice models.

with) a specific tactic.

$$U_{in}^* = U_{in} + \varepsilon_{in} \quad (7)$$

$$U_{in'}^* = U_{in'} + \varepsilon_{in'}.$$

Assuming an exogenous sample of activists whose decisions are independent, we write the probability of activist i choosing alternative n as the following expression:

$$\begin{aligned} \Pr \{U_{in}^* > U_{in'}^*\} &= \Pr \{U_{in} + \varepsilon_{in} > U_{in'} + \varepsilon_{in'}\} = \Pr \{\varepsilon_{in'} - \varepsilon_{in} < U_{in} - U_{in'}\} \\ &= \int_{\varepsilon} I \{\varepsilon_{in'} < \varepsilon_{in} + U_{in} - U_{in'}\} f(\varepsilon) d\varepsilon, \end{aligned} \quad (8)$$

where I is an indicator function equal to one when the expression in the parentheses is correct.

Assuming independent and identically distributed (i.i.d.) Type I extreme value errors results in the logit formulation, which simplifies Eq. (8) further.

$$\begin{aligned} \Pr \{U_{in}^* > U_{in'}^* | \varepsilon_{in}\}_{i \neq j} &= \prod_{i \neq j} \exp(-\exp(-(\varepsilon_{in} + U_{in} - U_{in'}))) \\ \Pr \{U_{in}^* > U_{in'}^*\}_{i \neq j} &= \int \left(\prod_{i \neq j} \exp(-\exp(-(\varepsilon_{in} + U_{in} - U_{in'}))) \right) \exp(-\varepsilon_{in}) \exp(-\exp(-\varepsilon_{in})) d\varepsilon_{in}. \end{aligned} \quad (9)$$

Using the fact that the difference between two extreme values is distributed logistically, the above expression takes the following closed form for a binary choice:

$$\Pr \{U_{in}^* > U_{in'}^*\} = \frac{\exp(U_{in})}{1 + \exp(U_{in})}. \quad (10)$$

We derive the standard logistic regression model by assuming a linear probability specification:

$$\begin{aligned} \Pr \{U_{in}^* > U_{in'}^*\} &= \frac{\exp(\mathbf{x}'\beta)}{1 + \exp(\mathbf{x}'\beta)} \\ \frac{\Pr \{U_{in}^* > U_{in'}^*\}}{\Pr \{U_{in}^* \leq U_{in'}^*\}} &= \exp(\mathbf{x}'\beta) \\ \log \left(\frac{\Pr \{U_{in}^* > U_{in'}^*\}}{\Pr \{U_{in}^* \leq U_{in'}^*\}} \right) &= \mathbf{x}'\beta. \end{aligned} \quad (11)$$

As a result, the activist's *stage-specific* break-even constraint can be rewritten into a regression equation, which takes an analogous form for each stage:

$$\log \left(\frac{\text{continue}}{\text{exit}} \right) = \hat{\beta}_{1n} \left(\frac{1}{\pi_{in} M_{in}} \right) + \hat{\beta}_{2n} \left(\frac{V_{in}}{M_{in}} \right). \quad (12)$$

Activist costs are estimated using the above regression equation for each stage of activism. The first coefficient in each regression estimates relative stage costs. The second coefficient identifies a stage-specific parameter, which is required to find the absolute magnitude of each cost threshold (as described next).

3.2. Identification

Monitoring costs are estimated using the activist’s break-even profit condition (as defined in Eq. (12)). The empirical procedure consists of two simultaneous parts—a system of conditional logistic regressions, which separately derives the costs of each stage, and statistical backward induction, which uses the estimated costs of later stages in the calculation of the costs of the earlier stages of activism.¹⁶ That is, the activist’s decision problem is estimated equation by equation following a recursive system of substitutions.

Each logistic regression corresponds to a stage-specific break-even profit constraint and uses the conditional sample of activists who have reached the current decision step and are choosing whether to continue to the next stage.¹⁷ The starting point of the estimation is the last decision stage, where the activist chooses whether to initiate a proxy contest.¹⁸ The activist’s break-even profit constraint (Eq. (4)) defines a minimum cost threshold associated with the continuation to a proxy. Then, the estimated costs of the proxy stage are used as inputs in the calculation of the costs of board representation and demand negotiations.

A significant advantage of the chosen empirical design versus other structural methods is that costs can be estimated without imposing any additional assumptions on the parameter distributions. The first coefficient estimate, $\hat{\beta}_{1n}$, in each logistic regression determines (up to scale) stage-specific costs. $\hat{\beta}_{1n}$ can be given the following general interpretation:

$$\hat{\beta}_{1n} = \hat{\chi}_n = \frac{\text{stage cost function}}{\text{stage continuation probability}}. \quad (13)$$

¹⁶See Bas, Signorino, and Walker (2008) for a discussion of statistical backward induction.

¹⁷This technique is qualitatively similar to using a sequential response model, a limiting case of the nested logit model, in which the probability of making a transition from stage n of the activist process to stage $n+1$ is conditional on having reached n .

¹⁸The estimation sample includes only failed activist campaigns, i.e., campaigns in which the activist faces the decision whether to continue or exit at a specific stage in the process.

The first regression coefficient determines *relative* stage costs but does not identify the *absolute* magnitudes of these costs. This is due to the underidentification of the logistic regression model, i.e., its estimation imposes an arbitrary restriction on the variance of the random error term.¹⁹ This is equivalent to normalizing the scale of utility, or scaling each regression coefficient by $1/\sigma_{\varepsilon_{in}^*}$ (see Train, 2003), i.e.,

$$\hat{\beta}_{in} = \frac{1}{\sigma_{\varepsilon_{in}^*}} \iff \sigma_{\varepsilon_{in}^*} = \frac{1}{\hat{\beta}_{in}}. \quad (14)$$

Most empirical studies using logistic estimation are interested in the relative magnitudes of the regression coefficients and are not affected by this underidentification problem. However, we cannot determine the absolute magnitudes of monitoring costs without an exogenous identification restriction that fixes $\sigma_{\varepsilon_{in}^*}$. Based on the activist’s break-even profit condition (defined in Eqs. (5) and (6)), I constrain the coefficient on the second explanatory variable to one and free an additional degree of freedom to estimate absolute stage costs. This restriction fixes the scale of utility at each stage and pins down the absolute magnitude of stage costs.

The stage-specific scale parameters control for unobserved heterogeneity in the activist sample and lead to more precise cost estimates. Intuitively, we expect the scale parameters to become smaller with every consecutive stage because the activists employing more confrontational tactics are more homogeneous. The results in Table 7 confirm that the proxy contest has the lowest scale parameter while the negotiations stage has the highest scale parameter.

3.3. Target valuation and campaign return

The activist’s choice between campaign continuation and exit is described by two explanatory variables—the expected gross return from a successful intervention, $\left(\frac{V_i}{M_i}\right)$, and the current value of the activist’s investment in the target firm, $\left(\frac{1}{\pi_i M_i}\right)$. A crucial step of the empirical design is finding V_i , a target’s fundamental (or ‘frontier’) valuation. The modeling setup in this paper assumes that a target will achieve its maximum potential value if the campaign’s demands are successfully implemented.

¹⁹Typically, it is assumed that the random utility component is distributed Type I extreme value with variance $\pi^2/6$.

The fundamental value of a firm is unobservable and has to be estimated. The right measure needs to reflect the potential for value improvement as a result of an activist intervention. Generally, a firm's valuation may diverge from its potential value due to both operational inefficiencies (such as an outdated plant) and agency issues (for example, poor management). Both of these problems can be alleviated by effective active monitoring.

Valuation metrics based on a target's current market value are inappropriate because they may be confounded by market expectations and/or fail to fully reflect the potential value improvement from activism. Using market price reactions as a measure of activist reward will generally underestimate the expected benefits from successful activism [see Brav et al. (2008) for a discussion]. Consequently, I estimate a target's maximum value as the valuation of a matched peer with similar fundamentals. To produce a valid measure of a target's valuation improvement due to activism, the chosen valuation metric needs to satisfy three important conditions.

First, any suitable estimate of 'frontier' value needs to measure a target's fundamental valuation along dimensions, which are independent of the activist's intervention. This prescribes the use of firm-level characteristics that are likely to remain unaffected by the activist's demands. Following Edmans, Goldstein, and Jiang (2012), I match targets to other Center for Research in Security Prices (CRSP)/Compustat firms based on size (defined as the log of sales), asset turnover (sales over total assets), market share (sales divided by total industry sales), growth (average sales growth during the past two years), and R&D ratio (research and development expense divided by sales).

Second, the estimation of potential value needs to allow for 'noise' due to luck, misvaluation, or idiosyncratic factors. In the presence of noise, a target and its matched peer(s) are unlikely to achieve identical market valuations even if an activist successfully corrects the former's operational and agency problems. Consequently, the calculation of fundamental value assumes that an activist can improve a target's valuation to that of the best performing peer in the same value tercile as the target. This conservative approach limits a target's potential value improvement and biases the estimated costs of activism downward.

Third, the definition of fundamental value needs to properly reflect the potential for value improvement in a successful campaign. I calibrate a parameter in the quantile regression to the median value improvement achieved by successful activists, which is calculated as 35.38% based

on the sample of successful campaigns in 2000–2007. As a result, the estimation of a target’s fundamental value is consistent by construction with the returns of successful activists.

The estimation of fundamental values starts by dividing all CRSP/Compustat firms in a given year into terciles based on sales, asset turnover, market share, growth, and R&D ratio. Then, I calculate a target’s maximum potential value by using a censored quantile regression of the target’s Q ratio on the tercile ranks of each of the five characteristics. The censored least absolute deviations estimator of Powell (1984) is an extension of the original approach of Koenker and Bassett (1978) and is robust to heteroskedasticity.

