

**FOLLOW THE MONEY: INSIDER TRADING AND PERFORMANCE OF
HEDGE FUND ACTIVISM TARGETS**

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This dissertation is dedicated to my wife for her enormous love, patience, and support during my graduate study.

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TABLE OF CONTENTS

LIST OF TABLES	6
LIST OF FIGURES	7
ABSTRACT.....	8
1. INTRODUCTION	9
2. DATA AND SAMPLE.....	18
3. INSIDER TRADING AROUND CAMPAIGN ANNOUNCEMENTS	21
4. INSIDER TRADING AND FUTURE PRICE DRIFT	23
4.1 Insider Trading and Short-Term Price Drift	24
4.2 Insider Trading and Long-Term Stock Return.....	25
4.3 Insider Trading and Information Asymmetry	28
5. WHAT DO INSIDERS KNOW?	30
6. INSIDER TRADING AND CAMPAIGN RESISTANCE	33
7. ROBUSTNESS TESTS	35
7.1 Is the Information from Outside Insiders?	36
7.2 Market Reaction and Long-Term Performance	36
7.3 Insider Trading and Proxy Contests.....	37
7.4 Post-Announcement Insider Trades in Longer Intervals	39
7.5 Campaign Outcomes or Regular Corporate Events	40
8. CONCLUSION.....	41
REFERENCES	65
APPENDIX.....	69
VITA	71

LIST OF TABLES

Table 1. Number of Activism Campaigns	49
Table 2. Insider Trading among Target Firms	50
Table 3. Characteristics of Activism Targets with Different Insider Trading	51
Table 4. Long-Term Stock Performance of Activism Targets	52
Table 5. Panel Regressions of Monthly Returns.....	54
Table 6. Stated Goals and Return Predictability	55
Table 7. Campaign Outcomes.....	56
Table 8. Resistance and Insider Trading.....	57
Table 9. Excluding Outside Insiders	59
Table 10. Announcement CAR and Post-Announcement Performance	60
Table 11. Proxy Contests	61
Table 12. Return Predictability of Insider Trades in Longer Windows.....	62
Table 13. Pre-announcement Insider Trading and Campaign Outcomes	64

LIST OF FIGURES

Figure 1. Insider Trading around Activism Announcements.....	43
Figure 2. Short-Term Stock Performance of Activism Targets.....	45
Figure 3. Campaign Outcomes and Stock Performance	46
Figure 4. Target Firm Resistance around Activism Announcements	47
Figure 5. Stock Performance of Resisting and Non-Resisting Firms	48

FOLLOW THE MONEY: INSIDER TRADING AND PERFORMANCE OF HEDGE FUND ACTIVISM TARGETS

ABSTRACT

Hedge fund activism announcements are associated with positive market reactions, and they introduce information asymmetry between insiders and outside investors. Target firm insiders have superior information about the campaign and play an important role in the campaign negotiation. This study examines insiders' behavior as information asymmetry rises following the campaign announcement. Insiders increase trading in their own firms in response to the campaign announcement. These post-announcement insider trades have additional return predictability than insider trades in other times. Post-announcement insider buys predict higher probabilities of achieving successful campaign outcomes including management turnovers, increases in payout, and corporate restructurings, and higher value of these outcomes. I also find evidence that insiders use campaign resistance and trading interactively to achieve higher wealth gain.

1. INTRODUCTION

It is commonly believed that firm insiders can profit from their superior information. But due to the nature of private information, there is still limited evidence on what type of information insiders profit from and how they do so. In this study, I utilize some interesting features of hedge fund activism campaigns to provide new perspectives on insider trading.

A hedge fund activism campaign is a confrontational campaign started by a hedge fund or a group of hedge funds by filing Schedule 13D with the SEC. Through these campaigns, the hedge funds aim to force the target firms to make changes that the hedge funds believe will enhance firm value. Several studies have documented positive and significant market reactions to these campaign announcements. However, the announcement return is likely a noisy indicator of the future campaign outcomes and the campaign value creation as the market may face substantial difficulties when interpreting and reacting to the noisy information disclosed in the initial Schedule 13D.¹ Relative to the outside investors, insiders of the campaign target firms have superior information about the campaign because 1) they can communicate more directly with the hedge fund activists and 2) they are decision makers of the firm. That is, a campaign announcement apparently increases the information asymmetry between target firm insiders and outside investors. Another interesting feature of these campaigns stems from how they proceed following the campaign announcement. Although the campaign announcement is made by the hedge fund activists, the future campaign outcomes are largely determined by the negotiation between the hedge funds and the target firm, which further increases target insiders' information advantage. These features of these events are used to answer the main question of this study: how exactly do insiders behave when information asymmetry suddenly increases?

¹ See for example, Clifford (2008), Brav, Jiang, Partnoy, and Thomas (2008), Klein and Zur (2009), and etc. Brav et al. (2008) find that the correlation between market reactions and ex post success of activism campaigns is only 0.04.

The market faces substantial information barriers when interpreting and reacting to information disclosed at the campaign announcement. These barriers exist for several reasons. First, the information disclosed in the initial Schedule 13D is usually vague. The most important information for the market is from Item 4 of the filing where the hedge fund activists are supposed to disclose their “Purpose of Transaction”. However, I find that roughly two thirds of the campaigns do not clearly state their goals. Some of these unclear Item 4 statements are like the following two examples:

Example 1: The Reporting Persons purchased the Shares based on the Reporting Persons’ belief that the Shares were undervalued and represented an attractive investment opportunity.....

