What Causes Passive Hedge Funds to Become Activists?*

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Abstract

About 20% of the total activist hedge funds' positions are initiated as passive holdings, that is without the intention of changing or influencing the control of the target firms. At some point, however, the hedge funds change their filing status and switch to activism. My paper investigates what triggers this switch. I hypothesize and find that hedge funds see the purchase price of their passive positions as a reference point. When hedge funds are suffering losses on these positions, they are more likely to switch to become activists, even after controlling for the firms' underperformance. This study presents new evidence about what causes hedge fund activism.

Keywords: Hedge fund activism, Switch, Loss, Reference point

JEL classification: G02, G11, G23, G34

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1. Introduction

In January 2001, Tocqueville Asset Management filed a Schedule 13G with the Securities and Exchange Commission (SEC) disclosing a 5.4% stake in Systems & Computers Technology Corporation. Blockholders file the Schedule 13G if they own more than 5% of the outstanding shares of a firm and if they are passive investors, that is, if they hold the stock without the intention of influencing the control of the target firm. Two years later, in April 2003, Tocqueville changed its filing status and switched to Schedule 13D. Blockholders that want to intervene must file the Schedule 13D.[1] In the filing, Tocqueville expressed its "dissatisfaction with the current share price," and "strongly urged" the firm "to develop new strategies to enhance shareholder value." At the time of the switch, Tocqueville was sitting on a loss of 39%, or $10M of its $25.6M initial investment.

In my sample, I find that such behavior is not uncommon. Of the total hedge funds' 13D filings (activist positions), about 20% of them were initially 13G filings (passive holdings). That is, 20% of the activists' 13D filings are actually switches from former passive holdings. While prior literature uses the switches to examine the consequences of activism (Brav, Jiang, and Kim, 2015; Aslan and Kumar, 2016; Boyson, Gantchev, and Shivdasani, 2017; Brav, Jiang, Ma, and Tian, 2017), my paper is the first one to examine what causes a passive hedge fund to switch to activism.

I posit that hedge fund managers see their purchase price as a reference point. They have a portfolio of passive holdings and when they suffer losses on these holdings, they are more likely to switch to become activists, even after controlling for the target firms' underperformance. This

[1] The active posture of 13D filers is recognized by the hedge fund activism literature that uses the 13D filing as a proxy for the beginning of the activists' campaigns (Brav, Jiang, Partnoy, and Thomas, 2008; Greenwood and Schor, 2009; Klein and Zur, 2009; Brav, Jiang, and Kim, 2015). More details about Schedule 13D and Schedule 13G filings are described in Section 2.

hypothesis is rooted in one of the most robust finding of the behavioral finance literature that claims retail investors, professional traders, and mutual fund managers are reluctant to realize their losses (Odean, 1998; Locke and Mann, 2005; Frazzini, 2006). This literature examines how investors *trade* in response to past losses or gains, and claims that investors hold onto losses because "a realized loss is more painful than a paper loss" (Thaler, 1999). An implicit assumption, however, is that investors can only choose between holding or selling the stock. But activist hedge funds have an attractive third option: engage with management.[2]

Evaluating the potential for value improvement of the target firm is highly subjective. This uncertainty about the outcome of the intervention is likely to increase the psychological influences on the choice of engaging with management (Baker, Pan, and Wurgler, 2012). The loss on a passive block is evidence of a mistake and the psychological cost of admitting this mistake is a carrier of disutility. Hedge fund managers can reduce these costs and preserve their self-image by blaming the firm's management (Chang, Solomon, and Westerfield, 2016) and influence the control of the firm by switching to activism.

Activist intervention is costly, so it is optimal for hedge funds to stay passive in most of their holdings.[3] Edmans, Fang, and Zur (2013) *assume* that the hedge funds' high performance-based fees induce hedge fund managers to choose optimally whether to intervene or not. If hedge funds switch only when the firms' potential for value improvement exceeds the expected cost of the intervention, then the switch will indeed be optimal. However, if the loss generates

[2] I focus on hedge funds because, in contrast with the largely ineffective activism of other institutional investors (Gillan and Starks, 2007), hedge fund activism is an effective governance mechanism (Brav, Jiang, Partnoy, and Thomas, 2008). Hedge funds have highly incentivized managers, they do not suffer from conflicts of interest or political control, and they have the "full menu" of governance options at their disposal (Edmans, Fang, and Zur, 2013).

[3] Clifford (2008) documents higher returns from the hedge funds' activist positions than from passive holdings. However, the costs of activism play a major role in the decision to be active or to stay passive. Gantchev (2013) estimates that the monitoring costs of activism are substantial and reduce activist returns by more than two-thirds. The mean net activist return is close to zero and only the top quartile of activists' campaigns exceed the returns of the passive holdings.

psychological costs, then the hedge funds' total (expected) utility benefits from the intervention will not only depend on the potential for value improvement, but will also depend on whether the position is at a gain or at a loss. Therefore, when hedge funds suffer a loss, the expected utility benefits will be higher and the probability of intervention will increase discontinuously, generating a deviation from the ex-ante optimal plans (Imas, 2016).

I examine the determinants of the switch to activism using a sample of 312 activist hedge funds over the period 1994-2014. My results show that the purchase price is a reference point and that hedge fund managers who suffer from losses on their passive holdings are more likely to switch to become activists. I find that for 66% of the switches, the hedge fund is sitting on a paper loss. The distribution of the holding period return at the time of the switch shows that there is a significant discontinuity in the frequency of the switches around the zero-loss level. The number of switches with a moderate loss is almost double the number of switches with a moderate gain. This suggests a causal effect of the loss on the switch to activism.

The loss has independent explanatory power even after controlling for the target firm's prior underperformance, as well as for the other firm characteristics that prior literature finds to be related to the probability of being targeted by activists: the loss increases the probability of switching by 1.3 percentage points, an increase of 65% from the unconditional probability of switching in a given quarter of 2%. If the firm is underperforming its industry peers, the probability of switching increases by 0.8 percentage points, an increase of 40% from the unconditional probability. Therefore, the marginal effect of the loss is economically large and bigger compared to the effect of the firms' underperformance. The results of a multivariate regression discontinuity analysis confirm that the probability of switching increases discontinuously exactly at the zero-loss level.

The main results survive a variety of additional tests. First, the main findings hold in both the subsamples of the over- and under- performing passive holdings. Second, the loss increases the probability of switching using a one-to-one matching where each switch is matched with the hedge fund's passive holding that has the closest prior abnormal return. Third, instead of using the abnormal return during a fixed time-window before the beginning of the activist campaign, I also consider the abnormal return since the formation of the passive block. The results are unchanged. Finally, the main results hold in a variety of robustness tests that consider alternative proxies for the target firms' underperformance, additional controls, and alternative control groups. Taken together, the results show that the loss is an important factor that triggers the switch and that its effect is distinct from the effect of the other firms' characteristics.

To better evaluate whether the hedge funds' decision to switch or to stay passive is optimal, we would require an estimate of both the expected costs and the expected benefits of activism. However, the costs of activism are unobservable and difficult to estimate. Nevertheless, I do find suggestive evidence of the effects of the switches by looking at the buy-and-hold abnormal returns (BHARs) to activism around the 13D filings. I find that, while the entire sample of switches has an average BHAR of more than 4%, the average BHARs of the switches that are likely to be motivated by the psychological costs of the loss is not significantly positive.

This paper contributes to several streams of research. First, it adds to the hedge fund activism literature by showing that the hedge funds' loss triggers the switch to activism. Brav, Jiang, Partnoy, and Thomas (2008) investigate the characteristics of the firms that are targeted by activists and the effect of activism. However, little is known about the reasons why passive hedge funds decide to take an active role. A number of recent studies use the switches as a source of identification to answer important questions. The switches are used to differentiate the hedge

funds' stock picking ability from the treatment effect of activism on operating performance, on rival firms, on the likelihood of receiving a takeover bid, and on innovation (Brav, Jiang, and Kim, 2015; Aslan and Kumar, 2016; Boyson, Gantchev, and Shivdasani, 2017; Brav, Jiang, Ma, and Tian, 2017). These studies conclude that the hedge funds' intervention has an incremental effect, above and beyond stock picking ability. The decision to switch, however, is endogenous and my paper addresses the factors that affect this decision.

