Hedge Fund Activism: A Review[*]

Alon Brav
Duke University and NBER

Wei Jiang
Columbia University

Hyunseob Kim
Duke University

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Abstract

This article reviews shareholder activism by hedge funds. We first describe the nature and characteristics of hedge fund activism, including the objectives, tactics, and choices of target companies. We then analyze possible value creation brought about by activist hedge funds, both for shareholders in the target companies and for investors in the hedge funds. The evidence generally supports the view that hedge fund activism creates value for shareholders by effectively influencing the governance, capital structure decisions, and operating performance of target firms.

Keywords
Hedge Fund, Shareholder Activism, Corporate Governance

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Introduction

During the past decade, hedge fund activism has emerged as a new form of corporate governance mechanism that brings about operational, financial, and governance reforms in the corporation. Shareholder activism (Gillan and Stark (2007) and Karpoff (2001)) and more broadly, large investors' monitoring of corporate managers (Shleifer and Vishny (1986), Grossman and Hart (1980)) are not a new phenomena in capital markets around the world. In the U.S., institutional investors such as pension funds and mutual funds have been actively engaging the management of the invested firms since the 1980s with the goal of improving shareholder value. However, the early institutional shareholder activism has been plagued by many regulatory and structural barriers such as free-rider problems and conflict of interest (Black (1990)). As a result, the evidence on the effect of their activist efforts has largely been mixed (Gillan and Stark (2007)).[1]

Hedge fund activism distinguishes itself from other institutional activism in a number of aspects. First, hedge fund managers have stronger financial incentives to make profits. Hedge funds generally receive a significant proportion (e.g., 20%) of excess returns as performance fees on top of fixed management fees. Moreover, the managers of hedge funds invest a substantial amount from their personal wealth into their own funds. This strong incentive for high investment returns in the compensation structure contrasts with that of mutual fund or pension fund managers, which usually does not allow managers to capture a significant portion of (excess) returns. Second, hedge funds are lightly regulated since they are not widely available to the public but only to institutional clients and a limited number of wealthy individuals. Therefore, hedge funds are not subject to strict fiduciary standards (such as those embodied in ERISA), and

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[1] One exception is Bethel, Liebeskind, and Opler (1998), who provide evidence for successful activist blockholders in the 1980s.

this in turn allows them to have much more flexibility to intervene in the invested companies. For example, since the law does not require hedge funds to maintain diversified portfolios as required for some other institutional investors, they can take large and concentrated stakes in target firms more easily. Further, they can use derivative securities or trade on margin to hedge or leverage their stakes with a given capital. These are important advantages for activist shareholders to have influence over the target firms' management.

Third, hedge funds face fewer conflicts of interest than some other institutional investors, such as mutual funds and pension funds, who often have other business relations with the invested companies or have non-financial agendas and goals. Hedge fund managers rarely face this sort of conflicts. Lastly, hedge funds usually have lock-up provisions that restrict the investors from withdrawing their principal. Given that hedge fund activists invest in target firms for more than a year on average to pursue their strategies, this feature affords the managers an extended flexibility to focus on intermediate and long-term activist objectives.

To summarize, hedge fund activists are a new breed of shareholder activists that are equipped with more suitable financial incentives and organizational structures for pursuing activism agendas than earlier generations of institutional activists. Not surprisingly, they turn out to be successful in facilitating significant changes in corporate governance and operations of target firms, and in turn achieving the goal of improving value for both the firms' shareholders and their own investors.

In this article, we survey the academic literature on hedge fund activism focusing on two main questions: (i) What is the nature of activist hedge funds' intervention in target firms? and (ii) Does hedge fund activism create value for shareholders in the target firms and investors in the hedge funds? Our main analyses are based on the updated empirical evidence from an extended

sample from that of Brav, Jiang, Partnoy, and Thomas (2008a). The sample covers hedge fund activism events in U.S. firms during 2001-2007. We also review work by other researchers on both U.S. and international hedge fund activism. We refer readers interested in general shareholder activism to the survey by Gillan and Starks (2007).

Evidence on the two questions can be summarized as follows. Hedge fund activists tend to target "value" firms that have low valuations compared to "fundamentals." In addition, activist hedge funds are more likely to target firms that have sound operating cash flows, but low (sales) growth rates, leverage, and dividend payout ratios. Therefore, one can characterize the targets as "cash-cows" with low growth potentials that may suffer from the agency problem of free cash flow (Jensen (1986)). This characterization of target firms differentiates hedge fund activism from earlier shareholder activism, which tended to target companies that had poor operating performance. The target firms are generally smaller than comparable firms. Hedge funds target small firms partly because they can accumulate a significant ownership more easily with a given amount of capital. Related to this point, the targets of hedge fund activism exhibit relatively high trading liquidity, institutional ownership, and analyst coverage. Essentially, these characteristics allow the activist investors to accumulate significant stakes in the target firms quickly without adverse price impact, and to get more support for their agendas from fellow sophisticated investors. Lastly, target companies tend to have weaker shareholder rights than comparable firms, consistent with the argument that hedge fund activists target poorly-governed firms where the potential for value improvement is higher.

By and large, the evidence in the literature indicates that hedge fund activism is successful in achieving the goals of creating value for shareholders of the target companies. The short-term average abnormal returns around the announcement of the intervention of hedge funds

are significantly positive across studies, on the order of 5-10%. Moreover, the perceived increase in firm value through hedge fund activism shows considerable cross-sectional differences. The categories that achieve the highest abnormal short-term returns are the sale of the target firm and changes in business strategy. In contrast, activism targeting purely capital structure or corporate governance related agendas earns relatively low returns. In sum, investors perceive activism that facilitates efficient re-allocation of capital in the target firms has the highest potential for shareholder value improvement.

Importantly, post-event long-run returns, up to multiple years, show no reversion, indicating that the market's initial perception about value creation is justified. Furthermore, the targets experience improvements in operating performance (measured by return on assets or equity) after the activism; they also exhibit increases in CEO turnover, leverage, and payouts, but a decrease in CEO compensation. These results are consistent with the view that hedge fund activism adds value through operational, financial, and governance remedies in the target firms.

The rest of the review is organized as follows. Section 1 begins with a brief outline of the major work reviewed in this article. Section 2 describes datasets on hedge fund activism. Section 3 then examines the goals and tactics employed by hedge fund activists. Section 4 analyzes the characteristics of firms that activist hedge funds target. In Section 5, we address the fundamental question of whether hedge fund activism creates value for shareholders by examining short- and long-run stock returns, and changes in operating performance of target firms. Section 6 examines returns to investors in activist hedge funds. The final section concludes with remarks for future research.

1. Major Work on Hedge Fund Activism

This review covers the following four parts of research on hedge fund activism. The first, and most important, is on hedge fund activism in the public companies in the United States. The most comprehensive study in this area is conducted by Brav, Jiang, Partnoy, and Thomas (2008a) who examine a sample of 1,059 hedge fund activism events over the period 2001-2006. They analyze the objectives and tactics of the hedge fund activists, the characteristics of targets firms, the market's reactions to activism, and changes in firm performance after the intervention of hedge funds. Klein and Zur (2009) collect a sample of 151 activism events over the 2003-2005 period. They focus on confrontational hedge fund activism. Boyson and Mooradian (2007) examine 418 hedge fund activism cases from 1994 to 2005. Clifford (2008) collects another sample of 1,902 activism cases over the period 1998 to 2005 and focuses on stock price reactions and changes in operating performance. Finally, Greenwood and Schor (2009) study the role of hedge fund activism on mergers and acquisitions using a sample of 784 events for 138 hedge funds over 1995-2005.

Most of the aforementioned studies find that hedge fund activism is associated with significantly positive abnormal stock returns around the announcement, as well as operational, financial, and governance-related improvements in target firms across events. The only exception is Greenwood and Schor (2009) who argue that positive abnormal short- and long-term returns are driven solely by targets that are acquired ex post, while there is no improvement in operating performance among surviving targets.

Second, a few papers study hedge fund activism in specific sectors or categories of business. Bradley, Brav, Goldstein, and Jiang (2010) analyze shareholder activism (mostly by hedge funds) in the sector of closed-end funds. Closed-end funds serve as an ideal laboratory for analyzing value improvement from activism because their discount (the deviation of actual from

potential value) can be accurately measured. Bradley et al. (2010) find that the activism during 1988-2003 reduces the close-end fund discounts to a half of their original level on average. Huang (2009) examines the effect of hedge funds in leveraged buyouts during 1990-2007 and finds that hedge funds bring about a higher buyout premium by using their hold-out power with the potential buyers. Jiang, Li, and Wang (2009) study a comprehensive sample of Chapter 11 firms from 1996 to 2007 and document an array of strategies that hedge funds adopt in order to gain control and acquire ownership at a low cost. They find that the presence of a hedge fund is a driving force underlying the changing nature of Chapter 11, such as strengthening of creditors' rights and a more management-neutral process.

Third, the literature also sheds light on the returns to investors in the activist hedge funds, in addition to shareholders of target companies. Activist hedge funds outperform the overall market and other types of equity-oriented hedge funds. In particular, Brav, Jiang, Partnoy, and Thomas (2008b) show that activist hedge funds on average earn about 1% of monthly excess returns over the market during the 2001-2006 period. Boyson and Mooradian (2007) also report that activist hedge funds outperform matched hedge funds by 3.3% annually. Gantchev (2009) estimates the cost of launching activism and concludes that the net return is considerably lower.

Finally, there are a few papers that study hedge fund activism outside the U.S. Becht, Frank, and Grant (2008) examine hedge fund activism events in Europe over the period 2000-2008 and find that abnormal returns around the announcement of activism are significantly positive. Mietzner and Schweizer (2008) collect filings of the acquisition of at least 5% of the voting right of public firms in Germany and compare the performance of hedge funds to that of private equity funds as shareholder activists. They find that the market perceives the announcement of the acquisition of large stakes in target firms favorably for both groups of

investors. Stokman (2008) studies 94 hedge fund activism cases in Europe from 2000 to 2007 and compares them with similar activism events in North America (mostly in the U.S.). His conclusion is generally consistent with that of other papers on hedge fund activism in Europe.

In a clinical study, Becht, Franks, Mayer, and Rossi (2009) collect a sample of 41 companies targeted by one U.K. hedge fund, the Hermes U.K. Focus Fund, and find that a high proportion of the interventions are successful and result in substantial increases in shareholder wealth. Uchida and Xu (2008) study 41 shareholder activism events in Japan initiated by a U.S. hedge fund, Steel Partners, and a Japanese activist fund, Murakami Fund. They find that the target stocks exhibit significantly positive abnormal returns around the announcement of activism and the positive abnormal returns do not revert in the long run. Overall, the evidence from samples outside the U.S. are consistent with the U.S. evidence that hedge fund activism creates value for the shareholders of target companies.

2. Data on Hedge Fund Activism

In this section we review the approaches taken by researchers to construct samples of hedge fund activism events, with a focus on U.S. data. Since there is no centralized database for hedge fund activism the most reliable source for such events comes from Schedule 13D filings. Section 13(d) of the 1934 Securities Exchange Act requires investors who are beneficial owners of over 5% of any class of publicly traded securities of a company, and who have an intention to influence corporate control, to disclose their ownership and intent within 10 days of crossing the 5% threshold.[2] The Schedule 13D filing is an important source for studying hedge fund activism since it provides information about the identity of the filer, filing date, ownership and its changes,

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[2] Large passive investors can file the Schedule 13G instead which requires less information and allows a longer delay in disclosure.

cost of purchase, and most importantly, the purpose of the investment (from Item 4 "Purpose of Transaction").

Brav, Jiang, Partnoy, and Thomas (2008a) use a top-down approach to construct a comprehensive sample of activism events that includes events from both Schedule 13D filings (over 5% stakes) and events that were launched with below 5% stakes. The list of hedge funds filing a Schedule 13D is filtered through a complete list of all 11,602 Schedule 13D filers over the 2001 to 2006 period. They identify hedge fund managers based on the names and descriptions of the filer type listed in Item 2 ("Identity and Background") combined with Internet/news searches of the filers. The search process results in 311 hedge funds. Next, they gather all the Schedule 13D filings and their amendments (Schedule 13D/A) made by the 311 hedge funds on the SEC's EDGAR system. This process produces 1,032 events.

To mitigate the concern that the Schedule 13D-based sample is biased toward smaller targets because of the large amount of capital required to acquire a more than 5% stake in a large-cap company, Brav et al. (2008a) search Form 13Fs filed with the SEC and news for cases with below 5% stakes and identify 27 additional events. After excluding filings that involve risk arbitrage, distress financing, and non-regular corporations such as closed-end funds, their final sample consists of 236 activist hedge funds and 1,059 fund-target firm pairs from 2001 to 2006, involving 882 unique target firms. Finally, Brav et al. (2008a) rely on a combination of information from SEC filings and news search from Factiva for the coding of the key aspects of events, such as announcement date, ownership stake, stated objectives, managerial responses, and outcomes.