Example 2:One or more of the Reporting Persons may issue analysts’ reports, participate in interviews or hold discussions with third parties or with management.....Such suggestions or positions may relate to one or more of the transactions specified in clauses (a) through (j) of Item 4 of Schedule 13D including, without limitation, such matters as disposing of one or more businesses, selling the company or acquiring another company or business, changing operating or marketing strategies, adopting or not adopting, certain types of anti-takeover measures and restructuring the company’s capitalization or dividend policy.....

In cases similar to the first example, the activists do not disclose any plan except for their belief that the target firm is undervalued. In cases similar to the second example, the activists admit that their intervention may affect almost every aspect of the firm. However, in both examples, it is difficult for the market to infer useful information about the campaign. Second, in cases where the activists are completely transparent about their intentions, it is still difficult for the market to anticipate the success of the campaign and how the target firm would collaborate with or resist the hedge fund activists. For example, Boyson and Pitchler (2018) find that the stock price drops when the market learns about the target firm’s resistance to the campaign, suggesting that the market did not fully anticipate the resistance when the campaign was first announced.

But in contrast to the noisy public information, target firm insiders have superior information about the campaign for at least two reasons. First, target insiders can communicate

directly with the hedge fund activists, which provide them access to more campaign-specific information.² Second, target insiders include firm executives and directors, who are also decision makers of the target firm and should have superior information about how the firm would collaborate with or resist the hedge fund activists, which would in turn affect the campaign outcomes. From this apparent information asymmetry between target insiders and outside investors, I develop the following main hypotheses: 1) in response to the campaign announcement, target insiders may increase their trading activities to exploit their increase information advantage; 2) these post-announcement insider trades may predict future stock returns and campaign outcomes as they may contain superior information about the campaign; 3) as decision makers of the target firms, insiders may take advantage of their role in the negotiating process to extract more personal wealth.

The mechanism for the first two hypotheses is the following: once a campaign announcement is made, insiders of target firms update their belief about the firm value along with outside investors, which results in a stock price reaction. However, the price reaction is more likely to reflect other investors' valuation as target insiders face capital constraints. Therefore, these insiders would compare their own valuation, which is based on a larger information set, to the market reaction which is based on a smaller information set. They would trade when the new price level deviates from their valuation, and the direction of their trades may predict the direction of the future price drift. In other words, the informative insider trades are motivated by insiders' disagreement with the campaign announcement return. So what does an announcement return

² Institutional investors including hedge fund activists are not restricted from privately talking to their portfolio firms. For example, Lowe's Companies, Inc made the following announcement on January 19st, 2018. "We are pleased to welcome David, Brian and Lisa as new independent directors to the Lowe's board and especially value the constructive discussions I have had with the D. E. Shaw group." These discussions between the firm and the institutional investor are considered private because no detailed information about these conversations was disclosed.

capture that target insiders disagree with? Investors react to the campaign announcement based on the value of a successful campaign outcome adjusted for the probability of achieving such an outcome. Thus, insiders' disagreement could be either with the probability of a successful outcome or with the value of an outcome or both. If the disagreement was with the probability, the post-announcement insider trades would predict the probability of a successful campaign outcome. If it is the value of a potential outcome that insiders disagreed with, upon realization of the outcome, the market reaction to the outcome would be higher for firms with post-announcement insider buys than firms with insider sells. Relative to insider trades that front run some corporate announcements, these post-announcement trades are understandably subject to less regulatory scrutiny but less studied.

As to the last hypothesis, a campaign announcement is also the start of a negotiation between the hedge fund activists and the target firm. We know that, as decision makers of the firm, target insiders are able to influence this negotiation. Boyson and Pitchler (2018) find that the market reacts negatively to the campaign resistance announcement. But the firm's actual dedication to the announced resistance may vary. So a problem arises because both the resistance announcement and the dedication to the resistance are under the influence of the insiders. That is, a resistance announcement may result in nothing but a longer window and a better price for insiders to conduct their informed trades.

I start the empirical analysis by examining the insider trading pattern around activism announcements. I find that insider trading increases following campaign announcements, suggesting increasing activities of exploiting their information advantage about the campaign. I also find that insider buys increase when a lower announcement return is observed and decrease when a higher announcement return is observed. On the other hand, insider sells increase

immediately if the announcement return is higher. Overall, these results suggest that insiders often disagree with the announcement return and trade accordingly.

The next question is of course: do post-announcement insider trades predict the price drift of the target firm? The price drift, if any, may take two forms. On the one hand, as informed insider trades are gradually disclosed, the market may react immediately to incorporate the new information into the stock price. In this case, the price drift should be primarily observed shortly following the activism announcements. On the other hand, the market may fail to immediately recognize all the information contained in these trades and, thus, the market price drifts in the long run.³ I take three steps to examine the post-announcement price drifts. I first assign target firms into Insider Buy, Insider Sell, and No Insider Trade groups based on their post-announcement insider trading activities, and I examine the stock performance of these groups over the 60 days following the announcement. I show that, by allowing the market to react to these trades, Insider Buy firms experience positive price drift while Insider Sell firms experience negative price drift. This result indicates that the market incorporates at least part of the information in these insider trades.

In the second step, I use a calendar-time portfolio approach to examine whether post-announcement insider trading predicts stock price performance of the target firm in the long run. I calculate the time-series portfolio alphas relative to Fama-French three factors and Momentum. And I find that the Insider Buy portfolios generate positive and significant monthly alphas and that the Insider Sell portfolio generates negative but insignificant alphas. Depending on the holding period, the buy-minus-sell portfolios generate equally weighted monthly alphas ranging from 0.82% to 2.22% and value-weighted monthly alphas ranging from 1.15% to 1.67%. Consistent with

³ In a contemporary study, Cziraki, Lyandre, and Michaely (2018) find that the market underreacts to insider trading before share repurchases thus insider trading predicts long-term price drift following the events.

previous evidence, insider buys are more informative, and the market underreacts to the post-announcement insider buys.