Second, this work also contributes to the behavioral finance literature. Existing studies show that retail investors, professional futures traders, market makers, and mutual fund managers see the purchase price as a reference point and this affects their trading decisions (Odean, 1998; Locke and Mann, 2005; Coval and Shumway, 2005; Frazzini, 2006). Barberis and Xiong (2012) investigate the underlying mechanism of this behavior. In their model of realization utility investors derive utility and disutility directly from realizing gains and losses, respectively. This is why investors postpone realizing a loss until they are forced to do so by a liquidity shock. Chang, Solomon, and Westerfield (2016) claim that the carrier of disutility from realizing losses is cognitive dissonance, i.e. the psychological cost of admitting mistakes. A vast part of the literature focuses on prospect theory to explain preferences over returns. Shefrin and Statman (1985) claim that the underlying mechanism of this behavior is the particular shape of the prospect theory value function that is convex in the loss region, is concave in the gain region, and has a kink at the origin (Kahneman and Tversky, 1979; Tversky and Kahneman, 1992). It generates a disutility from losses that is disproportionately higher compared to the utility from gains of similar magnitude, and this is why investors are reluctant to realize losses. But hedge funds can do more than just postpone the "direct" disutility from realizing losses and from admitting mistakes: they can intervene. By

switching to activism they can influence the control of the firm. My paper shows that an important consequence of losses, undocumented by prior literature, is to trigger activism.

Finally, this study also speaks to the literature that studies the two governance mechanisms at the hedge funds' disposal, voice versus exit. Hedge funds can engage with management through direct intervention (voice). The models of Admati and Pfleiderer (2009), Edmans (2009), and Edmans and Manso (2011), however, show that blockholders can exert governance also through a second mechanism: exit (or the threat of exit). Edmans, Fang, and Zur (2013) claim that hedge funds exert this second governance mechanism when they remain passive and file the Schedule 13G. This paper contributes to a better understanding of the causes of the hedge funds' choice between these two governance mechanisms. The loss determines the switch from the choice of the threat of exit to the choice of voice.

2. Hedge Funds' Active and Passive Holdings

2.1 Active (13D) versus passive (13G) hedge funds' holdings

Any blockholder that acquires beneficial ownership of more than 5% of a voting class of a company's equity securities must disclose its holdings in a regulatory filing with the Securities and Exchange Commission (SEC).[4] Hedge funds intending to influence the control of the company are required by law to file the Schedule 13D. Those who want to remain passive file the Schedule 13G (Edmans, Fang, and Zur, 2013; Boyson, Gantchev, and Shivdasani, 2017).

The active posture of 13D filers is recognized by the hedge fund activism literature that uses the filing of the Schedule 13D as a proxy for the beginning of the activists' campaigns (Brav, Jiang, Partnoy, and Thomas, 2008; Greenwood and Schor, 2009; Klein and Zur, 2009; Brav, Jiang,

[4] Section 13(d)(1) of the Securities Exchange Act of 1934.

and Kim, 2015). If the hedge funds have the intention to influence the control of the firm, they are extremely attentive in filing the Schedule 13D, because misstating the true intentions and filing the Schedule 13G instead can lead to lawsuits that can be filed by the SEC, the management of the firm, or by other shareholders.[5] Clifford (2008) provides anecdotal evidence that the SEC and target firms utilize the court to enforce truthful disclosure by blockholders.

A passive investor is unlikely to file the Schedule 13D. This filing allows the hedge fund to intervene but it also requires to disclose costly information that is not required by the 13G filing, such as the amount and the source of funds used to acquire the shares, and the detailed trade information during the 60 days prior to the filing date. Active 13D filers must also declare in detail how they intend to influence the control of the company. Failing to disclose this information can lead to litigation (Edmans, Fang, and Zur, 2013). The Schedule 13D must be filed within 10 days after crossing the 5% threshold, while the 13G allows for a longer delay in disclosure.[6] Both filings require the prompt filing of an amendment if there is any variation to the information previously disclosed in the initial filing, but 13G filers are subject to less stringent requirements. In particular, the filing of an amendment is triggered by changes in the ownership by more than 1% for 13D filers, and by more than 5% for 13G filers. The lower 13D threshold generally causes the price of the stock to move more promptly against the hedge fund that either wants to increase or decrease its stake, making the 13D filing particularly unattractive for passive investors (Edmans, Fang, and Zur, 2013).

[5] See the case of NACCO industries vs. Applica. Ronson Corp. vs. Steel Partners II (2005) and SEC vs. Montgomery Medical Ventures, LP (1996).

[6] The Schedule 13G must be filed within 45 days after the end of the calendar year in which the hedge fund crossed the 5% threshold. If the ownership exceeds 10% the hedge fund must file the initial Schedule 13G within 10 days after the end of the month in which the ownership exceeds this level.

2.2 The switch from a passive (13G) to an active investment (13D)

Hedge funds can decide to change their filing status if their intentions have changed. If, after having previously filed a Schedule 13G, a hedge fund decides to take actions to influence the control of the firm, then it is required by law to publicly disclose that its intentions have changed by switching to the 13D filing (Brav, Jiang, and Kim, 2015). This requirement in ownership disclosure has already been documented by prior literature. In particular, it has been used by several recent papers as a source of identification for the causal effect of activism over a passive investment.

Brav, Jiang, and Kim (2015) use 299 switches over the period 1994-2007 to identify the real effects of activism over a passive investment. Active and passive investments of the same hedge funds in different firms could not be comparable because of unobservable firm characteristics. The switch overcomes this problem by identifying the treatment effect of activism for the same hedge fund-firm pair. They find that the operating performance of the target firms increases after the switch. Aslan and Kumar (2016) consider 228 switches from 1996 to 2008 to study the causal effect of activism on rivals' performance. They find negative effects on the market shares and profit margins of rival firms during the three years after the switch. Boyson, Gantchev, and Shivdasani (2017) use 159 switches to investigate the channel of value creation of hedge fund activism. They claim that after the switch, the portfolio company has a higher probability of receiving a takeover bid. They conclude that "the hedge fund's activist intervention has an incremental effect in fostering takeovers above and beyond stock picking ability." Finally, Brav, Jiang, Ma, and Tian (2017) identify 79 activist campaigns that are the result of a switch. They find that the target firm increases innovation, as proxied by the number of new patents and their citations, after the hedge fund changes its stance from passive to active. They claim that, compared

to other tests, the switch provides a cleaner identification of the treatment effect of activism beyond stock picking.

Clearly, the switch is a key element to answer important questions related to the treatment effect of activism on target firms and to the channel of value creation. However, it does not happen randomly (Brav, Jiang, and Kim, 2015) and it likely depends on latent variables (Aslan and Kumar, 2016). My paper addresses this issue by examining what causes a hedge fund to switch from a passive to an active stance in a particular holding.

I only examine the switches of hedge funds that own more than 5% of the target firms. However, hedge funds can build a stake (just) below 5% without the intentions to intervene, and afterward switch to activism. Therefore, the actual switches are likely to happen more frequently than the switches detected by the regulatory filings. But if the hedge funds do not cross the 5% threshold, the switches cannot be observed because the hedge funds are not required to disclose their passive or active posture. However, the smaller sample size used in this paper will reduce the power of the tests and will thus bias against finding the results.

2.3 Triggers of activism documented by prior literature

What triggers hedge funds to initiate activist campaigns in specific firms? To answer this question, prior literature compares the target firms' characteristics to the characteristics of matched samples of firms, where each target firm is matched by size, market-to-book, and industry (Strickland, Wiles, and Zenner, 1996; Brav, Jiang, Partnoy, and Thomas, 2008; Klein and Zur, 2009; Bebchuck, Brav, Jackson, and Jiang, 2013) or with the universe of firms that do not experience shareholder activism (Norli, Ostergaard, and Schindele, 2015).[7] The decision to buy a

[7] See Brav, Jiang, and Kim (2009) and Denes, Karpoff, and Mcwilliams (2017) for reviews of the literature.

large block of stocks in order to initiate a new activist campaign is different from the decision to switch from a passive to an active stance. However, the same firm characteristics are likely to be related to both decisions.

Hedge funds are value investors and they target undervalued firms that have a high potential for value improvement (Brav, Jiang, and Kim, 2016). Hedge funds create value primarily by reducing agency costs or by removing allocative inefficiencies through the sale of the target company or a change in business strategy such as the spinning-off of noncore assets (Brav, Jiang, Partnoy, and Thomas, 2008; Brav, Jiang, and Kim, 2015; Boyson, Gantchev, and Shivdasani, 2017).

Brav, Jiang, Partnoy, and Thomas (2008) and Norli, Ostergaard, and Schindele (2015) find that target firms tend to underperform matched firms before being targeted. However, there is no consensus in the literature and Klein and Zur (2009) find that targets of hedge funds have higher prior abnormal stock returns. Concerning the operating performance, Brav, Jiang, Partnoy, and Thomas (2008) and Klein and Zur (2009) find a positive relation between the probability of observing activism and ROA. Gillan and Starks (2007) claim that, compared to earlier activism by other institutional investors, hedge funds have shifted the focus on profitable firms.