A firm’s Q ratio is defined as market equity plus total debt plus preferred stock plus deferred taxes and investment credit divided by total assets (as in Lemmon, Roberts, and Zender, 2008). The estimation of maximum value is robust to alternative Q definitions, such as the one in Hennessy, Levy, and Whited (2007) who define Q as total assets plus market equity less book equity less balance sheet deferred taxes divided by total assets. The Q ratio is a suitable measure for the activist’s reward from a successful campaign because it reflects both the probability of being targeted and the potential for improvement in undervalued companies.²⁰

In an alternative specification, I use a target’s industry affiliation as the only determinant of its ‘frontier’ value. This approach borrows from the takeover literature, which frequently uses industry analysis to evaluate potential takeover targets (known as the “comparable company” method). I assume that an activist can improve a target’s value to that of the best performing industry peer in the same value tercile as the target. In particular, I divide all CRSP/Compustat firms in the sample period into terciles based on their Q ratios. Then, I assume that a target’s maximum potential value equals the value of the best performing three-digit Standard Industrial Classification (SIC) industry peer within the same value tercile. Both explanatory variables retain their statistical and economic significance under this alternative specification (as reported in Table 9).

²⁰Brav et al. (2008, p. 1754) demonstrate that “a one standard deviation decrease in Q is associated with a 0.49 percentage point increase in the probability of being targeted, other things being equal.”

4. Campaign data

4.1. Sample construction

I use data from SEC Schedule 13D, preliminary and definitive proxy statements, and SharkRepellent.net to construct a comprehensive data set of hedge fund activist campaigns between 2000 and 2007. My focus is on the negotiation tactics used during each campaign. I also collect information about each activist’s investment intent and demands, the specifics of his communication with the target, the firm’s response, and the outcome of each demand.

Schedule 13D must be filed by any person or group that acquires more than 5% of the voting stock of a public company with the intention of influencing its operations or management. More importantly, the SEC requires an amended filing within ten days of any material change in the amount or intent of ownership, which allows me to track the evolution of each campaign through its stages. Appendix A provides a detailed description of SEC Schedule 13D.

A major challenge in the data collection is consistently identifying activist hedge funds. I follow a multi-step procedure. First, I start with a list of important 13D filings reported by Dow Jones Newswires in the period between 2000 and 2007. The list contains approximately 5,000 filings but about 15% of them are not by hedge funds. The next step is to verify the identity of the filers. I use at least two of the following sources: FT.com’s 100 Hedge Funds to Watch (April 27, 2007), Institutional Investor’s Alpha Magazine Hedge Fund 100 (2002–2008), Infovest21’s 714 Hedge Fund Managers Register (February 1, 2006), and a list of hedge fund activists provided by Robin Greenwood (see Greenwood and Schor, 2009). I supplement the sample by searching Factiva for the following text strings: “filer name and hedge fund,” “filer name and 13D,” “filer name and activism.” I also use Internet searches for Web sites and articles about the 13D filers. This step yields approximately 200 hedge funds and managers, which I group into 129 hedge fund families.

Then, I download from SEC.gov all 13D filings and their amendments for the final list of hedge funds. I collect the following data points: the filing and event dates; the identity and Central Index Key (CIK) of the fund; whether the activist files a 13F report with the SEC; the target’s name, CIK, CUSIP, and SIC code; the percentage owned by the activist; the list of demands; the target’s reaction, and the outcome of each demand.

Item 4 of Schedule 13D provides details about the purpose of each transaction. This section requires disclosure of any specific plans or proposals with respect to the company such as an acquisition, a reorganization, a change in capital structure, dividend policy, board of directors, bylaws, etc. I group demands in five categories—corporate governance, strategic alternatives, corporate structure, opposition to a proposed transaction, and general undervaluation. Activists who choose the last category without making subsequent demands could be considered passive investors.

I supplement the sample with data from two additional sources. It is common for an activist to threaten a proxy fight without actually filing proxy materials with the SEC. For example, an activist may file a so-called preliminary proxy statement soliciting materials from shareholders as a ‘scare tactic’ to induce cooperation by a target. To differentiate between a proxy threat and a proxy fight, I collect all preliminary (PREC 14A and PREN 14A) and definitive (DFAN 14A and DEFN 14A) proxy filings from SEC.gov. I also use additional outcome data from SharkRepellent.net for the campaigns whose final outcome is not reported in their Schedule 13D.

To account for activist engagements with no Schedule 13D filings (i.e., events below the 5% filing threshold), I incorporate the nonpublic activist campaigns used in Brav et al. (2008). Data on these campaigns were collected “through news searches . . . plus a general search using various combinations of ‘hedge fund’ and ‘activism’ as key words” (p. 1738). Of the 25 events, one was already included in the original sample, two had insufficient press coverage, and one involved preferred shares and non-activist intentions.

For the remaining 21 campaigns, I perform Factiva searches in order to collect information necessary to fit these events in the sequential definition of activism—tactics and their announcement dates, demands, and outcomes. Of the 21 events, nine exit after demand negotiations (three successes), four exit after board representation (all successful), and eight after proxy contest (three successes).²¹ The inclusion of these nonpublic activist events does not affect the cost estimates reported in this paper.

After excluding Real Estate Investment Trusts (REITs; SIC 6798), bankrupt companies, blank

²¹Note that these events represent a nonrandom sample of campaigns below the 5% filing threshold because they involve large and newsworthy targets with above-average press coverage.

check entities (SIC 6770), trusts (6792), American Depository Receipts (ADRs), and events whose start is before 2000, my final sample consists of 1,164 distinct campaigns described in 5,645 individual filings involving 171 hedge funds and 1,023 unique targets.

4.2. Summary of activist events

Defining activism as a sequential process allows for a more detailed description of its evolution than previous academic studies. Hedge fund activists achieve different levels of success with the various tactics they employ and do not seem to use ownership strategically to affect campaign outcomes. Common demands consist of major operational or capital structure changes and frequently involve consideration of strategic alternatives. Activists are becoming more confrontational and are not afraid to go to a proxy fight or even bid for a target if its management refuses to listen to their demands. These observations add to the empirical evidence on what makes hedge funds more successful monitors than other types of institutional activists.

Table 1, Panel A, presents the distribution of hedge fund activist campaigns by year.²² The number of activist events increased more than three times from 135 in 2001 to 565 in 2007, significantly outpacing the growth of hedge fund assets under management during the same period. More importantly, there was a substantial shift in the activists' preferred tactics from informal negotiations to more confrontational (and public) approaches. Hedge fund activists requested board representation in 16.81% of the campaigns in 2007 versus only 11.85% in 2001 (a 42% increase). The use of the proxy process showed a 50% increase, 12.21% in 2007 versus 8.15% in 2001. Both trends suggest that activist hedge funds are increasingly following a more hostile (and public) approach.

Insert Table 1

Panel B of Table 1 describes the progression of a typical campaign across the stages of the activist process as defined in this paper. The first two columns summarize the data for the full activist sample, which includes 5,645 individual filings involving 171 hedge funds and 1,164 unique

²²The analysis in Panel A of Table 1 excludes the first year of the sample period to correct for left censoring (i.e., campaigns initiated before the beginning of the sample period).

targets. The last two columns of the table present the CRSP-Compustat merged sample, which includes 4,610 individual filings and 953 unique targets.²³

As seen in Table 1, more than two-thirds of activists quit before making formal demands to their targets. These hedge funds may have filed Schedule 13D for legal reasons or in anticipation of an activist engagement but decided against it.²⁴ From the sample of activists who formally communicate specific demands to their targets, less than 20% proceed to request a board seat and only 10–12% threaten a proxy contest. Surprisingly, only 7% of the activist campaigns end up in a proxy fight.

The most active hedge funds during 2000 to 2007 are Loeb Partners Corp./Third Point Management, Millennium Management, Steel Partners II L.P., Farallon Capital, and ValueAct Capital Management. The top 25 hedge funds listed in Table 2 account for more than half of all campaigns in the sample period. The most confrontational hedge fund activists are Carl Icahn, Steel Partners II L.P., Financial Edge Fund L.P., Bulldog Investors G.P., Barington Capital Group L.P./Clinton Group, and Ramius L.L.C. The evidence suggests that both experience and preference for a specific tactic may be important in explaining the investment behavior of an activist. In the main empirical analysis, I show that both fixed effects are statistically significant.

Insert Table 2

4.2.1. Activist demands and success rates

Table 3, Panel A, presents the most common campaign demands during the sample period.²⁵ I classify the activists' stated objectives into four broad categories: strategic direction and alternatives (56% of the sample), capital structure (20%), opposition to a proposed transaction (13%), and corporate governance (12%).

²³Target CIK codes obtained from Schedule 13D filings are manually matched to CRSP PERMNOs.

²⁴The initial 13D filers who do not announce specific demands can be considered passive investors and are excluded from most of the analysis in this paper. However, I use the sample of initial filers in estimating the costs of the first stage of demand negotiations.

²⁵The total number of demands listed in the table exceeds the number of campaigns with formal demands because activists make multiple demands in some campaigns.

As previously shown in the literature, the most frequent demand is for a sale of the target to a third party (one-third of all events), followed by demands for higher dividends (or share repurchases), and restructuring of inefficient operations. Greenwood and Schor (2009, p. 363) argue that “activism targets earn high returns primarily when they are eventually taken over.” In the robustness section, I evaluate the impact of takeover activity on campaign outcomes and find that the average return difference between the M&A and non-M&A samples is not statistically significant after controlling for the activists’ stated objectives.