Klein and Zur (2009) begin with all Schedule 13D filings from 2003 to 2005 and verify the identity of the filers (i.e., hedge funds vs. other types of investors) by searching fund websites

and news. Then, they restrict the sample to transactions that present an explicit activist agenda, excluding events that only present a general agenda (e.g., stock undervaluation). This procedure generates 101 activist hedge funds and 151 confrontational target events (and 154 events for 134 other types of activist investors).

Clifford (2008) collects a list of hedge fund activists from the Dow Jones Newswires "CFA Weekly Summary of Key 13D Filings to the SEC" and supplements this list of funds with additional activist hedge funds by searching Factiva for news. Then, he confirms the identities of hedge funds by searching individual funds' websites, the Internet, and media reports. For this list of hedge funds, he collects all block holdings (i.e., both active and passive blocks of investments) from 1998 to 2005 from the SEC filings. This procedure yields 788 activist blockholder events for 197 distinct hedge funds.

Boyson and Mooradian (2007) obtain their sample of hedge funds from CSFB/Tremont that gathers hedge fund data directly from voluntarily reporting hedge fund managers. They choose this sample of hedge funds in order to properly compare the performance of activist hedge funds to that of other types of hedge funds in the sample. They identify 111 activist hedge funds with an average fund size over $10 million and at least 24 months of consecutive returns They collect all Schedule 13D filings by these funds from the SEC website for the period 1994-2004. This process yields 418 unique hedge fund-target firm pairs for 397 target firms.

Finally, Greenwood and Schor (2009) collect hedge fund activism events from Schedule 13D filings and definitive proxy statements filed by non-management (DFAN14As).[3] They restrict the sample to transactions by investment managers that have filed Form 13F at some

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[3] Definitive proxy statements filed by non-management (DFAN14As) are filed with the SEC by investors who intend to or are engaged in a proxy fight with a firm's management.

point in their history in order not to confuse corporate crossholdings with activist investment.[4]

They determine whether an activist is a hedge fund or not through the institutions' websites, newspaper articles, and the Center for International Securities and Derivatives Markets (CISDM) hedge fund database. Their final sample consists of 784 events initiated by 139 unique hedge funds from 1993 to 2006.

Despite the differences in sample construction the key summary statistics for the intervention of activist hedge funds are generally similar across the studies mentioned above. For example, Brav et al. (2008a), Greenwood and Schor (2009), and Boyson and Mooradian (2007) report that in about a half of the activism events, hedge funds' intervention is motivated by general issues, such as the "undervaluation" of the targets' stocks. In such cases, funds do not state specific objectives. Further, the studies document that corporate governance and sales of the target's assets are two of the most common agendas. In addition, both Brav et al. (2008a) and Boyson and Mooradian, (2007) suggest that the duration of hedge fund activists' investment is typically longer than one year, implying that they are not short-term investors as often presumed by the media.

Sources of data on hedge fund activism vary more across countries outside the U.S. Becht, Franks, Mayer, and Rossi (2009) collect their sample of activism events in the U.K. using proprietary data from one hedge fund: the Hermes U.K. Focus Fund. Mietzner and Schweizer (2008) construct their sample from the disclosure of the acquisition of at least 5% of shares in public firms from the German Federal Financial Supervisory Authority. Stokman (2008) performs extensive news/media searches to collect his sample of activism incidences in Europe. Similarly, Uchida and Xu (2008) collect a sample of Japanese activism events by searching

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[4] This restriction essentially excludes Schedule 13D filings by small hedge funds because only institutions holding more than $100 million in U.S. 13(f) securities (mostly publicly traded equities) are required to file 13F reports.

Edinet's large shareholding filings and *Nikkei Shinbun,* one of the largest business newspapers in Japan, with keywords related to the names of the two activist funds: Steel Partners and Murakami Fund.

The data used in the analyses for the rest of the paper are a combination of two sources: data for events from 2001 to 2006 are obtained from Brav et al. (2008a); and data for events in 2007 are hand-collected using the same procedure and criteria. Unless otherwise stated, we use the 5% level as the criterion for statistical significance.

3. Characteristics of Hedge Fund Activism Events

3.1. Activist Hedge Funds' Objectives and Tactics

Intervention by hedge fund activists in target firms involves various objectives and tactics. Panel A of Table 1 summarizes the stated objectives that the activist funds provide when they announce their intent to intervene as well as the associated success (including partial success) rates from 2001 to 2007. The panel classifies the underlying motives into the following five major categories: "general undervaluation/maximize shareholder value," "capital structure," "business strategy," "sale of target company," and "governance." The objectives, except the first, are not mutually exclusive as one activist event can target multiple issues. An event is classified as successful if the hedge fund achieves its main stated goal; a partial success if the hedge fund and the company reach some settlement through negotiation that partially meets the fund's original goal.

The first objective includes events in which the hedge fund believes that the company is undervalued and/or that the fund can help the manager maximize shareholder value. All events in this objective involve communication with the management without more aggressive tactics that

are publicly observed. This category represents 47.9% of the full sample. The second category, which represents 17.4% of the full sample, includes activism targeting firm's payout policy and capital structure. This category includes events in which the hedge fund proposes changes geared towards the reduction of excess cash, an increase in firm leverage, or higher payouts to shareholders. This group of events also involves issuance of securities by the target companies, such as modifying seasoned equity offerings or proposing debt restructuring.

The third set of events includes activism targeting issues related to business strategy, such as operational efficiency, business restructuring, mergers and acquisitions, and growth strategies. This group represents 23% of all events in the full sample. The fourth category of activist events involves activism urging the sale of the target. In this category, hedge funds attempt either to force a sale of the target company to a third party, or, in a small minority of the cases, to acquire the company themselves. Partial success in this group means that the firm remains independent, but agrees to undergo major changes.

Lastly, the fifth set of events includes activism targeting corporate governance. In this category, hedge funds attempt to rescind takeover defenses, to oust the CEO or chairman, to challenge board independence and fair representation, to demand more information disclosure and question potential fraud, and to challenge the level or the pay-for-performance sensitivity of executive compensation.

Greenwood and Schor (2009) report a similar representation of objectives for their sample of hedge fund activism. For about a half (45.5%) of the hedge fund activism events they study, hedge funds recognize that the target firm is "undervalued" and engage management to improve the value of the firm. Further, activism agendas related to capital structure, asset sales, and corporate governance represent 11.5, 18.1, and 21.9 percent of their full sample, respectively.

The success rate of activism across the objectives varies. Aggregated across both hostile and non-hostile events, hedge funds achieve complete or near complete success in 31.3% of the cases, which we define as achieving their main stated goals. In 21.1% of the cases, we observe a partial success where hedge funds gain major concessions from their targets; in 22.1% of the cases the funds fail or withdraws their case. The remaining 25.5% of the cases in our sample are those that are still ongoing toward the end of the sample collection, or for which no information about outcome is available in any news service or SEC filings. Given that targets firms often demonstrate strong tendency to resist and fight, this rate of success or partial success is impressive. Such a rate is comparable to that reported by Ikenberry and Lakonishok (1993) on outcomes of proxy contests for corporate control from 1968 to 1988. Klein and Zur (2009) and Boyson and Mooradian (2007) report that the overall success rate of hedge fund activism in their samples is about two-thirds.

The last row of Panel A of Table 1 summarizes events in categories (2) through (5) in which a goal is explicitly stated. It indicates that hostile events, defined as events that involve open confrontation between the activists and the target management, are generally associated with lower success rates but higher partial success rates. In other words, a middle-ground resolution through negotiation is a more likely outcome for events with a public battle. Not surprisingly, the total success rate (including partial success) for the hostile sample is even higher than that for the non-hostile sample (60.6 vs. 43.9%). Needless to say, hedge fund tactics are endogenous, and this evidence is best interpreted as an equilibrium outcome in which hostile tactics are most likely adopted when the perceived resistance from the target management is higher, or after less confrontational approaches fail (Gantchev (2009)).

Panel B of Table 1 provides a breakdown of the hedge funds tactics in the sample from the least to most aggressive. The first tactic category includes events in which the hedge fund states that it intends to communicate with the board/management on a regular basis with the goal of enhancing shareholder value. Almost all filings in this group do not reveal to the public any specific agenda by the hedge fund. These cases comprise about a half (51.2%) of the sample. The second tactic category includes events in which the hedge fund seeks board representation without a proxy contest or confrontation with the existing management/board. The third tactic category includes cases where the hedge fund makes formal shareholder proposals, or publicly criticizes the management and demands change. Next, the fourth category includes events in which the hedge fund threatens to wage a proxy fight in order to gain board representation, or to sue the management for breach of duty. The fifth category is assigned events in which the hedge fund launches a proxy contest in order to replace the board. The remaining two tactic groups include events in which the hedge fund sues the company with the intention to take control of the company (e.g., with a take-over bid). Since activist events can fall within more than one of these categories, the percentages in the second through seventh categories sum to more than 48.8% (the remaining 51.2% fall in the first group).

The subcategory of hostile activist events involves events in fourth through seventh tactic categories, or those that fall in the third category but involve a stated hostile intention (such as to oust the CEO). By this criterion, there are a total of 318 such hostile cases (27.1% of the total sample).

The large heterogeneity in fund tactics raises the question as to how target companies respond to this rich set of tactics and what kind of equilibrium outcomes emerge. Given that events in the first tactic category described above ("communication") do not provide public and

explicit agenda, it is difficult to classify target company responses and outcome. For the remaining 611 events in which hedge funds post some explicit agenda, we track the evolution of these events using information from both news search and subsequent SEC filings (such as Schedule 13D/A and Schedule 14A).[5] Over the course of the hedge fund's intervention, target companies choose to accommodate the activists 35.3% of the time, to negotiate 22.3% of the time, and to fight/resist 42.4% of the time.

3.2. Activist Hedge Funds' Investment in Target Firms

How large is hedge funds' investment in their target companies? In this section, we examine the percentage ownership and the value of stakes that activist hedge funds acquire in target firms. Panel A of Table 2 reports the size of the activists' stakes in their target firms, both in dollar value (at cost), and as a percentage of outstanding shares of the target. Information in the columns denoted "Initial" comes from the Schedule 13D filing. For the non-Schedule 13D events, the information is collected based on news media or Form 13F at the initiation of the events. The columns labeled "Max." provide the maximum stake that the funds accumulated in the targets, which is retrieved from the subsequent amendments to the 13D filings, or news follow-ups. The last four columns in Panel A present this information for the subsample of hostile events.

The median initial (maximum) percentage stake that a hedge fund takes in the target is 6.3 (9.5)%, and the median dollar stake, at cost, is 15.0 (24.8) million in 2007-constant dollars.

We note that the hostile cases exhibit larger ownership stakes in target firms and greater capital commitments by the hedge funds, especially at the higher percentiles of the sample.

An important pattern emerging from Panel A is that the activism that we analyze does not generally involve controlling blocks. The inter-quartile range of hedge funds' initial stakes is from 5.3 to 8.8 percent, and the 75th percentile of the maximum ownership falls below 15 percent. Even at the 95th percentile of the sample, hedge funds hold 29.2 percent in the target companies, considerably lower than the majority requirement. These numbers are comparable across different studies. For example, Boyson and Mooradian (2007) document that the mean initial (maximum) percentage ownership by hedge funds in target companies is 8.8 (12.4) percent. Similarly, Greenwood and Schor (2009) report a 9.8 percent average initial ownership in their sample. It therefore appears that the activist hedge funds do not generally aim to take control of their targets. Rather, they hope to facilitate value-enhancing changes as minority shareholders. As such, they often need to work with and win support from other shareholders, especially on issues that require shareholder voting. These features distinguish the activist hedge funds from the corporate raiders in the 1980s who sought to obtain full control to internalize all the benefits from their intervention. Panel B of Table 2 lists the breakdown of various forms of hedge fund exit, indicating that selling in the open market is the predominant form, accounting for two-thirds of all complete spells.

