



---

Publicly Accessible Penn Dissertations

---

Fall 2011

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

Nickolay M. Gantchev

University of Pennsylvania, [gantchev@wharton.upenn.edu](mailto:gantchev@wharton.upenn.edu)

Follow this and additional works at: <https://repository.upenn.edu/edissertations>

 Part of the [Corporate Finance Commons](#), [Econometrics Commons](#), and the [Finance Commons](#)

---

### Recommended Citation

Gantchev, Nickolay M., "The Costs of Shareholder Activism: Evidence from a Sequential Decision Model" (2011). *Publicly Accessible Penn Dissertations*. 442.  
<https://repository.upenn.edu/edissertations/442>

This paper is posted at ScholarlyCommons. <https://repository.upenn.edu/edissertations/442>  
For more information, please contact [repository@pobox.upenn.edu](mailto:repository@pobox.upenn.edu).

---

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

## Abstract

Recent work on hedge fund activism documents substantial abnormal returns but fails to answer the question whether these returns cover the large costs of activist campaigns. This paper provides benchmarks for monitoring costs and evaluates the net returns to activism. I model activism as a sequential decision process consisting of demand negotiations, board representation and proxy contest and estimate the costs of each distinct stage. A campaign ending in a proxy fight has average costs of \$10.71 million. The proxy contest is the most expensive stage, followed by demand negotiations. The estimated monitoring costs consume more than two-thirds of gross activist returns implying that the net returns to activism are significantly lower than previously thought. Even though the mean net return is close to zero, the top quartile of activists earn higher returns on their activist holdings than on their non-activist investments.

## Degree Type

Dissertation

## Degree Name

Doctor of Philosophy (PhD)

## Graduate Group

Finance

## First Advisor

Lucian Taylor

## Second Advisor

Franklin Allen

## Third Advisor

Itay Goldstein

## Keywords

Shareholder Activism, Hedge Funds, Monitoring, Corporate Governance

## Subject Categories

Corporate Finance | Econometrics | Finance

THE COSTS OF SHAREHOLDER ACTIVISM:  
EVIDENCE FROM A SEQUENTIAL DECISION MODEL

Nickolay M. Gantchev

A DISSERTATION

in

Finance

For the Graduate Group in Managerial Science and Applied Economics

Presented to the Faculties of the University of Pennsylvania

in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

2011

Supervisor of Dissertation

-----

Lucian Taylor, Assistant Professor of Finance

Graduate Group Chairperson

-----

Eric T. Bradlow, Professor of Marketing, Statistics, and Education

Dissertation Committee

Lucian Taylor, Assistant Professor of Finance

Franklin Allen, Nippon Life Professor of Finance and Economics

Itay Goldstein, Associate Professor of Finance

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

COPYRIGHT

Nickolay M. Gantchev

2011

To my parents.

## Acknowledgements

I am grateful to Franklin Allen, Itay Goldstein, and Lucian Taylor for their invaluable guidance. I thank an anonymous referee, Ashwini Agrawal and David Denis for helpful comments and discussion. I also thank Carlos Bellon, Philip Bond, Indraneel Chakraborty, Paolo Fulghieri, Anil Shivdasani, Toni Whited, and seminar and conference participants at University of British Columbia, Carnegie Mellon University, University of Houston, London Business School, Ohio State University, Oxford University, University of Rochester, University of Toronto, University of North Carolina at Chapel Hill, University of Pennsylvania, Vanderbilt University, Washington University in St. Louis, University of Wisconsin at Madison, the SFS Finance Cavalcade at the University of Michigan and the 2011 Western Finance Association. I am grateful to Alon Brav for providing data on non-public activist campaigns.

## **Abstract**

# **THE COSTS OF SHAREHOLDER ACTIVISM: EVIDENCE FROM A SEQUENTIAL DECISION MODEL**

**Nickolay M. Gantchev**

**Lucian Taylor**

Recent work on hedge fund activism documents substantial abnormal returns but fails to answer the question whether these returns cover the large costs of activist campaigns. This paper provides benchmarks for monitoring costs and evaluates the net returns to activism. I model activism as a sequential decision process consisting of demand negotiations, board representation and proxy contest and estimate the costs of each distinct stage. A campaign ending in a proxy fight has average costs of \$10.71 million. The proxy contest is the most expensive stage, followed by demand negotiations. The estimated monitoring costs consume more than two-thirds of gross activist returns implying that the net returns to activism are significantly lower than previously thought. Even though the mean net return is close to zero, the top quartile of activists earn higher returns on their activist holdings than on their non-activist investments.

# Contents

<b>Contents</b>	<b>vi</b>
<b>List of Tables</b>	<b>viii</b>
<b>List of Figures</b>	<b>ix</b>
0.1 Introduction . . . . .	1
0.2 Literature Review . . . . .	7
0.3 Model Framework . . . . .	10
0.3.1 Activism as a Sequential Process . . . . .	10
0.3.2 The Activist's Decision Problem . . . . .	13
0.4 Econometric Design . . . . .	17
0.4.1 Random Utility Specification . . . . .	17
0.4.2 Identification . . . . .	20
0.4.3 Target Valuation and Campaign Return . . . . .	22
0.5 Campaign Data . . . . .	25

0.5.1	Sample Construction . . . . .	25
0.5.2	Summary of Activist Events . . . . .	27
0.6	Empirical Results . . . . .	35
0.6.1	Costs of Activist Campaigns . . . . .	35
0.6.2	Returns to Hedge Fund Activism . . . . .	40
0.7	Robustness . . . . .	42
0.7.1	Expected Activist Reward . . . . .	42
0.7.2	Activist Heterogeneity . . . . .	44
0.7.3	Ownership, Takeover Activity and Learning . . . . .	45
0.8	Concluding Remarks . . . . .	47
0.9	Appendices . . . . .	48
0.9.1	Appendix A: SEC Schedule 13D . . . . .	48
0.9.2	Appendix B: Carl Icahn & Time Warner Inc. . . . .	50
	<b>Bibliography</b>	<b>54</b>

# List of Tables

1	Distribution of Activist Campaigns by Year and Activist Stage . . . . .	58
2	List of Activist Hedge Funds: 2000-2007 . . . . .	59
3	Most Common Activist Demands . . . . .	60
4	Duration of Activist Campaign . . . . .	61
5	Activist Ownership Analysis . . . . .	62
6	Characteristics of Target Companies . . . . .	63
7	Costs of Commonly Used Activist Tactics . . . . .	64
8	Activist Abnormal Return Analysis . . . . .	65
9	Stage-Specific Logistic Regressions: Alternative Estimation Methods . . . . .	66
10	Expected Activist Reward by Outcome . . . . .	67
11	Stage-Specific Logistic Regressions with Activist Fixed Effects . . . . .	68
12	Activist Abnormal Returns and Takeover Activity . . . . .	69

# List of Figures

1	A Sequential Definition of the Activist Process . . . . .	57
---	---	----

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

## 0.1 Introduction

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

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)). In order to understand this incentive trade-off, we need to assess both the benefits and the costs of active monitoring.

Recent work on hedge fund activism has documented that activists generate significant abnormal returns both in absolute terms and in comparison to non-activist investing. Brav et al. (2008) report that the average hedge fund activist in 2001-2006 earned 14.30% higher return than the size-adjusted value weighted portfolio of stocks. Clifford (2008) demonstrates that activist hedge funds in 1998-2005 generated 21.75% higher annualized returns than the passive holdings of the same managers.

Do these substantial returns cover the large costs of activist engagements? These costs consist of 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 to negotiate with a target. The existing literature on shareholder activism lacks a proper measure for these costs and does not take them into account in the estimation of activist returns. This leads to an incomplete assessment of the activist's incentive trade-off.