Hedge funds file the Schedule 13D and initiate activists' campaigns in M&A targets after the announcement of the deal, in order to oppose the merger, and to improve the deal terms. Using this tactic, called "jawboning in risk arbitrage" (Jiang, Li, and Mei, 2016), the hedge funds attempt to change the course of an announced deal through public campaigns. Activist hedge funds also target firms that have higher institutional ownership, which helps the coordination among investors and increase the probability of success, especially in more confrontational stages (Brav, Jiang, Partnoy, and Thomas, 2008; Brav, Jiang, and Kim, 2015; Wong, 2016).

Liquidity facilitates block formation by lowering the costs of entering and exiting the position (Kahn and Winton, 1998; Maug, 1998), and thus it encourages the formation of both passive and active blocks. Norli, Ostergaard, and Schindele (2015) claim that higher liquidity increases the probability of a firm to be targeted by activist hedge funds. Edmans, Fang, and Zur (2013), however, claim that conditional on block formation, higher liquidity increases the likelihood that the hedge fund governs through the threat of exit, that is, they are more likely to stay passive.

3. Data

I collect data about the 13D and the 13G filings from 1994 to 2014 from the SEC Electronic Data Gathering, Analysis, and Retrieval System (EDGAR) database. The quarterly hedge fund ownership information is from the Thomson Reuters Form 13F database. Accounting variables are from Compustat. Stock prices are from the Center for Research in Security Prices (CRSP). All continuous variables are winsorized at the 1% and 99% levels to reduce the influence of outliers.

3.1 Hedge funds' sample selection

Following the hedge fund literature, I rely on multiple sources to construct my activist hedge funds' sample. I start from a search of hedge funds on Bloomberg[8] (Aragon and Martin, 2012). Then, I perform a search in Factiva for activist hedge funds (Brav, Jiang, Partnoy, and Thomas, 2008; Klein and Zur, 2009; Aslan and Kumar, 2016). My sample is less subject to typical

[8] The starting hedge funds' list from Bloomberg has been downloaded in October 2015. The hedge funds provided by Bloomberg are hedge funds that also file the Schedule 13F.

problems of other hedge funds' databases, such as survivorship bias and backfill bias (Brunnermeier and Nagel, 2004; Brav, Jiang, Partnoy, and Thomas, 2008).

I require all the hedge funds of my sample to file the quarterly Schedule 13F with the SEC, and thus to be included in the Thomson Reuters Form 13F database. This filter, that excludes the smallest hedge funds,[9] is needed in order to compute the purchase price of the passive positions in the hedge funds' portfolios starting from the quarterly 13F holdings (see Section 4.2). The Schedule 13G does not require the disclosure of the purchase price and these holdings are used as control group in the main tests.

I finally merge my hedge fund dataset with the SEC EDGAR database of the 13D and 13G filers by manually matching the hedge funds names. I require the hedge funds to have filed at least one 13D and one 13G over the sample period 1994-2014, in order to be included in my sample.[10] These are the hedge funds that effectively engage in both active and passive investments, that is the institutions that have the "full menu" of governance options at their disposal (Edmans, Fang, and Zur, 2013). This procedure yields an initial sample of 312 hedge funds. Table 1, Panel A provides the summary characteristics of the hedge funds' sample. These hedge funds filed 2,396 Schedule 13Ds and 9,171 Schedule 13Gs. The mean (median) number of 13Ds filed by each hedge fund is 8 (3), while it is 29 (14) for the 13Gs. The prevalence of passive positions is consistent

[9] Section 13(f) of the Securities Exchange Act of 1934 requires institutional investment managers that exercise investment discretion over a portfolio of securities whose market value is $100M or more, to file the quarterly Form 13F with the SEC disclosing their quarterly holdings. The institutions required to disclose their holdings in the aggregate under Section 13(f) include broker/dealers, insurance companies, banks, registered investment advisors, hedge funds, private equity firms, and mutual funds.

[10] Jim Simons' Renaissance Technologies, for instance, is a hedge fund that uses quantitative trading. All its holdings are passive, that is, it buys blocks of stocks following quantitative models without the intention to intervene and to become an activist in any of the target firm. Jeff Smith's Starboard Value, on the other side, only filed 13Ds during the sample period. Its investment philosophy is to "actively engage with management teams and boards of directors to identify and execute opportunities to unlock value for the benefit of all shareholders" (Starboard Value website). Finally, Barry Rosenstein's Jana Partners is a hedge fund that follows both strategies. "Jana typically applies a fundamental value discipline to identify undervalued companies that have one or more specific catalysts to unlock value. In certain cases, JANA can be the instrument for value creation by becoming an actively engaged shareholder" (Jana Partners website).

with prior literature (Clifford, 2008; Edmans, Fang, and Zur, 2013). Activism is expensive (Gantchev, 2013) and thus it is not always the optimal choice.

3.2 Descriptive data of the switches

In the 13D filings, the hedge funds must declare whether they are switching from a previous 13G filing. I identify an initial sample of 480 switches made by the hedge funds of my sample by manually reading their filings.[11] The number of switches is significant as they represent 20% of the total 2,396 13D activist filings.

Every 13D filing must also report the reason of the activist intervention. Table 1, panel B, reports summary statistics of the reasons of the switch that are declared by the hedge funds in Item 4 "Stated Purpose of the Filing." The Table follows the main classification of Brav, Jiang, Partnoy, and Thomas (2008). For 48% of the switches, the declared reason of the switch is general undervaluation. The hedge funds typically use boilerplate statements that involve multiple goals and communication with the management. The other main categories are related to capital structure (5%), business strategy (14%), the sale of the target company (7%), and corporate governance (12%).

If a passive hedge fund blockholder increases the ownership in the target firm above 20%, it is required by law to switch to the 13D filing. In my sample, I identify 67 such switches. In order to properly classify these cases as actual switches from a passive to an active stance, I follow Edmans, Fang, and Zur (2013) and I look at the information provided in Item 4 of the 13D filing. If I find evidence of activism,[12] then I keep the switches in my main sample (21 cases). If there is

[11] Following Brav, Jiang, Partnoy, and Thomas (2008), I exclude 14 switches where the hedge funds files the Schedule 13D in order to participate in the bankruptcy reorganization of the firm.

[12] These include cases where the hedge fund wants a board seat or it has already sent a public letter to the management.

no evidence of activism (46 cases), then I exclude them from my main sample, as the 13D filing is likely to be motivated only by the regulation.

The key variable of interest is the *Loss* dummy. It is equal to one if the *Holding Period Return* is negative, and zero otherwise. I compute this variable by comparing the purchase price that I collect from Item 3, "Source and amount of funds" of the 13D filing, with the stock price at the time of the switch.[13] The market price considered is the price on the day prior to the date of the switch. If it is not available, I consider the closest price within the 30 days before the date of the switch. If the market price of the target firm is not available in this time window, I exclude the switch.

After applying the above mentioned filters, the final sample consists of 384 switches made by 135 hedge funds (Table 1, Panel C). Klein and Zur (2009) examine the confrontational activism of 101 hedge funds. Greenwood and Schor (2009) look at the ability of activists to force target firms into a takeover. Their sample includes 139 unique hedge funds. The pioneering study by Brav, Jiang, Partnoy, and Thomas (2008), which includes different types of activism, even below 5%, examines 236 hedge funds.

4. Empirical Results

4.1 Discontinuity around the zero-loss level

The hypothesis predicts that hedge fund managers are more likely to switch to activism when they are suffering losses on their passive holdings. To test this prediction, I first examine whether the frequency of the switches increases discontinuously moving from moderate gains to

[13] When it is missing, I estimate the purchase price following the procedure described in section 4.2.

moderate losses. The direction and magnitude of the jump in the frequency of the switches around the zero-loss threshold is indicative of the loss having a causal effect on the switch to activism.

An important assumption of the discontinuity framework is the local continuity of the holding period return. This assumption implies that the positions around the zero-loss cutoff are similar in the absence of the loss itself. This assumption seems plausible given that, even if the holding period return is likely to be related to other firm's characteristics that could increase the expected benefits of activism, there is no reason to believe that these relationships are not continuous around the zero-loss threshold.[14]

Figure 1 shows the frequency distribution of the switches as a function of the holding period return. The bin size is equal to 10%. Consistent with the loss being a trigger of the switches, there is a significant discontinuity in the frequency of the switches at the zero-loss cutoff. The number of the switches with a moderate loss is almost the double of the number of the switches with a moderate gain (51 versus 28).