Finally, activist hedge funds' investment horizons have been an issue of contention. Critics accuse activist funds of aiming for short-term gains at the expense of long-term shareholder value (Kahan and Rock (2006)). Panel C of Table 2 shows the duration of hedge fund activists' investment in target companies. We use multiple sources to determine the "exit

date" when the hedge fund significantly reduces its investment in the target company.[6] First, we use the last 13D/A filing to determine when the ownership drops below the five-percent disclosure threshold (i.e., the "exit date"). When such information is not available, we use the date when the outcome of sale of the target or the fund's withdrawal from the intervention is announced. Note that since the sample period is from 2001 to 2007 with many recent events still unresolved as of the close of the data collection, the exit information is not available for 57.1% of the cases. Focusing on the sub-sample of the completed events where the information to determine the exit date is available, Panel C shows that the median duration from the first Schedule 13D filing to divestment is 266 days. We also find that the average duration of investment is 376 days, which implies that the distribution of the duration is right-skewed. The 25th and 75th percentile figures for the full sample are 126 days and 487 days, respectively. Furthermore, events that are initiated with hostility see somewhat shorter investment horizon than the non-hostile ones (229 vs. 285 days at the median).

The numbers reported in Panel C of Table 2 generally under-estimate the unconditional duration of hedge funds' investment in the target companies both because they exclude investments censored at the end of the sample period and they assume that dropping below 5% level is divestment. Using the annual portfolio turnover rates of the activist hedge funds (based on their quarterly holdings disclosed in their 13F filings), we find that their average holding period of a position is close to two years. The evidence regarding the duration of investment is confirmed by Boyson and Mooradian (2007), who show that for hostile (non-hostile) events, the average duration of activist hedge funds' investment in their sample is 496 (773) days.

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[6] See Brav et al. (2008a) for the duration of hedge fund activism when broader definitions of exit (e.g., the hedge fund's stake drops below 1% or $1 million) are considered.

4. Characteristics of Target Companies

The next important question for hedge fund activism is: What type of companies do activist hedge funds target? Table 3 reports results for probit regressions predicting hedge funds' targeting. The regressions cover all Compustat firm-year observations from 2001 to 2007, which include both event and non-event observations. The dependent variable is a dummy variable equal to one if the firm-year observation corresponds to a firm being targeted by a hedge fund during the year. All of firm characteristics variables are from various components of the WRDS database (including CRSP, Compustat, Thomson, IBES, and Risk Metrics), recorded at the year-end before targeting. Since the GINDEX, defined as the number of takeover defenses that a firm adopts according to Gompers, Ishii, and Metrick (2003), is only available for about one-third of firms on Compustat, the multivariate regression with GINDEX are reported separately (in column 2). It is important to point out that the subsample of firms that have GINDEX information are over-represented by large firms and firms with higher institutional ownership, and the results should therefore be interpreted accordingly.

The results from the multivariate regression are qualitatively similar to the univariate results based on the matched-sample method reported in Brav et al. (2008a), where the set of matched firms for each target company are assigned from the same year, same industry, and same size and book-to-market sorted portfolios.

Table 3 reveals several interesting relations. The negative coefficients on market value of equity (MV) across columns indicate that the target firms are generally smaller than the non-target firms. This result is robust and consistent with many other studies including Klein and Zur (2009), Greenwoord and Schor (2009), Clifford (2008), Boyson and Mooradian (2007), and Mietzner and Schweizer (2008). Larger firms are less likely to be targeted by hedge funds

possibly because of the large amount of capital a hedge fund would need to invest in order to amass a meaningful stake. Moreover, acquiring a sizeable stake in a large firm might introduce inordinate amount of idiosyncratic risk for an activist hedge fund given that the median activist fund in our sample manages less than $1 billion of assets.

The significant coefficients on the valuation variable, q (defined as (book value of debt + market value of equity)/(book value of debt + book value of equity)), indicate that the activist hedge funds resemble "value investors." This result suggests that activist hedge funds are attempt to identify undervalued companies where the potential for improvement is high. In fact, in about two-thirds of the cases, the hedge fund explicitly states that it believes the target is undervalued. To the extent that activist hedge funds profit from the improvement of the companies' operations and strategies, it is also important that hedge funds target companies whose stock prices have yet to reflect the potential for improvement.

Target firms tend to be low growth firms but significantly more profitable than comparable firms, in terms of annual sales growth (GROWTH) and return on assets (ROA, defined as the ratio of EBITDA to lagged assets). This evidence is important as it sets apart hedge fund activism from earlier institutional activism targeting poorly performing companies (Gillian and Starks (2007)). Note that although column 2 shows that the coefficient on ROA is insignificantly negative, we interpret the results in columns 1 and 5 as more representative of the full sample because the regression in column 2 is over-represented by large firms.

The next set of variables concern capital structure. Target firms have higher leverage: the coefficient on book value debt-to-capital ratio (LEV) is significantly positive both in univariate and multivariate regressions. Target firms' dividend payout is significantly lower relative to peers, as measured by the dividend yield (DIVYLD, defined as (common dividend)/(market

value of common stocks)). Combined with the results regarding ROA and DIVYLD, we conclude that target firms do generate cashflow but are reluctant to pay out to investors, a symptom of the agency problem of free cash flow according to Jensen (1986).

The characteristics of target firms mentioned above (i.e., they have low valuations, growth rates, and payout ratios) are consistent across different studies. In particular, Boyson and Mooradian (2007) report that the target firms have a lower Tobin's q, sales growth rate, payout ratio, and dividend yield compared to the industry/size/book-to-market matched firms. In addition, they find that the targets have higher operating profitability in terms of ROA and cash flow than the matched firms. Clifford (2008) also finds that the firms in the active blocks have higher ROA and ROE, but lower market-to-book and leverage ratios than those in the passive blocks. Overall, these characteristics suggest that hedge fund activists target companies that have stable but undervalued businesses generating sound cash flows, rather than firms that have either operational problems or uncertain business prospects.

On the investment side, target firms spend less than their peers on research and development, scaled by lagged assets (RND) (However, the statistical significance is weak for multivariate regressions in columns 1 and 2). This result is confirmed by Boyson and Mooradian (2007), who report that target firms have lower R&D expenditures than matched firms at the median. The univariate analysis in column 9 indicates that target firms appear to have slightly lower Herfindahl indices (HERFINDAHL, measured as the Herfindahl index of sales in different business segments as reported by Compustat), suggesting that they are more diversified than their peers. However, the significance becomes weak in multivariate regressions and thus the evidence on business diversification is largely inconclusive.

Based on univariate regressions, targets also have significantly higher institutional ownership (INST) and analyst coverage (ANALYST) than their peers. However, the sign of the coefficient on analyst coverage turns negative in multivariate regressions in columns 1 and 2 mainly due to its collinearity with institutional ownership and the measure of illiquidity per Amihud (2002) (AMIHUD). Both institutional ownership and analyst coverage proxy for shareholder sophistication. This is an important factor for activist hedge funds because they often rely on the understanding and support from fellow shareholders in order to implement the changes, given their minority stakes in the target firms (see Table 2). Since the latter two variables could also proxy for trading liquidity we use a direct trading liquidity measure, the Amihud (2002) illiquidity measure (AMIHUD). It is defined as the yearly average of $1000\sqrt{|\text{Return}|/(\text{Dollar Trading Volume})}$, using daily data. We find that target companies exhibit higher trading liquidity than comparable firms (i.e., negative coefficients on the illiquidity measure). High liquidity makes it easier for the activists to accumulate a stake within a short period of time without incurring adverse market impact.

Related to the effect of liquidity on targeting of hedge fund activists, a recent paper by Norli, Ostergaard, and Schindele (2009) provides additional evidence that stock market liquidity facilitates intervention by activist investors. Using a sample of 507 contested proxy solicitations and shareholder proposals from 1994 to 2007, they find that liquid firms (i.e., those having above-median liquidity) have a 50% higher likelihood of being targeted by activist investors than illiquid firms (i.e., those having below-median liquidity). Their evidence is consistent with the theoretical model of Maug (1998), in which liquidity mitigates the free-rider problem in costly

monitoring of managers because activist blockholders can compensate for their monitoring costs through the increased trading profits due to high liquidity.[7]

Next, we turn to governance characteristics measured by the Gompers, Ishii, and Metrick (2003) governance index (GINDEX). The GINDEX tracks 24 takeover defenses that firms can adopt, as well as the laws of the state in which the targets are incorporated. Target firms tend to have more takeover defenses (or weaker shareholder rights). The effect of GINDEX on the probability of targeting is highly significant both for multivariate and univariate regressions.

Characteristics of target firms in activism events outside the U.S. are broadly consistent with those in the U.S. Uchida and Xu (2008) show that targets of hedge fund activism in Japan tend to have lower market-to-book ratios (i.e., "value") and leverage than matched firms. For activist events in the U.K., Becht, Franks, Mayer, and Rossi (2009) report that the factor loadings of the U.K. Hermes Focus Fund on Fama and French factors SMB and HML are positive, suggesting that the target companies in the fund's portfolio are characterized as value and small firms.

In summary, the characteristics of target firms suggest that the potential problems that hedge funds identify tend to be issues that are generalizable to all firms, such as changes in governance and payout policies, rather than issues that are specific to individual target firms, such as slump in sales. Targeted firms do not seem to suffer from serious operational difficulties. Rather, they are actually profitable and enjoy sound cash flows, as indicated by the significantly positive coefficients on ROA in Table 3. The potential problems that these companies face are likely related to the agency problem of free cash flows, such as relatively low dividend payout and diversifying investments that might not be in the best interest of shareholders.

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[7] Theory does not prescribe a clear-cut relation between shareholder intervention and stock liquidity. See Coffee (1991), Bhide (1993), and Kahn and Winton (1998) for models that predict the opposite (i.e., discouraging) effect of liquidity on shareholder activism.

These targeting patterns seem sensible given that hedge funds are, in general, not experts in the specific business of the firms they invest in. Focusing on issues that are generalizable to other potential target firms helps to lower the marginal cost of launching activism on a new company (Black (1990)). Another reason to avoid targeting an idiosyncratic firm issue is offered by Kahn and Winton (1998). Their theory predicts that investors are more likely to intervene in well-understood firms or industries so that the market can appreciate the effects of intervention. And they should avoid "opaque" and complicated business, such as those involved with high R&D, in order to avoid delay in the resolution (in the market price) of the intervention's impact. Our data as well as those in Boyson and Mooradian (2007) offer support to this hypothesis (i.e., the target firms have lower R&D expenditures than the peer firms). We do not wish to over-interpret this relation because the effect is not significant in Table 3 when the full set of covariates is controlled for. We note, however, that q, sales growth, and ROA are also indirect proxies for technology intensity, and they are all statistically significant in predicting activist targeting. The combined evidence is therefore consistent with the predictions in Black (1990) and Kahn and Winton (1998).

5. Does Hedge Fund Activism Create Value for Shareholders?

The fundamental question for hedge fund activism is whether it achieves the stated goal of creating value for shareholders. We address this question by examining both short-run stock returns around the announcement of activism as well as subsequent long-run returns. This analysis addresses how the stock market perceives the effect of hedge fund activism on shareholder value ex ante and whether the long-run measures are consistent with the market's perception.

5.1. Event-Day Returns around the Announcement of Activism

We adopt both short- and long-run event windows around the announcement of activism events. Figure 1 plots the average buy-and-hold return, in excess of the buy-and-hold return on the value weight NYSE/AMEX/NASDAQ index from CRSP, from 20 days prior to the event date to 20 days afterwards for all events from 2001 to 2007. The event date is defined as the Schedule 13D filing date if available, or the first announcement of targeting if the hedge fund ownership stake is lower than 5 percent (and hence no Schedule 13D was filed). There is a run up of about 2.6 percent between 10 days to one day prior to filing. The filing day and the following day see an increase of 1.0 and 1.2 percent, respectively. Afterwards the abnormal return keeps trending up to a total of 6.0 percent in 20 days.

The magnitude of the announcement-window abnormal returns is comparable with those in other studies on U.S. activism events. Klein and Zur (2009) report that the average abnormal return (over the market) is 7.2 percent for the [-30, +30] window around the announcement day. Clifford (2008) and Boyson and Mooradian (2007) also document significantly positive average abnormal announcement-day returns ranging from 3.4 to 8.1 percent for various event windows. Greenwood and Schor (2009) show that the average abnormal return for the [-10, +5] window is 3.6 percent for their sample and it is highest for events related to asset sales and block mergers for the target firm.

The stock market's reaction to the disclosure of activist funds' engagement in a target outside the U.S. is broadly consistent with the U.S. experience. Becht, Franks, Mayer, and Rossi (2009) report that in the U.K., the mean abnormal return over the [-5, +5] window around the announcement of activism *outcomes* is 3.94 percent. Moreover, they find that the announcement

of CEO and chairman turnover and restructuring is associated with particularly high returns. Similarly, Becht, Franks, and Grant (2009) document that the average cumulative abnormal return around the [-25, +25] announcement-day window is about 6.0 percent for their sample of activism events in Europe. Stokman (2008) also reports a similar magnitude of abnormal returns for European cases: the average cumulative abnormal returns (CAR) during the [-25, +25] window of 12.2 percent. For activism events in Germany, Mietzner and Schweizer (2008) report the average abnormal return of 6.24 percent for the [-20, +20] window around the announcement of activists' acquisition of stakes. For Japan, Uchida and Xu (2008) document the average excess return of 5.6 percent for the [-2, +2] window around the announcement of activist events. Overall, the evidence suggests that investors perceive hedge fund activism as value-enhancing.