Most evidence about monitoring costs is anecdotal and limited to proxy solicitations - the most public activist approach. 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". Hedge fund activists estimate proxy costs at "upwards of \$10,000,000".<sup>1</sup> However, the majority of activist campaigns do not reach a proxy contest but rely on less confrontational activist 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. In order to account for the large heterogeneity of activist events, I estimate the costs associated with three common activist approaches - demand negotiations, board representation and proxy contest. 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

---

<sup>1</sup>See 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/>).

behavior.

The approach taken in this paper 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 transform this break-even condition into a discrete-choice framework and estimate the costs of activism implied by the observed decision-making behavior of activists between 2000 and 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 an 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 involves 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 selling value of his ownership stake. The observed continuation decision defines a minimum cost threshold at which the activist is indifferent between continuation and exit.

The activist's break-even condition is transformed into 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 a target's potential value if the activist's demands are successfully implemented. Empirically, I estimate a target's potential value as the valuation of a matched peer with similar fundamentals. This valuation metric reflects the potential for value improvement due to an activist engagement and is calibrated to the actual valuation improvement in successful activist campaigns.

The estimation procedure consists of two simultaneous parts - a system of conditional logistic regressions, which separately derives the costs of each activist 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. I solve the underidentification problem of the logistic model by using an exogenous identification restriction derived from the activist's break-even profit constraint. This identifying restriction fixes the scale of utility of each stage allowing me to derive the absolute magnitude of stage costs.

The main contribution of this paper is providing cost benchmarks to assess the *net* returns to activism. I 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 activist campaign. 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 approaches.

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).<sup>2</sup> 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. Even though the mean net return is close to zero, the top quartile of activists earn higher returns on their activist holdings than on their non-activist portfolios.

This paper introduces a large hand-collected dataset 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 final sample consists of 1164 unique campaigns summarized in 5645 individual filings by 171 hedge funds and 1023 unique targets. In addition to data from regulatory filings, the sample includes activist events reported in the press as described in Brav et al. (2008).<sup>3</sup>

The comprehensive dataset 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 percent proceed to request a board seat and only 10-12% threaten a proxy contest. Surprisingly, only 7% of activist

---

<sup>2</sup>The calculation of characteristic based returns follows the approach in Daniel, Grinblatt, Titman and Wermers (1997).

<sup>3</sup>Schedule 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.

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), CEO removal or executive compensation changes. In terms of their demands, 29.17% of activists achieve their objectives. As an alternative measure of success, I estimate holding period returns and show that only the highest quartile of activist campaigns earn positive returns.

I also document 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 rest of the paper proceeds as follows. **Section 2** reviews the related academic literature. **Section 3** presents a new definition of activism as a sequential decision process and defines the activist's break-even profit constraint. **Section 4** discusses the empirical design, identification and estimation of target valuations. **Section 5** describes the activist sample. **Section 6** reports the main empirical results and **Section 7** presents robustness analysis. **Section 8** concludes.

## 0.2 Literature Review

One of the classic questions in finance is whether shareholders have adequate incentives to effectively monitor firm management. Active monitoring aligns the interests of managers and shareholders, and reduces the agency costs resulting from the separation of ownership and control. Shareholder activists - minority shareholders intent on changing major firm policies - have often acted as the interface between internal governance by blockholders and board of directors and external governance by the market for corporate control.

The theoretical literature has studied the importance of monitoring costs (in terms of liquidity, risk aversion, or information acquisition) in determining the activist's incentive trade-off. Grossman and Hart (1980) were the first to point out that small shareholders may lack the proper incentives to discipline managers. Shleifer and Vishny (1986) consider the role of large shareholders (blockholders) in providing effective governance. They argue that a blockholder will actively monitor as long as the return on his stake is sufficient to cover the costs of monitoring.

Admati, Pfleiderer and Zechner (1994) consider a blockholder's trade-off in terms of the loss in risk-sharing benefits resulting from concentrated ownership. They show that market inefficiencies (e.g., free-riding) may induce a blockholder to reduce his ownership rather than incur the cost of monitoring. Kahn and Winton (1998) demonstrate that the precision of a blockholder's private information increases his motive to speculate in the target's shares rather than intervene to improve performance. Maug (1998) studies the effects of market liquidity on a shareholder's incentives to monitor and shows that liquid markets help shareholders overcome the free-rider problem.

More recently, Edmans and Manso (2011) argue that a multiple blockholder structure exacerbates the free-rider problem and reduces the effectiveness of direct intervention (“voice”) but increases the usefulness of governance through trading (“exit”). Cohn and Rajan (2011) consider the interplay between internal and external governance in a model, in which the activist incurs a fixed cost as a function of his information about the firm.

Despite the theoretical emphasis on monitoring costs, the empirical literature has largely ignored costs in analyzing the activist’s incentive trade-off. This most likely results from challenges in measuring the costs of activism.

The first challenge has been finding the right institutional setting to study the trade-off facing an activist shareholder. Most empirical work has focused on pension or mutual funds and labor unions even though their monitoring abilities are severely limited by regulatory (or self-imposed) restrictions. For example, pension and mutual funds are subject to the ‘prudent man’ rule which curbs investment in some troubled companies while mutual funds have to comply by diversification requirements that limit their ability to accumulate a concentrated position in a target. In addition, pension and mutual funds may be unwilling to become confrontational with firms whose business they covet while unions may pursue self-interested agendas conflicting with shareholder maximization.

Consequently, most recent surveys of shareholder activism (Karpoff (2001), Romano (2001), Gillan and Starks (2007), Holderness (2003), Yermack (2010)) have concluded that institutional activism (by pension funds, mutual funds and unions) has had limited impact on firm governance and performance. Kahan and Rock (2006) differentiate hedge funds from other activists. They argue that hedge funds suffer from fewer conflicts of interest, face fewer regulatory restrictions, and have a better-aligned incentive structure, which makes them better positioned

as active monitors.<sup>4</sup>

The second challenge in measuring the costs of activism has been the lack of empirical data. Most evidence about monitoring costs is limited and anecdotal, and pertains to contested proxy solicitations. For example, Stephen M. Bainbridge estimates the costs of a proxy contest at \$1.8 million based on data from the late 1980s while statements by hedge fund managers suggest that proxy costs exceed \$10 million.<sup>5</sup> However, the costs of less confrontational activist campaigns are unobservable and cannot be estimated from publicly-available information.

This paper is the first attempt in the literature to quantify the costs of monitoring. It complements recent work on hedge fund activism by providing cost benchmarks to evaluate the *net* returns to activism. For example, Brav et al. (2008) report that the average hedge fund activist in their sample between 2001-2006 earned 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 activists, and find that hedge funds earn higher overall returns. Clifford (2008) demonstrates that activist investing is a profitable investment strategy even when compared to non-activist investing.

The existing literature on shareholder activism does not account for the costs of activist monitoring due to the lack of proper measures for these costs. This leads to an incomplete assessment of the activist's incentive trade-off. This paper estimates that costs consume about two-thirds of gross activist returns implying that the net returns to activism are significantly lower than previously thought.

---

<sup>4</sup>Hedge funds have initiated the large majority of activist campaigns since 2000.

<sup>5</sup>See references above.

## 0.3 Model Framework

### 0.3.1 Activism as a Sequential Process

Gillan and Starks (2007) 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.”(p. 55) Tirole (2006) provides the following definition: “Active monitoring consists in interfering with management in order to increase the value of the investors’ claims.”(p. 27) 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.<sup>6</sup> 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.”<sup>7</sup>

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

---

<sup>6</sup>See also Appendix B describing Carl Icahn’s campaign at Time Warner Inc.