Insert Table 3

Hedge fund activists not only demand a sale of their targets to third parties but also bid for the targets themselves in more than 10% of the campaigns. As Kahan and Rock (2007, p. 1040) point out: “these bids can be part of a strategy to improve the governance or capital structure of these companies or to put the target in play.” In a *New York Times* article, Carl Icahn argues that it is simplistic to suggest that activists “simply bang on the boardroom table and demand a sale” and indicates that takeover activity is part of his broad activist agenda.²⁶

The campaign of Jana Partners at Houston Exploration illustrates what role Jana’s bid played in their overall campaign. Shortly after accumulating a 10% stake in February 2006, Jana’s Barry Rosenstein sent a letter to the Company’s board expressing his belief that Houston Exploration should use the proceeds from some recent asset sales to repurchase shares as well as explore strategic alternatives, including a sale.²⁷ A week later, Jana issued a letter to shareholders urging them to withhold vote from the Company’s directors.²⁸ On June 12, Jana offered to purchase Houston Exploration for \$62 per share, after accusing the Board of “a possible breach of their fiduciary duties and waste of corporate assets.”²⁹ Jana’s bid attracted interest from Forest Oil, which acquired Houston Exploration in January 2007. As this example demonstrates, Jana’s motivation—to pressure the board and attract bids from third parties—is distinctly different from the motivation for a toehold acquisition (to help a future takeover by the toehold buyer).

²⁶ “Another view: Icahn defends his record” by Carl Icahn, published in the *New York Times* on August 17, 2011 (<http://dealbook.nytimes.com/2011/08/17/another-view-carl-icahn-defends-his-record/>).

²⁷ See letter at <http://www.sec.gov/Archives/edgar/data/1015293/000090266406001253/exhibita.txt>.

²⁸ See press release at <http://www.sec.gov/Archives/edgar/data/1015293/000090266406001276/exhibit99.txt>.

²⁹ See acquisition letter at <http://www.sec.gov/Archives/edgar/data/1015293/000090266406001648/exhibit99.txt>.

Table 3 also reports the average success rate of each demand. As in previous studies of hedge fund activism (see Brav et al., 2008; and Klein and Zur, 2009), an activist campaign is classified as successful if the activist achieves his main investment objective(s) or reaches a partial agreement with the target. Activists are most successful when demanding a sale (or privatization) of a target, restructuring of inefficient operations, and additional disclosure but less successful when asking for higher dividends (or repurchases), CEO removal, or executive compensation changes. In terms of their demands, 29.17% of activists achieve their objectives.³⁰ Using holding period activist returns as an alternative measure of success, I find that only the top quartile of activists earns higher returns on their activist holdings than on their non-activist portfolios (see the return analysis presented in Table 8).

Panel B of Table 3 reports the success rate of activism by stage. I find that more confrontational activist tactics have higher success rates. The most successful activist stage is the proxy contest, in which 57.38% of activists achieve their objectives. Board representation is effective in 39.33% of the cases while demand negotiations are successful in only 6.76% of the campaigns. These results need to be interpreted with caution as the decision to continue an activist engagement is endogenous to each campaign.

4.2.2. *The activist's investment horizon and capital commitment*

Are hedge fund activists short-term investors who make a quick profit at the expense of long-term shareholders? The data do not support this criticism. Panel A of Table 4 reveals that the average duration of an activist campaign is 15 months. Excluding events in which no formal demands are announced raises the average campaign horizon to 19 months.

Insert Table 4

Panel B of Table 4 reports that the mean (median) duration of an activist stage is seven (three) months. There is virtually no variability in the mean (median) duration across the different stages

³⁰Note that classifying board representation as an activist *tactic* rather than a campaign *demand* lowers the estimated success rate of activism compared to previous studies. Including board representation demands raises the success rate in my sample to 46%, which is in line with the estimates in Brav et al. (2008) and Greenwood and Schor (2009).

of activism. This empirical observation serves as the basis for the convenient modeling assumption that each stage of the activist process has a fixed duration.

What is the activist's capital commitment during a campaign? Panel A of Table 5 reports that the mean (median) initial ownership stake at the start of a campaign is 8.27% (8.00%) of the target's outstanding shares. In terms of the average target valuation of \$868.54 million, the mean (median) initial dollar stake is \$71.83 million (\$69.48 million). The mean (median) maximum ownership stake over the duration of the campaign is 9.11% (9.00%). The ownership data show that activists do not significantly increase ownership during a campaign.

Insert Table 5

Another interesting question is whether activists vary their ownership with the tactics they employ. Panel A of Table 5 reports that the median change in ownership (calculated as the difference between the maximum and initial ownership during an activism stage) is zero while the mean change in ownership is 30.61% corresponding to an increase of only 2.79%. The small magnitude of these changes suggests that activists do not use high ownership to exert pressure in their negotiations with a target.

Panel B of Table 5 further evaluates the role of activist ownership on campaign outcomes by comparing successful versus failed and friendly versus hostile campaigns. As before, a campaign is classified as successful if the activist achieves his objectives or reaches a partial agreement with the target. As seen in Panel B, there is no statistical difference between successful and failed campaigns in terms of initial ownership, maximum ownership, or change in ownership.

Panel B also compares friendly and hostile campaigns, where a campaign is considered friendly if the interaction between an activist and a target is positive on average. This hand-collected communication consists of letters, phone conversation transcripts, presentations, etc. disclosed as part of Schedule 13D and coded as either positive or negative. The differences in initial ownership, maximum ownership, or change in ownership between friendly and hostile campaigns are not statistically significant.

4.2.3. Characteristics of Target Companies

What are some important characteristics of activist targets that differentiate them from other firms? Table 6 compares the typical target to the average CRSP/Compustat firm in terms of several valuation, capital structure, performance, and information asymmetry variables. The last two columns of Table 6 report differences between activist targets and other CRSP/Compustat firms after propensity-score matching in terms of industry, size, and book-to-market.

Insert Table 6

Table 6 reveals that activist targets are significantly smaller than matched firms, with a mean market value of \$868.54 million and Q ratio of 1.30. Targets underperform in terms of holding-period return during the 12 months before campaign announcement, even though this underperformance is not statistically significant after matching on industry, size, and book-to-market. In addition, activist targets are not statistically different from the average CRSP/Compustat firm in terms of growth opportunities (proxied by market-to-book ratio) or book leverage.

Target firms have lower sales growth compared to their matched counterparts but do not show statistically significant differences in terms of profitability (return on assets (ROA)), asset turnover, market share, or research and development costs (R&D expense/assets). More importantly, targets have significantly higher institutional ownership, which is a critical determinant of campaign success in the more confrontational stages of activism. Overall, hedge fund activists seem to target small firms with no significant operational problems but some market underperformance.³¹

In terms of their industry affiliation, most activist targets are in manufacturing and services. The individual two-digit SIC codes with the highest concentration of activism are business services (17% of all targets), retail (11%), chemicals (9%), electronic equipment (7%), and instruments (7%). The fixed effects for each of the above groups are not statistically significant. There is also no evidence of industry concentration by hedge fund activists, except for highly specialized industries such as medical instruments and depository institutions. Intuitively, focusing on underperformance issues general to most firms (such as agency problems) reduces an activist's marginal cost of initiating a campaign.

³¹Previous studies have attributed the targets' market underperformance to agency problems (see Brav et al., 2008; and Klein and Zur, 2009).

5. Empirical results

5.1. Costs of activist campaigns

The main goal of this study is to estimate the costs of activist engagements implied by the observed investment decisions of hedge fund activists in 2000–2007. At each stage of the process, an activist must choose whether to continue or terminate his campaign based on a cost-benefit analysis of the intervention. In order to account for the heterogeneity of activist events in terms of their duration and exit stage, I estimate the costs of three common activist tactics—demand negotiations, board representation, and proxy contest.³² The cost of an activist campaign equals the sum of the costs of its component stages.

The estimation methodology uses the activist’s break-even profit constraint for monitoring (as defined in Eq. (12)) to determine the cost thresholds of the three activism stages. Each cost cutoff represents a lower bound on the costs of employing a specific engagement tactic and is estimated by a conditional binary logistic regression. The empirical design incorporates the sequence of logistic regressions into a statistical backward induction procedure, which estimates first the costs of the later stages of activism and uses them in the calculation of the costs of its earlier stages.

The starting point of the estimation is the last decision step, the decision node before the proxy contest stage. The conditional sample of activists who reach that node are divided into two subgroups—those who choose to exit after board representation (coded as 0) and those who continue to a proxy contest (coded as 1). I regress an activist’s continuation decision on his expected gross return from a successful intervention, which summarizes the benefit from campaign continuation, and (the inverse of) his marked-to-market investment in the target, which captures the opportunity cost of the campaign. As described in Eqs. (13) and (14), the first regression coefficient determines the relative magnitude of proxy costs while the second coefficient identifies the absolute level of these costs. Then, I use the estimated costs of the proxy stage in a backward induction procedure to derive the costs of board representation and demand negotiations.

Table 7 presents the main empirical results. Panel A reports average costs for demand negotia-

³²To provide more robust estimates, I combine proxy threat and proxy fight into ‘proxy contest’ resulting in three distinct stages—demand negotiations, board representation, and proxy contest.

tions, board representation, and proxy contest, including their bias-corrected bootstrap confidence intervals. The cost of an activist campaign ending in a proxy contest is \$10.71 million (equal to the sum of all three stages). The proxy contest has the highest cost equal to \$5.94 million for the average campaign (with a 95% confidence interval of \$3.04 – \$10.86 million). In addition to printing and postage costs to reach a target’s shareholders, this stage typically involves significant disclosure, legal and other fees of hiring proxy solicitors, corporate governance experts, investment banks, public relations and advertising firms.