Figure 1 also shows the average abnormal trading volume over the event window. The abnormal volume is defined as the share turnover rate over the "normal" turnover rate measured over the [-100, -40] window preceding the event date. The spike in abnormal trading volume does not occur on the event day but rather during the ten-day period before the announcement. The ten day lead seems no coincident with the fact that investors are required to file Schedule 13D no later than ten days after the transaction that causes them to go over the 5% threshold. Therefore, it is possible that the filing fund may be engaging in additional buying prior to the announcement of activism.[8]

It is important to note that the market reactions are not an unbiased estimate of expected benefits from ex-post successful activism. Rather, market prices reflect the benefit of intervention adjusted for the equilibrium probability that the hedge fund continues with activism

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[8] There are two alternative explanations for the abnormal volume in the days preceding the filing date. The first is "wolf pack" investing, in which several hedge funds, who do not formally coordinate, buy into the target firm; and the other is "tipping," where the lead hedge fund reveals its intention to a small number of investors before the public filing for reciprocation of other favors.

and succeeds, and hence underestimates the value of ex-post successful activism.[9] Moreover, the raw correlation between ex-post success and announcement returns is low. This low predictability of success, from the perspective of outside market participants, is consistent with the theoretical models of Maug (1998) and Cornelli and Li (2002) and the empirical evidence in Bradley, Brav, Goldstein, and Jiang (2010).

By breaking Figure 1 into event years, Figure 2 shows that the average abnormal return during the [-20, +20] window is higher for the early sample years than later. The average abnormal event-day return is almost 14 percent on average in 2001, but it decreases to less than 4 percent in 2006-2007. This decline may be driven by competition just like any other investment strategy: hedge funds' activist "arbitrage" strategy intensified over the years, leading to the entry of more players into the field, which in turn reduced the equilibrium returns to activism.

Equally important as the average abnormal return is its cross-sectional variation since it reflects the heterogeneity in market perceptions regarding the expected value generated by activism. To explore the cross-sectional variation in market response to shareholder activism, we run regressions with the dependent variable being the abnormal return in the [-20, +20] window around the event date. Included as covariates are dummy variables for the five broad stated objectives classified in Section 3.1, the logarithm of market capitalization, the leverage ratio (the ratio of debt to sum of debt and market value of equity), a dummy variable equal to one if the hedge fund revealed significant stake in the target company in its 13F filings before the event, and the average [-20, +20] window abnormal return for all the previous events led by the same hedge fund.

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[9] See Bond, Goldstein, and Prescott (2010) for a theoretical analysis of a general model on how prices anticipate corrective actions that are based on these prices.

From the regression (not reported), we learn that activism that aims at the sale of the target generates the highest abnormal return, with the average abnormal return of 8.54 percent. This result is consistent with the evidence in Greenwood and Schor (2009) who report that the abnormal return is the highest for the events in which targets are acquired subsequently. Becht, Franks, and Grant (2009) document a similar difference in average abnormal returns between acquired and non-acquired targets (8.1 vs. 5.2 percent) for their sample of activism events in Europe. Business strategy related activism also generates a significant abnormal return of 5.95 percent.

On the other hand, though activism targeting capital structure and governance issues also generates somewhat positive average returns (1.47 and 1.73 percent), these estimates are not statistically distinguishable from zero. The latter estimates are consistent with the weak return effects documented by prior literature on traditional governance-oriented activism.[10] Similarly, Becht, Franks, and Grant (2009) show that the announcement of board turnover outcomes produces abnormal returns close to zero. However, these results contrast with the evidence in Boyson and Mooradian (2007), who report that governance-related hedge fund activism is associated with the most favorable stock market reaction. Thus, the evidence on the market's perception of governance-related activism is mixed.

Finally, we find a significant, but economically small effect of a hedge fund's track record (proxied by the average announcement returns from the hedge fund's previous interventions) on market reactions. Related to this point, Zur (2008) suggests that the reputation for being successful in previous activism events can account for some of the cross-sectional differences in the Schedule 13D announcement premium.

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[10] One exception is Bizjak and Marquette (1998), who document some value improvement from shareholder resolution to rescind poison pills.

5.2. Long-term Returns to Targets of Hedge Fund Activism

Alternative explanations for the high abnormal event-day return examined in the previous section that refute value-creation include a temporary price impact caused by buying pressure from the lead hedge fund or their followers, and market over-reaction. As shown in Figure 1, the run up in price around the announcement window is accompanied by abnormally high trading volume as well. If the price impact is purely temporary and reflects a trading friction rather than information about prospective value changes, we should observe negative abnormal returns shortly after the event. This turns out not to be the case in our data. Figure 1 shows no reversal after 20 days (when the abnormal turnover declines to close to zero), and the pattern persists if we extend the window for another 20 days.

We conduct a more formal long-term return analysis, reported in Table 4, using calendar-time monthly portfolio regressions around the event date. For example, a [-3,-1] portfolio is formed by buying the stocks of all firms that will be targeted by a hedge fund within three months' time, and the positions are held for three months before being sold. For each such portfolio we estimate a regression of the portfolio returns on the Fama-French market (RMRF), size (SMB), book-to-market (HML), and the momentum (MOM) factors. We then focus on the regression intercept, the alpha estimate, as evidence for abnormal returns and possible mean reversion. The results are reported in Panels A and B of Table 4, using equal- and value-weighting schemes, respectively.

The factor loadings in both Panels A and B indicate that targeted companies co-move with small and value firms, consistent with the results on the characteristics of the targets presented in Section 4 and Table 3. Target firms have a slightly sub-par pre-event stock

performance (i.e., negative alphas). But the negative alphas are only significant in the value-weighting specification, implying that it takes larger stock return underperformance for large-cap firms to be targeted. The event month sees quite robust positive abnormal returns. With equal weighting, the event month window alpha is 5.04 percent (significant at less than the 1 percent level). The same number for value-weighting is somewhat lower (3.30 percent) but is also statistically significant at the 1 percent level. Presumably the larger firms in the sample do not receive as a favorable response from the market as the smaller targets but they still earn significant event-month returns.

These results are comparable to those in Clifford (2008), who also runs calendar-time portfolio regressions for the target firms in his sample. For windows of [0, +12], [0, +24], and [0, +36], he finds that the average three- and four-factor alphas range from 1.0 to 1.9 percent per month and that they are statistically significant. In addition, he obtains loadings on the RMRF, SMB, HML, and MOM factors for the target portfolios that are very similar with those in Table 4.

Greenwood and Schor (2009) use a different event-time regression approach to estimate the long-term abnormal returns for target firms. They first estimate the loadings on the Fama-French three factors based on returns for the 24 months prior to the activism and then use the estimated loadings to compute abnormal monthly returns (i.e., alphas) for the months after the event. They report that the cumulative abnormal returns for the [-1, +18] window is over 10 percent on average and most of the returns accrue during the [+3, +18] window. These numbers are broadly consistent with results in Table 4 as well as those in Clifford (2008). However, Greenwood and Schor (2009) further argue that hedge fund activism appears to create value only when the target is acquired ex post based on their result that the alpha is significantly positive

only on the subsample of targets that are eventually acquired. Given that an event-time portfolio that is conditional on ex-post information (i.e., whether the target is acquired) is not implementable, it is hard to compare their conclusion directly with those in other studies, in which implementable calendar-time portfolio strategies are examined and only *ex-ante* information is used to explain long-term returns.

Using evidence from Japan, Uchida and Xu (2008) confirm that targets of hedge fund activism earn positive long-term abnormal returns. They find that alphas from calendar-time portfolio regressions for one year after the event month are positive for both of the funds they study (i.e., Steel Partners Japan and Murakami Fund), and most of the alphas are statistically significant.

Overall, the evidence in the literature suggests that the alphas around event time are positive for targets of hedge fund activism, and the positive abnormal returns do not revert up to a year after the initiation of activism. Therefore, the evidence clearly refutes the market over-reaction hypothesis and supports the hypothesis that hedge fund activism creates value for shareholders.

5.3. Performance of Target Firms Before and After Activism

If hedge fund activism creates shareholder value by intervening in the target firms, one would expect improvements in terms of operating performance, capital structures, and corporate governance after the intervention. This section reviews the evidence on the change in companies post targeting along various measures of corporate policy and performance. Results are reported in Table 5. More specifically, we conduct the following regression in the panel data of all Compustat firms from 1999 to 2008:

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$$y_{i,t} = \sum_{j=-2}^{2} \gamma_{i,j} D_{i,j} + \beta \ln(MV_{i,t}) + \alpha_{SIC3} + \alpha_{year} + \varepsilon_{i,t},$$ (1)

where $y_{i,t}$ is a measure of performance for firm i in year t, $D_{i,j}$ is a dummy variable equals to one if firm i was (will be) under hedge fund targeting j years (j = -2, -1, 0, +1, +2) relative to the current year, and $\ln(MV_{i,t})$ is the log of market value of equity for firm i in time t. Finally, α_{SIC3} and α_{year} control for industry (three-digit SIC code) and year fixed effects, respectively. Essentially, the default category in the regression is "non-event firm-year observations," and hence the γ_j coefficient could be interpreted as the abnormal performance of an event firm during j years relative to the event year, compared to the normal levels of non-event firms. The control variables effectively form the matched sample for target firms based on the industry, year, and firm size.

Column 1 in Panel A of Table 5 reports estimates of the regression in equation (1) when the dependent variable is ROA (return on assets, defined as EBITDA/lagged Assets), which measures operating profitability. The positive coefficient estimates on the dummy variables γ_j (for all j) indicate that targeted companies generally have higher operating profitability than their industry/year/size matched peers in terms of ROA. However, their performance deteriorates during the event year (i.e., the coefficient on the dummy variable becomes insignificant), and roughly recovers to the pre-event level two years after the event, and hence the difference between t-1 and t+2 is close to zero.

Column 2 confirms that activist targets are value firms that have lower q compared to their peer firms, consistent with the characteristic of targets discussed in Section 4. Thus, the coefficients on the dummy variables γ_j are significantly negative across j. However, the target

firms experience an improvement in valuation after the intervention of activist hedge funds. The differences in q between t-1 and t+1 and between t-1 and t+2 are economically large (0.17 and 0.23, respectively) and statistically significant (at the 10% and 5% levels, respectively). This result suggests that hedge fund activists are generally successful in improving the valuation of undervalued target firms.

The change in payout policies occurs sooner with the hedge fund intervention. Given that activist hedge funds often demand both dividends and share repurchases, a total payout measure is suitable for our analysis. We define the total payout yield as (dividend + share repurchase)/(lagged market value of equity). Column 3 in Panel A shows that payout increases during the year of intervention, and peaks in the year afterwards. Compared to the level in the pre-event year, target firms' average total payout yield increases by 0.1-0.2 percentage points in the post-event years, although the changes are not statistically significant. Column 4 shows that the initiation of dividends increases during the year after the event, with a 1.2 percentage point significant difference in the probability of initiation between t-1 and t+1.

Column 5 reports the change in net leverage (defined as total debt minus cash holdings scaled by book assets). In two years, the net leverage ratio increases by 1.0-1.3 percentage points compared to the level in the year before the event. However, the changes are not statistically significant at conventional levels. This moderate increase in leverage is consistent with the results discussed later in Section 5.4 that expropriation of debt holders is unlikely to be a significant source of shareholder gains.

Several other studies provide similar evidence on the effect of hedge fund activism on targets' performance and policies. Boyson and Mooradian (2007) show that one year after the intervention of activist hedge funds, target firms exhibit increases in ROA, cash flow, Tobin's q,

and payout but a decrease in cash holdings. Clifford (2008) provides additional evidence that firms targeted by activist hedge funds experience increases in operating profitability (i.e., ROA and ROE), leverage, and dividend yield, but a decrease in cash levels. Similarly, Klein and Zur (2009) document that one year after the intervention, target companies decrease their cash balances and increase leverage and dividend payout. In addition, evidence in Kim (2009) suggests that after the intervention of activist hedge funds, managers of the target firms are less involved with self-interested overinvestment using firms' cash flow compared to the pre-event period. Collectively, the evidence in these studies broadly supports the hypothesis that hedge fund activism enhances firm performance by reducing agency costs associated with free cash flow and by subjecting managers to increased discipline.