<sup>7</sup>Full letter available at [http://www.sec.gov/Archives/edgar/data/1006438/000089534505000135/exhi99\\_10.txt](http://www.sec.gov/Archives/edgar/data/1006438/000089534505000135/exhi99_10.txt).

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*.”<sup>8</sup>

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 representation, 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 know as a “beneficial ownership report”) needs to 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.<sup>9</sup> 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.

Insert Figure 1

Shortly after the initial filing of Schedule 13D, the activist formally communicates a set of

---

<sup>8</sup>Full letter available at <http://www.sec.gov/Archives/edgar/data/1056590/000105659002000009/exhibitc.txt>.

<sup>9</sup>In addition to data from regulatory filings, the sample includes non-public activist campaigns (i.e. events below the filing threshold of 5%) reported in the press as described in Brav et al. (2008).

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 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.

### 0.3.2 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.”<sup>10</sup>

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 price,  $M_i$ ,

---

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

and is a sufficient statistic for the profitability of the campaign. In the empirical analysis, the continuation benefit is measured by the valuation gap between the target firm and its matched peers, 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 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 selling value of his ownership stake. 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 (minimum) cost thresholds implied by the 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 price,  $M_{in}$ , 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 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.<sup>11</sup>

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

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

Here,  $\pi_{in}$  denotes the current activist ownership, and  $c_n$  is the cost of stage  $n$ .<sup>12</sup>  $U_{i,n+1}^{cont}$  is the utility from continuation to the next stage, if applicable. The activist's break-even constraint can be written as:

$$U_{i,n}^{cont} = U_{i,n}^{exit} \iff \tilde{U}_{i,n} = U_{i,n}^{cont} - U_{i,n}^{exit} = 0 \quad (2)$$

For example, consider the activist's choice at the last decision stage - the decision node before the proxy contest stage. The activist compares the utility from the two available alternatives - continue to a proxy fight,  $U_{i,3}^{cont}$ , or sell at the current market price,  $U_{i,3}^{exit}$ , as follows:

$$\begin{aligned} U_{i,3}^{cont} &= -c_3 + p_{i,3}\pi_i V_{i,3} + (1 - p_{i,3})\pi_i M_{i,3} \quad (3) \\ U_{i,3}^{exit} &= \pi_i M_{i,2} \end{aligned}$$

---

<sup>11</sup>The 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.

<sup>12</sup>The empirical evidence in Section 5 supports the modelling assumption that the activist would not use ownership strategically to exert more pressure on the target. Hence, I drop the stage subscript for  $\pi$ .

The activist continues to the proxy stage if

$$\begin{aligned}\tilde{U}_{i3} &= -c_3 + p_{i3}\pi_i V_i + (1 - p_{i3})\pi_i M_i - \pi_i M_i \geq 0 \\ \tilde{U}_{i3} &= \left(-\frac{c_3}{p_{i3}}\right) \left(\frac{1}{\pi_i M_i}\right) + \left(\frac{V_i}{M_i}\right) - 1 \geq 0\end{aligned}\tag{4}$$

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 transformation 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,  $M_i$ . This reasoning is supported by findings in Brav et al. (2008) who 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 of exit.

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

$$\tilde{U}_{in} = \chi_n \left(\frac{1}{\pi_i M_i}\right) + \left(\frac{V_i}{M_i}\right) - 1 = 0\tag{5}$$

where

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

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

## 0.4 Econometric Design

### 0.4.1 Random Utility Specification

The activist's break-even constraint for monitoring can be rewritten into 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.<sup>13</sup>

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

---

<sup>13</sup>See Eckstein and Wolpin (1989) and Train (2003) for surveys of the literature on discrete-choice models.

expected gross return of a successful campaign and the present value of the investment in the target. These estimates differ from the activist's actual utility by an error term, which captures unobservable factors that vary among activists with the same representative utility such as preference for (or experience 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:

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

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

Assuming iid type I extreme value errors results in the logit formulation, which simplifies the above expression further.

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

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 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:

$$\log \left( \frac{\textit{continue}}{\textit{exit}} \right) = \hat{\beta}_1 \left( \frac{1}{\pi_{in} M_{in}} \right) + \hat{\beta}_2 \left( \frac{V_{in}}{M_{in}} \right) \quad (12)$$

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 scale parameter, which is required to find the absolute magnitude of each cost threshold (as described next).

## 0.4.2 Identification

Monitoring costs are estimated using the activist’s break-even profit condition (as defined in equation 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.<sup>14</sup> That is, the activist’s decision problem is estimated equation by equation following a recursive system of substitutions.

Each stage logistic regression uses the conditional sample of activists who have reached the current decision step and are choosing whether to continue to the next stage.<sup>15</sup> The starting point of the estimation is the last decision stage, where the activist chooses whether to initiate a proxy contest.<sup>16</sup> The activist’s break-even profit constraint (Equation 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:

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

---

<sup>14</sup>See Bas, Signorino and Walker (2008) for a discussion of statistical backward induction.

<sup>15</sup>This 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  $n$ .

<sup>16</sup>The 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. In brief, estimation of the logistic model requires imposing a restriction on the variance of the random error term. Typically, it is assumed that the random utility component is distributed type I extreme value with variance  $\bar{\sigma}^2 = \pi^2/6$ . This is equivalent to normalizing the scale of utility, or scaling each regression coefficient by  $1/\bar{\sigma}$  (see Train 2003). 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 net returns to activism without knowing the absolute magnitudes of monitoring costs. Absolute costs can be estimated by using an exogenous identification restriction derived from the activist's break-even profit constraint:

$$\sigma_{\varepsilon_{in}^*} = \frac{1}{\hat{\beta}_{2n}} \tag{14}$$

This identifying restriction fixes the scale of utility of each stage and provides an additional degree of freedom to pin down the 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.

### 0.4.3 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 maximum (or 'frontier') valuation. The modelling setup in this paper assumes that a target will achieve its maximum potential value if the activist's demands are successfully implemented.

The maximum potential value of a firm is unobservable and has to be estimated. The right measure needs to reflect the potential for value improvement due to an activist intervention. Generally, a firm's valuation may diverge from its fundamental 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 intervention. This prescribes the

use of firm-level characteristics, which are likely to remain unaffected by the activist’s demands. Following Edmans, Goldstein and Jiang (2011), I match targets to other 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 (R&D expense divided by sales).

Second, the estimation of maximum 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 maximum value assumes that an activist can improve a target’s valuation to that of the best performing peer company 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 maximum value needs to properly reflect the potential for value improvement when a campaign is successful. This is achieved by calibrating expected rewards to the actual valuation improvement in successful activist campaigns. Specifically, a parameter in the censored quantile regression used to estimate ‘frontier’ values is set to equal the median value improvement achieved by successful activists (calculated at 35.38%).<sup>17</sup> Table 10 compares expected activist rewards between successful and failed campaigns and demonstrates that the difference in average rewards between the two samples is not statistically significant at conventional levels. This evidence confirms that the chosen valuation metric accurately reflects the potential for value improvement from a successful campaign.

The estimation of frontier values starts by dividing all CRSP/Compustat firms in a given

---

<sup>17</sup>See Edmans, Goldstein and Jiang (2011) for a discussion of the role of this parameter.

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.<sup>18</sup> 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)).<sup>19</sup> 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.<sup>20</sup>

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 3-digit 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).

---

<sup>18</sup>The censored least absolute deviations estimator of Powell (1984) is a variation of the original approach of Koenker and Bassett (1984) and is robust to heteroskedasticity.

<sup>19</sup>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.