Insert Table 7

The limited anecdotal evidence available can help us put these costs into perspective. Stephen M. Bainbridge estimates the costs of a proxy contest at \$1.8 million based on a survey conducted in the late 1980s (see Thomas et al., 1998) but points out that “costs almost certainly are much higher today.” In a letter to the SEC, Ralph V. Whitworth, principal of activist hedge fund Relational Investors L.L.C., argues that “. . . only a few investors have the expertise and resources to execute a short slate campaign which in our experience can cost upwards of \$10,000,000 at a typical large U.S. company.” Carl Icahn, one of the most well-known activists, agrees: “At a large public company, mailing, printing and other costs can run into the millions of dollars.”³³

The demand negotiations stage is the second most expensive stage of the activist process, with average costs of \$2.94 million (and a 95% confidence interval of \$0.89 – \$6.96 million). The estimates presented in this paper are the first attempt in the literature to quantify the costs of activist-target negotiations.³⁴ Unlike the proxy contest stage, most of the costs of demand negotiations are unobservable and cannot be estimated from publicly available information. However, the disclosure and legal fees associated with this stage most likely represent a smaller portion of its overall costs than the unobservable costs of the activist’s time and effort.

The least expensive stage is board representation, which adds \$1.83 million to the cost of the average campaign (with a 95% bootstrap confidence interval of \$0.46 – \$4.32 million). Most of

³³See Stephen M. Bainbridge (<http://www.sec.gov/rules/proposed/s71903/bainbridge121903.htm>); Ralph V. Whitworth (<http://www.sec.gov/comments/s7-10-09/s71009-185.pdf>); and Carl Icahn (<http://dealbook.nytimes.com/2009/03/30/were-not-the-boss-of-aig/>).

³⁴Becht et al. (2008) also suggest that unobservable costs dominate the overall costs of private demand negotiations. See their discussion on p. 3096.

these costs can be attributed to the activist's time commitment as a board member or his effort to identify board representatives. At this stage, many activists also hire consulting or investment banking firms to prepare formal board presentations of their recommendations. For example, in late 2005, Carl Icahn hired Lazard to prepare a report on the strategic alternatives available to Time Warner for "a \$5 million fee as well as 5 percent of whatever Mr. Icahn's dissident group makes on its Time Warner shares above \$18 over the next 18 months."³⁵ Another activist, Nelson Peltz of Trian Partners, paid Bear Stearns as much as \$1.6 million in 2006 for advisory work on his bid for board seats at H.J. Heinz.³⁶

Panel A of Table 7 also reports the scale parameters used to identify the absolute magnitudes of stage costs. As pointed out earlier, these parameters account for unobserved heterogeneity in the activist sample and improve the precision of the cost estimates. As expected, the proxy contest has the lowest scale while the negotiations stage has the highest scale. Intuitively, we expect these parameters to become smaller with every consecutive stage because the activists employing more confrontational tactics are more homogeneous.

The cost of an average campaign resulting in a proxy contest is \$10.71 million. One way to judge how reasonable the estimated costs are is to compute hypothetical break-even fees based on a typical hedge fund incentive schedule (2% of assets under management and 20% performance fees). Assuming that performance fees are assessed on the abnormal returns earned in a campaign (as reported in Table 8), the mean (median) fees based on value-weighted abnormal returns are \$12.4 million (\$11.1 million) while the mean (median) fees based on DGTW returns are \$17.3 million (\$12.1 million). These break-even fees can be viewed as maximum costs that an average activist would be willing to bear in a campaign assuming the above incentive scheme. The costs of \$10.71 million compare favorably to these hypothetical maximum fees.

Panel A of Table 7 also presents several goodness-of-fit measures for each stage-specific logistic regression. Overall, the best model fit is in the proxy contest stage and the worst in the demand negotiations stage. The model correctly classifies the activists' exit decisions in 58% of demand negotiations versus 78% of proxy contests. The R^2 is highest for the proxy stage (20%) and lowest

³⁵ As reported in *The New York Times*, December 7, 2005, <http://www.nytimes.com/2005/12/07/business/07icahn.html>.

³⁶ Reported in *Board Member Magazine*, 2010, http://www.boardmember.com/MagazineArticle_Details.aspx?id=5251.

for demand negotiations (18%).

Panel B of Table 7 presents additional information about each stage-specific binary logistic regression. The estimation allows for correlation among the campaigns of the same hedge fund activist (clustering) and model misspecification (incorrect likelihood function). Both explanatory variables are significant at 1% in all three regressions. The economic significance of the explanatory variables is higher in the more confrontational stages of the process.

Due to the recursive backward substitution of estimated costs, the procedure of statistical backward induction yields biased estimates of the standard errors in the first two stages (board representation and demand negotiations). To correct for this bias, I use nonparametric bootstrap to calculate standard errors. Bootstrapping involves repeated sampling (with replacement) from the data set at hand to estimate the error terms. I calculate bias-corrected bootstrap confidence intervals for the cost estimates, in which the bias correction adjusts for the potential bias in the tails of the sampling distribution. The bias-corrected bootstrap confidence intervals are very similar to the normal confidence intervals.

5.2. Returns to hedge fund activism

To compare net activist returns to the returns earned by hedge funds in 2000–2007, I calculate abnormal activist returns in excess of the value-weighted CRSP portfolio (VW returns) and in excess of characteristic-based portfolios following the approach in Daniel, Grinblatt, Titman, and Wermers (1997) (DGTW returns). I find that the estimated monitoring costs are economically significant. Under both benchmarks, abnormal activist returns drop by about two-thirds after subtracting activist costs.

First, I manually match the hedge funds in the activist sample to institutional (13F) data from Thomson Reuters. Hedge funds with assets under management in excess of \$100 million are required to report quarterly to the SEC all of their long equity positions over \$200,000 or 10,000 shares. I am able to match 85 of the 129 hedge fund families in this study. (Table 2 reports the 13F match for the 25 hedge funds with the most activist campaigns in 2000–2007.)

Then, I compute hedge fund returns following the methodology in Griffin and Xu (2009) who estimate monthly returns using the latest quarterly-end holding weights of each fund. As Griffin

and Xu (2009) argue, monthly returns based on 13F holdings are better suited to evaluating hedge fund performance because they do not suffer from the return manipulation and survivorship bias of self-reported hedge fund returns.³⁷ Even though 13F monthly returns ignore short-term trading (within a quarter), they exhibit high correlation with the returns reported in hedge fund databases and are representative of hedge fund returns in general.

I calculate DGTW abnormal returns in excess of the returns on 125 characteristic portfolios based on size, market-to-book, and stock return momentum. As Daniel et al. (1997, p. 1037) argue, characteristic-based returns "have more statistical power to detect abnormal performance than factor models."

Table 8 reports the activist returns of the hedge funds in the sample. Panel A presents deal-period and annualized raw campaign returns. The annualized mean (median) raw return is 31.48% (26.10%), comparable to the returns reported in Brav et al. (2008). Panel B reports VW and DGTW annualized abnormal returns. The annualized mean (median) VW abnormal return is 4.02% (3.89%) while the mean (median) DGTW abnormal return is 5.75% (7.61%). The conclusion reached in Brav et al. (2008, p. 1760) that "the positive average returns are attributed to the right tail of the distribution" seems to hold for the campaigns in this extended sample.

Insert Table 8

Panel C reports annualized abnormal net returns (that is, returns after subtracting activist costs). The annualized mean (median) VW abnormal return drops to 0.23% (1.40%) while the mean (median) DGTW abnormal return becomes 2.38% (3.85%). Both measures show that costs consume about two-thirds of gross activist returns. It is also interesting to note that the proxy contest stage has the lowest mean abnormal net returns implying that the proxy process may be value-destroying from the point of view of the activist.

Do hedge funds earn higher returns on their activist investments than on their other holdings? The last row of Table 8 helps answer this question by reporting the total (non-activist) portfolio returns of the hedge funds with 13F holdings information. The annualized mean (median) VW

³⁷Public hedge fund data sources such as the Center for International Securities and Derivatives Markets (CISDM) and the Trading Advisor Selection System (TASS) data sets cover less than half of the hedge funds in the activist sample.

abnormal portfolio return is 14.84% (15.84%) while the mean (median) DGTW abnormal return is 17.18% (16.38%). Even though the mean activist return is significantly lower than the mean non-activist portfolio return, the top quartile of activists earns significantly higher returns on their activist investments than on their non-activist holdings. The 75th-percentile of net activist returns is not statistically different from the 75th-percentile of total non-activist returns. However, the 90th-percentile of VW (DGTW) net activist returns is 56.51% (44.20%), significantly exceeding the 90th-percentile of non-activist returns (27.23% and 29.62%, respectively).³⁸

The above results lead to two conclusions. First, subtracting costs significantly reduces gross activist returns suggesting that costs play a major role in the decision-making behavior of an activist shareholder. Second, the returns of the top quartile of campaigns exceed the returns on hedge fund non-activist holdings even though the average hedge fund activist performs worse in activist targets than in other portfolio companies.

6. Robustness

6.1. *Expected activist reward*

A target’s maximum (or fundamental) valuation is unobservable and measuring it directly is not possible. In the main results, I calculate a target’s expected value improvement in terms of the valuation of a matched peer with similar fundamentals [following the approach in Edmans, Goldstein, and Jiang (2012)]. In particular, I use a censored quantile regression of the target’s Q ratio on the tercile ranks of firm characteristics, which remain unaffected by the activist’s demands—size, asset turnover, market share, growth, and R&D ratio.