In the third step, I examine whether this return predictability is specifically related to the activism campaigns. Since insider trading has been considered informative in general, one may be concerned that the return predictability above does not necessarily imply information about the campaigns. To mitigate this concern, I take another step forward and use panel regressions to examine whether insider trading is more predictive of future returns following activism announcements than in other times. I find that, while insider buys predict positive future stock returns in general, the return predictability is much stronger in the post-announcement period. The return predictability is stronger when the campaign does not have clearly stated goals of intervention. These results suggest that these post-announcement insider trades indeed convey specific information about activism campaigns.

I then examine what information these insiders know. The post-announcement insider trades may be motivated by target insiders' disagreement with the announcement return, which reflects the value of successful campaign outcomes adjusted for the probability of achieving them. A recent study by Becht, Franks, Grant, and Wagner (2017) finds that the successful campaign outcomes, including changes in management and board of directors, increased payouts, firm restructuring, and being acquired significantly contribute to the post-announcement returns of the target firms. So the post-announcement insider trades may predict both the probabilities and the value of the successful campaign outcomes. My findings suggest that the insider buys predict a significantly higher probability that the campaign will achieve certain outcomes, including changes in management and board of directors, increased payouts, and firm restructuring. But both insider buying and selling predict a lower probability of the firm being acquired, which is likely

due to insiders' litigation concern. Moreover, the market values these outcomes significantly more for the firms with insider buys than for firms with insider sells.

After documenting the pattern and the return predictability of post-announcement insider trades, the second part of this study examines whether and how insiders take advantage of their role in the negotiating process to extract more personal wealth. I hand-collect a dataset of resistance events including changes of corporate bylaws and security holders' rights against outside investors and public disclosures of opposite opinions about the campaign. Based on these data, I first confirm Boyson and Pitchler's (2018) finding that the market reacts negatively to the resistance. Second, we would expect the resisting firms to have lower returns following the campaign announcement as they have a lower probability of achieving successful campaign outcomes. However, I find that the resisting firms have much higher post-announcement returns than non-resisting firms. Finally, insiders are buying more and selling less around the resistance announcement. These findings together support the hypothesis that insiders use resistance and trading activities interactively to extract more personal wealth.

Finally, I conduct some robustness tests for alternative explanations of the return predictability and to address some other concerns one might have about the main results. First, I show that the return predictability is robust to the exclusion of insider trades from blockholders and outside directors, suggesting that the superior information is not from "outside insiders" who may be closely related to institutional investors and thus possess more campaign specific information. Second, it is possible that higher market reactions are on average overreactions, and lower market reactions are on average underreactions. Therefore, insiders may simply be acting on the systematic mis-reactions of the market. However, consistent with Brav et al (2008), I do not find evidence that market reactions predict future target returns, suggesting that insiders are not

simply contrarian traders. Third, I test a possible channel of the return predictability that may be unrelated to superior information. More specifically, post-announcement insider trading may be correlated with how target firms respond to hedge fund activists' demands. If the target management chooses not to collaborate, then target insiders may want to accumulate shares in preparation for the potential proxy contests. A recent study by Fos (2017) finds that proxy contests are associated with positive market reactions. Therefore, one may be concerned that both insider buys and higher future returns are driven by proxy contests. I provide evidence against this channel by showing that 1) the use of proxy contests is very rare and 2) post-announcement insider buys do not predict a significantly higher probability of a proxy contest. Fourth, a question one might have is: what is the length of the post-announcement period in which insider trades are informative? In the main tests, I use insider trades in the 30-day interval following the campaign announcement to form portfolios. As robustness, I use longer intervals to form portfolios and find that the return predictability of insider trades decreases as the interval increases. This result is consistent with my hypothesis that the informative insider trades are motivated by target insiders' disagreement with the campaign announcement returns, so they occur immediately following the campaign announcement. Last but not least, I use a placebo test to show that the pre-announcement insider trades do not predict future campaign outcomes. It suggests that the post-announcement insider trades have predictive power of future campaign outcomes mainly because they disagree with the information reflected by the campaign announcement return, not because insider trades predict these corporate events in general.

This paper contributes to the literature in the following ways. First, this setting allows me to study how exactly insiders behave when information asymmetry suddenly increases. The previous literature studies informative insider trades along several dimensions. Some of the papers

study the informativeness of insider trades at the aggregate level.⁴ But these results provide limited perspective on what information insiders are trading on and how these trades are conducted. Some papers study insider trades across different firms.⁵ But the implications are usually more about corporate governance across firms rather than insider trading itself. Some other papers identify informative insider trades using trade level characteristics.⁶ These studies also find that insiders often front run certain corporate announcements that affect firm value. Unlike most of the other corporate events, a hedge fund activism campaign is announced by the hedge funds instead of by the firm. However, the noisy public information and the important role (collaborative or resistive) played by the firm in the campaign trigger substantial information asymmetry between the insiders and outside investors. This allows me to examine in more details how insiders take advantage of their information advantage besides front running some corporate announcements, and more interestingly, whether and how insiders take advantage of their management role in addition to their superior information to extract more personal wealth.⁷

Second, this paper has interesting implications for the fast growing hedge fund activism literature. Brav et al. (2008) find that these campaign target firms do not generate abnormal returns after the campaign announcements. Greenwood and Schor (2009) and Boyson, Gantchev, and Shivdasani (2017) find that the value creation of the campaign is largely contingent on the hedge

⁴ See, for example, Seyhun (1992), Lakonishok and Lee (2001), and Jiang and Zaman (2010).