<sup>20</sup>Brav et al. (2009) 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... The marginal probabilities are substantial.” (p. 1754)

## 0.5 Campaign Data

### 0.5.1 Sample Construction

I use data from SEC Schedule 13D, preliminary and definitive proxy statements, and SharkRepellent.net to construct a comprehensive dataset 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 the 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 needs to 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 10 days of any material change in the amount or intent of ownership, which allows me to track the evolution of each campaign through the stages of activism. 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 four-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 5000 filings but about 15% of them were 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* (Feb. 1, 2006), and a list of hedge fund activists provided by Robin Greenwood. 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 CIK number of the fund; whether the activist files a 13F report with the SEC; the identity, CIK number, CUSIP and SIC code of the target; the percentage owned by the activist; the formal list of demands; the target’s reaction and the outcome of each demand.

Item 4 of Schedule 13D provides detailed information 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 activist 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.

In the last step, 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 the target. In order 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 non-public 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 performed 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, 9 exited after demand negotiations (3 successes), 4 exited after board representation (all successful), and 8 after proxy contest (3 successes).<sup>21</sup> The inclusion of these non-public activist events does not affect the cost estimates reported in this paper.

After excluding REITS (SIC 6798), bankrupt companies, blank check entities (SIC 6770), trusts (6792), ADRs, and left-censored observations (events whose start is before 2000), my final sample consists of 1164 unique campaigns summarized in 5645 individual filings involving 171 hedge funds and 1023 unique targets.

## 0.5.2 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

---

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

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.<sup>22</sup> 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 original activist sample, which includes 5645 individual filings involving 129 hedge fund groups and 1164 unique targets. The last two columns of the table present the CRSP-Compustat merged sample, which includes 4610 individual filings and 953 unique targets.<sup>23</sup>

---

<sup>22</sup>The 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).

<sup>23</sup>Targets' CIK codes obtained from Schedule 13D filings are manually matched to PERMNOs, which significantly improves the overall match with CRSP-Compustat.

As seen in Table 1, more than two-thirds of activists quit before making formal demands to the target. These hedge funds may have filed Schedule 13D for legal reasons or in anticipation of an activist engagement but decided against it. From the sample of activists who formally communicate specific demands to their targets, less than 20 percent proceed to request a board seat and only 10-12% threaten a proxy contest. Surprisingly, only 7% of 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 LP, 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 LP, Financial Edge Fund LP, Bulldog Investors GP, Barington Capital Group LP/Clinton Group and Ramius LLC. The evidence suggests that both experience and preference for a specific tactic may be important in explaining the activist's behavior. In the main empirical analysis, I show that both fixed effects are statistically significant.

Insert Table 2

### **Activist Demands and Success Rates**

Table 3, Panel A, presents the most common activist demands in the sample period.<sup>24</sup> As previously documented in the literature, the most frequent demand is for a sale of the company to a third party (one third of all events), followed by demands for higher dividends (share

---

<sup>24</sup>The total number of demands listed in the table exceeds the number of campaigns with formal demands as in some campaigns activists make multiple (usually two) demand.

repurchases), and restructuring of inefficient operations. Greenwood and Schor (2009) argue that “activism targets earn high returns primarily when they are eventually taken over.” (p. 363) 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 propensity-score matching on demand success.

### Insert Table 3

The impact of takeover activity on event outcomes warrants further discussion. As Carl Icahn points out, it would be simplistic to suggest that activists “simply bang on the boardroom table and demand a sale”: “While sometimes selling the company is the right approach because of the synergies that come from a takeover, my overall strategy is more complex: it is to force lackluster managements to sustainably improve their performance. This is frequently an arduous and complex process. Simple solutions are rarely obvious. In numerous cases, we have taken board seats to work with existing managements to help build value. ... As board members, we don’t simply bang on the boardroom table and demand a sale, but work hard with existing managements to create lasting value. This benefits all shareholders, not just us. It is hard to reconcile these facts with the [...] statement that my strategy is simply to “sell the company.””<sup>25</sup>

Another interesting observation from Table 3 is that in more than 10% of the events the activist himself bids for a target (offers to take it private). In the majority of cases, the activist’s bid follows a hostile response by the target’s management to a previous demand

---

<sup>25</sup> “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/>).

for a sale. A hedge fund bid galvanizes the takeover process and sets a reasonable lower bound on future takeover offers. This is one way in which activist shareholders occupy an important ‘middle ground’ between internal governance by blockholders and board of directors and external governance by the market for corporate control. The activist’s motivation - to attract high bids from third parties - is distinctly different from the motivation for a toehold acquisition (to help a future takeover by the toehold buyer). Consequently, this type of activist bid is typically considered as another activist demand (see for example, Brav et al. (2008)).

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 the 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. Note that classifying board representation as an activist tactic rather than a campaign demand lowers the estimated success rate of activism compared to previous studies.<sup>26</sup> Using holding period activist returns as an alternative measure of success, I find that only the highest quartile of campaigns earn positive returns (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

---

<sup>26</sup>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).

campaigns. These results need to be interpreted with caution as the decision to continue an activist engagement is endogenous to each campaign.

### **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 were announced raises the average campaign horizon to 19 months.<sup>27</sup>

Insert Table 4

Panel B of Table 4 reports that the mean (median) duration of an activist stage is seven (three) months. There is a virtually no variability in the mean (median) duration among the different stages of the process. This empirical observation serves as the basis for the convenient modelling 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 \$868.52 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%).

Insert Table 5

---

<sup>27</sup>Brav et al. (2008) report a similar median duration for the campaigns in their sample - 12 months based only on completed events and 19 months based on predictive regressions for all events.

Another interesting question is whether activists vary their ownership with the tactics they employ. Panel A of Table 5 reports that the median percentage change in ownership between two activism stages is only 2.94%, which corresponds to a 0.24% ownership increase based on the median activist stake of 8%. The mean change in ownership is 1.63%. The small magnitude of these changes suggests that activists do not use high ownership to exert pressure in their negotiations with the target.

Panel B of Table 5 further evaluates the role of activist ownership on campaign outcomes by comparing ownership and maximum ownership between successful and unsuccessful campaigns (defined in terms of demand outcomes). The difference in ownership and maximum ownership between the two samples is not statistically significant after propensity-score matching on predicted probability of success.<sup>28</sup>

### **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

---

<sup>28</sup>In unreported results, I use activist tactic, campaign duration and institutional ownership to predict the success of an activist campaign. Ownership and/or ownership squared are not statistically significant in determining a campaign's probability of success.

Table 6 reveals that activist targets are significantly smaller than matched firms, with a mean market value of \$868.52 million and Q ratio of 1.30. However, 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 (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 serious market underperformance which most likely results from agency problems.

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 activist, 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 the activist's marginal cost of initiating a campaign.

## 0.6 Empirical Results

### 0.6.1 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. At each stage of the process, an activist must choose whether to continue or exit 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.<sup>29</sup> 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 equation 12) to determine the cost thresholds of the three activism stages - demand negotiations, board representation and proxy contest. Each cost cutoff represents a lower bound on the costs of employing a specific engagement tactic. The empirical design consists of *two parts* - a system of *conditional binary logistic regressions*, which separately derives the costs of each stage, and *statistical backward induction*, which uses the estimated costs of the later stages of activism in the calculation of the costs of its earlier stages.

The starting point of the estimation procedure 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 sub-groups - 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

---

<sup>29</sup>In order to 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.

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 cost of the campaign. As described in equation 13, the first regression coefficient determines the *relative* magnitude of proxy costs while the second coefficient identifies the *absolute* magnitude of these costs (as in equation 14). 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 negotiations, board representation and proxy contest, including their bias-corrected bootstrap confidence intervals. The cost of an activist campaign that ends in a proxy contest is \$10.71 million. The proxy stage has the highest cost equal to \$5.94 million for the average campaign (with a 95% confidence interval of \$3.04 - \$10.86 million). This stage typically involves significant disclosure, legal and other fees of hiring proxy solicitors, corporate governance experts, investment banks, public relations and advertising firms as well as printing and postage costs to reach a target's shareholders.