I also confirm that the estimation of a target’s maximum potential value is robust to an alternative specification, in which I assume that the activist can improve a target’s value to that of the best performing industry peer in the same value tercile (that is, no other firm characteristics except for industry affiliation are used). Industry (also known as “comparable company”) analysis is frequently used in evaluating potential takeover targets. As seen in Table 9, Panel B, both ex-

³⁸Note also that the annualized standard deviation of net activist returns is about five times higher than the standard deviation of total portfolio returns.

planatory variables have high statistical and economic power in this alternative specification (even though expected gross return is now significant at 5% in some regressions).

Insert Table 9

The estimation of a target's fundamental value is calibrated to the median actual valuation improvement achieved by successful activists. In unreported results, I also confirm that the ex ante potential for value improvement is not statistically different between ex post successful and failed campaigns. This additional evidence confirms that the chosen valuation metric accurately reflects the potential for value improvement due to activism.

6.2. Activist heterogeneity

One way, in which I correct for unobserved activist heterogeneity, is by computing stage-specific scale parameters, as shown in Table 7. A more direct way to account for unobserved heterogeneity is to control for activist-specific attributes in the estimation of the cost thresholds.

Table 10 presents the same three logistic regressions as the baseline model but adds three additional explanatory variables capturing activist heterogeneity. The additional covariates are the number of contemporaneous campaigns by a hedge fund activist in a given quarter, an indicator (Active HFs) for the hedge funds with the most campaigns in the sample period (measuring experience), and an indicator (Hostile HFs) for the hedge funds with the most proxy contests between 2000–2007 (measuring preference for confrontational engagements). The list of the respective hedge funds in each group is presented in Table 2.

Insert Table 10

The included activist characteristics have high explanatory power in most regressions. The variable measuring the number of contemporaneous campaigns by the same hedge fund has the lowest economic significance. The other two additional covariates have the highest economic significance in the proxy stage. The results suggest that a firm targeted by a hostile activist is more likely to reach a confrontational stage while a firm targeted by a more experienced activist is less likely to make that transition.

6.3. Activist ownership

Defining the activist's break-even constraint for monitoring assumes that the size of his ownership stake does not affect the success of the engagement. Panel A of Table 5 reveals that the change in ownership during a campaign (stage) is minimal implying that activists do not use high ownership strategically to exert pressure in their negotiations with a target.

I further evaluate this assumption in a multivariate setting by estimating the probability of a successful campaign outcome as a function of ownership (and ownership squared), the tactic used by the activist, the duration of the campaign, and institutional ownership. Tactic (or stage) is included because more confrontational approaches are typically associated with higher success rates. Campaign duration controls for the activist's investment horizon, the assumption being that longer campaigns have a higher probability to achieve success. Institutional ownership is an important determinant of success in the more confrontational stages of activism. The (unreported) results confirm that ownership and/or ownership squared are not statistically significant in determining a campaign's probability of success.

Finally, I re-estimate costs excluding campaigns, in which the activist's stake exceeds the 95th-percentile of ownership in the sample (16%). Note that this level of ownership is below the level required to influence company procedures relying on shareholder voting. For example, 85% of Standard and Poor's (S&P) 500 companies impose ownership thresholds above 25% to call a special meeting or do not give their shareholders that right.³⁹ The exclusion of high ownership campaigns has no effect on the estimated costs.

6.4. Takeover activity and learning

Most previous studies of hedge fund activism (see Brav et al., 2008; Klein and Zur, 2009; Becht et al., 2008) document that the cross-sectional variation in (abnormal) activist returns is influenced by the stated campaign objectives. Alternatively, Greenwood and Schor (2009) argue that only activist events resulting in an M&A transaction earn significant abnormal returns. To evaluate whether takeover activity has additional predictive power after controlling for a campaign's

³⁹See article by Ted Allen of Institutional Shareholder Services (ISS), April 2011, <http://www.deallawyers.com/Blog/2011/04/proxy-season-preview-takeover-defenses.html>.

objectives, I compare abnormal activist returns between events ending in an M&A and those with no M&A activity. Using data from Thomson Reuters Securities Data Company (SDC) Platinum, I identify 104 acquisitions among the sample of activist targets by restricting the announcement date of a takeover to be between the start of the campaign and 180 days after the exit of the activist (or December 2007, if no exit is observed).

Table 11 reports the results. Panel A presents unconditional results while Panel B compares mean returns between the M&A and non-M&A samples after controlling for stated activist objectives. The difference in mean abnormal VW (DGTW) returns between the treatment (M&A) and control (no M&A) groups is 23.77% (20.61%), significant at 1%. These results seem to confirm Greenwood and Schor's (2009) conclusion that only events resulting in a sale earn significant abnormal returns. However, the mean difference in returns between the M&A and non-M&A groups becomes insignificant after taking into account activist costs (i.e., in terms of *net* abnormal returns).

Insert Table 11

Panel B compares the mean abnormal returns between the M&A and non-M&A samples after controlling for the stated activist objectives, which are classified in one of four broad groups—corporate governance, restructuring and strategic alternatives, capital structure, and opposition to a proposed deal. The difference in mean gross and net VW (DGTW) abnormal returns is insignificant between the two subsamples. This suggests that takeover activity has no additional predictive power after controlling for a campaign's objectives.

I also verify (in unreported results) that learning has no effect on campaign outcomes. I compare successful and failed campaigns in terms of proxies for the activist's learning. The first proxy consists of hand-collected communication between the activist and the target (as described in Table 5). The other two proxies for learning are the number of filings by the activist and the current length of the campaign. None of the learning proxies is statistically different between successful and failed campaigns after controlling for the campaign's predicted probability of success (estimated as in the previous subsection).

7. Concluding remarks

The goal of this paper is to measure the costs of activist monitoring and provide a better understanding of the net returns to activism. I focus on the principal cost-benefit trade-off facing an activist and study its effect on the choice of negotiation tactics in communicating with a target.

The approach taken in this study consists of two interrelated parts. First, I model activism as a sequential decision process consisting of demand negotiations, board representation, and proxy contest, and define the activist's break-even constraint for monitoring. Then, I examine this trade-off condition in a discrete-choice framework and estimate the costs of activism implied by the observed decisions of activist investors between 2000 and 2007.

This paper complements recent work on hedge fund activism by providing cost benchmarks for evaluating the net returns to activism. I find that the average campaign ending in a proxy fight costs \$10.71 million. Subtracting costs reduces the mean abnormal activist return by two-thirds suggesting that costs play a major role in the activist's decision-making behavior. I find that the returns of the top quartile of campaigns exceed the returns on hedge fund non-activist holdings even though the average hedge fund activist performs worse in activist targets than in other portfolio companies.

This paper also introduces a comprehensive hand-collected data set of hedge fund activist campaigns between 2000 and 2007, which contains detailed information about the evolution of each campaign and the negotiation tactics employed by activists. The large-sample evidence presented in this paper aids in understanding the nature and evolution of activist engagements.

Appendix A. SEC Schedule 13D

The Securities and Exchange Act of 1934, rules 13d-1 to 13d-6, contains the filing requirements for large shareholders. Schedule 13D is commonly referred to as a "beneficial ownership report" and must be submitted to the US Securities and Exchange Commission within ten days by any investor who acquires ownership of 5% of the voting stock of a public company. Any material changes in the facts contained in the original filing (such as a change in beneficial ownership by more than 1%, a change in the investment intent, or the preferred method of communicating with the firm) requires a prompt amendment.

Schedule 13D consists of seven sections:

1. *Security and Issuer* - Basic information regarding the type and class of security and the contact information of the beneficial owner.
2. *Identity and Background* - Background information such as the type of investment business the owner engages in and related investment vehicles managed by the owner.
3. *Source and Amount of Funds or Other Considerations* - The source of the owner's investment capital (usually working capital funds).
4. *Purpose of Transaction* - This is the most important portion of the 13D filing for the purposes of this study. It describes the beneficial owner's investment intent, main demands, and level of engagement with the firm.
5. *Interest in Securities of the Issuer* - Expands on Section 4.
6. *Contracts, Arrangements, Understandings or Relationships with Respect to the Securities of the Issuer* - Reports any special relationships between the beneficial owner and the company.
7. *Materials to Be Filed as Exhibits* - This is the second most important section. It contains any exhibits that may be filed along with the form such as letters to the management or board of the firm as well any agreements between the two parties. Exhibits can also elaborate on the Purpose of Transaction (Section 4).

Item 4 lists ten specific actions of a large shareholder that would require disclosure:

(a) The acquisition by any person of additional securities of the issuer or the disposition of securities of the issuer;

(b) An extraordinary corporate transaction, such as a merger, reorganization, or liquidation, involving the issuer or any of its subsidiaries;

(c) A sale or transfer of a material amount of assets of the issuer or any of its subsidiaries;

(d) Any change in the present board of directors or management of the issuer, including any plans or proposals to change the number or term of directors or to fill any existing vacancies on the board;

(e) Any material change in the present capitalization or dividend policy of the issuer;

(f) Any other material change in the issuer's business or corporate structure including but not limited to, if the issuer is a registered closed-end investment company, any plans or proposals to make any changes in its investment policy for which a vote is required by Section 13 of the Investment Company Act of 1940;

(g) Changes in the issuer's charter, bylaws, or instruments corresponding thereto or other actions which may impede the acquisition of control of the issuer by any person;

(h) Causing a class of securities of the issuer to be delisted from a national securities exchange, or to cease to be authorized to be quoted in an inter-dealer quotation system of a registered national securities association;

(i) A class of equity securities of the issuer becoming eligible for termination of registration pursuant to Section 12(g)(4) of the Act; or

(j) Any action similar to any of those enumerated above.