⁵ See, for example, Frankel and Li (2004), Jagolinzer, Larcker, and Taylor (2011), Skaife, Veenman, and Wangerin (2013), and Massa, Qian, Xu, and Zhang (2015).

⁶ See, for example, Aboody and Lev (2000), Karpoff and Lee (1991), Kahle (2000), Clarke, Dunbar, and Kahle (2001), Ke, Huddart, and Petroni (2003), Ali, Wei, and Zhou (2011), Agrawal and Nasser (2012), Cohen, Malloy, and Pomorski (2012), Wang, Shin, and Francis (2012), Agrawal and Cooper (2015), Gao, Ma, and Ng (2015), Niessner (2015), Dechow, Lawrence, and Ryans (2016), Ali and Hirshleifer (2017), and Cziraki, Lyandres, and Michaely (2017).

⁷ A previous study by Sivakumar and Waymire (1994) finds that the return predictability of insider trades following earnings announcements do not predict significantly higher returns than insider trades in other times, which is not very surprising given that, similar to most of other corporate announcements, earnings announcements resolve information asymmetry.

funds' ability to force the target firm to be acquired. In this paper, I document a way to identify target firms whose stock prices drift in the future. This return predictability is due to insiders' ability to predict the occurrence of value-enhancing outcomes. And interestingly, I find that the post-announcement insider buys do not predict a higher probability of a merger event, which is arguably the main source of the value creation according to the previous literature. This finding is also interesting to all the shareholders of the target firms as well as the investors who specifically seek for exposure to the outcomes of activism campaigns since it points towards a profitable trading strategy.⁸ Furthermore, this study sheds light on how the agency issue plays a role in these campaigns and, more specifically, in the negotiating process between the hedge funds and the target firm.

The rest of this paper is organized as follows. Section 2 describes the data and the sample. Section 3 examines the insider trading pattern around activism announcements. Section 4 examines whether post-announcement insider trading predicts the price drift of the target firms. In Section 5, I explore what insiders know in activism campaigns. Section 6 discusses whether insiders take advantage of their role in the negotiation to extract more personal profits. Section 7 reports several robustness tests. And Section 8 concludes.

2. DATA AND SAMPLE

The data used in this study are from several sources. I start with the hedge fund activism data that covers all hedge fund activism campaigns in U.S. from 1994 to 2014 kindly provided by Professor Alon Brav. I update these data to include hedge fund activism campaigns in 2015 and

⁸ Interestingly, there is even a mutual fund, named 13D Activist Fund, opened in 2011 to specifically track activism campaign targets.

2016. This dataset covers all hedge fund activism campaigns started with a Schedule 13D filing. According to the SEC's definition, when a person or a group of persons acquire beneficial ownership of more than 5% of a voting class of a firm's equity and intend to influence the management of the firm, they are required to file a Schedule 13D with the SEC within 10 business days. This activism dataset contains the 13D filing date, target name, target identifier, and the name of the hedge fund activist. Open market insider trades are collected from Form 4, which is filed by firm insiders with the SEC. Stock return and accounting data are from CRSP and Compustat, respectively. Data on mergers are from Thomson One Banker. In this study, I construct insider trading measures over short periods, during which there are often a limited number of trades or no insider trades at all. Thus, I use categorical variables to indicate whether there are insider buys or sells in the interval as continuous variables can be very noisy.

I collect the stated goals of these campaigns by reading all the Item 4 sections of the 13D filings. I also hand-collect the campaign outcomes from 8-K filings and from reading news articles in Factiva. Following Becht et al. (2017), I identify the actual campaign outcomes including "Board" (replacement of the CEO, CFO, Chairman, or Nonexecutive directors), "Payout" (share repurchases or increased/special dividends), "Restructure" (divestiture and spin-offs of non-core assets, and the blocking of diversifying acquisitions), and "Takeover" (the target firm is acquired). I construct an indicator "Outcome" that is equal to 1 if at least one of these outcomes is achieved within a year and 0 otherwise.⁹ I also hand-collect the proxy contests initiated by hedge fund activists from the SEC website. I rely on three types of proxy statements filed by hedge fund

⁹ Another way to study the campaign outcomes is through examining whether the campaign achieve its stated goals in the initial Schedule 13D. Becht et al.'s (2017) approach better serves the purpose of this paper because 1) only about one third of the campaigns clearly state their goals of intervention; and 2) the activists may change their goals following the campaign announcements (eg Greenwood and Schor (2009)).

activists when soliciting votes, namely PREC14A, DEFC14A, and DFAN14A.¹⁰ I identify the proxy contest announcement date as the first date one of these forms is filed within one year of the initial activism announcement. The outcomes of the proxy contests are collected from the 8-K filings and news articles in Factiva. I also collect resistance data from the 8-K filings and news articles in Factiva. These resistance events include changes of corporate bylaws and security holders' rights against outside investors and public disclosures of negative opinions about the campaign.