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”.<sup>30</sup> In a letter to the SEC, Ralph V. Whitworth, principal of activist hedge fund Relational Investors LLC argues that “... only a few investors have

---

<sup>30</sup> “A Comment on the SEC Shareholder Access Proposal” by Stephen M. Bainbridge, December 19, 2003 (<http://www.sec.gov/rules/proposed/s71903/bainbridge121903.htm>).

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”.<sup>31</sup> 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.”<sup>32</sup>

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. Unlike the proxy contest stage, most of the costs of the first stage are unobservable and cannot be estimated from publicly-available information. However, the disclosure and legal fees associated with demand negotiations most likely represent a smaller portion of the overall costs compared to unobservable costs such as the time and effort of the activist.

Becht, Franks, Mayer and Rossi (2008) suggest that unobservable costs dominate the overall costs of private demand negotiations: “Shareholder activism is predominantly executed through private interventions as opposed to shareholder proposals at a company’s annual meeting, or filing of proxy statements. ... These engagements involved numerous meetings and telephone calls with chairmen, CEOs, and CFOs..., other executives, divisional managers, heads of investor relations, and with non-executive board members, ... [The Fund] also privately contacted other institutional shareholders, with a view to communicating its engagement objectives and soliciting support for its activities. Strikingly, engagements rarely took a public form.” (p. 3096).

---

<sup>31</sup>Letter from Ralph V. Whitworth, Principal of Relational Investors LLC, to the SEC, Aug. 14, 2009 (<http://www.sec.gov/comments/s7-10-09/s71009-185.pdf>).

<sup>32</sup>“We’re Not the Boss of A.I.G.” op-ed by Carl Icahn, published in The New York Times on March 29, 2009 (<http://dealbook.nytimes.com/2009/03/30/were-not-the-boss-of-aig/>).

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 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."<sup>33</sup> 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.<sup>34</sup>

Panel A of Table 7 also reports the scale parameters used to identify the absolute magnitude of stage costs. As pointed out earlier, these scale 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 parameter while the negotiations stage has the highest scale parameter. Intuitively, we expect the scale parameters to become smaller with every consecutive stage because the activists employing more confrontational tactics are more homogeneous.

The cost of an average 'complete' campaign that ends in a proxy contest is \$10.71 million. This compares favorably to the hypothetical break-even fees calculated in reference to a typical hedge fund incentive schedule (80% of assets under management and 20% performance fees). Assuming that performance fees equal the abnormal returns earned in a campaign, the mean (median) fees based on value-weighted abnormal returns (as reported in Table 8) are \$12.4 mil-

---

<sup>33</sup> As reported in The New York Times, December 7, 2005 (<http://www.nytimes.com/2005/12/07/business/07icahn.html>)

<sup>34</sup> Reported in Board Member Magazine, 2010, [http://www.boardmember.com/MagazineArticle\\_Details.aspx?id=5251](http://www.boardmember.com/MagazineArticle_Details.aspx?id=5251).

lion (\$11.1 million) while the mean (median) fees in excess of characteristic-based benchmark portfolios are \$17.3 million (\$12.1 million).

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 (20.40%) and lowest for demand negotiations (17.90%).

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 non-parametric bootstrap to calculate standard errors. Bootstrapping involves repeated sampling (with replacement) from the dataset at hand to estimate the error terms. I calculate bias-corrected bootstrap confidence intervals for the cost estimates, where 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.

## 0.6.2 Returns to Hedge Fund Activism

The estimated monitoring costs are economically significant both in absolute terms and in terms of net returns. In order to compare net activist returns to the average total returns earned by hedge funds, 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). 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. I am able to match 85 of the 129 hedge fund families in this study.<sup>35</sup> (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.<sup>36</sup> 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.

As Greenwood and Schor (2009) argue in their discussion of hedge fund activist returns, “[w]hile the raw abnormal returns are suggestive, they are confounded by volatility in both

---

<sup>35</sup>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.

<sup>36</sup>Public hedge fund databases such as CISDM and TASS cover less than half of the hedge funds in the activist sample.

market returns and abnormal returns accruing to value-growth and momentum-based strategies. . . Identifying the benchmark is particularly important in this exercise . . . “ (p. 373). I follow their approach and calculate DGTW abnormal returns in excess of the returns on 125 characteristic portfolios based on size, market-to-book and stock return momentum.<sup>37</sup>

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) that “the positive average returns are attributed to the right tail of the distribution” (p. 1760) seems to hold for the campaigns in this extended sample.

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.

Insert Table 8

Do hedge funds earn higher returns on their activist investments than on their other hold-

---

<sup>37</sup> As Daniel, Grinblatt, Titman and Wermers (1997) argue, characteristic-based returns "have more statistical power to detect abnormal performance than factor models" (p. 1037).

ings? The last row of Table 9 helps answer this question by reporting the total portfolio returns of the hedge funds with 13F holdings information. The annualized mean (median) VW 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 portfolio return of the hedge funds in the sample, the top quartile of activists earn significantly higher returns on their activist investments than on their non-activist holdings.<sup>38</sup> Note also the annualized standard deviation of net activist returns is about five times higher than the standard deviation of total portfolio returns.

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 process of an activist shareholder. Second, the returns of the top quartile of activists exceed the returns on their portfolio holdings even though the average hedge fund activist performs worse in activist targets than in other portfolio companies.

## **0.7 Robustness**

### **0.7.1 Expected Activist Reward**

The maximum potential value of a firm 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 the same fundamentals (following the approach in Edmans, Goldstein and Jiang (2011)). In particular, I use a censored quantile regression of the target's Q ratio on

---

<sup>38</sup>The 75th-percentile of net activist returns is not statistically different from the 75th-percentile of total returns. However, the 90th-percentile of VW (DGTW) net activist return is 56.51% (44.20%), significantly exceeding the 90th-percentile portfolio returns (27.23% and 29.62%, respectively).

the tercile ranks of firm characteristics, which are likely to 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. Industry (also known as "comparable company") analysis is frequently used in evaluating potential takeover targets. As seen in Table 9, Panel B, both explanatory variables have similarly 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 must reflect the potential for value improvement in a successful campaign. This is achieved by calibrating a parameter in the quantile estimation to the median valuation improvement achieved by successful activists (calculated at 35.38%). Table 10 reports a comparison of expected reward measures between successful and failed campaigns by activist stage. The mean expected activist reward is 36.47% in the successful sample compared to 32.18% in the unsuccessful one. The difference between the two samples is not statistically significant at conventional levels.

Insert Table 10

The median valuation improvement in successful campaigns has an order of magnitude similar to the mean (median) abnormal buy-and-hold return earned by the average successful

hedge fund activist. The mean (median) VW adjusted return is 41.75% (17.68%) and the mean (median) DGTW adjusted return is 27.20% (36.16%).

### **0.7.2 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 11 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 12 hedge funds with the most campaigns in the sample period (measuring experience) and an indicator (Hostile HFs) for the 12 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 11

The included activist characteristics have high explanatory power at most stages. The indicator variable measuring the number of contemporaneous campaigns by the same hedge fund activist 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.

### 0.7.3 Ownership, Takeover Activity and Learning

Defining the activist's break-even constraint for monitoring assumes that the size of the ownership stake does not affect the success of the engagement. Panel A of Table 5 revealed that the mean (median) change in ownership between activism stages is minimal implying that an activist would not increase his ownership to exert pressure in his negotiations with the target.