The magnitude of the discontinuity suggests that the purchase price is an important reference point and that when hedge funds are suffering a paper loss, they have higher incentives to becoming activists. The psychological costs related to the losses increase the frequency of the observed switches at the zero-loss threshold: this is the first evidence that supports the main hypothesis.

[14] A second assumption is that the agents (the hedge funds) must have an imprecise control over the holding period return (the assignment variable). And by law, before the switch they cannot exert control over the firm and thus over the firms' stock returns. Once they take the passive position, they can only decide whether to sell it (exit) or not.

4.2 Univariate tests

In order to study what causes hedge funds to become activists in former passive holdings instead of sticking to the original plan of not influencing the control of the firm, I then compare the characteristics of the switches to the characteristics of the control group of quarterly holdings, where the hedge funds maintain a passive posture. For a particular quarterly hedge fund's holding to be included in the control group, I first require that the hedge fund has a 5% ownership, as reported in the 13F database, and that it filed the Schedule 13G for that particular position. Then, I require the hedge fund to hold this passive position for the entire quarter.[15] The control group includes 18,913 hedge fund-firm-quarter observations.

Since passive 13G filers are not required to report the price at which they purchased their stake, in order to compute the loss variable for the control group, I estimate the purchase price following the procedure used by Frazzini (2006).[16] Therefore, I estimate the purchase price starting from the quarterly 13F holdings.[17] In more detail, I look at the change in holdings, as reflected by the end-of-quarter holdings relative to the end of the previous quarter. If the 13F holding of a particular hedge fund on a particular stock increases, I assume that the purchase is executed at the quarter-end market price. If the holding decreases, I use first-in, first-out (FIFO) method to calculate the purchase price of the remaining shares. The purchase price estimated using this procedure that relies on the quarterly changes in the hedge funds' holdings is a noisy measure. The actual price at which the transactions happen is usually different from the price at the end of the

[15] In robustness I consider alternative control groups.

[16] Frazzini (2006) estimates the purchase price of mutual funds' holdings starting from the quarterly 13F holdings. He then computes an aggregate measure, the *capital gains overhang*, that measures the percentage deviation of the aggregate cost basis for all mutual funds from the current price.

[17] To compute the purchase price for each firm of each hedge fund, I use data starting from 1980.

quarter.[18] There is, however, no reason to expect that this will systematically over- or under-estimate the purchase price. I finally define the dummy variable *Loss* to equal to one if the stock price at the beginning of each quarter is greater than the purchase price, and zero otherwise.

Table 2 presents univariate tests on mean values. The results are consistent with the hypothesis that hedge funds are more likely to switch if they are suffering losses. I find that the mean value of *Loss* is 0.66 that is, for 66% of the switches, the hedge fund is sitting on a paper loss. This compares to 47% of the hedge funds' passive holdings that do not switch (control group) and the difference of 19% is statistically significant at the 1% level.

A primary concern is that the switch may be triggered by the firm's prior underperformance, a proxy for the expected benefits of activism, and not by the loss itself. To investigate this issue, I measure the *Abnormal Return* as the difference between the raw stock return of the target firm over the previous 12 months and the Fama-French 48 industry portfolio return[19] over the same time period. *Underperformance* is then a dummy variable that is equal to one, if the abnormal return over the previous 12 months is negative, and zero otherwise. Table 2 shows that 75% of the target firms at the time of the switch underperform the industry peers. The firms of the control sample underperform their peers 57% of the times. The difference of 18% is statistically significant at the 1% level.

An anecdote suggests that a possible trigger for the switch could be a takeover attempt. In January 2005, the hedge fund Diker Management, a passive hedge fund invested in I Many Inc., switched to Schedule 13D. I Many Inc. received a takeover bid from Selectica, and Diker believed that "the terms of the merger do not give full and fair value to the Company." The hedge fund

[18] The limited number of switches and the noise in the computation of the loss variables for the control group bias against finding statistical significance in the empirical tests.
[19] I also consider the Fama-French 12 industry portfolio returns, the CRSP value-weighted, and the CRSP equally weighted indices as alternate benchmarks. The results, not reported, are qualitatively similar.

decided to vote against the merger and "to actively encourage the Company to seek alternate means of delivering value for its shareholders."

This anecdote recalls jawboning in risk arbitrage. Passive hedge funds can use this tactic to exert monitoring during M&A contests. Using data from Thomson Reuters Securities Data Company (SDC) Platinum, I construct the dummy variable *M&A Target* that is equal to one, if the firm receives a takeover bid during the previous 12 months, and zero otherwise.

Table 2 shows that hedge funds are more likely to switch to activism when the portfolio company receives a takeover bid: 16% of the switches happen after the firm receives a takeover bid. Only 2% of the firms in the control group receive a takeover bid during the previous 12 months, which is consistent with the evidence of prior literature on the importance of mergers and acquisitions for value creation in hedge fund activism.

Finally, the firms where the hedge funds switch have a lower Tobin's *q*. This confirms that hedge funds start activist campaigns in undervalued firms. The other univariate results show that the switches and the control group are indistinguishable in terms of liquidity (*Liquidity*),[20] the proportion of shares held by institutional investors (*Inst*), dividend yield (*Dividend Yield*), return on assets (*ROA*), leverage (*Leverage*) and cash holdings (*Cash*).

4.3 Multivariate tests

In this section, I proceed to formal multivariate tests of my hypothesis. To control for the firm characteristics that can trigger the switch, I estimate the following linear probability model:

$$Switch_{i,j,t} = \alpha + \beta_1 Loss_{i,j,t} + \delta' X_{j,t} + \gamma_i + \theta_t + \varepsilon_{i,k,t}$$

[20] To measure liquidity I follow Edmans, Fang, and Zur (2013) and I use *Liquidity=-ln(1+Amihud)*. The Amihud illiquidity ratio is computed using daily prices over the previous year. Higher values of *Liquidity* correspond to higher liquidity.

Observations are at the hedge fund (*i*), firm (*j)*, and quarter (*t*) level. The dependent variable, $Switch_{i,j,t}$ is a dummy variable equal to one if the hedge fund *i* switches from the 13G to the 13D filing in firm *j* in quarter *t*, and zero otherwise. The explanatory variable of interest is the *Loss* dummy. It is equal to one if the holding period return is negative, and zero otherwise. A positive coefficient on *Loss* would suggest that hedge funds are more likely to switch to activism when they are suffering a paper loss.

The vector *X* includes the firm characteristics that are described in the previous sections and that may affect the probability of switching to activism: the firm's stock underperformance dummy (*Underperformance*), the M&A target dummy (*M&A Target*), the stock liquidity (*Liquidity*), the firm's institutional ownership (*Inst*), Tobin's *q* (*q*), the dividend yield (*Dividend Yield*), the return on assets (*ROA*), leverage (*Leverage*), and cash holdings (*Cash*). I estimate the regressions with and without these controls. In all regressions, I include hedge fund (γ_i) and quarter (θ_t) fixed effects. Standard errors are clustered by hedge fund.

Table 3 reports the coefficient estimates from the multivariate regressions. Columns 1 reports the results with only the *Loss* variable. Consistent with my hypothesis, I find the coefficient on *Loss* to be significantly positive. Column 2 and 3 reports the results with only the *Underperformance* variable and with both *Loss* and *Underperformance*, respectively. The coefficient on *Loss* continues to be significantly positive, even after controlling for the target firm's underperformance. The effect of the loss is also economically large. Column 4 shows that controlling for the firm's underperformance, as well as for the other firm characteristics, the loss increases the probability of switching by 1.3 percentage points, an increase of 65% compared to the unconditional probability of 2% of switching in each quarter. In contrast, if the firm is underperforming its industry peers, the probability of switching increases by 0.8 points, an increase

of 40% of the unconditional probability. Thus, these results suggest that the marginal effect of the loss is bigger, compared to the effect of the target firm underperformance.

With respect to the other control variables, I find that the coefficient on *M&A Target* is significantly positive. This implies that hedge funds are significantly more likely to switch to activism if the firm is the target of a takeover attempt. Conditional upon receiving a takeover bid, the probability of switching increases by 9.2%. The magnitude of the effect is large but not surprising. Shareholders' value creation from hedge fund activism occurs primarily by influencing takeover outcomes for targeted firms (Boyson, Gantchev, and Shivdasani, 2017). The evidence from the switches complements the findings of Jiang, Li, and Mei (2016) that claim that activist hedge funds file the Schedule 13D after the announcement of a takeover bid, and Boyson, Gantchev, and Shivdasani (2017), that claim that hedge fund activism in a particular firm increases the likelihood of receiving a takeover bid. The coefficients on all the other controls are not statistically different from zero.