Becht, Franks, Mayer, and Rossi (2009) provide another type of evidence on the improved performance and efficiency in target firms after the U.K. fund's intervention. They find that the target firms experience decreases in total assets and numbers of employees but an increase in return on assets during the events. This result suggests that the activist fund facilitates active restructuring and slack-cutting in the target firms. In addition, they find an increase in the valuation of the targets (i.e., the market-to-book ratio) after the intervention compared to the year prior to the fund's engagement.

Turning to the financial strength of target firms, columns 6 and 7 in Panel A of Table 5 present results on the changes in Altman's (1968) Z-score (ALTMAN) and distance to default (DtD). Altman's Z-score is widely used in the literature as a proxy for the bankruptcy risk. Although the overall credit worthiness of the targeted firms measured by Z-score improves in years after the intervention compared to the year prior to the event, the changes are not statistically significant.

Distance to default (DtD) measures the number of standard deviation decreases in the firm value before it fails the debt obligations (i.e., the firm is in default) based on Merton's (1974) bond pricing model. Column 7 shows that the targets experience improvements in the safety of debt claims from the event year to two years after the event. Moreover, the differences between the post-event years and the year prior to activism are highly significant. Overall, the results suggest that the credit worthiness of debt claims issued by the target companies improves after the intervention of activist hedge funds.

Aslan and Maraachlian's (2009) study provides additional evidence on the wealth effect of hedge fund activism on debt holders of target firms. They show that the bonds of target firms earn significantly positive abnormal returns around the announcement of activism. However, they find that the target bonds significantly underperform their benchmark from the year after the activism by 3-5% per year. Moreover, the target firms have a higher likelihood of downgrading in their credit ratings compared to their peer firms. This negative wealth effect on bondholders is more pronounced for bonds that have weak covenant protection or investment restrictions. Nonetheless, Aslan and Maraachlian (2009) conclude that combining the (positive) short-term and (negative) long-term effects of hedge fund activism on creditors' wealth, the net effect appears not a significant source of gains for shareholders.

It is worth pointing out that results in Table 5 are subject to potential selection effect because the ex-post performance analysis can only be performed on firms that remain in the sample in post-event years. Within two years after being targeted by hedge funds, 18.6% of the targets cease to be covered by Compustat (a proxy for delisting), a rate that almost doubles the average attrition rate of Compustat firms. We thus face the challenge to address the potentially non-random attrition of target firms. While firm delisting is generally associated with negative

reasons (Shumway (1997)), the specificity of our sample indicates that firm attrition due to targeting is actually more likely to represent a successful outcome of hedge fund activism. First, the "sale of the company" category sees the highest attrition rate (31.0%), where the successful sale of a target firm reflects the stated goal of the hedge fund. Second, Table 3 shows that target companies have stronger fundamentals (higher ROA and liquidity) than peer firms. As a result, the subsequent attrition is less likely due to distress compared to firms delisted without the involvement of hedge funds. Therefore the ex-post performance analysis does not necessarily induce a positive bias when based on surviving firms only.

Section 5.4 below provides a detailed discussion on the issue of separating treatment effects from selection effect. In the current setting, we formally address the issue of sample selection in the post-event sample by re-examining the regression in equation (1) using Heckman's (1979) two-step procedure. More specifically, we estimate the following system sequentially:

$$Attrition_i^* = X_i\beta + Z_i\gamma + \varepsilon_i, \tag{2-a}$$

$$\text{Attrition}_i = 1, \text{ if Attrition}^*_i > 0; \text{Attrition}_i = 0, \text{ otherwise}, \tag{2-b}$$

$$\Delta y_i = \lambda X_i + \delta H(X_i\beta + Z_i\gamma) + \omega_i, \tag{2-c}$$

where Attrition$^*_i$ is a latent variable for the propensity of attrition for firm i from the sample post targeting, and Attrition$_i$ is the observed binary outcome. Δy_i is the change in a performance measure of firm i. X_i is a set of independent variables including major firm characteristics measured during the year before targeting, and Z_i represents the instrumental variable that affects the propensity of attrition but bears no direct relation to performance. H(.) is the hazard function

or the inverse Mill's ratio. Finally, ε_i and ω_i are random disturbances which are distributed as bivariate normal.

Equation (2-a) applies to the full sample (including firms that cease to be listed post targeting), and we estimate the equation using probit. The estimated coefficients β and γ are used to form the hazard function H(.), which is used as an additional regressor in equation (2-c) which only applies to the firms that remain in the sample post targeting. If the estimate of the coefficient on H(.) is positive (negative), then it implies that firms with higher propensity for attrition also tend to have greater (smaller) improvement in ex-post performance. As a result, a performance regression without controlling for attrition would under- (over-) state the effect of hedge fund activism.

In general, the system of equations (2) is identified by the non-linearity of the inverse Mill's ratio under the joint normality of the error terms (ε_i and ω_i), because to the extent that the inverse Mill's ratio is not linear, the regressors in equation (2-c) would not be collinear. Thus, the existence of instrumental variables (Z_i) in equation (2-a) (i.e., exclusion restrictions) is not a strict requirement for identification. However, given that the inverse Mill's ratio is roughly linear in parts of its domain in practice (Li and Prabhala (2007)), the need for instrumental variables arises to properly identify the system.

We therefore use the Amihud (2002) illiquidity measure, which captures the target companies' stock trading liquidity before the intervention, as the instrumental variable (Z_i) to identify the system of equations (2). This instrument presumably affects the probability of attrition but does not appear in the second equation. A large literature identifies liquidity as a prime benefit for firms to go or to remain public. The hedge funds in our sample also often cite lack of trading liquidity as a reason for the sales of the targets. Therefore, the measure should

have explanatory power over whether the target firms remain as stand-alone public firms (and hence continue to be covered by CRSP/Compustat). On the other hand, there is no a priori reason for trading liquidity to affect firms' operating performance directly. In fact, if trading liquidity matters for firm operating performance, the effect must go through the channel of public listing. Therefore, the instrumental variable satisfies the exclusion criterion.

Panel B of Table 5 presents estimation results for Heckman's two-step procedure in equation (2). We examine changes in three performance measures between one year prior to and one year after the activism: ROA, dividend yield (DIVYLD), and distance to default (DtD). The coefficient on the inverse Mill's ratio in the ROA system is significantly positive (t-stat = 2.33), indicating that the magnitude of an improvement in ROA in column 1 of Panel A is underestimated because firms that have higher a propensity for attrition also have a better prospect in ROA. On the other hand, there is no evidence of selection bias for dividend yield and distance to default because the coefficients on both inverse Mill's ratios are far from significant (t-stat = 0.25 and -0.47, respectively).

This result sheds light on the interpretation of ex-post performance analysis for target companies of hedge fund activism. If anything, the effect of hedge fund activism on operating performance of target firms is more likely to have been underestimated in various studies. In particular, Greenwood and Schor (2009) argue that hedge fund activism does not appear to create long-term value because the measures of performance (such as ROA) do not improve significantly after the intervention among surviving firms. However, given the potential negative bias in the estimate of changes in ROA due to the sample selection effect, their finding on the weak effect of activism on performance might be partially driven by the selection bias because

firms that get acquired due to activist intervention tend to be better-than-average in quality or have less entrenched management.

Returning to Panel A, columns 8 to 10 examine the effect of hedge fund activism on executives. Column 8 classifies an event as CEO turnover if the name of the CEO of a company is different from that in the prior year in the ExecuComp database. The result shows that one year after targeting, the turnover rate among the (surviving) target companies increases significantly compared to one year prior to intervention, with a jump of 5.5 percentage points. Moreover, the estimates used here underestimate CEO turnover since they do not include CEO departures as a result of liquidation or sale of the company.

In column 9, the variable is the total CEO compensation including salary, bonus, and stock and option grants ("TDC1" by ExecuComp). The value of the last component is measured at the time of grant and therefore the variable is an ex-ante measure of total CEO compensation, which is usually contracted during the year prior to the year in which they are paid. The CEO compensation at target firms was higher than that of the peers up to the event year (significant at the 10 percent level). However, it decreases in the years after the activism (the differences are statistically insignificant), becoming indistinguishable from peer levels one year after hedge fund targeting. A related pattern is the increase in pay-for-performance sensitivity shown in column 10, measured as the percentage of CEO's total compensation that comes from equity-based incentives (including both shares and options): targeted firms experience a significant increase in pay-for-performance two years after the event year compared to the year before the event.

Overall, hedge funds are successful in curtailing executive compensation, enhancing pay-for-performance, and ousting CEOs. And such actions seem to be much more widespread than implied by hedge funds' publicly stated objectives: in only 5.6% and 4.7% of all activism events

hedge funds openly request CEOs to step down or to cut their pay. Therefore, we believe that hedge funds carry out governance-related agenda more often than their public statements indicate (as summarized by Table 1).

To summarize, hedge fund activism has been successful in improving operating performance, increasing payouts, and reducing agency costs. It is associated with an almost immediate increase in payout and heightened discipline of the CEO. Cronqvist and Fahlenbrach (2009) show that there is large heterogeneity across different blockholders in their effect on corporate decisions along similar dimensions, but the average effect is small and insignificant.[11] Our results contribute to the literature by showing that one small group of block holders—activist hedge funds—are effective at influencing corporate policies and enhancing corporate governance.

5.4. Value Creation, Stock Picking, or Wealth Transfer?

The most important alternative hypothesis for the positive market reactions to hedge fund activism is that hedge fund activists simply identify undervalued companies and alert the market to this possibility, but do not add to the firms' fundamental value. According to this hypothesis, the positive market reaction is due to the revelation of new information that a hedge fund has identified an undervalued company, but not due to the announcement that a hedge fund has committed to intervene to enhance value to shareholders. Given the strong evidence in Table 3 that hedge funds target "value" firms (i.e., firms with low q), and the tendency of event-firm portfolios to load positively on the Fama and French HML factor (Table 4), it is plausible that obtaining the value return is indeed a part of the hedge funds' strategy.

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[11] See also Bhagat, Black, and Blair (2004).

Brav, Jiang, Partnoy, and Thomas (2008a) present several types of evidence that refute this alternative hypothesis as the driving force. First, they find that when hedge funds launch activism with hostile tactics, the abnormal return is on average 3.9% higher than non-hostile targeting. Hostile deals, by definition, are resisted by the managers, and therefore the changes are unlikely to happen were it not for the hedge funds' persistence. Recalling the argument that upon the announcement of activism market prices adjust to a level reflecting the benefit of successful intervention adjusted for the equilibrium probability that the hedge fund continues with activism and succeeds, the hedge fund will only intervene when the probability-adjusted benefit is greater than the cost of intervention. Hostile deals presumably involve higher costs of intervention; as a result the expected benefit when a hedge fund successfully carries out a hostile deal should be higher than a non-hostile one. Therefore, the more favorable market response indicates that the perceived value improvement comes from imposed changes, rather than a mere discovery of mispricing.

Second, Brav et al. (2008a) examine the abnormal announcement returns of the subsample where the hedge fund had revealed a significant ownership in the 13F filing prior to the filing of a Schedule 13D. This subsample of events sheds light on the question of stock-picking vs. value creation through intervention since the new information in the subsequent 13D filing is not just about stock picking, but about intervention. Based on the results of the cross-sectional regression in which the dependent variable is the announcement-day abnormal return, Brav et al. (2008a) report that the coefficient on the dummy variable for the existence of the 13F filing prior to the 13D filing is indeed significantly negative. However, they also find that this sub-sample of events still show significant announcement window returns comparable to those for the full sample despite the little additional information regarding ownership stakes in the 13D

filing. These results suggest that the expectation regarding the hedge fund's intervention, rather than the information about stock pricing, drives the announcement returns.

Third, Brav et al. (2008a) find that abnormal returns upon hedge funds' exit show different patterns, contingent on whether the stated agenda has been carried out. They show that the average abnormal buy-and-hold return around the last Schedule 13D/A file date (i.e., the date of exit) for the full sample is positive leading up to the file date, and roughly flat afterwards at about 4 percent. This result indicates that hedge funds' exit has a rather neutral impact on the stock price. On the other hand, they find a significantly negative market response if a hedge fund fails or withdraws from ongoing activism and exits: the average [-20, 20] window abnormal return is about -4 percent, significantly lower than the full sample average. They argue that these patterns are inconsistent with the simple stock picking story as it does not predict these varying abnormal return patterns upon exit.

Fourth, they argue that activist hedge funds do not appear to be mere stock pickers because if that was the case, they should sell shortly afterwards, if not immediately after the market price adjusts to fair valuation. In contrast, they find that activist hedge funds continue to hold for relatively long periods of time (see Panel C of Table 2). Moreover, they find that in 94 percent of the cases hedge funds exit only after a resolution of the stated goals. It is consistent with the view that the positive abnormal return reflects the market's expectation of hedge fund intervention, and it would be difficult for the hedge fund to exit at a high price without action.