I further evaluate this assumption in a multivariate setting by estimating the probability of a successful campaign outcome as a function of ownership (ownership squared), the tactic used by the activist, the duration of the campaign and institutional ownership. Activism tactic (stage) is included because more confrontational stages 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 S&P 500 companies impose ownership thresholds above 25% to call a special meeting or do not give their shareholders that right.<sup>39</sup> The exclusion of high ownership campaigns has no effect on the estimated costs.

Table 12 reports a comparison of abnormal activist returns between the campaigns ending

---

<sup>39</sup>See article from ISS's Ted Allen, April 2011, <http://www.deallawyers.com/Blog/2011/04/proxy-season-preview-takeover-defenses.html>.

in M&A and those with no M&A activity. I manually collect M&A data for the activist targets from Thomson Reuters SDC Platinum restricting the announcement date of a takeover to be within the duration of an activist campaign. The mean difference in abnormal VW (DGTW) excess returns is 26.77% (13.83%) in terms of annualized gross returns and 26.13% (14.58%) in terms of net returns. The unmatched results confirm Greenwood et al. (2009)'s conclusion that only events resulting in a sale earn significant abnormal returns.

Insert Table 12

However, the average return difference between the M&A and non-M&A samples is not statistically significant after propensity-score matching in terms of campaign outcome, i.e. after controlling for whether the activist's demands were successfully implemented. This suggests that a campaign's demand outcome successfully explains the difference in returns between events with and without takeover activity.

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 activist learning. The first proxy – cumulative board signals - consists of hand-collected communication between the activist and the target. These exchanges - letters, phone conversation transcripts, presentations, etc. disclosed as part of Schedule 13D - are coded as positive or negative and aggregated for each campaign. The other two proxies for learning are the number of material filings by an activist and the current length of a campaign. None of the learning proxies is statistically different between successful and failed campaigns after propensity-score matching in terms of a campaign's predicted probability of success.

## 0.8 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 firm.

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 transform the activist's break-even condition into a discrete-choice framework and estimate the costs of activism implied by the observed decision making behavior of activists between 2000 and 2007.

This paper complements recent work on hedge fund activism by providing cost benchmarks for evaluating the net returns to activism. In order to account for the large heterogeneity of activist events, I estimate the costs associated with three common activist approaches - demand negotiations, board representation and proxy contest. 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. Even though the mean net return is close to zero, the top quartile of activists earn higher returns on their activist holdings than on their non-activist portfolios.

This paper also introduces a comprehensive hand-collected dataset 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.

## 0.9 Appendices

### 0.9.1 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 10 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* - 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 10 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 for the 13D 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 a 13D.

### **0.9.2 Appendix B: Carl Icahn & 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.<sup>40</sup> 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

---

<sup>40</sup>This 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 the only sources of information. This skews the available evidence in favor of larger and more visible activists and companies.

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.”<sup>41</sup> 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 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.<sup>42</sup> Several days later, Robert C. Clark, a board member of both Time Warner and Lazard resigned from Time

---

<sup>41</sup>See [http://www.sec.gov/Archives/edgar/data/921669/000110465905047809/a05-17463\\_1ex2.htm](http://www.sec.gov/Archives/edgar/data/921669/000110465905047809/a05-17463_1ex2.htm).

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

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."<sup>43</sup> 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.<sup>44</sup> 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

---

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

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

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.

# Bibliography

- [1] Admati, Anat, Paul Pfleiderer and Josef Zechner, 1994. Large shareholder activism, risk sharing and financial market equilibrium, *Journal of Political Economy* 102 (6), 1097-1130.
- [2] Bas, Muhammet Ali, Curtis S. Signorino and Robert Walker, 2008, Statistical backwards induction: A simple method for estimating recursive strategic models, *Political Analysis* 16(1), 21-40.
- [3] Becht, Marco, Julian Franks, Colin Mayer and Stefano Rossi, 2008. Returns to shareholder activism: Evidence from a clinical study of the Hermes UK Focus Fund, *Review of Financial Studies* 22(8), 3093-3129.
- [4] Bolton, Patrick and Ernst-Ludwig von Thadden, 1998, Blocks, liquidity and corporate control, *Journal of Finance* 53(1), 1-25.
- [5] Bradley, Michael, Alon Brav, Itay Goldstein and Wei Jiang, 2010, Activist arbitrage: A study of open-ending attempts of closed-end funds, *Journal of Financial Economics* 95(1), 1-19.
- [6] Brav, Alon, Wei Jiang, Frank Partnoy, and Randall Thomas, 2008, Hedge fund activism, corporate governance, and firm performance, *Journal of Finance* 63(4), 1729-1773.
- [7] Clifford, Christopher P., 2008, Value creation or destruction? Hedge funds as shareholder activists, *Journal of Corporate Finance* 14, 323-336.
- [8] Cohn, Jonathan and Uday Rajan, 2011, Optimal corporate governance in the presence of an activist investor, Working paper, University of Michigan.
- [9] Daniel, Kent, Mark Grinblatt, Sheridan Titman and Russ Wermers, 1997, Measuring mutual fund performance with characteristic-based benchmarks, *Journal of Finance* 52 (3), 1035-1058.

- [10] Eckstein, Zvi and Kenneth I. Wolpin, 1989, The specification and estimation of dynamic stochastic discrete choice models: A survey, *Journal of Human Resources*, 24(4), 562-598.
- [11] Edmans, Alex and Gustavo Manso, 2011, Governance through exit and voice: A theory of multiple blockholders, *Review of Financial Studies* 24(7), 2395-2428.
- [12] Edmans, Alex, Itay Goldstein and Wei Jiang, 2011, The Real Effects of Financial Markets: The Impact of Prices on Takeovers, *Journal of Finance*, forthcoming.
- [13] Gillan, Stuart and Laura Starks, 2007, The evolution of shareholder activism in the United States, *Journal of Applied Corporate Finance* 19, 55–73.
- [14] Greenwood, Robin and Michael Schor, 2009, Investor activism and takeovers, *Journal of Financial Economics* 92, 362-375.
- [15] Griffin, John and Jin Xu, 2009, How smart are the smart guys? A unique view from hedge fund stock holdings, *Review of Financial Studies* 22(7), 2531-2570.
- [16] Grossman, S.J., Hart, O.D., 1980. Takeover bids, the free rider problem, and the theory of the corporation. *Bell Journal of Economics* 11, 42–64.
- [17] Hennessy, Christopher, Amnon Levy and Toni Whited, 2007, Testing Q theory with financing frictions, *Journal of Financial Economics* 83, 691-717.
- [18] Holderness, Clifford, 2003, A survey of blockholders and corporate control, *Economic Policy Review* 9(1).
- [19] Kahan, Marcel, and Edward Rock, 2007, Hedge funds in corporate governance and corporate control, *Corporate Governance Law Review* 3(2).
- [20] Kahn, Charles and Andrew Winton, 1998, Ownership structure, speculation, and shareholder intervention, *Journal of Finance* 53(1), 99-129.
- [21] Karpoff, Jonathan, M., 2001, The impact of shareholder activism on target companies: A survey of empirical findings, Working paper, University of Washington.
- [22] Klein, April, and Emanuel Zur, 2009, Entrepreneurial shareholder activism: Hedge funds and other private investors, *Journal of Finance* 63(1), 187-229.
- [23] Koenker, Roger and Gilbert Bassett, 1978, Regression quantiles, *Econometrica* 46, 33-50.
- [24] Lemmon, Michael, Michael Roberts and Jaime Zender, 2008, Back to the beginning: Persistence and the cross-section of corporate capital structure, *Journal of Finance* 63, 1575-1608.