Table 1 reports the number of activism campaigns by calendar year. From 1994 to 2016, the raw activism data include a total of 4277 activism campaigns. There is an increasing trend in the number of activism campaigns over time. Only 9 campaigns occurred in 1994. This number increased to 382 in 2007. Hedge fund activists slowed pace following the recent financial crisis, but the number climbed to 203 by year 2015.¹¹ Some of the target firms' shares are never traded by insiders throughout my sample period. I exclude an activism campaign if there is no open market insider trading throughout my sample period. I also exclude an activism campaign if it is preceded by another activism campaign toward the same firm within one month of the campaign announcement. After these filters, I am left with 3284 activism campaigns. I also report the number of activism campaigns followed by insider trading in the 30 days after the activism announcements. It shows that, in each 30-day interval, only a small portion of the targets are traded by insiders. For example, for the 203 campaign announcements in my sample in 2016, only 41 of them are followed

¹⁰ There are different approaches to identify proxy contests in the literature. Greenwood and Schor (2009) rely on DFAN14A (Additional Definitive Proxy Solicitation Materials Filed by Non-Management). Alexander, Chen, Seppi, and Spatt (2010) use DEFC14A (Definitive Proxy Statement in Connection with Contested Solicitations). Fos and Tsoutsoura (2014) and Fos (2017) use DEFC14A as well as PREC14A (Preliminary Proxy Statement in Connection with Contested Solicitations). I collect all three forms filed by the target firms and define the date of the first filing among them as the proxy announcement date.

¹¹ This pattern coincides with the size of the hedge fund industry. For details, see the research by Barclay Hedge at https://www.barclayhedge.com/research/indices/ghs/mum/Hedge_Fund.html.

by insider buys and only 46 of them are followed by insider sells. I also report the number of activism campaigns ended with a proxy contest. The previous literature argues that hedge fund activists only use proxy contests as a threat since it is very costly for both parties. For example, Gantchev (2012) estimates an average cost of \$10.71 million for a proxy contest. Confirming this argument, Table 1 also shows that only fewer than 10% of the activism campaigns lead to proxy contests. In a later section, I also report that the majority of these proxy contests were settled before the annual shareholder meetings.

3. INSIDER TRADING AROUND CAMPAIGN ANNOUNCEMENTS

Do target insiders trade to capitalize on their superior information? To begin the empirical analysis, I first examine the insider trading pattern around activism announcements. If target insiders have private information and want to profit from it, I expect the campaign announcement to trigger changes in their trading pattern as they may disagree with the market reaction.

To test this hypothesis, I estimate regressions of insider trading variables on event time indicators. The results are reported in Table 2. In column (1), the dependent variable is the Insider Buy indicator that equals 1 if there is at least 1 insider buy trade in the month. The coefficients suggest that the likelihood of insider buying increases significantly following the activism campaign announcement. For example, the probability of insider buying is about 4% higher in the announcement month than in the pre-announcement months. In column (2) where I use $\text{Log}(1 + \text{Insider Buy Shares})$ as the dependent variable, the pattern is similar. Column (5) and (6) use insider sell variables as dependent variables. The results show that insider selling is low around activism announcements in general, but it is relatively higher in the event month. I also use whether the campaign has clearly stated goals as a proxy for the level of information asymmetry associated

with the campaign announcement. Intuitively, insiders would have less information advantage if more information was disclosed to the market. Thus we would expect a smaller increase in insider trading for campaigns with clearly stated goals. Consistent with this prediction, I show in column (3), (4), (7), and (8) that the increase in insider trading is significantly lower for campaigns with clearly stated goals. Overall, these results suggest that insiders increase their trading in response to the campaign announcement to exploit their information advantage.

How do insiders react to the campaign announcement returns? We would expect insiders to trade when the announcement return deviates from their belief. However, the difficulty is that I do not observe insiders' valuation. Therefore, I examine the insider trading patterns of target firms with different announcement returns. To be specific, I sort all target firms into quintile groups by their cumulative abnormal returns (CAR) in the $(-10, 10)$ interval.¹² The group with the highest CAR is named the High Announcement CAR group and the group with the lowest CAR is named the Low Announcement CAR group. I examine insider trading patterns for these groups in the 360-day interval around the announcements using twelve mutually exclusive 30-day intervals. In each 30-day interval, the Insider Buy (Insider Sell) indicator of a firm is equal to 1 if there are non-zero insider buys (sells) and 0 otherwise. I then calculate the insider buy (sell) probability in this interval as the average Insider Buy (Sell) indicator across all firms in each group. To make sure I do not include trades by hedge fund activists, I exclude the insider trades from the 10% owners of the firm unless the insider is also a firm executive. The results are reported in Figure 1. Panels A and B report the probabilities of insider buying and selling, respectively. Panel A shows that the insider buying pattern is significantly different for High Announcement CAR and Low Announcement CAR groups. For the High Announcement CAR group, the probability of insider

¹² I focus on the announcement return in the $(-10, 10)$ window because Brav et al. (2008) show that most of the price changes occur in this window.

buying increases by 3.2% from its pre-announcement level. For the Low Announcement CAR group, however, it drops by 6.7% from its pre-announcement level. The new probability levels remain for a few months and start to converge after about 120 days. Panel B shows that the probability of insider sells does not change for the Low Announcement CAR group but increases to 21.6% immediately following the announcement for the High Announcement CAR group. These patterns suggest that insiders react to the market reactions, consistent with my hypothesis that insiders often disagree with the market on the expected value of the activism campaigns. One may be concerned that it is the market reactions that predict future price drift and that insiders are simply exploiting the systematic mis-reactions. To address this concern, in Section 7.1, I examine whether market reactions predict future price drifts. I do not find evidence supporting this explanation.

4. INSIDER TRADING AND FUTURE PRICE DRIFT

The findings in the previous section suggest that insiders are trying to capitalize on their superior information. In this section, I examine the return predictability of these post announcement insider trades.