The second alternative hypothesis attributes the positive returns to shareholders to wealth transfer from other stakeholders. Brav et al. (2008a) examine this "wealth transfer" hypothesis focusing on two other important groups of stakeholders: creditors and senior management represented by the CEOs. On the creditor side, they argue that if shareholders of the target

company gain at the expense of the creditors (i.e., by increasing leverage and lowering debt rating), then the gain should be higher in companies with higher levels of leverage, especially long-term debt because terms on short-term debt can be adjusted quickly to reflect the new leverage condition. However, the relation between abnormal announcement-window returns and the long-term debt ratio (scaled by the market value of capital) is economically small conditional on other covariates: every percentage point increase in long-term leverage is associated with a decrease of 0.03 percentage point in announcement return. A cleaner test is obtained from the subsample of 174 targets without any long-term debt (and hence no creditors to expropriate). This subsample actually exhibits somewhat higher announcement window returns than the remaining sample that has long-term debt. The overall evidence suggests that it is unlikely that the expropriation of bondholders is a meaningful source of shareholder gains in the wake of announced activism.

In contrast, evidence on activism in Japan documented by Uchida and Xu (2008) indicates that the market's reaction to hedge fund activism is more favorable when the target firm has higher leverage. However, they point out that this result seems to be driven by the particular ownership structure in Japan: The main banks are also majority shareholders of the target firms, and thus the banks may expropriate value through higher interest rates prior to the intervention.

Aslan and Maraachlian (2009) focus on the wealth transfer between creditors and shareholders in hedge fund activism. Based on a data set of activist filings at the SEC from 1996 to 2008, they find that target *bondholders* earn a mean excess return of 2 percent around the nine-day announcement window. Furthermore, they find that activism events that have well-defined objectives, such as corporate governance, are associated with higher excess bondholder

returns than events that simply target the general issue of asset undervaluation. Their findings provide additional support to the view that the increased shareholder value is driven by the active intervention of the hedge funds, rather than by wealth transfers from bondholders. Not surprisingly, they document that certain subset of activism, such as that aims to sell all or part of the target firms' assets produces negative excess bond returns on average, where the loss is driven by the sample of bonds with weak covenant protections.

Huang (2009) identifies leveraged buyouts (LBO) as another potential channel through which activist hedge funds create value for shareholders. He uses a sample of 237 buyout proposals in the U.S. from 1990 to 2007 and documents that pre-announcement equity holdings by hedge funds (but not by other institutional investors, such as pension funds and mutual funds) are positively associated with the initial LBO premium offered by the acquirer. Furthermore, he finds that this positive relation holds only for activist hedge funds (i.e., filers of Schedule 13D), and that the activist hedge funds increase their stakes in targets after the announcement of buyout offers. The latter result suggests that hedge fund activists protect the wealth of target shareholders by increasing their stakes in the firm in order to enhance their bargaining power against the acquirer. Overall, his findings suggest that activist hedge funds create value for target shareholders in LBO transactions through their bargaining power over the potential buyers, consistent with the theoretical prediction of Gomes (2001).

Jiang, Li, and Wang (2009) deliver the same message from a different angle using a sample of U.S. bankruptcy filing firms during 1996-2007. They find that the abnormal stock return during the bankruptcy filing window is higher among the subsample where there is hedge fund is among the largest unsecured creditors. The fact that hedge funds' influence as creditors does not come at the expense of shareholders indicates that they enhance the overall value of

firms in Chapter 11, apparently by providing fresh capital, reducing the frequency of inefficient liquidation, and smoothing the frictions among different classes of claims.

On the other hand, empirical evidence supports the claim that some of the shareholder gains come from heightened discipline to the senior management. As Table 5 (the last three columns of Panel A) shows, hedge funds are successful in forcing out entrenched CEOs, curtailing the pay of the ones that stay, and subjecting them to higher pay-for-performance sensitivity. Such actions tend to be viewed favorably as enhanced governance rather than wealth expropriation.

To summarize, the evidence in the literature indicates that hedge fund activism creates value for shareholders mainly through their active intervention in the management of target firms (or sometimes bargaining with potential acquirers), rather than by expropriating value from creditors or simply by their superior stock picking ability. Indeed, in light of the evidence in Griffin and Xu (2009), who suggest that hedge fund managers as a group might not be superior stock pickers, the latter hypothesis seems even less plausible.

6. Returns to Hedge Fund Activism

So far, the evidence presented in this article concerns the question of whether hedge fund activism creates value for shareholders of target firms. We now ask whether hedge fund activists create value for the investors in their own funds. That is, do activist hedge funds earn abnormal returns from their investment strategy? Given that activist funds bear most of the cost of intervention but only receive a small proportion of the direct gain, it is a priori unclear whether such activities are profitable to the activist funds (and, as a result, to the investors in these hedge funds).

If one views activist investing as a new form of arbitrage (Bradley, Brav, Goldstein, and Jiang (2010)), this question is interesting for at least two reasons: First, profitability by activist hedge funds is a necessary condition for their survival and long-term viability. Like any other arbitrage strategy, profitability tends to decrease with competition as the number of hedge funds engaging in activism has been increasing steadily over the past few years (see Figure 2). A finding of equilibrium level of profitability ensures that hedge fund activism will remain a staple of corporate governance in the foreseeable future.

Second, if markets are efficient, abnormal returns to an investment strategy should persist only when activists have private information. In the conventional setting, superior information is about the value of the firm that is assumed to be out of the control of the investors (and unknown to the market). In the context of activist investing, the value of the firm could be potentially affected by the activist's action. As a result, the player's superior information about his own intention to intervene becomes valuable.[12] This non-conventional form of private information calls for possible extensions of the existing regulation regarding informed trading. For example, when a lead hedge fund "tips" a small set of investors (e.g., members of a "wolf-pack") about its intention to launch activism before filing the Schedule 13D, it allows the informed parties to gain at the expense of the uninformed sellers. However, such actions do not violate any existing rules because the private information is not proprietary about the firm. Similarly, the hedge fund could trade on derivatives based on the private information about its own agenda (Hu and Black (2006), Brav and Mathews (2009)), which has become a contentious issue in the recent debate regarding disclosure.

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[12] See Cornelli and Li (2002), and Bond and Eraslan (2009) for theoretical analysis of informed trading where private information comes from the knowledge of one's own intention or action.

6.1. Returns to Activist Funds

Brav, Jiang, Partnoy, and Thomas (2008b) offer a detailed analysis of the return to activist hedge funds based on two data sources: a combination of databases based on self-reporting hedge funds; and the institutional quarterly holdings maintained by the Thomson 13F database. First, Brav et al. (2008b) merge two major hedge fund databases: the Center for International Securities and Derivatives Markets (CISDM) database, maintained by the University of Massachusetts; and HedgeFund.net, a leading commercial database distributed by the Channel Capital Group Inc. They are able to match 103 unique funds that have at least 12 months of return data from the combination of the two databases. They retrieve hedge fund returns from January 1995 (or the earliest available date) through June 2007 (or the latest reporting date).

To analyze the performance of activist hedge funds, they measure their one- and four-factor alphas using 36-month (or as many months as possible, subject to having at least 12 months of data) rolling window factor loadings, which allow time-varying loadings on the factors by the hedge funds. To benchmark activist performance against that of other self-reported, non-activist hedge funds, they repeat the measurement of fund alphas for two comparison hedge fund samples: the first includes all hedge funds covered by HedgeFund.net; and the second includes all equity-oriented hedge funds in HedgeFund.net.

Based on this sample of returns to activist and non-activist hedge funds, Brav et al. (2008b) find that activist hedge funds on average perform better than the full sample of self-reported hedge funds and the subset of equity-oriented hedge funds by both the one- and four-factor alpha measures. Specifically, they report that the average (median) of one- and four-factor monthly alpha of the sample activist hedge funds is 0.71 percent (0.68 percent) and 0.64 percent

(0.63 percent), as compared to 0.41 percent (0.33 percent) and 0.39 percent (0.29 percent) for the full sample of hedge funds. The average loadings on the market, size, value, and momentum factors are 0.33, 0.27, 0.17, and 0.04, respectively, indicating that most activist hedge funds over-weight small and value firms, but are not momentum players. In addition, the relatively low loading on the market factor indicates that activists probably hold positions beyond purely long-positions in common stocks. But the commonly used non-equity factors are not significant in the return regressions for the activist funds. The size and value tilt is consistent with the characteristics of the target companies described in Section 4 as well as the long-term regression results discussed in Section 5.2.

Boyson and Mooradian (2007) report a similar magnitude of excess returns for activist hedge funds using the TASS hedge fund database. They find a matched sample of non-activist hedge funds based on fund style and size for each activist fund, and then compare the 24-month four- and seven-factor alphas (Fund and Hsieh (2004)) between the activist and non-activist groups of funds for the year before activism. They report that the median four- and seven-factor monthly alphas for the sample of activist hedge funds are 0.58 percent and 0.66 percent, while they are 0.45 percent and 0.50 percent for the matched sample of non-activist hedge funds. In addition, they find that the mean monthly seven-factor alpha of activist hedge funds is 0.27 percent higher than that of non-activist funds, suggesting that activist hedge funds in their sample on average have earned 3.3 percent of annual excess returns over returns to non-activist hedge funds in one year prior to activism. However, their conclusion on the performance of activist hedge funds is mixed because they do not find an incremental return performance among activist funds during the 24 months after the activism using both four- and seven-factor alphas.

Needless to say, the return discussed above does not accrue entirely to the hedge funds since launching activism is costly. Gantchev (2009) is the only work that calibrates the net return after incorporating such costs, especially at the stage of a proxy contest. Using a dataset of 1,492 hedge fund campaigns between 2000 and 2007, he finds that the average activist campaign costs $10.5 million, or about one-third of the average gross deal return. Outside the U.S., Becht, Franks, Mayer, and Rossi (2009) examine the long-term performance of the Hermes U.K. Focus Fund (HUKFF). Their results suggest that the U.K. activist fund earns positive abnormal returns: an annual excess internal rate of return (IRR) of 4.9 percent during the sample period from 1998 to 2004. Furthermore, alphas from the regression of the fund's returns on the one and four factors are significantly positive (0.41 and 0.86 percent per month, respectively). The magnitude is comparable to the average abnormal performance of U.S. activist funds.

6.2. Selection Bias and Returns to Activism

One drawback of the return analyses based on self-reported hedge fund databases in the previous section is related to the potential selection bias that comes from self-reporting. That is, hedge funds that choose to report to one or multiple commercial databases may or may not have the same average return performance as a full universe of hedge funds (Baquero, ter Horst, and Verbeek (2005)). Brav et al. (2008b) address this issue of section bias by examining Thomson Financial 13F filings, which provide quarterly long equity positions for 147 of their hedge funds. They construct the returns from the equity long-only position of their sample funds by assuming that they hold the most recently disclosed positions. This strategy is meant to capture the returns to the private information possessed by the activist funds, and is not implementable for outside investors given the 45-day lag between the quarter end and the filing date.

Brav et al. (2008b) report that the quarter-end equity holdings of the sample activist hedge funds on average outperform the market by 0.6 to 0.9 percent per month, a sizable premium given the lack of abnormal performance of 13F holding returns for hedge funds (see Griffin and Xu, (2009)) in general. This is consistent with the results discussed in the previous section that activist hedge funds seem to be better performers among all hedge funds.

Interestingly, this result suggests that a tradable "copy cat" strategy that holds the most recent publicly available activist hedge funds' 13F holdings could yield positive alphas. It is indeed the case but the magnitude from the implementable strategy (incorporating a two-month delay to reflect the timing of holdings information disclosure) is less impressive. The difference between the returns of the copy-cat strategy and the hedge funds' long positions indicates that some of the superior returns can be attributed to non-public information, and this advantage dissipates as the information is disseminated through the 13F filings.

Additionally, Brav et al. (2008b) provide evidence from the 13F holdings return that more successful funds are no more likely to report to hedge fund databases, which suggests that the selection bias might not be a big concern in examining the performance of activist hedge funds. Among the 147 13F-filing funds, 64 also report to at least one of the two hedge fund databases mentioned earlier. They find that the self-reporting funds on average have somewhat lower excess returns as well as one- and four-factor alphas, but the differences are not statistically significant.