- [25] Madalla, G. S., 1983, Limited dependent and qualitative variables in econometrics, Cambridge: Cambridge University Press.
- [26] Maug, Ernst, 1998, Large shareholders as monitors: Is there a trade-off between liquidity and control?, *Journal of Finance* 53(1), 65-98.
- [27] Powell, James, 1984, Least absolute deviations estimation for the censored regression model, *Journal of Econometrics* 25, 303-325.
- [28] Romano, Roberta, 2001, Less is more: Making shareholder activism a valued mechanism of corporate governance, *Yale Journal on Regulation* 18, 174-251.
- [29] Shleifer, Andrei and Robert W. Vishny, 1986, Large shareholders and corporate control, *Journal of Political Economy* 94, 461-488.
- [30] Tirole, Jean, 2006, *The Theory of Corporate Finance*, Princeton: Princeton University Press.
- [31] Thomas, Randall and Catherine Dixon, 1998, *Aranow & Einhorn on Proxy Contests for Corporate Control*, 3rd Edition, Aspen Law & Business.
- [32] Train, Kenneth, 2003, *Discrete choice methods with simulation*, Cambridge: Cambridge University Press.
- [33] Yermack, David, 2010, Shareholder voting and corporate governance, *Annual Review of Financial Economics* 2, 103-25.

Figure 1: A Sequential Definition of the Activist Process

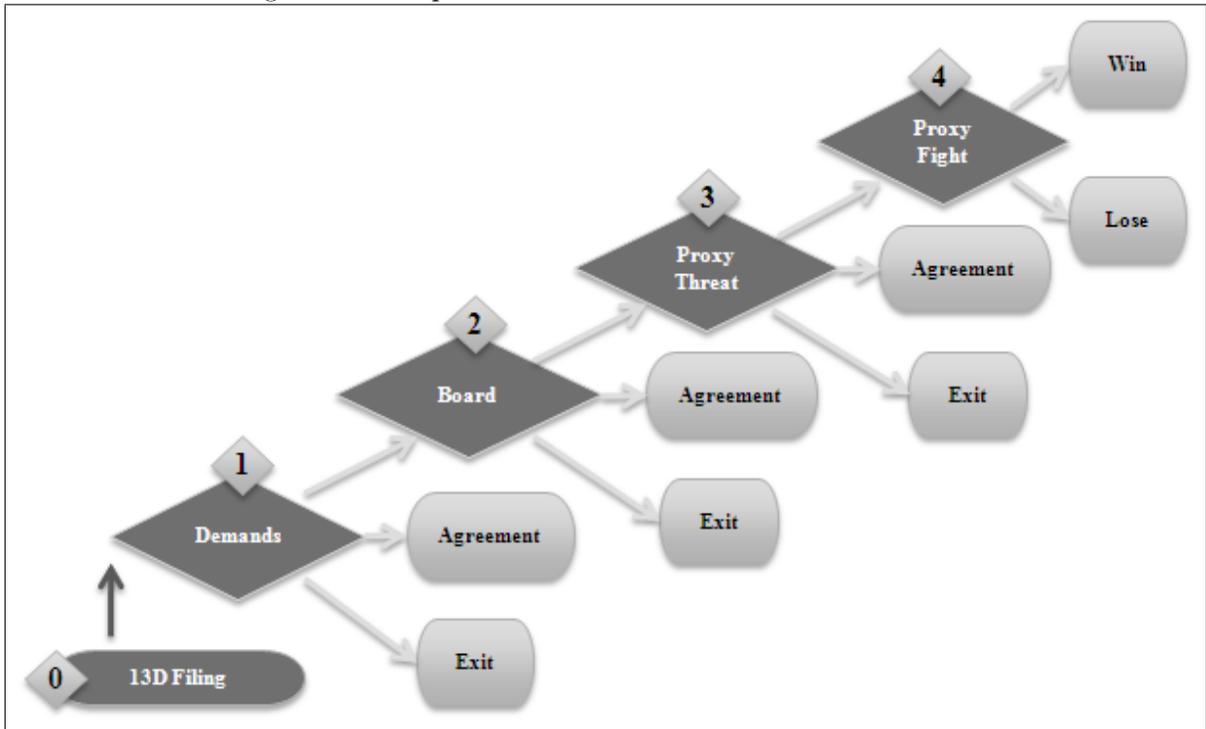


Table 1: Distribution of Activist Campaigns by Year and Activist Stage

The table presents the distribution of activist campaigns during 2000-2007. The full sample consists of 1164 unique campaigns. The CRSP-Compustat sample contains 953 unique events. Exclusions: bankruptcies, ADRs, REITS, funds, trusts and left-censored observations.

Panel A: Distribution of Activist Campaigns by Year

Year	Negotiations	Board	Proxy	Total
2001	22	16	11	135
	16.30%	11.85%	8.15%	
2002	32	27	12	189
	16.93%	14.29%	6.35%	
2003	44	22	18	225
	19.56%	9.78%	8.00%	
2004	38	32	18	237
	16.03%	13.50%	7.59%	
2005	98	46	36	371
	26.42%	12.40%	9.70%	
2006	115	73	54	469
	24.52%	15.57%	11.51%	
2007	117	95	69	565
	20.71%	16.81%	12.21%	
Growth (2000-2007)	27.07%	41.87%	49.88%	318.52%

Panel B: Distribution of Activist Campaigns by Stage

Stage	Activist Sample		CRSP-Compustat Merge	
	Targets	% Total	Targets	% Total
Initial Filing	1164	100.00%	953	100.00%
Demand Negotiations	342	29.38%	300	31.48%
Board Representation	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: 2000-2007

The table lists the 25 hedge funds with the most activist campaigns in 2000-2007. The sample includes 21 'non-public' activist campaigns with no SEC Schedule 13D. The column labeled 13F reports the availability of holdings data from Thomson Reuters 13F Institutional Holdings used in return calculations.

Hedge Fund	Activist Campaigns	Proxy Contests	13F
Loeb Partners Corp./ Third Point Management Co	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
Barrington 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: Most Common Activist Demands**

The table reports the primary and secondary demands of 342 campaigns with specific activist demands. The sample includes 21 campaigns with no Schedule 13D filing (i.e., below the 5% filing threshold). Panel A reports the number and success rate of various demands made to the target's management. Panel B reports stage-specific success rates. Proxy contest is a combined proxy threat and fight stage.

Panel A: Success rate of activism by demand

Primary Activist Demands	Number Campaigns	Number Successful	Success Rate
Sale of company to a third party	159	51	32.08%
Dividends/ repurchases/ excess cash	78	13	16.67%
Restructuring/ spin-off	69	24	34.78%
Opposition to a proposed merger	63	18	28.57%
Take target private/bid	52	21	40.38%
Remove CEO or separate CEO/Chairman	27	5	18.52%
Recapitalization/ debt restructuring	22	7	31.82%
Excessive executive compensation	20	3	15.00%
Additional disclosure	14	5	35.71%
Overall Success Rate			29.17%

Panel B: Success rate of activism by stage

	Number Campaigns	Number Successful	Success Rate
Exit after Demand Negotiations	342	23	6.76%
Exit after Board Representation	203	79	39.33%
Exit after Proxy Contest	122	70	57.38%
Overall Success Rate			29.17%

Table 4: Duration of Activist Campaign

The table presents statistics on the duration of (the stages of) activist campaigns between 2000-2007. The sample includes 21 campaigns with no Schedule 13D filing (i.e., below the 5% filing threshold). Panel A reports statistics on the overall duration of activist campaigns. The last row of Panel A presents information only for the campaigns in which the activist made specific demands to the target company. Panel B presents the duration of each stage of the activist process as defined in the paper.