In the next tests, reported in Table 4, I focus on identifying the discontinuity at the zero-loss threshold by applying a multivariate regression discontinuity framework. I test whether the same discontinuity survives after the inclusion of the polynomials of the holding period return. I restrict the sample to the holdings whose holding period returns are within one standard deviation around zero. The trade-off is to keep a significant number of observations to allow the polynomial to fit the shape of the switching probability without being influenced by extreme values. Column 1 reports the results without including the polynomials of the holding period return; columns 2 and 3 include the polynomials up to the second and third power, respectively; columns 4 and 5 include the polynomials of the holding period return up to the second and third power and their interactions

with the loss dummy. The last two specifications allow the coefficients of the holding period return polynomials to vary on either side of the zero-loss threshold.

The results reported in Table 4 show that the magnitude of the discontinuity is quantitatively similar to the marginal effect of the loss reported in Table 3. These results support the hypothesis that hedge funds see the purchase price as a reference point and that they are more likely to switch to activism when they are suffering a loss.

5. Alternative Explanation

The evidence presented so far shows that the loss of a particular hedge fund in a particular passive holding triggers the switch to activism. This is consistent with the loss generating psychological costs and a deviation from the ex-ante optimal hedge fund's plans. In the main tests I control for the target firm's underperformance during the previous 12 months. Furthermore, the results of the discontinuity tests give further support to the identification of the effect of the loss. If the results are driven by the firm's underperformance, there would be no reason to see a discontinuity exactly at the zero loss level. In this section, I further investigate whether the effect of the loss is distinct.

First, I split the sample into the holdings with underperformance and without underperformance. If it is the loss itself that triggers the switch and not the underperformance, I expect to find that the loss has explanatory power in both samples, and this is exactly what I find. Columns 1-2 of Table 5 show that the loss increases the probability of switching in both subsamples. In particular, Column 1 shows that even in the subsample of positive abnormal returns, and even if the sample size is much smaller, the loss is still significant at the 5% level and the point estimate is only marginally lower if compared to the main tests reported in Table 3.

Second, I consider a one-to-one matching where, among all the hedge funds' holdings that remain passive during the same quarter of the switch, each switch is matched with the single position that has the closest prior abnormal return. This matching criteria is a further attempt to control for the effect of the abnormal return and to identify the effect of the loss on the probability of switching. Column 3 of Table 5 shows that the coefficient on the loss variable is still positive and statistically significant.

Third, I also address the concern that the correct proxy for the firm's potential for value improvement is not the abnormal return during the previous 12 months, but it is the abnormal return since the time of the filing of the 13G. At the time of the filing of the 13G a passive strategy is probably optimal, but a negative abnormal return since then could increase the expected benefits from the intervention, making a change of strategy the optimal choice. I split the sample into the holdings with a positive and with a negative industry-adjusted abnormal return since the filing of the 13G. Columns 4-5 of Table 5 show that the loss retains its statistical as well as its economic significance in both subsamples.

Finally, to better evaluate whether the hedge funds' decision to switch or to stay passive is optimal, we would require an estimate of both the expected costs and the expected benefits of activism. By evaluating both the costs and benefits from a passive and from an active strategy at any point in time, we would be able to assess whether the observed switch is indeed the optimal choice. However, the costs of activism are unobservable and difficult to estimate. Nevertheless, I can get suggestive evidence of the effects of the switches by looking at the buy-and-hold abnormal returns. I follow Brav, Jiang, Partnoy, and Thomas (2008) and I evaluate the BHARs in the (-20,+20) days window around the switch. In particular, I compare the consequences of the switches for the entire sample and for two subsamples. The first subsample includes only the

switches with a loss but without prior underperformance. If these switches are driven by the psychological costs of the loss, we should observe lower announcement returns. The second subsample includes the switches without a loss but with prior underperformance.

Figure 2 compares the BHARs for the three groups of switches. We can observe a significantly positive BHAR for the entire sample of switches and for the subsample of switches without a loss but with prior underperformance. This confirms prior literature that uses the switches to study the consequences of activism and find that after the switch the target firms have, on average, a positive performance. The magnitude of the BHARs returns for the entire sample of switches is also similar to the BHARs of all activists' campaigns as reported by Brav, Jiang, and Kim (2013). However, the mean BHAR for the switches that are likely to be motivated by the psychological costs of the loss is not significantly positive.[21]

6. Robustness Tests

In this section, I subject the main results to a variety of robustness tests. First, I re-estimate the main regression adding additional controls. Even though the previous tests include the main firm characteristics that may cause the switch, there could be the concern that other factors are omitted. I control for the holding period (*Holding Period*), for the hedge fund's percentage ownership in the firm (*Own*), for the firm size (*Size*), and for the presence of other activist hedge funds (*Other 13D*). To control for other activist hedge funds in the firm, I include a dummy variable that is equal to one if other hedge funds hold a 5% block of stock in the firm at the time of the switch and they filed the Schedule 13D. There is not a clear prediction on the sign on the

[21] The mean BHAR is equal to 0.991% but it is not statistically different from zero. The mean BHAR for all the switches and for the switches without a loss but with prior underperformance is equal to 4.28% and 3.98%, respectively. Both are statistically significant at the 1% level.

coefficient of this variable. The existence of other activists will increase the probability of success of activism, and could thus increase the probability of the switch. A free-riding hypothesis, however, would predict a negative relationship. Column 1 of Table 6 reports the results including all the additional controls. The coefficient on the loss variable is only marginally lower. The positive coefficient of the ownership control suggests that a bigger stake in the firm increases the probability of the switch. The coefficients on *Size* and on *Other 13D* are not significantly different from zero.

Second, I check the robustness of the main results by using alternative proxies for the target firms' abnormal returns. I re-estimate the main regressions by using the Fama-French 12 industries portfolios, the CRSP value-weighted, and the CRSP equally-weighted indices. The results, not tabulated, are qualitatively similar.

Third, I re-estimate the main regression in the subsamples of observations where the holding period is greater than 6 and 12 months, respectively. One concern is that activist hedge funds could file the Schedule 13G even if they have activist intentions. This is unlikely for the reasons discussed in Section 2 and, if it happens, it would add noise to the data. However, by removing the passive holdings where the Schedule 13G has been recently filed will likely remove the possible few instances where the hedge funds' intentions are not truly passive since the beginning. Columns 2 and 3 of Table 6 show that the effect of the loss in these two subsamples is virtually unchanged.

Fourth, I consider alternative matching criteria. Column 1 of Table 7 reports the results of the main regression after adding, to the control group, also the positions that exit. I define exit when the hedge fund's holding in the target firm drops below 2%. Column 2 reports the results using only the passive positions that are in the hedge fund's portfolio during the quarter of the

switch. This matching is stricter as it involves the same hedge fund switching on one position but not on others at the same time. Column 3 uses the same matching criteria of column 2 but it also adds the holdings that exit during the quarter of the switch. Table 7 shows that the loss retains its explanatory power using all these alternative matching criteria.

Finally, following Brav, Jiang, Partnoy, and Thomas (2008) that exclude risk arbitrage from their sample of activism events, I re-estimate the main results without the *M&A Target* dummy and excluding the holdings where the firms received a takeover bid during the previous 12 months. The results, not reported, are qualitatively similar.

Taken together, the results of this paper provide support for the hypothesis that the loss increases the probability of the switch to activism and this effect is distinct from the prior firm's underperformance.

7. Conclusions

In this paper, I study the reasons why hedge funds decide to change their investment stance from passive to active. I find that hedge funds see the purchase price on their passive holdings as a reference point and they are more likely to become activists if they are incurring losses. The loss increases the probability of switching by 1.3 percentage points, an increase of 65% of the unconditional probability.

The results of the univariate and multivariate discontinuity tests, and various additional tests, confirm that the effect of the loss is distinct from the effect of the target firms' underperformance and the effect of other characteristics that prior literature has documented as being related to the decision of activist hedge funds to target specific firms. I present some suggestive evidence that the switches that are likely to be motivated by the loss do not have

significantly positive announcement returns. This is consistent with "bad" activism triggered by the psychological costs of the loss.

The existing literature on hedge fund activism investigates the characteristics of the firms that are targeted by activists, and that proxy for the potential for value improvement, and the effect of activism. The main contribution of this paper is to show what causes the switch to activism. My results have also implications for the behavioral finance literature. Prior studies examine how investors trade in response to past losses and gains and find that investors hold onto losses longer than gains. I show that a further consequence of losses is to trigger activism.