6.3. Cross-sectional Variation in Return to Hedge Fund Activism

Only few papers provide evidence on the cross-sectional variation in the return of activist hedge funds. Based on regression results in which the dependent variables are four- and one-

factor alphas, Brav et al. (2008b) show that most of independent variables related to the style of activism and the characteristics of funds are insignificant except that high fees tend to be charged by funds that deliver better performance. These results indicate that fund performance is very difficult to predict from observed characteristics, consistent with the theoretical work (Berk and Green (2004)) and empirical evidence (Liang (2001)) in the literature. In addition, Boyson and Mooradian (2007) try to relate the performance of activist hedge funds with activism strategies. Their evidence suggests that activist hedge funds that pursue aggressive activism, particularly corporate governance changes, tend to earn higher risk-adjusted returns than those focusing on the undervaluation of the target assets (i.e., passive activism).

7. Conclusion

This review serves as a comprehensive survey of research on hedge fund activism, a new phenomenon that has emerged during the past decade and has been widespread across sectors and multiple countries. We review activists' objectives, tactics, and choices of target companies. We then analyze value creation brought about by activist hedge funds, both for shareholders in the target companies and for investors in the hedge funds, and distinguish the value effect from alternative hypotheses such as stock picking and wealth transfer. The multitude of evidence from different studies generally supports the view that hedge fund activism creates value for shareholders by effectively influencing the governance, capital structure decisions, and operating performance of target firms.

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Figure 1 - Buy-and-Hold Abnormal Return around the Announcement of Activism

The solid line (left axis) plots the average buy-and-hold return around the announcement date, in excess of the buy-and-hold return of the value-weight market, from 20 days prior the event date to 20 days afterwards. The bars (right axis) plot the increase (in percentage points) in the share trading turnover during the same time window compared to the average turnover rate during the preceding [-100, -40] event window.
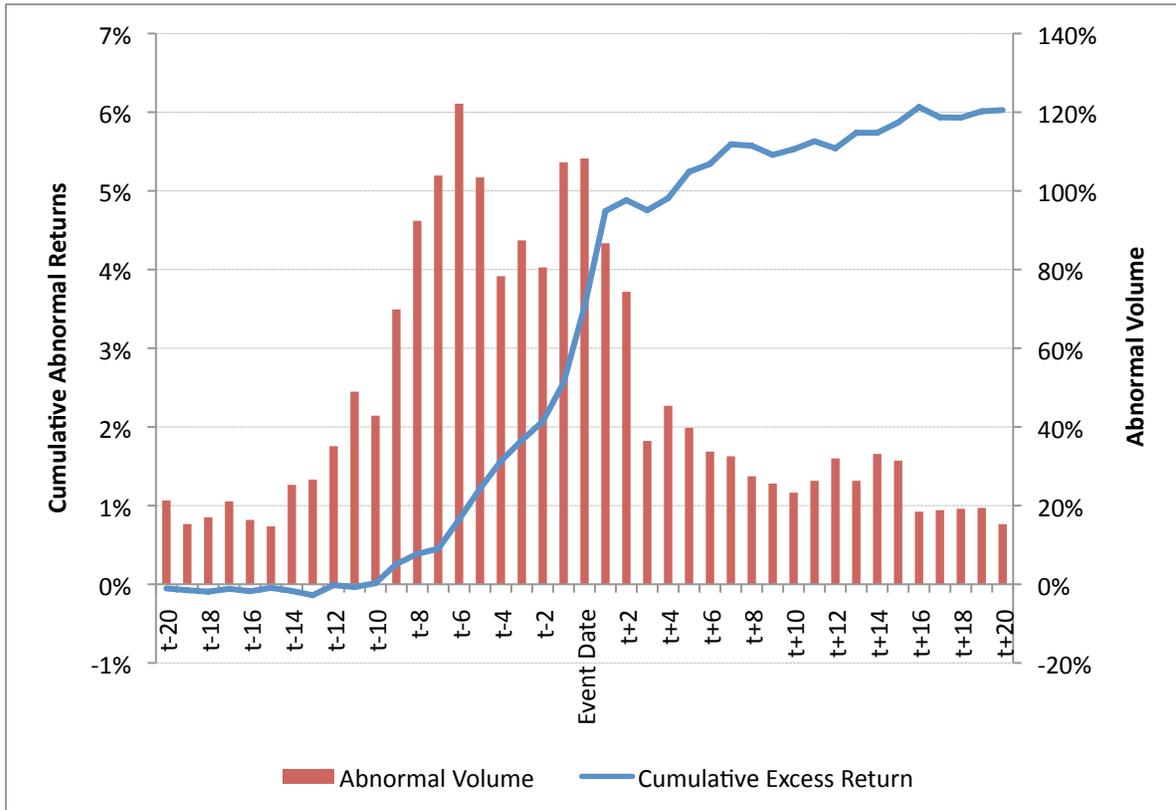
Figure 2 – Buy-and-Hold Abnormal Return by Event Year
Average buy-and-hold return during the event window (as defined in Figure 1) in excess of the buy-and-hold return of the value-weight market for different groups of events classified by the event year, from 2001 to 2007. The rightmost bar presents the average abnormal buy-and-hold return of the full sample.
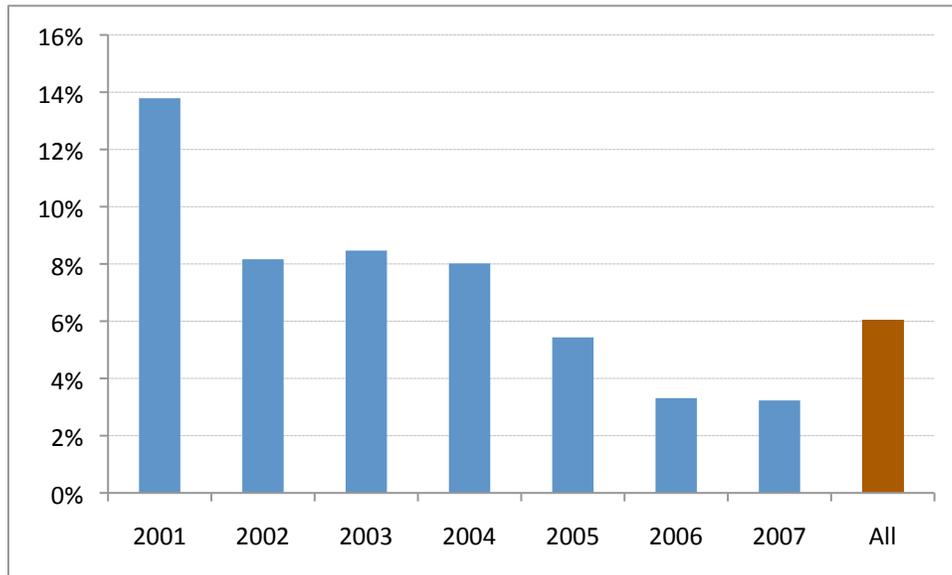
Table 1 - Summary of Events by Hedge Funds' Stated Objective

The sample includes 1,172 events from 2001 to 2007. Panel A presents the summary of the events sorted by hedge funds' stated objective. Columns (1) and (2) report the number of events, and the percentage among all events, of each category. Columns (3) to (5) list the rate of success (including partial success) and number of hostile events within each category. Columns (6) to (9) break down each category into hostile and non-hostile events and record the success and partial success rate within each subcategory. Percentages sum up to more than 100% since one event can have multiple objectives (The first category and the other four categories are mutually exclusive). An event is classified as successful if the hedge fund achieves its main stated goal; a partial success if the hedge fund and the company reach some settlement through negotiation that partially meets the fund's original goal. Panel B provides information on the tactics undertaken by hedge funds, including a breakdown into seven categories and the percent of events in each category relative to the full sample. Since activist events can fall within more than one category the percentages in categories 2 through 7 sum up to more than 48.8% (the remaining 51.2% fall into the first category).

Panel A: Summary of Hedge Funds' Stated Objectives									
	All Events				Num of Hostile Events	Hostile Events		Non-hostile Events	
Objective Categories:	Num of Events (1)	% of Sample (2)	% Success (3)	% Partial Success (4)	(5)	% Success (6)	% Partial Success (7)	% Success (8)	% Partial Success (9)
1. General undervaluation/maximize shareholder value	561	47.9%	-	-	-	-	-	-	-
2. Capital Structure	204	17.4%	26.5%	25.5%	102	18.6%	43.1%	34.3%	7.8%
3. Business Strategy	270	23.0%	30.7%	22.2%	136	23.5%	39.0%	38.1%	5.2%
4. Sale of Target Company	235	20.1%	29.8%	20.4%	142	27.5%	27.5%	33.3%	9.7%
5. Governance	284	24.2%	29.2%	28.9%	187	26.7%	37.4%	34.0%	12.4%
Sum of categories (2) through (5):	611	52.1%	31.3%	21.1%	310	26.5%	34.2%	36.2%	7.6%

Panel B: Summary of Hedge Funds' Tactics	
Tactic Categories	% of All Events
1. The hedge fund intends to communicate with the board/management on a regular basis with the goal of enhancing shareholder value	51.2%
2. The hedge fund seeks board representation without a proxy contest or confrontation with the existing management/board	11.9%
3. The hedge fund makes formal shareholder proposals, or publicly criticizes the company and demands change	35.1%
4. The hedge fund threatens to wage a proxy fight in order to gain board representation, or to sue the company for breach of fiduciary duty, etc.	7.3%
5. The hedge fund launches a proxy contest in order to replace the board	13.1%
6. The hedge fund sues the company	4.7%
7. The hedge fund intends to take control of the company, for example, with a takeover bid	4.6%

Table 2 - Hedge Funds' Capital Commitment and Investment Horizon

Panel A provides the size of the hedge funds' stakes both in terms of dollar values (at cost), and as a percentage of the outstanding shares of the target companies. We report the 5th, 25th, 50th (median), 75th, and 95th percentiles of the sample. The "Initial" columns report the stakes that hedge funds take at their initial 13D filings or first announcement of activism. The "Max." columns report the maximum reported stakes that the funds accumulated in the targets as revealed from subsequent 13D/A filings or news search. Panel B gives the breakdown of various forms of hedge fund exit. Reported in the last row are the percentages of events that have no information about exit by the end of March 2009. Finally, Panel C lists the length of holding period (in number of days) at different percentiles of the sample for the sub-sample that has exit information. In each panel, the statistics for the full sample and the subsample of hostile events are reported separately.

	Panel A: Capital Commitment (in 2007 Constant Dollars)							
	All Events				Hostile Events			
	Invested Capital ($ Million)		% Ownership		Invested Capital ($ Million)		% Ownership	
Percentile	Initial	Max.	Initial	Max.	Initial	Max.	Initial	Max.
5%	0.9	2.2	5.00%	5.50%	1.6	3.2	3.70%	5.60%
25%	4.3	9.0	5.31%	7.52%	5.3	10.6	5.55%	8.20%
50%	15.0	24.8	6.30%	9.50%	16.4	25.8	6.70%	9.87%
75%	46.7	79.4	8.81%	13.16%	46.6	84.5	9.02%	13.85%
95%	234.2	329.3	21.10%	29.20%	313.1	420.8	19.95%	30.10%

Panel B: Breakdown of Exit			
Categories	Hostile	Non-hostile	All Events
Sold shares on the open market	20.8%	32.9%	29.5%
Target company sold	11.9%	4.9%	6.8%
Target company merged into another	8.2%	4.1%	5.2%
Liquidated	1.6%	0.7%	0.9%
Shares sold back to target company	0.6%	0.4%	0.4%
Still holding/no Information	56.9%	57.0%	57.1%

Panel C: Length of Holding Period (Days) for Completed Spells			
Percentile	Hostile (Initial)	Non-hostile (Initial)	All Events
5%	11	23	22
25%	96	141	126
50%	229	285	266
75%	439	504	487
95%	840	1,273	1,235

Table 3 - Probit Analysis of Hedge Funds' Targeting

This table reports the effects of covariates on the probability of being targeted by activist hedge funds. The dependent variable is a dummy variable equal to one if there is hedge fund activism targeting the company during the year. All covariates are lagged by one year. *MV* is market capitalization in millions of dollars; *q* is defined as (book value of debt + market value of equity)/(book value of debt + book value of equity); *GROWTH* is the growth rate of sales over the previous year; *ROA* is return on assets, defined as EBITDA/assets (lag); *LEV* is the book leverage ratio defined as debt/(debt + book value of equity); *DIVYLD* is dividend yield, defined as (common dividend + preferred dividends)/(market value of common stocks + book value of preferred); *RND* is R&D scaled lagged assets; *HHI* is the Herfindahl index of sales in different business segments as reported by Compustat; *ANALYST* is the number of analysts covering the company from I/B/E/S; *INST* is the proportion of shares held by institutions; *AMIHUD* is the Amihud (2002) illiquidity measure, defined as the yearly average (using daily data) of $1000\sqrt{|Return|}/(Dollar\ Trading\ Volume)$; *GINDEX* is the Gompers, Ishii, and Metrick (2003) governance index where high index values represent lower shareholder rights or higher management entrenchment. In the first column we exclude the variable GINDEX, while in column (2) we include it, to reflect the significant loss of observations due to the GINDEX data availability. In each column, we report probit coefficients and their t-statistics. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