I first report the characteristics of target firms in different post-announcement insider trading groups in Table 3. I assign the activism targets to three mutually exclusive groups based on their insider trading activities in the 30-day interval immediately following the campaign announcement. A firm is assigned to the Insider Buy group if at least one insider buy occurred in the 30-day period. A firm is assigned into the Insider Sell group if at least one insider sell but no insider buy occurred in the 30-day period. All other firms are assigned to the No Insider Trade group. Lakonishok and Lee (2001) state, “There can be a variety of reasons for insiders to sell a

stock, but the main reason to buy a stock has to be to make money.” Since insider buys are in general considered more informed, I allow firms in the Insider Buy group to have insider sells. I use this 30-day interval to measure insider trading to avoid using noisy trades that do not reflect insiders’ reactions to announcement returns. According to the mechanism, insiders trade when they disagree with the announcement return, so the informative trades should occur immediately following the campaign announcement. In Section 7.4, I construct portfolios using insider trades in longer intervals, and the results are consistent with this story. The Insider Buy group contains 679 cases, and the Insider Sell group contains 556 cases. I find that several characteristics differ substantially across groups. The mean and median sizes of the Insider Buy firms are \$962.1 billion and \$177.0 billion, respectively, similar to those of No Insider Trade firms. But both the mean and median sizes of Insider Sell firms are considerably larger. Also, the past performance measures of these groups are substantially different. Insider Sell firms have much better past performance than the other two groups.

4.1 Insider Trading and Short-Term Price Drift

The SEC requires insider trades to be publicly disclosed using Form 4. If post-announcement insider trades contain information, I would expect the information to be captured by the market and incorporated into the price as soon as the trades are disclosed. In this subsection, I examine whether these insider trades predict short-term price drift. I first assign firms into different insider trading groups as described above. For each group, I then calculate the average CAR for each group from 20 days before the campaign announcements to 60 days after the campaign announcements.¹³ The result is plotted in Figure 1. Consistent with Brav et al. (2008), it

¹³ Before 2002, insiders are required to make disclosure within 10 days after the close of the calendar month in which the transaction occurred. Starting 2002, insiders are required to disclose their trades within 2 business days of the

shows that announcement returns on average span the period from 10 days before announcements to 10 days after announcements. More importantly, I find that the CAR of Insider Buy groups keeps drifting up after the campaign announcement, while the CAR of the Insider Sell group starts to drift down after about 20 days after the announcement and eventually almost converge with that of the No Insider Trade group. As a result, Insider Buy firms generate about 3% higher abnormal return than firms in other groups in this 80-day interval. Apparently, the market at least recognizes at least some of the information contained in these trades immediately.

4.2 Insider Trading and Long-Term Stock Return

Does the market recognize all the information immediately? If so, we would not expect the stock price to drift in longer windows. In this subsection, I examine whether post-announcement insider trading predicts long-term price drift.

Analyses in this subsection are based on a portfolio approach. Similar to the previous subsection, I divide my activism targets into Insider Buy, Insider Sell, and No Insider Trade groups based on insider trading activities from the announcement day to 30 days after. Since the insider trading measures are constructed in the 30-day interval following activism announcements, I skip the announcement month and the month after to avoid the potential price impacts of the activism announcement and the disclosure of insider trading. That is, I start the return windows the second month after the announcement month and hold the firms for one, three, six, and twelve months, and these strategies are labeled as (+2, +2), (+2, +4), (+2, +7), and (+2, +10), respectively.

actual transactions according to Section 403 of the Sarbanes-Oxley. That is, insider trades occurred in the 30 business days following an activism announcement technically have up to 63 days after the event to disclose with absolute majority of them disclosed in 60 days following the event. Therefore, I examine the price drift up to 60 days after activism announcements.

The results of the portfolio analysis are reported in Table 4. I first report the pooled averages of the monthly raw returns in Panel A, which are straightforward to understand and give the nominal return of these target firms. The second column of this panel shows that the average monthly raw return ranges from 0.58% to 0.89% depending on the holding period for the whole sample, all of which are statistically significant. The third column is for the No Insider Trade group. And the magnitudes of the average returns in this column are comparable to that of the first column. The raw returns of Insider Buy firms are reported in column 4. The average monthly raw return ranges from 1.21% for the (+2, +2) window to 1.52% for the (+2, +7) window, three of which are highly significant except for the (+2, +2) return. These numbers are about twice as large as those of the No Insider Trade firms. Insider Sell firms are in column 5. The average monthly raw return ranges from -0.71% to 0.54%. Only the returns in the (+2, +7) and (+2, +10) are statistically significant at the 10% level. The last column reports the difference between the average raw returns of the Insider Buy group and the Insider Sell group and the pooled t-statistics. The difference for the one-month window is 1.93% per month with a t-statistic of 2.00. For the three-month window, the difference is 1.28% with a t-statistic of 2.21. For the six-month window, the difference is 0.98%, significant at 10% level. The difference for the nine-month window is not statistically significant.

Although the results of the pooled test above are straightforward, one may only draw limited conclusions because of several shortcomings associated with the test: 1) it is necessary to control for the risk profiles of these groups as Insider Buy firms and Insider Sell firms are different in several dimensions as shown in Table 3; 2) the pooled statistics do not provide time-variations; 3) they do not allow different weighting schemes across firms. Therefore, to supplement the pooled results, I follow Brav et al. (2008) and form equal-weighted and value-weighted calendar-time

portfolios and estimate the alphas with respect to Fama-French three factors and Momentum.¹⁴ For example, to construct the calendar-time portfolio for the (+2, +4) strategy, I include a firm in the portfolio in month t if it had activism announcements in the period from month $t-4$ to month $t-2$.