Note: Schedule 13G is an alternative SEC filing which must be filed by anyone who acquires beneficial ownership in a public company (i.e., owns more than 5% of a company). The 13G filing is considered a more passive version of the 13D, and has fewer reporting requirements. Activist practices are not permitted by 13G filers unless they re-file as 13D investors.

Appendix B. Carl Icahn and Time Warner Inc.

On August 9, 2005, Dow Jones reported that Carl Icahn had started accumulating a stake in Time Warner Inc. and was exploring institutional support for his plan to restructure the Company.⁴⁰ Among Icahn's demands were a break-up of the media conglomerate and a substantial increase of its share repurchase program. Initial conversations with Richard Parsons, Time Warner's CEO, were characterized as "productive" but did not result in an agreement on the right approach to increase shareholder value.

On September 12, Mr. Icahn took the next step in his campaign by proposing nominees to Time Warner's board. He argued that shareholder-nominated directors were "particularly important at Time Warner because of the difference of opinion between many large shareholders and management concerning the direction of the company and the lack of share price performance under current management."

A month later, on October 11, Carl Icahn escalated his campaign to the preliminary proxy stage and issued an open letter to all shareholders (reported in a Schedule 14A): "In life and in business, there are two cardinal sins. The first is to act precipitously without thought, and the second is to not act at all. Unfortunately, the Board of Directors and top management of Time Warner already committed the first sin by merging with AOL, and we believe they are currently in the process of committing the second."⁴¹ Icahn enumerated the following failures of the current management and board: the AOL "disaster," "fire sale" of Warner Music and Comedy Central, failure to acquire MGM, and "bloated" cost structure.

On October 31, Steve Case, co-founder of AOL and one of the main architects of its merger with Time Warner, resigned from the board of directors. Two days later, the Company increased its current stock buyback program from \$5 billion to \$12.5 billion. At the same time, Time Warner was exploring a sale of its publishing business, which was completed in February 2006.

Dissatisfied with the progress of his campaign, Icahn hired Lazard to prepare a report on the strategic alternatives available to Time Warner. In a press release, Icahn described the financial

⁴⁰This case study illustrates the challenges in performing a cost-benefit analysis of an activist campaign. Press reports and quarterly holdings information from SEC 13F filings are typically the only sources of information. This skews the available evidence in favor of larger and more visible activists and companies.

⁴¹See http://www.sec.gov/Archives/edgar/data/921669/000110465905047809/a05-17463_1ex2.htm.

terms of the Lazard engagement: a \$5 million fee and "an additional incentive fee" of 5% of any increase in Time Warner's price over \$18 in the next 18 months.⁴² Several days later, Robert C. Clark, a board member of both Time Warner and Lazard, resigned from Time Warner's board.

On December 19, 2005, Mr. Icahn openly questioned the Company's agreement to sell a stake in AOL to Google Inc. "On the eve of a proxy contest, I believe it would be a blatant breach of fiduciary duty to enter into an agreement with Google that would either foreclose the possibility of entering into a transaction that would be more beneficial for Time Warner shareholders or make such a transaction more difficult to achieve."⁴³ On January 30, 2006, Carl Icahn proposed Frank Biondi, a former CEO of Universal Studios Inc. and Viacom Inc., to replace Richard Parsons and lead the restructuring of Time Warner.

On February 7, 2006, Carl Icahn and Lazard released a 343-page analysis of Time Warner, which recommended that the Company be split into four independent entities (the AOL online division, a film and cable networks company, a publishing company, and a cable operator), reduce costs, and repurchase a total of \$20 billion of company stock.

Ten days later, Time Warner announced an agreement with Carl Icahn to increase its existing share repurchase program to \$20 billion and extend its duration through December 31, 2007. In addition, the Company agreed to appoint two new independent directors based on recommendations from major shareholders such as Icahn Partners and achieve cost reductions of \$1 billion in 2007.⁴⁴ Icahn's demand for a break-up of the company was not part of the agreement, probably because of its lukewarm reception among other institutional investors.

Estimating Carl Icahn's financial gain from this campaign is difficult without detailed trading data. However, we can approximate the benefits of the campaign by the increase in value of Icahn's ownership stake between December 31, 2005 and December 31, 2006, the first and last 13F filings reporting an ownership stake in Time Warner. In that period, Time Warner's adjusted closing price increased by \$9.02 (26.37%), giving Icahn a gross profit of \$100.12 million.

⁴²Press release available at <http://www.sec.gov/Archives/edgar/data/921669/000092847505000229/dfan14a.txt>.

⁴³See <http://www.sec.gov/Archives/edgar/data/921669/000092847505000239/dfan14a1219.txt>.

⁴⁴See <http://www.sec.gov/Archives/edgar/data/921669/000092847506000082/dfan14a02172006.txt>.

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Fig. 1. A sequential definition of the activist process. The figure depicts the sequential definition of activism, in which an activist shareholder chooses a more hostile tactic only after less confrontational approaches have failed. Under this definition, activism consists of demand negotiations, board representation, and (threatened) proxy contest.

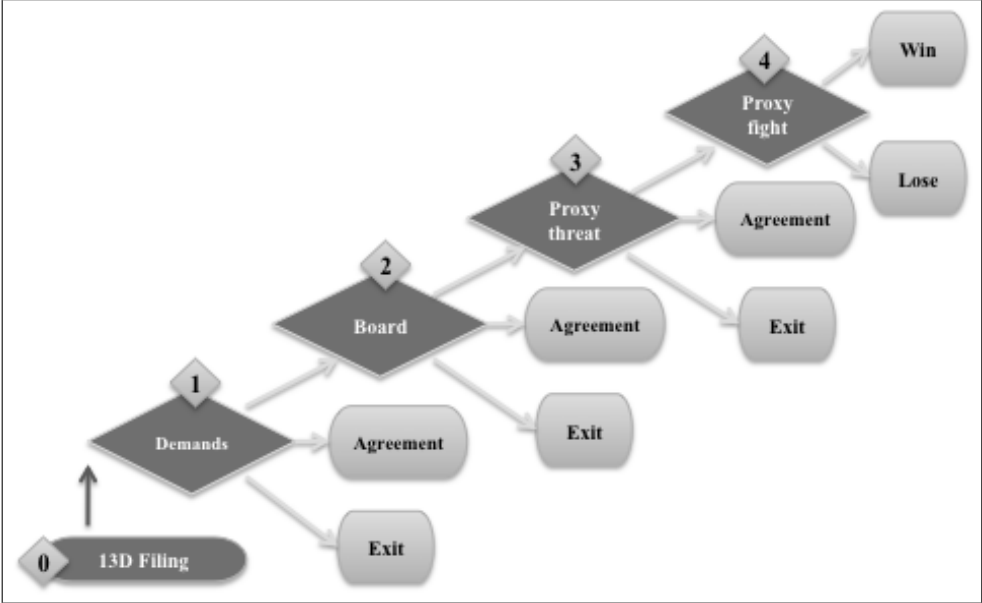


Table 1

Distribution of activist campaigns by year and activism stage

The table presents the distribution of hedge fund activist campaigns in 2000–2007. Data are collected from SEC Schedule 13D and proxy statements. The sample also includes nonpublic events (i.e., below the 5% regulatory threshold) reported in the press and described in Brav et al. (2008). The full sample consists of 1,164 unique campaigns. The CRSP-Compustat merged sample includes 953 unique events. Standard exclusions are applied—bankruptcies, ADRs, REITs, funds, trusts, and left-censored observations. Panel A presents the distribution of campaigns by year and activism stage (initial filing, demand negotiations, board representation, and proxy). The last column denotes the total number of campaigns during each year. Panel B describes the distribution of the sample across the stages of the activist process. % Total denotes the percent of events reaching each activism stage.

Panel A: Distribution of activist campaigns by year and stage

Year	Filing	% Total	Negotiations	% Total	Board	% Total	Proxy	% Total	# Campaigns
2001	86	63.70%	22	16.30%	16	11.85%	11	8.15%	135
2002	118	62.43%	32	16.93%	27	14.29%	12	6.35%	189
2003	141	62.67%	44	19.56%	22	9.78%	18	8.00%	225
2004	149	62.87%	38	16.03%	32	13.50%	18	7.59%	237
2005	191	51.48%	98	26.42%	46	12.40%	36	9.70%	371
2006	227	48.40%	115	24.52%	73	15.57%	54	11.51%	469
2007	284	50.27%	117	20.71%	95	16.81%	69	12.21%	565

Panel B: Distribution of activist campaigns by stage

Stage	Full activist sample		CRSP-Compustat merge	
	Targets	% Total	Targets	% Total
Initial filing	1164	100.00%	953	100.00%
Negotiations	342	29.38%	300	31.48%
Board	203	17.44%	179	18.78%
Proxy threat	122	10.48%	113	11.86%
Proxy fight	74	6.36%	68	7.14%

Table 2

List of activist hedge funds

The table lists the 25 hedge funds with the most campaigns during 2000–2007. Proxy contests refers to the number of campaigns that reach the proxy stage. The column labeled 13F Data reports the availability of holdings data from Thomson Reuters 13F Institutional Holdings used in return calculations.