References

Admati, Anat R., and Paul Pfleiderer, 2009, The "Wall Street Walk" and shareholder activism: Exit as a form of voice, *Review of Financial Studies* 22, 2645–2685.

Aragon, George O., and Spencer J. Martin, 2012, A unique view of hedge fund derivatives usage: Safeguard or speculation?, *Journal of Financial Economics* 105, 436–456.

Aslan, Hadiye, and Praveen Kumar, 2016, The product market effects of hedge fund activism, *Journal of Financial Economics* 119, 226–248.

Baker, Malcolm, Xin Pan, and Jeffrey Wurgler, 2012, The effect of reference point prices on mergers and acquisitions, *Journal of Financial Economics* 106, 49–71.

Barberis, Nicholas, and Wei Xiong, 2012, Realization utility, *Journal of Financial Economics* 104, 251–271.

Bebchuck, Lucian, Alon Brav, Robert Jackson, and Wei Jiang, 2013, Pre-disclosure accumulation by activist investors: evidence and policy, *Journal of Corporation Law* 1, 0–34.

Boyson, Nicole M., Nickolay Gantchev, and Anil Shivdasani, 2017, *Activism Mergers Journal of Financial Economics (forthcoming)*.

Brav, Alon, Wei Jiang, and Hyunseob Kim, 2009, Hedge Fund Activism: A Review, *Foundations and Trends in Finance* 4, 185–246.

Brav, Alon, Wei Jiang, and Hyunseob Kim, 2013, Hedge fund Activism. Updated tables and figures, *Working Paper. Duke University*.

Brav, Alon, Wei Jiang, and Hyunseob Kim, 2015, The Real Effects of Hedge Fund Activism: Productivity, Asset Allocation, and Labor Outcomes, *Review of Financial Studies* 28, 2723–2769.

Brav, Alon, Wei Jiang, and Hyunseob Kim, 2015, Recent advances in research on hedge fund activism: value creation and identification, *Annual Review of Financial Economics* 7, 579–595.

Brav, Alon, Wei Jiang, Song Ma, and Xuan Tian, 2017, How does hedge fund activism reshape corporate innovation?, *Journal of Financial Economics (forthcoming)*.

Brav, Alon, Wei Jiang, Frank Partnoy, and Randall Thomas, 2008, Hedge fund activism, corporate governance, and firm performance, *Journal of Finance* 45, 391–413.

Chang, Tom Y., David H. Solomon, and Mark M. Westerfield, 2016, Looking for Someone to Blame: Delegation, Cognitive Dissonance, and the Disposition Effect, *Journal of Finance* 71, 267–302.

Clifford, Christopher P., 2008, Value creation or destruction? Hedge funds as shareholder activists, *Journal of Corporate Finance* 14, 323–336.

Denes, Matthew R, Jonathan M. Karpoff, and Victoria B Mcwilliams, 2017, Thirty years of shareholder activism : A survey of empirical research, *Journal of Corporate Finance* 44, 405–424.

Edmans, Alex, 2009, Blockholders, Market Efficiency, and Managerial Myopia, *Journal of*

Finance 64, 2481–2513.

Edmans, Alex, Vivian W. Fang, and Emanuel Zur, 2013, The effect of liquidity on governance, *Review of Financial Studies* 26, 1443–1482.

Edmans, Alex, and Gustavo Manso, 2011, Governance through trading and intervention: A theory of multiple blockholders, *Review of Financial Studies* 24, 2395–2428.

Frazzini, Andrea, 2006, The disposition effect and underreaction to news, *Journal of Finance* 61, 2017–2046.

Gantchev, Nickolay, 2013, The costs of shareholder activism: Evidence from a sequential decision model, *Journal of Financial Economics* 107, 610–631.

Gillan, Stuart L., and Laura T. Starks, 2007, The Evolution of Shareholder Activism in the United States, *Journal of Applied Corporate Finance* 19, 55–73.

Greenwood, Robin, and Michael Schor, 2009, Investor activism and takeovers, *Journal of Financial Economics* 92, 362–375.

Imas, Alex, 2016, The Realization Effect: Risk-Taking After Realized Versus Paper Losses, *American Economic Review* 106, 1–27.

Jiang, Wei, Tao Li, and Danqing Mei, 2016, Influencing Control: Jawboning in Risk Arbitrage, *Working Paper. Columbia University*.

Kahn, Charles M, and Andrew Winton, 1998, Ownership Structure, Speculation, and Shareholder Intervention, *The Journal of Finance* 53, 99–129.

Klein, April, and Emanuel Zur, 2009, Entrepreneurial Shareholder Activism: Hedge Funds and Other Private Investors, *Journal of Finance* 64, 187–229.

Locke, Peter R., and Steven C. Mann, 2005, Professional trader discipline and trade disposition, *Journal of Financial Economics* 76, 401–444.

Maug, Ernst, 1998, Large Shareholders as Monitors: Is There a Trade-Off between Liquidity and Control?, *The Journal of Finance* 53, 65–98.

Norli, Oyvind, Charlotte Ostergaard, and Ibolya Schindele, 2015, Liquidity and shareholder activism, *Review of Financial Studies* 28, 486–520.

Odean, Terrance, 1998, Are Investors Reluctant to Realize Their Losses?, *Journal of Finance* 53, 1775–1798.

Thaler, Richard H., 1999, Mental Accounting Matters, *Journal of Behavioral Decision Making* 12, 183–206.

Wong, Forester, 2017, Wolves at the Door: A Closer Look at Hedge-Fund Activism, *Working Paper. University of Southern California*.

Figure 1. Distribution of the holding period return at the time of the switch

The figure plots the distribution of the holding period return computed at the time of the switch. The bin size is equal to 10%.

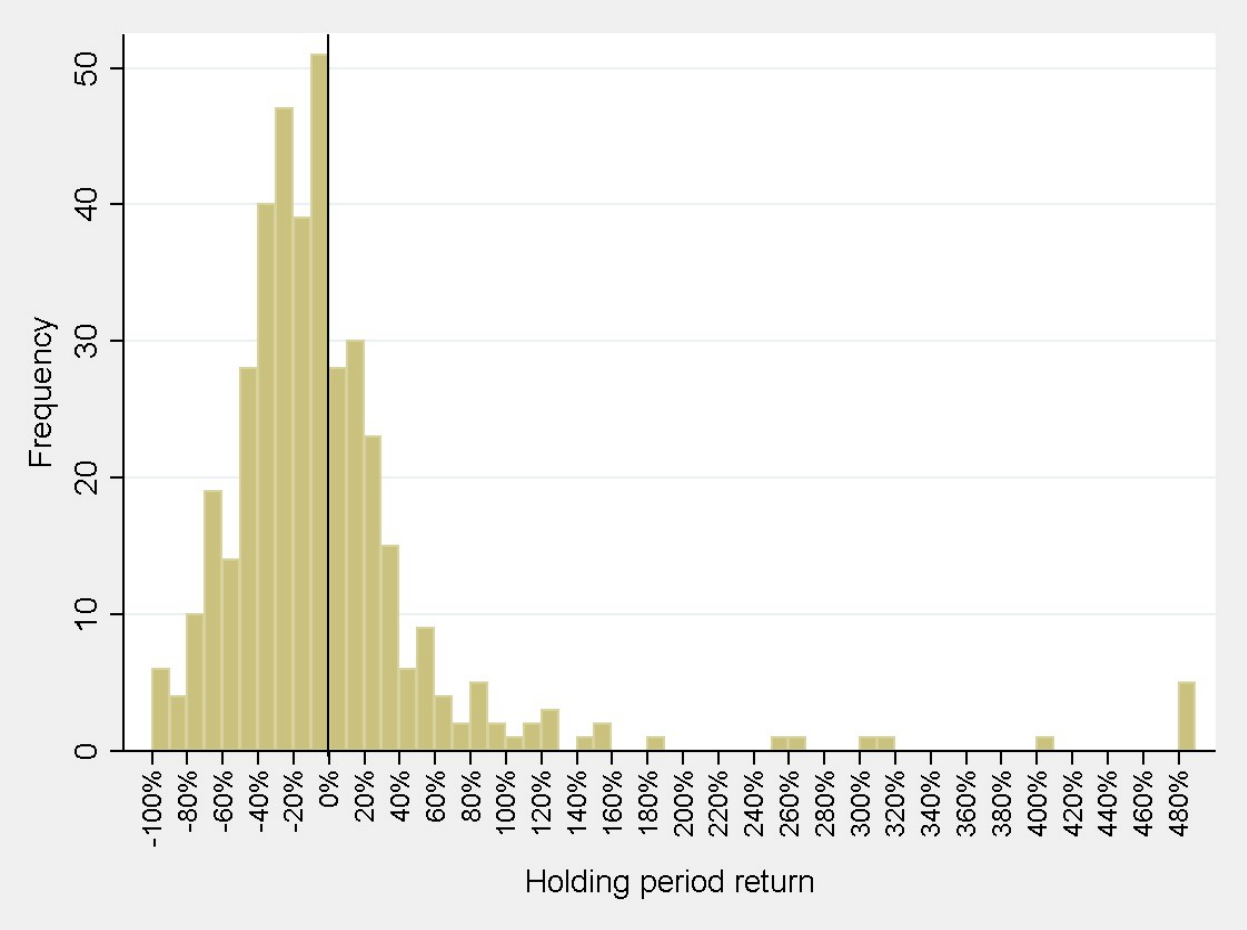

Figure 2. Buy-and-hold abnormal returns

The figure plots the average buy-and-hold abnormal returns (BHARs) in the [-20, +20] day interval around the switch for the entire sample of switches, for the subsample of switches with a loss but not prior underperformance, and for the subsample of switches without a loss but with prior underperformance. The abnormal returns are calculated using the Fama-French-Carhart four-factor model, with the market, SMB, HML, and MOM factor loadings estimated over the [-30, -180] day interval prior to the switch.