The alphas of the equal-weighted and value-weighted portfolios are reported in Panel B and C of Table 4, respectively. In Panel B, when I include all target firms in the portfolio, the one-month and three-month strategies do not generate significant alpha. The six-month and nine-month strategies have alphas of 0.55% and 0.39% per month, which are statistically significant at the 10% level. For No Insider Trade firms, the alpha ranges from 0.02% to 0.23%, all of which are statistically insignificant. For Insider Buy firms, the one-month strategy generates a monthly alpha of 1.64% with a t-statistic of 1.42. The three-month, six-month, and nine-month strategies generate monthly alphas of 1.34%, 1.24%, and 0.75%, respectively, all of which are significant at the 5% level. For Insider Sell firms, the alpha for the one-month strategy is -1.86% with a t-statistic of -1.97. Other strategies generate negative alphas ranging from -0.08% to -0.60%. But the t-statistics do not show statistical significance. In the last column, I construct a zero-investment strategy where I buy Insider Buy firms and short Insider Sell firms. When one of the groups is empty in a month, I replace it with the T-bills.¹⁵ I find that the alpha ranges from 0.82% to 2.22%, all of which are statistically significant.

In Panel C, I repeat the analysis in Panel B with value-weighted portfolios. Consistent with Brav et al. (2008), I do not find significant alphas from any of the strategies when all the targets

¹⁴ Except for advantages listed above, I choose calendar-time portfolio approach over buy-and-hold abnormal return (BHAR) approach based on control firm matching so that my results are comparable to those in Brav et al. (2008). Moreover, Bessembinder and Zhang (2013) find that their refined BHAR approach generates results more consistent with calendar-time portfolio results.

¹⁵ The one-month strategy results in empty portfolios in a few month at the beginning of the sample period.

are used to construct the portfolio. The result is similar for firms without insider trades. For Insider Buy firms, the one-month and three-month strategies have monthly alphas of 0.67% and 1.10%, respectively, both statistically insignificant. However, the six-month and nine-month strategies generate alphas of 1.02% and 0.80%, respectively, both with t-statistics above 2. Similar to the results in Panel A, Insider Sell firms generate negative alphas, but only the one-month alpha is marginally significant. The zero-investment portfolio generates alphas of 1.67%, 1.46%, and 1.15% for the three-month, six-month, and nine-month strategies, respectively, all statistically significant.

In general, the results in this subsection show that the post-announcement return predictability of insider trading is robust both in the pooled sample and in the time-series. The return predictability in these longer windows suggests that market clearly underreacts to the post-announcement insider buys.

4.3 Insider Trading and Information Asymmetry

The literature has established that insider trading is informative on average. So is the return predictability documented in the previous subsection really due to superior information about the campaign? To answer this question, I examine whether these post-announcement insider trades have stronger return predictability than insider trades in other periods. I estimate the following regression using all public firms with insider trading data:

$$\begin{aligned} Monthly\ Ret_{i,t} = & \beta_0 + \beta_1 * Activism_{i,t} + \beta_2 * Buy_{i,t} + \beta_3 * Sell_{i,t} + \beta_4 * \\ & Activism_Buy_{Post\ i,t} + \beta_5 * Activism_Sell_{Post\ i,t} + \beta_6 * Controls_{i,t} + \mu_t + \gamma_{ind} + \varepsilon_{i,t}. \end{aligned} \quad (1)$$

where $Monthly\ Ret_{i,t}$ is the monthly return of firm i in month t . For month t , I construct the $Activism_{i,t}$ variable as an indicator that equals 1 if there is an activism announcement for firm i between month $t-10$ and $t-2$. $Buy_{i,t}$ ($Sell_{i,t}$) is an indicator that equals 1 if there are insider buys

(sells) between month $t-9$ and $t-1$ and 0 otherwise. The main variables of interest are the indicators that identify a group of observations that are preceded by campaign announcements between month $t-10$ and $t-2$ with insider trades in the month after the announcement month, namely $Activism_Buy_{Post\ i,t}$ and $Activism_Sell_{Post\ i,t}$. Firm level control variables include Past Year Return, Past Month Return, $\text{Log}(\text{Size})$, $\text{Log}(\text{B/M})$, and an indicator that equals 1 if the B/M ratio is negative and 0 otherwise. I also include a month fixed effect μ_t and an industry fixed effect γ_{ind} to control for the time- and industry-specific characteristics, respectively. Standard errors are clustered at the firm level.

The results are reported in Table 5. To set up the benchmark, I include only an Activism indicator in column (1) and only insider trading indicators in column (2). Column (3) includes all the variables. Column (1) shows that campaign announcements are not followed by significantly different stock performance on average. Insider Buy (Sell) predicts higher (lower) stock returns in both column (2) and (3). The variables of my interest are $Activism_Buy_{Post}$ and $Activism_Sell_{Post}$. In column (3), I find that the coefficient on $Activism_Buy_{Post}$ is positive and statistically significant with a large magnitude of 1.0149. This coefficient suggests that insider buys in the month after the campaign announcement month predict 1.01% higher monthly return than other insider buys. This higher return predictability of post-announcement insider buys indicates that insiders have more valuable information in this specific period than in other times. Moving to $Activism_Sell_{Post}$, the coefficient is small in magnitude and statistically insignificant.