Hedge fund	Activist campaigns	Proxy contests	13F Data
Loeb Partners Corp./ Third Point Management	103	4	Y
Millennium Management, Millenco LLC	51	0	Y
Steel Partners II LP	48	6	Y
Farallon Capital Management LLC	48	0	Y
ValueAct Capital Management LP	35	1	Y
Hummingbird Management	35	0	N
Blum Capital Partners LP	26	0	Y
Carl Icahn	26	7	Y
Prides Capital Partners LLC	23	0	Y
Barington Capital Group LP/ Clinton Group	23	5	Y
Chap Cap Partners	21	0	Y
Ramius LLC	20	5	Y
Yorktown Avenue Capital/Boston Avenue Capital	19	0	N
Pirate Capital LLC	18	4	Y
Wynnefield Partners Small Cap Value LP	18	2	Y
SCSF Equities LLC	18	0	N
Riley Investment Management LLC	15	3	Y
Perry Corp	15	0	Y
Lawrence B. Seidman	15	7	N
Financial Edge Fund LP/ John Morrison	15	6	N
Jana Partners LLC	15	2	Y
Shamrock Activist Value Fund LP	14	1	Y
Bulldog Investors GP/ Phillip Goldstein	14	6	N
Cannell Capital LLC	13	0	Y
Harbinger Capital Partners	13	2	N

Table 3

Common activist demands

The sample consists of 1,164 hedge fund campaigns in 2000–2007, of which 342 contain demands. The number of demands exceeds the number of events because some campaigns have multiple demands. Panel A reports the success rate of each type of activist demand. A campaign is considered successful if the activist achieves his stated objectives or reaches an agreement with the target. Panel B reports success rates in terms of the stage of the activist process, at which a campaign ends (as described in Fig. 1).

Panel A: Success rate of activism by demand

Primary activist demands	Number of campaigns	% of Sample	Successful campaigns	% Success rate
<i>1. Strategic direction & alternatives</i>	<i>280</i>	<i>55.56%</i>	<i>96</i>	<i>34.29%</i>
- Sale of company to a third party	159	31.55%	51	32.08%
- Operational inefficiency; restructuring	69	13.69%	24	34.78%
- Activist bid to take target private	52	10.52%	21	40.38%
<i>2. Capital structure</i>	<i>100</i>	<i>19.84%</i>	<i>20</i>	<i>20.00%</i>
- Dividends/ repurchases/ excess cash	78	15.48%	13	16.67%
- Recapitalization/ debt restructuring	22	4.37%	7	31.82%
<i>3. Opposition to a proposed merger</i>	<i>63</i>	<i>12.50%</i>	<i>18</i>	<i>28.57%</i>
<i>4. Corporate governance</i>	<i>61</i>	<i>12.10%</i>	<i>13</i>	<i>21.31%</i>
- Remove CEO; separate CEO/Chairman	27	5.36%	5	18.52%
- Excessive executive compensation	20	3.97%	3	15.00%
- Additional disclosure; possible fraud	14	2.78%	5	35.71%
<i>Overall success rate</i>	<i>504</i>	<i>100%</i>	<i>173</i>	<i>29.17%</i>

Panel B: Success rate of activism by stage

Exit after	Number of campaigns	% of Initial sample	Successful campaigns	% Success rate
Demand negotiations	342	29.38%	23	6.76%
Board representation	203	17.44%	79	39.33%
Proxy contest	122	10.48%	70	57.38%
<i>Overall success rate</i>				<i>29.17%</i>

Table 4

Investment horizon of hedge fund activists

The table reports statistics on the investment horizon of hedge fund activists between 2000–2007. Panel A provides a breakdown of events in terms of the activism stage, at which a campaign is terminated. Exit is defined as the last SEC Schedule 13D filing by an activist or December 2007 if no exit is observed. The last *italicized* row of Panel A excludes activist events, in which no formal demands were announced (i.e., the activist’s stated objective is shareholder maximization or the target’s market undervaluation). Panel B presents the length of each distinct stage of the activist process. Reported variables are in months.

Panel A: Investment horizon of hedge fund activists (in months)

Percentile	25%	50%	75%	90%	Mean	SD
Exit after initial filing	0	5	13	25	9.42	13.52
Exit after demand negotiations	2	6.5	16	27	10.48	11.35
Exit after board representation	7	15	27	41	19.43	16.12
Exit after proxy contest	10	18	34	64	25.78	21.59
Average (per campaign)	3	9	20	36	14.66	16.96
<i>Average (campaigns w/ specific demands)</i>	<i>6</i>	<i>14</i>	<i>26</i>	<i>41</i>	<i>18.75</i>	<i>18.20</i>

Panel B: Length of individual activism stages (in months)

Percentile	25%	50%	75%	90%	Mean	SD
Initial filing	3	3	9	15	7.49	8.55
Demand negotiations	3	3	6	12	6.44	6.89
Board representation	3	3	9	15	6.79	7.03
Proxy contest	3	3	6	15	6.90	7.09
Average (per stage)	3	3	9	15	7.28	8.54

Table 5

Analysis of activist ownership

The table reports ownership data for the sample of hedge fund activist campaigns in 2000–2007. Panel A reports ownership statistics for each stage of a campaign, including initial ownership at the start of a campaign stage, maximum ownership accumulated during a stage, and change in ownership (defined as the difference between maximum and initial stage ownership divided by initial ownership). Panel B reports ownership statistics by campaign for successful/ failed and friendly/ hostile events. A campaign is classified as successful if the activist achieves his stated objectives or reaches a partial agreement with the target. A campaign is considered friendly if the average communication between the activist and the target (disclosed in Schedule 13D and coded as positive or negative) is positive.

Panel A: Ownership by activism stage

Activism stage	(1) Initial ownership, %				(2) Maximum ownership, %				Change ((2)-(1))/(1)	
	50%	75%	95%	Mean	50%	75%	95%	Mean	50%	Mean
Initial filing	7.00	10.00	16.00	8.51	8.00	10.00	20.00	8.95	0.00	10.21
Demand negotiations	7.00	10.00	16.00	7.41	8.00	10.00	17.00	8.37	0.00	36.04
Board representation	9.00	13.00	19.00	9.46	10.00	14.00	21.00	10.70	0.00	41.62
Proxy fight	8.00	11.00	15.00	7.94	8.00	11.00	15.00	8.52	0.00	28.40
Total	8.00	10.00	16.00	8.27	9.00	11.00	18.00	9.11	0.00	30.61

Panel B: Ownership by campaign type

	(1) Initial ownership, %		(2) Maximum ownership, %		Change ((2)-(1))/(1)	
	Mean	St. error	Mean	St. error	Mean	St. error
Successful campaigns	6.81	0.47	8.73	0.51	60.49	16.68
Failed campaigns	7.16	0.25	8.92	0.24	44.91	7.78
Difference	-0.45	0.53	-0.19	0.56	15.58	18.40

	Mean	St. error	Mean	St. error	Mean	St. error
Friendly campaigns	7.16	0.32	9.26	0.33	53.96	10.79
Hostile campaigns	6.96	0.31	8.50	0.30	45.02	9.94
Difference	0.20	0.44	0.76	0.45	8.94	14.67

Table 6

Characteristics of companies targeted by hedge fund activists

The table presents the characteristics of companies targeted by hedge fund activists in 2000–2007. Columns 4 and 5 report unmatched comparison of activist targets to the average CRSP/Compustat firm. Columns 6 and 7 present differences between the average target and the average CRSP/Compustat firm after propensity-score matching in terms of industry, size (market cap), and book-to-market ratio. Market value is market capitalization in millions of dollars. Book-to-market is book value of equity to market value of equity. Q ratio is defined as market equity plus total debt plus preferred stock plus deferred taxes and investment credit divided by assets. Stock return is the holding period return during the 12 months before campaign announcement. Book leverage is debt divided by total firm assets. ROA is operating income over total assets. Asset turnover is sales over total assets. Growth is sales growth over the previous four quarters. R&D is research and development expense over assets. Market share is defined in terms of industry sales. Institutional data come from Thomson Reuters Institutional Holdings (13F) database and analyst coverage is from Thomson Reuters Institutional Brokers' Estimate System (I/B/E/S). All variables are lagged by one quarter and winsorized at 1%. Stars denote standard statistical significance (***) $p < 0.01$, (**) $p < 0.05$, (*) $p < 0.1$, respectively).

Characteristic	Summary statistics			Difference		Matched difference	
	(1) Mean	(2) Median	(3) SD	(4) Avg. diff	(5) St. error	(6) Avg. diff	(7) St. error
Market value	868.54	155.22	2915.85	-2711.18	171.560	-1313.50***	133.76
Book-to-market	1.27	0.60	2.98	0.055	0.074	-0.031	0.089
Q -ratio	1.30	0.97	1.13	-0.413***	0.025	-0.374***	0.029
Stock return	0.12	0.02	0.70	-0.063**	0.028	-0.017	0.031
Book leverage	0.23	0.19	0.23	-0.002	0.003	0.003	0.047
ROA	0.01	0.02	0.05	0.004***	0.001	0.000	0.001
Asset turnover	0.26	0.23	0.19	0.036***	0.003	-0.003	0.004
Sales growth	0.10	0.03	0.43	-0.079***	0.007	-0.065***	0.009
Market share	0.04	0.00	0.10	-0.003**	0.002	0.001	0.002
R&D	0.28	0.00	1.92	-0.089***	0.032	0.031	0.036
Inst. ownership	0.57	0.58	0.32	0.143***	0.005	0.126***	0.007
Analysts	8.28	6.00	7.19	-2.093***	0.180	-0.355*	0.202

Table 7

Costs of commonly used activist tactics (stages of activism)

The table reports cost estimates for the three most common tactics of hedge fund activists in 2000–2007. The sample excludes events whose outcome is unknown as of December 2007. The estimation consists of a backward sequence of conditional logistic regressions corresponding to the activist’s break-even constraints for each stage of a campaign. These constraints also provide the structural parameters (called Scale below) required for identification of the absolute level of costs. Panel A reports average stage costs with bootstrap confidence intervals. The total cost of a campaign equals the sum of the costs of its component stages. % Classified denotes the percent of correctly classified campaign continuations. The R^2 is McFadden’s R^2 . Panel B presents the conditional logistic regressions used to estimate the activist costs in Panel A. The independent variable is the activist’s continuation decision at each stage and the dependent variables are the current value of the activist’s stake and the expected gross return from campaign continuation. The expected gross return is the expected firm value in a successful campaign and is estimated by a quantile regression of the firm’s Q ratio on the tercile ranks of firm characteristics. Standard errors are clustered by activist campaign. Stars denote statistical significance (***) $p < 0.01$, (**) $p < 0.05$, (*) $p < 0.1$.