	Dependent Variable: Dummy (of Being Targeted)												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
MV	-0.007***	-0.006***	-0.001***	-0.002***	-0.002***	-0.002***	-0.001***	-0.002***	-0.002***	-0.003***	-0.006***	-0.005***	-0.006***
	[-10.73]	[-5.43]	[-3.67]	[-4.21]	[-5.93]	[-4.84]	[-3.31]	[-4.93]	[-4.96]	[-5.80]	[-13.42]	[-10.94]	[-8.10]
q	-0.002***	-0.002**	-0.002***										
	[-4.41]	[-2.41]	[-5.53]										
GROWTH	-0.006***	-0.009**		-0.007***									
	[-3.52]	[-2.14]		[-4.03]									
ROA	0.012**	-0.009			0.023***								
	[2.38]	[-0.80]			[5.13]								
LEV	0.009***	0.015***					0.009***						
	[3.29]	[3.10]					[2.97]						
DIVYLD	-0.200***	-0.143*						-0.231***					
	[-4.59]	[-1.87]						[-5.47]					
RND	-0.000	-0.003							-0.002**				
	[-0.08]	[-1.34]							[-2.41]				
HHI	-0.001	0.007								-0.005			
	[-0.15]	[1.59]								[-1.50]			
ANALYST	-0.004***	-0.007***									0.003***		
	[-4.70]	[-3.89]									[3.48]		
INST	0.035***	0.046***										0.040***	
	[12.82]	[9.34]										[16.26]	
AMIHUD	-0.015***	-0.025***											-0.016***
	[-9.59]	[-3.24]											[-10.39]
GINDEX		0.002***											0.002***
		[4.44]											[4.98]
Observations	40,645	14,269	42,408	42,508	41,531	42,800	42,508	42,800	42,800	42,800	42,800	42,800	14,986
Pseudo R2	4.81%	6.43%	0.61%	0.41%	0.49%	0.33%	0.56%	0.30%	0.26%	0.36%	2.81%	1.45%	2.17%

Table 4 - Long-term Abnormal Return Analysis

The table reports statistics on long-term abnormal returns associated with hedge fund activism. Panels A and B report regression estimates and t-statistics from equal- and value-weighted calendar-time portfolio regressions. "Window" indicates the buying time relative to the event (hedge fund activism targeting) and the holding period in months. "Alpha" is the estimate of the regression intercept from the factor models. "Beta" is the factor loading on the market excess return (the Fama and French RMRF). "SMB," "HML," and "MOM" are the estimates of factor loading on the Fama-French size and book-to-market factors, and the Carhart momentum factor. "R2" is the R-squared from the regressions. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Window	Alpha		Beta		SMB		HML		MOM		R2
(months)	Estimate	t-statistic	Estimate	t-statistic	Estimate	t-statistic	Estimate	t-statistic	Estimate	t-statistic	
				Panel A: Equal-weight four-factor model							
(-12,-10)	-0.665	-1.33	1.192***	9.85	0.473***	3.94	0.298*	1.88	0.018	0.23	0.636
(-9,-7)	-0.293	-0.58	0.544***	3.83	1.246***	7.65	0.241	1.47	-0.502***	-5.66	0.685
(-6,-4)	-0.773*	-1.79	0.781***	6.31	0.910***	6.03	0.407***	2.77	-0.304***	-3.37	0.674
(-3,-1)	-0.272	-0.60	0.754***	5.62	0.803***	5.00	0.401**	2.48	-0.139	-1.42	0.565
Event	5.044***	7.31	0.758***	3.51	0.652**	2.63	0.366	1.30	-0.202	-1.21	0.351
(1,3)	0.121	0.38	0.801	0.80	0.466***	3.97	0.514***	4.04	-0.152*	-1.83	0.666
(4,6)	-0.114	-0.30	0.891***	7.39	0.874***	6.18	0.536***	3.03	-0.252**	-2.59	0.708
(7,9)	-0.542	-1.45	0.983***	8.71	0.853***	5.96	0.396**	2.26	-0.117	-1.29	0.719
(10,12)	0.259	0.58	0.943***	7.71	0.718***	3.87	0.678***	3.22	-0.109	-0.97	0.656
				Panel B: Value-weight four-factor model							
(-12,-10)	-2.306***	-3.21	1.278***	7.32	0.310*	1.80	0.605***	2.65	-0.093	-0.83	0.450
(-9,-7)	-0.833	-1.70	0.842***	6.15	0.735***	4.67	0.392**	2.48	-0.281***	-3.29	0.611
(-6,-4)	-2.505***	-3.73	0.986***	5.13	0.534**	2.28	0.973***	4.27	-0.138	-0.99	0.390
(-3,-1)	-1.111	-1.59	0.969***	4.67	0.087	0.35	0.378	1.52	-0.274*	-1.81	0.367
Event	3.297***	4.69	1.071***	4.87	0.257	1.02	0.565*	1.97	0.140	0.83	0.291
(1,3)	0.680	1.21	1.010	1.01	0.065	0.31	0.477**	2.10	-0.121	-0.82	0.412
(4,6)	0.168	0.38	1.070***	7.63	0.821***	5.00	0.747***	3.63	-0.233**	-2.05	0.680
(7,9)	-0.475	-1.09	1.073***	8.16	0.643***	3.86	0.621***	3.03	-0.205*	-1.95	0.668
(10,12)	0.052	0.10	1.003***	7.10	0.538**	2.50	0.634**	2.60	-0.126	-0.97	0.588

Table 5 - Target Firm Performance Before and After Hedge Fund Activism

Panel A (Panel B) reports changes in measures of target firm performance in years before and after being targeted by activist hedge funds without (with) Heckman's (1979) correction for sample selection. Estimates from the following regression are reported:

$$y_{i,t} = \sum_{j=-2}^{2} \gamma_{i,j} D_{i,j} + \beta \ln(MV_{i,t}) + \alpha_{SIC3} + \alpha_{year} + \varepsilon_{i,t}.$$

"$D_{i,j}$" is a dummy variable equals to one if firm i was (will be) under hedge fund targeting j years (j = -2, -1, 0, +1, +2) relative to the current year; "$\ln(MV_{i,t})$" is the log of market value of equity for firm i in time t. "ROA," "q," and "DIVYLD" are as defined in Table 3. "DIVINI" is a dummy variable for an initiation of dividend payout during the year; "NETLEV" is defined as (debt -cash)/(debt + book value of equity); "ALTMAN" is Altman's (1968) Z-score which proxies for the bankruptcy risk; "DtD" is the distance to default, which measures the number of standard deviation decreases in firm value before the firm is in default based on Merton's (1974) bond-pricing model; "CEOTURNOVER" is the rate of CEO turnover; "CEOPAY" is the total CEO contracted pay including options valued at granting ("TDC1" from ExecuComp); "Pay-for-Performance" is the percentage of CEO take-home pay (including option exercise) that comes from equity-based incentive. All independent (dependent) variables in Panel B are for t-1 (changes from t-1 to t+1). *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

					Panel A: Without Sample Section Correction					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Variable	ROA	q	DIVYLD	DIVINI	NETLEV	ALTMAN	DtD	CEOTURNOVER	CEOPAY	Pay-for-Performance
ln(MV)	0.0335***	0.2625***	0.0023***	0.0007***	0.0044***	0.4932***	0.2409***	0.0019	2.3097***	0.0596***
	[99.33]	[65.85]	[32.37]	[3.42]	[6.79]	[59.05]	[129.21]	[1.23]	[73.32]	[40.16]
Event year - 2	0.0195***	-0.3494***	0.0003	0.0026	0.0100	0.2702**	-0.0033	0.0570***	0.1376	-0.0090
	[3.55]	[-5.38]	[0.27]	[0.75]	[0.95]	[1.98]	[-0.11]	[2.80]	[0.40]	[-0.57]
Event year - 1	0.0178***	-0.4243***	0.0020*	0.0011	0.0266**	0.0956	0.0128	0.0556**	0.3803	0.0013
	[3.27]	[-6.57]	[1.79]	[0.34]	[2.57]	[0.71]	[0.41]	[2.60]	[1.10]	[0.08]
Event year	0.0038	-0.3651***	0.0039***	0.0065	0.0261**	0.0441	0.0749**	0.0675***	0.6864*	-0.0015
	[0.67]	[-5.40]	[3.34]	[1.57]	[2.40]	[0.31]	[2.31]	[2.63]	[1.92]	[-0.09]
Event year + 1	0.0081	-0.2513***	0.0042***	0.0127**	0.0365***	0.1217	0.1914***	0.1107***	-0.0758	0.0108
	[1.29]	[-3.39]	[2.95]	[2.38]	[3.06]	[0.78]	[5.39]	[3.30]	[-0.20]	[0.56]
Event year + 2	0.0171**	-0.1986**	0.0031*	-0.0011	0.0392***	0.1553	0.1625***	0.0331	-0.1304	0.0606***
	[2.30]	[-2.26]	[1.80]	[-0.28]	[2.77]	[0.84]	[3.86]	[0.99]	[-0.30]	[2.69]
Constant	-0.1324***	1.2195***	0.0121***		0.0543***	-1.6538***	0.6747***		-11.6054***	0.0255**
	[-59.48]	[46.33]	[25.75]		[12.84]	[-29.97]	[54.38]		[-43.21]	[2.03]
Year fixed effect	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Industry fixed effect	Y	Y	Y	N	Y	Y	Y	N	Y	Y
Observations	65,399	66,951	63,153	67,550	67,530	67,540	57,311	16,060	16,170	15,913
R-squared	31.60%	24.20%	17.10%	2.97%	32.90%	46.00%	58.30%	0.80%	36.50%	23.80%
Test of H0: (t+1) - (t-1):	-0.0097	0.1731	0.0022	0.0116	0.00984	0.0261	0.1786	0.0551	-0.4561	0.0095
t-statistics	-0.94	1.87	1.30	2.14	0.66	0.61	4.24	2.30	-0.85	-0.36
Test of H0: (t+2) - (t-1):	-0.0007	0.2257	0.0011	-0.0022	0.0126	0.0597	0.1497	-0.0225	-0.5107	0.0593
t-statistics	-0.16	2.17	0.55	-0.16	0.75	0.69	3.01	-0.76	-0.99	2.28

	Panel B: With Sample Section Correction					
	(1)		(2)		(3)	
	ΔROA		ΔDIVYLD		ΔDtD	
Variable	1st Step	2nd Step	1st Step	2nd Step	1st Step	2nd Step
ROA	0.0153	-0.3825***				
	[0.05]	[-11.09]				
DIVYLD			2.5627	-0.4356***		
			[1.01]	[-4.93]		
DTD					0.0625	-0.7010***
					[1.39]	[-9.32]
MV	-0.1170***	-0.0078	-0.1282***	0.0016	-0.2006***	0.1775
	[-2.67]	[-1.42]	[-2.97]	[1.28]	[-3.94]	[1.10]
q	-0.0283	-0.0163***	-0.0278	-0.0005	0.0381	-0.0921*
	[-1.01]	[-4.55]	[-1.00]	[-0.79]	[1.05]	[-1.94]
GROWTH	-0.2388**	-0.0411**	-0.1742*	0.0008	-0.2004*	-0.1356
	[-2.11]	[-2.54]	[-1.71]	[0.31]	[-1.75]	[-0.71]
LEV	-0.1277	0.0440**	-0.1426	0.0003	-0.0598	0.0587
	[-0.72]	[2.48]	[-0.81]	[0.06]	[-0.29]	[0.30]
INST	0.0975	0.0170	0.0898	0.0054	-0.0645	-0.7315***
	[0.51]	[0.96]	[0.48]	[1.43]	[-0.32]	[-3.75]
ANALYST	0.1416**	0.0260***	0.1582**	-0.0028	0.2308***	-0.0697
	[2.20]	[2.74]	[2.48]	[-1.29]	[3.19]	[-0.32]
AMIHUD	-0.1855		-0.1967*		-0.1263	
	[-1.64]		[-1.75]		[-1.00]	
INVMILL		0.1589**		0.0035		-0.5511
		[2.33]		[0.25]		[-0.47]
Constant	0.0593	-0.1453**	0.0891	-0.0043	0.2431	1.9076**
	[0.25]	[-2.27]	[0.38]	[-0.34]	[0.88]	[2.05]
Observations	908	751	921	754	714	526
R-squared	1.92%	30.30%	1.94%	10.20%	2.51%	36.50%