Panel A: Overall Duration of Activist Campaigns (in months)						
	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
Average (excl. no specific demands)	6	14	26	41	18.75	18.20

Panel B: Duration of Activism Stages (in months)						
	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: Activist Ownership Analysis

The table reports ownership statistics for activist campaigns between 2000-2007 including 21 non-public events with no Schedule 13D filing. Excluded are campaigns with no specific activist demands. Panel A reports summary statistics for the activist's initial ownership at the start of an activism stage, maximum ownership stake accumulated during a stage and change in ownership between stages. Panel B reports percentage ownership and maximum campaign ownership by activism outcome after propensity-score matching on a campaign's predicted probability of success in terms of activist demands (estimated as a function of the tactic used by the activist, campaign duration and institutional ownership).

Panel A: Ownership by Activist Stage, %										
	Initial Ownership				Max Stage Ownership				Ownership Change	
	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	-	-
Demand Negotiations	7.00	10.00	16.00	7.41	8.00	10.00	17.00	8.37	16.67	24.65
Board Representation	9.00	13.00	19.00	9.46	10.00	14.00	21.00	10.70	8.39	23.86
Proxy Fight	8.00	11.00	15.00	7.94	8.00	11.00	15.00	8.52	0.00	12.76
Total	8.00	10.00	16.00	8.27	9.00	11.00	18.00	9.11	2.94	19.70

Panel B: Propensity-Score Matched Ownership Analysis						
	Sample	Success	Failure	Difference	Std Error	T-Stat
Ownership, %	Unmatched	9.36	7.90	1.46***	0.47	3.11
	Matched	9.36	8.38	0.98	0.64	1.52
Max. Ownership, %	Unmatched	10.92	10.39	0.53	0.69	0.76
	Matched	10.92	9.87	1.05	0.69	1.53

Table 6: Characteristics of Target Companies

The table presents the characteristics of companies targeted in activist campaigns between 2000-2007 including 21 campaigns with no Schedule 13D filing (i.e., events below the 5% filing threshold). Columns 6 and 7 report 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. Book leverage is debt divided by total assets. Q ratio is defined as market equity plus total debt plus preferred stock plus deferred taxes and investment credit divided by 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. Institutional data from Thomson Reuters Institutional Holdings (13F) and analyst data from I/B/E/S. All variables are lagged by one quarter and winsorized at 1 percent. Stars denote usual significance levels.

Characteristic	Summary Statistics			Unmatched Difference		Matched Difference	
	Mean (1)	Median (2)	SD (3)	Avg Diff (4)	St Err (5)	Avg Diff (6)	St Err (7)
Market value	868.52	155.22	2915.85	-68846.680	52435.810	-1741.92***	254.296
Book-to-market	1.27	0.60	2.98	0.055	0.074	-0.031	0.089
Book leverage	0.23	0.19	0.23	-0.002	0.003	0.003	0.047
Q-ratio	1.30	0.97	1.13	-0.413***	0.025	-0.374***	0.029
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
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

The table presents cost estimates for common activist tactics derived by a backward sequence of logistic regressions. The sample includes public campaigns between 2000-2007 and 21 events with no Sch 13D (i.e., below the 5% filing threshold). Right-censored observations whose outcome is unknown as of 2007 are excluded. Panel A reports avg. stage-specific costs with bias-corrected bootstrap confidence intervals. Scale refers to the stage-specific variance parameter used to estimate the cost thresholds. Percent classified refers to the proportion of correctly classified campaign continuations. The reported  $R^2$  is McFadden's  $R^2$ . Panel B reports conditional logistic regressions with dependent variable equal to one if a hedge fund activist continues a campaign to the next stage. Marked-to-market investment equals the activist's current stake. Expected gross return is the expected firm value after a successful campaign and is estimated by a censored quantile regression of the firm's Q ratio on the tercile ranks of firm characteristics. Standard errors are clustered by activist campaign. Stars denote usual significance levels (\*\*\*)  $p < 0.01$ , (\*\*)  $p < 0.05$ , (\*)  $p < 0.1$ .

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: Activist Abnormal Return Analysis

The table reports statistics on the returns of hedge fund activist campaigns between 2000 and 2007 excluding campaigns with no specific activist demands. Returns are computed starting one month before the activist event and ending with the last Schedule 13D filing or December 2007. DGTW returns refer to characteristic-based returns. The last row reports total portfolio returns of the hedge funds with 13F data.

Panel A: Campaign Raw Returns										
	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										
	Value-Weighted 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										
	Value-Weighted 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 13F 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 Methods

The table presents results of a backward sequence of logistic regressions used to estimate activist costs. 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 where 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). St. errors are clustered by campaign. Stars denote significance levels (\*\*\*)  $p < 0.01$ , (\*\*)  $p < 0.05$ , (\*)  $p < 0.1$ .

Panel B: Estimation of Target Valuations (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: Estimation of Target Valuations (Best Performing Industry Peer)

		Coefficient	St. Error	
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: Expected Activist Reward by Outcome

The table reports expected reward measures for activist campaigns between 2000-2007 including 21 (non-public) events with no Schedule 13D filing. Excluded are events with no specific activist demands. The comparison between successful and failed campaigns is in terms of expected activist reward, which is estimated by a censored quantile regression of the firm's Q ratio on firm attributes.

	Success	Failure	Difference
Demand Negotiation	37.62 (10.21)	30.29 (3.23)	7.33 (10.71)
Board Representation	39.57 (4.92)	33.03 (4.82)	6.54 (6.89)
Proxy Fight	35.57 (5.17)	33.55 (7.25)	2.01 (8.90)
Total Sample (Matched)	36.47	32.18	4.29 (4.66)

Table 11: Stage-Specific Logistic Regressions with Activist Fixed Effects

Results from stage-specific binary logistic regressions. Marked-to-market investment is the inverse of the activist's current stake; expected gross return equals the expected firm value if the campaign is successful and is estimated by a censored quantile regression of the target's Q ratio on the tercile ranks of firm level characteristics (sales, asset turnover, market share, growth and R&D ratio). Active HFs is an a 1/0 variable for the 12 hedge funds with the most campaigns in 2000-07. Hostile HFs is a 1/0 variable for the 12 hedge funds with the most proxy contests. Clustered standard errors. Stars denote significance levels.

		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 12: Activist Abnormal Returns and Takeover Activity

The table reports statistics on the abnormal returns of hedge fund activist campaigns between 2000-2007 excluding campaigns with no specific hedge fund demands. The sample also includes 21 campaigns with no Schedule 13D filing. Returns are computed starting one month before the campaign and ending with the last Schedule 13D filing of the activist. Events with no exit are assumed to end in December 2007. DGTW returns are characteristic-based returns as in Daniel, Grinblatt, Titman, and Wermers (1997). Panel A reports abnormal returns before activist costs while Panel B reports net returns after costs. Matched results use propensity score matching in terms of the outcome (success/failure) of each campaign.

Panel A: Annualized Abnormal Returns by M&A Activity						
	Sample	M&A	No M&A	Difference	Std Error	T-Stat
Value-Weighted Returns, %	Unmatched	26.80	0.03	26.77***	5.95	4.50
	Matched	26.80	15.75	11.05	8.13	1.36
DGTW Returns, %	Unmatched	17.75	3.92	13.83***	4.64	2.98
	Matched	17.75	11.72	6.03	8.04	0.75

Panel A: Annualized Abnormal Net Returns by M&A Activity						
	Sample	M&A	No M&A	Difference	Std Error	T-Stat
Value-Weighted Net Returns, %	Unmatched	22.58	-3.55	26.13***	5.98	4.37
	Matched	22.58	12.11	10.47	8.51	1.23
DGTW Net Returns, %	Unmatched	14.88	0.30	14.58***	5.03	2.89
	Matched	14.88	11.86	3.02	8.62	0.35