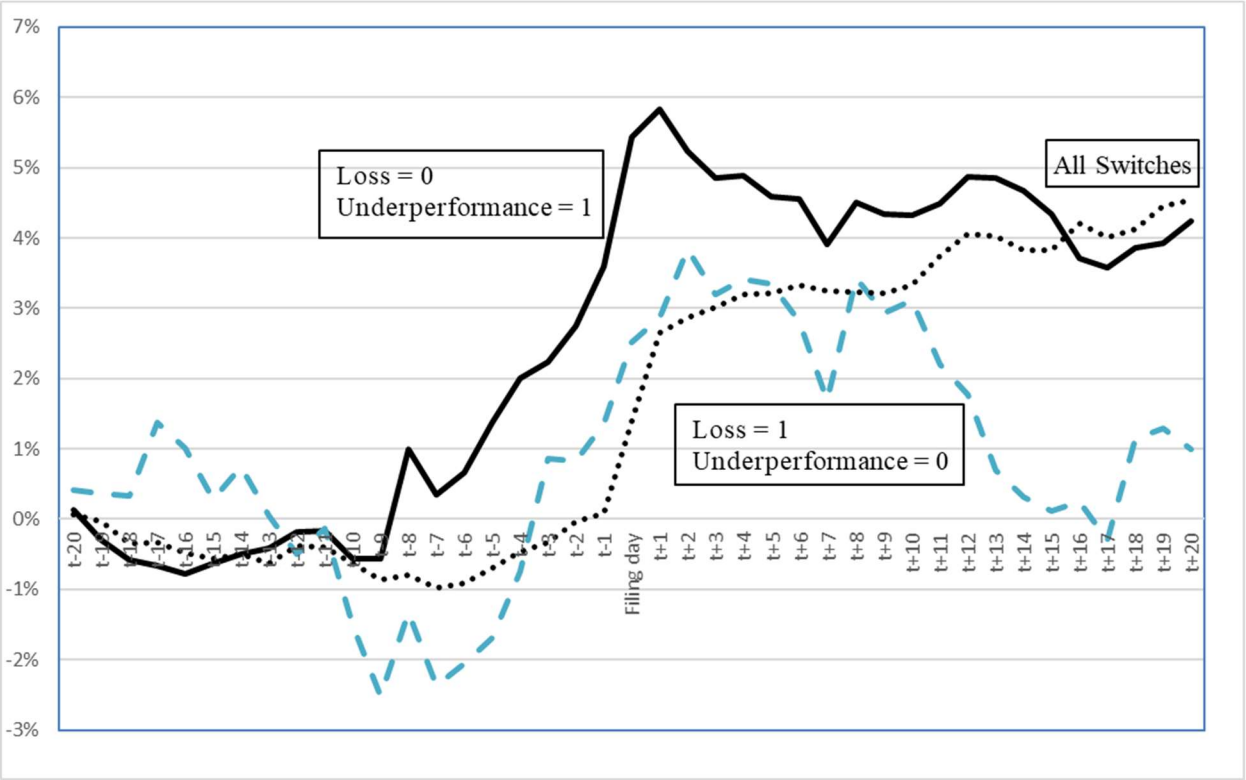

Table 1. Descriptive statistics

This table reports descriptive statistics for the sample of hedge funds and switches over the period 1994-2014. Panel A summarizes the number of hedge funds and the number of their 13D initial filings. Panel B summarizes the hedge funds' stated reasons for the switch as reported in Item 4 of the Schedule 13D, "Stated purpose of the filing." Panel C reports the final sample of the switches after applying all the filters.

Panel A: Initial sample of activist hedge funds	
Activist Hedge Funds	312
Number of 13D filings	2,396
Mean (Median) number of 13Ds (for each hedge fund)	8 (3)
Panel B: Stated reasons for the switch	
General undervaluation/maximize shareholder value	229 (48%)
Capital structure	26 (5%)
Business strategy	68 (14%)
Sale of the target company	34 (7%)
Corporate governance	56 (12%)
Ownership > 20% without evidence of activism	46 (10%)
Ownership > 20% and evidence of activism in 13D	21 (4%)
TOTAL	480
Panel C: Final sample of activist hedge funds and switches	
Initial sample of switches	480
-without ownership>20% and no evidence of activism	434
-with purchase price information	402
-with matched positions	384
Final sample of hedge funds	135
Final sample of switches	384

Table 2. Characteristics of the switches and of the control group

This table compares the characteristics of the switches with the characteristics of the control group. The last column reports the difference of the means. *Loss* is a dummy variable that is equal to one if there is a paper loss, and zero otherwise; *Holding Period Return (Ret)* is the hedge fund's return since purchase; *Underperformance* is a dummy variable that is equal to one if the target firm is underperforming its industry peers (Fama-French 48 industries) during the previous 12 months, and zero otherwise; *Abnormal Return* is the Fama-French 48 industry-adjusted return during the previous 12 months; *M&A Target* is a dummy variable that is equal to one if there is an announcement of a takeover bid during the previous 12 months, and zero otherwise; *Liquidity* is defined as *ln(1+Amihud)*. The Amihud illiquidity ratio is computed using daily prices over the previous 12 months; *Inst* is the proportion of shares held by institutional investors; *q* is Tobin's *q* defined as (book value of debt + market value of equity)/(book value of debt + book value of equity); *Dividend Yield* is defined as (common dividend)/(market value of common stock); Return on assets (*ROA)* is defined as earnings before interest, tax, depreciation and amortization (EBITDA) scaled by total assets; *Leverage* is the book leverage ratio; *Cash* is defined as (cash + cash equivalents)/assets. All continuous variables are winsorized at the 1st and 99th percentile. ***,**,* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	Switches		**Control group**		**Switches-Control Group**
	N	**Mean**	**N**	**Mean**	**Diff. in means**
Loss (Dummy)	384	0.66	18,913	0.47	0.19***
Holding Period Return	384	-5%	18,913	6%	-11%***
Underperformance (Dummy)	384	0.75	18,913	0.57	0.18***
Abnormal Return	384	-19%	18,913	-1%	-18%***
M&A Target	384	0.16	18,913	0.02	0.14***
Liquidity	384	-0.70	18,913	-0.86	0.16
Inst	384	0.51	18,913	0.53	-0.02
q	380	1.55	18,625	1.73	-0.18***
Dividend Yield	384	0.7%	18,627	0.9%	-0.2%
Return on Assets (ROA)	372	2.63%	18,214	3%	-0.37%
Leverage	382	0.25	18,749	0.24	0.01
Cash	381	0.21	18,805	0.22	-0.01

Table 3. Main results

This table reports the estimates of the probability of switching to activism. The dependent variable is a dummy variable that is equal to one if the hedge fund switches from Schedule 13G to Schedule 13D, and zero otherwise. Column 1-2 include the loss and the underperformance dummies separately. Column 3 includes both variables. Column 4 includes both variables and the other controls. All regressions include quarter and hedge fund fixed effects. Standard errors clustered by hedge fund are reported under the coefficients. The final rows of each column report the number of observations and R^2. Observations are at the hedge fund-firm-quarter level. ***,**,* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
Loss	0.016***		0.012***	0.013***
	(0.003)		(0.003)	(0.003)
Underperformance		0.013***	0.008***	0.008***
		(0.003)	(0.003)	(0.003)
M&A Target				0.092***
				(0.023)
Liquidity				0.039
				(0.038)
Inst				0.002
				(0.007)
q				-0.001
				(0.001)
Dividend Yield				-0.098
				(0.073)
ROA				0.006
				(0.009)
Leverage				0.001
				(0.005)
Cash				-0.005
				(0.007)
Constant	-0.009**	-0.005*	-0.011***	-0.004
	(0.004)	(0.003)	(0.004)	(0.007)
Quarter FE	Yes	Yes	Yes	Yes
Hedge Fund FE	Yes	Yes	Yes	Yes
Observations	19,297	19,297	19,297	18,381
R-squared	0.081	0.080	0.082	0.098