Panel A: Stage-specific costs (\$M)

Tactic	Mean	95% Interval		Scale	R^2	% Classified
Demand negotiations	\$2.94M	\$0.89M	\$6.96M	3.68	17.90%	58.09%
Board representation	\$1.83M	\$0.46M	\$4.32M	2.99	18.20%	60.69%
Proxy contest	\$5.94M	\$3.04M	\$10.86M	1.15	20.40%	77.78%

Panel B: Stage-specific logistic estimation

		Coefficient	St. error	Obs.
Demand negotiations	Marked-to-market investment	-2.809***	(0.671)	241
	Expected gross return	0.271***	(0.103)	
Board representation	Marked-to-market investment	-2.389***	(0.792)	145
	Expected gross return	0.334***	0.122)	
Proxy contest	Marked-to-market investment	-3.287***	(0.951)	63
	Expected gross return	0.869***	(0.225)	

Table 8

Analysis of activist returns

The table reports the returns of hedge fund activists during 2000–2007. Returns are computed starting one month before a campaign and ending with the last Schedule 13D filing or December 2007. Abnormal returns are in excess of the value-weighted CRSP portfolio (VW returns) or characteristic portfolios as in Daniel et al. (1997) (DGTW returns). The last row reports total (non-activist) returns of the hedge funds with 13F holdings data.

Panel A: Raw campaign returns

Stage	Deal period returns, %					Annualized returns, %				
	25%	50%	75%	Mean	SD	25%	50%	75%	Mean	SD
Demand negotiations	-7.36	18.96	75.10	30.85	68.15	-9.81	25.28	100.12	41.13	78.69
Board representation	5.11	40.20	101.23	49.43	85.95	3.41	26.80	67.49	32.95	70.18
Proxy contest	3.17	37.67	80.67	36.88	65.48	1.65	19.65	42.09	19.24	47.30
Total	-1.03	32.63	90.70	39.35	74.34	-0.82	26.10	72.56	31.48	66.49

Panel B: Annualized abnormal returns

Stage	VW returns, %					DGTW returns, %				
	25%	50%	75%	Mean	SD	25%	50%	75%	Mean	SD
Demand negotiations	-21.72	4.88	33.56	8.28	57.54	-19.27	9.29	35.05	7.59	48.41
Board representation	-16.55	1.93	21.61	1.62	62.28	-8.85	6.35	23.94	6.82	47.94
Proxy contest	-13.99	6.35	20.01	3.01	42.52	-5.88	5.94	16.83	3.28	35.51
Total	-16.06	3.89	25.14	4.02	54.10	-11.01	7.61	24.66	5.75	43.93

Panel C: Annualized abnormal net returns

Stage	VW returns, %					DGTW returns, %				
	25%	50%	75%	Mean	SD	25%	50%	75%	Mean	SD
Demand negotiations	-31.68	2.33	37.32	0.39	74.94	-27.65	6.41	36.11	3.97	58.87
Board representation	-21.38	0.00	23.25	-1.47	67.80	-14.99	3.48	21.91	4.65	48.12
Proxy contest	-15.17	1.05	15.17	-2.56	46.53	-16.04	0.61	13.33	-1.89	37.68
Total	-19.01	1.40	22.39	0.23	58.05	-16.59	3.85	21.66	2.38	45.60
Total (non-activist) returns	4.40	15.84	22.85	14.84	11.78	10.76	16.38	22.88	17.18	8.75

Table 9

Stage-specific logistic regressions: alternative estimation of target valuations

The table presents results of a backward sequence of logistic regressions estimating activist costs. Logistic regressions correspond to the activist's break-even profit constraints for each activism stage. The independent variable is the activist's continuation decision at each stage and the dependent variables are the current value of the activist's stake and the expected gross return from campaign continuation. Panel A reports results, in which gross returns are estimated by a censored quantile regression of the firm's Q ratio on the tercile ranks of firm characteristics (sales, asset turnover, market share, growth, and R&D). Q ratio is defined as market equity plus total debt plus preferred stock plus deferred taxes and investment credit divided by assets. Panel B estimates gross returns in terms of the best performing industry peer in the same value tercile as the target (no firm characteristics except for industry affiliation are used). Standard errors are clustered by campaign. Stars denote significance levels (***) $p < 0.01$, (**) $p < 0.05$, (*) $p < 0.1$).

Panel A: Logistic estimation (potential target value based on firm characteristics)

		Coefficient	St. error	Obs.
Demand negotiations	Marked-to-market investment	-2.809***	(0.671)	241
	Expected gross return	0.271***	(0.103)	
Board representation	Marked-to-market investment	-2.389***	(0.792)	145
	Expected gross return	0.334***	0.122)	
Proxy contest	Marked-to-market investment	-3.287***	(0.951)	63
	Expected gross return	0.869***	(0.225)	

Panel B: Logistic estimation (potential target value based on industry affiliation)

		Coefficient	St. error	Obs.
Demand negotiations	Marked-to-market investment	-2.180***	(0.491)	242
	Expected gross return	0.221**	(0.113)	
Board representation	Marked-to-market investment	-1.989***	(0.563)	147
	Expected gross return	0.329**	(0.147)	
Proxy contest	Marked-to-market investment	-3.346***	(1.087)	63
	Expected gross return	0.932***	(0.343)	

Table 10

Stage-specific logistic regressions with controls for activist characteristics

The table presents results of a backward sequence of logistic regressions estimating activist costs. Logistic regressions correspond to the activist's break-even profit constraints for each activism stage. The independent variable is the activist's continuation decision at each stage and the dependent variables are the current value of the activist's stake, the expected gross return from campaign continuation, and activist controls, including the number of contemporaneous campaigns by a hedge fund activist in a given quarter (Number of ongoing campaigns), an indicator (Active HFs) for the hedge funds with the most campaigns in the sample period (measuring experience), and an indicator (Hostile HFs) for the hedge funds with the most proxy contests in 2000–2007 (measuring preference for confrontation). Standard errors are clustered by activist campaign. Stars denote statistical significance (***) $p < 0.01$, (**) $p < 0.05$, (*) $p < 0.1$.

Stage	Covariates	Coefficient	St. error
Demand negotiations N=241	Marked-to-market investment	-3.034***	(0.808)
	Expected gross return	0.639***	(0.179)
	Number ongoing campaigns	-0.451**	(0.230)
	Indicator: Active HFs	-0.983**	(0.442)
	Indicator: Hostile HFs	1.267**	(0.527)
Board representation N=145	Marked-to-market investment	-2.247***	(0.728)
	Expected gross return	0.485***	(0.179)
	Number ongoing campaigns	-0.505***	(0.192)
	Indicator: Active HFs	0.164	(0.537)
	Indicator: Hostile HFs	1.109***	(0.425)
Proxy contest N=63	Marked-to-market investment	-3.916***	(1.428)
	Expected gross return	1.141***	(0.422)
	Number ongoing campaigns	-0.399	(0.389)
	Indicator: Active HFs	-2.496**	(1.149)
	Indicator: Hostile HFs	2.688**	(1.344)

Table 11

Abnormal activist returns and takeover activity

The table reports the abnormal annualized returns realized by hedge fund activists in 2000–2007. Included are only campaigns with specific activist demands, which are classified in one of four broad groups—corporate governance, restructuring and strategic alternatives, capital structure, opposition to a proposed deal. The sample is further subdivided into treatment (M&A) and control (No M&A) groups based on M&A activity. M&A transaction data from Thomson Reuters SDC Platinum identify 104 activist targets acquired between the start of the campaign and 180 days after the activist’s exit, or the end of 2007 if no exit is observed. Abnormal activist returns are calculated in excess of the value-weighted CRSP portfolio (*VW returns*) or in excess of characteristic portfolios as in Daniel, Grinblatt, Titman, and Wermers (1997) (*DGTW returns*). Net returns subtract activist costs estimated as in Table 7. All return measures are winsorized at 1%. Panel A reports the difference in mean returns between the treatment (M&A) and control (No M&A) groups. Panel B uses propensity-score matching to control for the four types of activist demands (defined above). Stars denote standard statistical significance (***) $p < 0.01$, ** $p < 0.05$, * $p < 0.1$, respectively).

Panel A: Annualized abnormal (net) returns

Abnormal returns	M&A	No M&A	Difference	St. error	<i>t</i> -Stat
Value-weighted returns, %	25.03	1.26	23.77***	6.97	3.41
Value-weighted <i>net</i> returns, %	14.23	6.40	7.83	5.59	1.40
DGTW returns, %	17.53	-3.08	20.61***	7.06	2.92
DGTW <i>net</i> returns, %	10.99	2.51	8.48	6.00	1.41

Panel B: Annualized abnormal (net) returns (controlling for activist demands)

Abnormal returns	M&A	No M&A	Difference	St. error	<i>t</i> -Stat
Value-weighted returns, %	25.03	25.54	-0.51	8.50	-0.06
Value-weighted <i>net</i> returns, %	14.23	10.99	3.24	7.36	0.44
DGTW returns, %	17.53	12.80	4.73	9.10	0.52
DGTW <i>net</i> returns, %	10.99	11.64	-0.65	7.22	-0.09