Table 4. Discontinuity tests

This table presents evidence for a discontinuity in the probability of switching around the zero-loss level. The dependent variable is the *Switch* dummy. In all regressions the sample is limited to positions with holding period return (Ret) of ±1 standard deviation around zero. Column 1 presents the baseline results. Columns 2 and 3 include the polynomials of the holding period return up to the second and third power, respectively. Columns 4 and 5 include the polynomials of the holding period return up to the second and third power, and the interactions with the *Loss* dummy. All regressions include quarter and hedge fund fixed effects, and the controls. Observations are at the hedge fund-firm-quarter level. Standard errors clustered by hedge fund are reported under the coefficients. ***,**,* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)	(5)
Loss	0.016***	0.010**	0.013**	0.013**	0.017**
	(0.003)	(0.004)	(0.005)	(0.005)	(0.006)
Underperformance	0.008***	0.007**	0.008**	0.008**	0.008**
	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)
Ret Polynomials 2nd power	No	Yes	Yes	Yes	Yes
Ret Polynomials 3nd power	No	No	Yes	No	Yes
Loss*Ret Polynomials 2nd power	No	No	No	Yes	Yes
Loss*Ret Polynomials 3nd power	No	No	No	No	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes
Hedge Fund FE	Yes	Yes	Yes	Yes	Yes
Observations	14,411	14,411	14,411	14,411	14,411
R-squared	0.113	0.113	0.113	0.114	0.115

Table 5. Alternative explanation

This table reports the estimates of the probability of switching to activism. The dependent variable is the *Switch* dummy. Column 1-2 restrict the sample to the holdings with positive and negative abnormal return, respectively. Column 3 uses, among all the hedge funds' holdings that remain passive during the same quarter of the switch, the single position that has the closest abnormal return. Columns 4-5 restrict the sample to the holdings with positive and negative industry-adjusted abnormal returns since the filing of the Schedule 13G, respectively. All regressions include quarter and hedge fund fixed effects. Observations are at the hedge fund-firm-quarter level. Standard errors clustered by hedge fund are reported under the coefficients. ***,**,* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	(1) Ab. return>0	(2) Ab. return<0	(3) One-to-one matching	(4) Ab. return 13G<0	(5) Ab. return 13G>0
Loss	0.013**	0.015***	0.182**	0.013***	0.013**
	(0.006)	(0.005)	(0.073)	(0.005)	(0.006)
Abnormal Return	0.005	-0.023**	-0.037		
	(0.005)	(0.009)	(0.074)		
Abnormal Return since 13G				-0.017**	-0.001
				(0.007)	(0.002)
M&A Target	0.160***	0.094***	0.544***	0.079***	0.141***
	(0.054)	(0.032)	(0.094)	(0.029)	(0.049)
Liquidity	-0.070	0.084*	1.686	0.064	-0.008
	(0.099)	(0.046)	(1.245)	(0.053)	(0.061)
Inst	0.002	-0.001	-0.164	0.002	0.004
	(0.013)	(0.009)	(0.164)	(0.009)	(0.011)
q	-0.003**	-0.002	-0.076**	-0.002	-0.001
	(0.001)	(0.002)	(0.038)	(0.002)	(0.002)
Dividend Yield	-0.128	-0.092	-1.108	-0.069	-0.069
	(0.145)	(0.127)	(1.715)	(0.122)	(0.124)
ROA	0.031*	0.007	-0.006	-0.006	0.035**
	(0.017)	(0.015)	(0.191)	(0.014)	(0.015)
Leverage	-0.002	-0.001	0.163	0.002	-0.004
	(0.012)	(0.008)	(0.143)	(0.008)	(0.011)
Cash	0.003	-0.011	0.173	-0.014	0.010
	(0.013)	(0.013)	(0.168)	(0.012)	(0.011)
Constant	0.327***	-0.006	0.162	0.007	0.010
	(0.013)	(0.013)	(0.298)	(0.012)	(0.008)
Quarter FE	Yes	Yes	Yes	Yes	Yes
Hedge Fund FE	Yes	Yes	Yes	Yes	Yes
Observations	4,783	9,399	604	9,110	6,095
R-squared	0.118	0.086	0.173	0.114	0.121

Table 6. Additional controls and subsample analysis based on the holding period

This table reports the estimates of the probability of switching to activism. The dependent variable is the *Switch* dummy. Column 1 includes the additional controls. Columns 2-3 restrict the sample to the holdings that are passive since at least 6 and 12 months, respectively. All regressions include quarter and hedge fund fixed effects. Observations are at the hedge fund-firm-quarter level. Standard errors clustered by hedge fund are reported under the coefficients. ***,**,* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)
		>6 months	>12 months
Loss	0.012***	0.012***	0.014***
	(0.003)	(0.004)	(0.005)
Underperformance	0.008***	0.008***	0.008**
	(0.003)	(0.003)	(0.004)
M&A Target	0.085***	0.085***	0.078**
	(0.023)	(0.029)	(0.033)
Liquidity	0.021	0.026	0.029
	(0.037)	(0.027)	(0.033)
Inst	-0.001	-0.008	-0.004
	(0.007)	(0.007)	(0.009)
q	-0.002*	-0.001	-0.000
	(0.001)	(0.001)	(0.001)
Dividend Yield	-0.082	-0.233**	-0.275**
	(0.073)	(0.098)	(0.117)
ROA	0.005	-0.004	-0.003
	(0.009)	(0.009)	(0.012)
Leverage	0.001	0.009	0.001
	(0.005)	(0.006)	(0.008)
Cash	-0.003	0.001	0.008
	(0.007)	(0.008)	(0.013)
Holding Period	-0.001		
	(0.001)		
Own	0.204***		
	(0.054)		
Other 13D	0.007		
	(0.006)		
Size	0.002		
	(0.001)		
Constant	-0.024**	0.004	-0.003
	(0.012)	(0.008)	(0.014)
Quarter FE	Yes	Yes	Yes
Hedge Fund FE	Yes	Yes	Yes
Observations	18,345	12,785	8,405
R-squared	0.092	0.070	0.084

Table 7. Alternative matching criteria

This table reports the estimates of the probability of switching to activism using alternative matching criteria. The control group used in Column 1 includes also the passive holdings that exit. The control group used in Column 2 considers only the positions that stay passive during the same quarter of the switch. The control group used in Column 3 considers the passive positions during the quarter of the switch that stay passive and that exit. All regressions include quarter and hedge fund fixed effects. The final rows of each column report the number of observations and R^2. Observations are at the hedge fund-firm-quarter level. Standard errors clustered by hedge fund are reported under the coefficients. ***,**,* indicate statistical significance at the 1%, 5%, and 10% level, respectively.

	(1) Positions that remain passive and exit	(2) Positions that remain passive during the same quarter of the switch	(3) Positions that remain passive and exit during the same quarter of the switch
Loss	0.012***	0.064***	0.066***
	(0.003)	(0.022)	(0.022)
Underperformance	0.007***	0.054**	0.049**
	(0.002)	(0.027)	(0.024)
M&A Target	0.056***	0.454***	0.306***
	(0.015)	(0.075)	(0.066)
Liquidity	0.035	0.523	0.490*
	(0.031)	(0.313)	(0.285)
Inst	0.000	0.018	-0.008
	(0.006)	(0.043)	(0.041)
q	-0.001	-0.019**	-0.015**
	(0.001)	(0.008)	(0.008)
Dividend Yield	-0.080	-0.306	-0.246
	(0.064)	(0.562)	(0.518)
ROA	0.005	-0.019	0.007
	(0.008)	(0.062)	(0.047)
Leverage	0.001	0.013	0.001
	(0.004)	(0.039)	(0.037)
Cash	-0.004	-0.024	-0.026
	(0.006)	(0.047)	(0.042)
Constant	-0.006	-0.089	-0.097
	(0.006)	(0.097)	(0.089)
Quarter FE	Yes	Yes	Yes
Hedge Fund FE	Yes	Yes	Yes
Observations	20,597	2,254	2,439
R-squared	0.081	0.245	0.206