To further confirm that the private information is relevant to the campaign, I explore the heterogeneity across different campaign announcements. To be specific, I hypothesize that the post-announcement insider trades have stronger return predictability when the campaign does not clearly state its goals. I modify regressions in Table 5 to include indicators of campaign

announcements with clearly stated goals. The results are reported in Table 6. Column (1) includes the industry fixed effect. $\text{Clear_Goals_Buy}_{\text{post}}$ has a negative and large coefficient. The t statistic is only -1.43 likely due to the small number of observations indicated by this variable. $\text{Clear_Goals_Sell}_{\text{post}}$ carries a positive but insignificant coefficient. Although these variables are not statistically significant, including $\text{Clear_Goals_Buy}_{\text{post}}$ in the regression leaves $\text{Activism_Buy}_{\text{Post}}$ with only campaigns without clearly stated goals. And I find that the magnitude of the variable is larger than those in column (3) of Table 5. In column (2), I control for firm fixed effect and the results are similar.

Overall, the results from this subsection suggest that post-announcement insider buys predict significantly higher future returns than other insider buys. Insiders are apparently trading on some information specifically about the campaign.

5. WHAT DO INSIDERS KNOW?

Naturally, the next question one may ask is: what do insiders know? While it is always empirically challenging to determine what kind of information insiders are capitalizing on, the setting of this paper provides an opportunity to study whether target insiders have information about outcomes of a campaign.

Becht et al. (2017) find that the successful outcomes of the activism campaigns, including board or management turnover (Board), increased payout (Payout), corporate restructuring (Restructure), and being acquired (Takeover), significantly contribute to the post-announcement stock returns of the target firms. So do post-announcement insider trades predict the likelihood of a successful outcome of the campaign? And do they predict the value of the outcome? To answer these questions, I hand-collect campaign outcomes for all the activism campaigns in my sample.

As discussed in Section II, the campaign outcomes are categorized as Board, Payout, Restructure, and Takeover.

Activism campaign announcements are associated with positive announcement returns. An announcement return reflects the value of the expected campaign outcome adjusted for the probability of successfully achieving the outcome eventually. That said, we would expect the market to adjust the stock price downwards for firms that do not achieve a successful outcome eventually. For campaigns with successful ex post outcomes, we would expect the market to adjust the price upward as the probability of such outcome just increased to 100%. I separate the target firms based on their ex post campaign outcomes and plot their stock performance in Figure 3. All the outcomes except for the firm becoming an acquisition target are shown in Panel A of this figure. As we expect, target firms without a successful campaign outcome ex post experience negative abnormal returns following the campaign announcement. Their stock price picks about 20 days following the announcement and drifts downwards thereafter. In the next 200 business days, this group of firms have a CAR of -3.40%. Firms with board or management turnovers do not experience significant post-announcement abnormal returns. But firms with increases in payout and corporate restructurings experience very abnormal returns. Firms who increase their payout have a CAR of 7.67% after the campaign announcement. And firms with corporate restructurings generate a post-announcement CAR of 9.77%. Panel B of this figure shows the CAR of firms that are eventually acquired by another firm. Not surprisingly, this group of firms have extremely high returns following the campaign announcement.

To test whether insiders have information about the probability of successful campaign outcome, I estimate OLS regressions of outcome indicators on insider trading indicators. I construct a dummy variable for each category of outcomes that is equal to 1 if such an outcome is

achieved within a year of the campaign announcement and 0 otherwise. I also construct an indicator, Outcome, to indicate whether at least one of these outcomes is achieved. Buy_{Post} is an indicator that equals 1 if there are insider buys in the 30-day window immediately following the activism announcement. Sell_{Post} is an indicator that equals 1 if there are insider sells in the 30-day window immediately following the activism announcement. Firm level control variables include Past Year Return, Log(Size), Log(B/M), Book Leverage, and Dividend Yield. The results are reported in Table 7 Panel A. In column (1) where the dependent variable is Outcome, the coefficient on Buy_{Post} is 0.1397 with a t-statistic of 6.68, suggesting that target firms with post-announcement insider buys have about a 14% higher probability of achieving at least one successful outcome than No Insider Trade firms. Sell_{Post} indicator has a negative but statistically insignificant coefficient. In column (2) to (5), campaign outcomes are broken down to four categories. The insider buy coefficient is positive and highly significant in column (2) to (4), while insider sell coefficient is indistinguishable from 0. Column (2) suggests that these insider buys predict a 15% higher probability of a replacement of the CEO, CFO, Chairman, or Nonexecutive directors. Column (3) suggests that these insider buys predict a 5.6% higher probability of share buybacks or increased/special dividends. Column (4) suggests that these insider buys predict a 6% higher probability of divestitures or spin-offs of non-core assets, or blocking of diversifying acquisitions. In column (5), both insider buys and insider sells carry negative coefficients, suggesting that the target firm is more likely to be acquired ex post when insiders are silent following the campaign announcement. This result is not surprising given the substantial litigation risk of front running such profitable events. In fact, these negative coefficients echo Agrawal and Nasser (2012) who find that insiders decrease their buying activities prior to M&A announcements to avoid litigation risk. But they decrease their selling activities even more so that they are not

worse off on average. So, in a different way, these insiders are predicting the likelihood of the firm being acquired as an outcome as well.

If these insider trades contained information about value of the potential outcome, the market reaction to the outcome would be higher for Insider Buy firms than for Insider Sell firms. Market reactions to the announcements of these outcomes are reported in Table 7 Panel B. Not surprisingly, the CAR in the (-10, +10) window is positive for all four outcomes, all of which are statistically significant except the Board outcome. Furthermore, I examine the outcome CARs for different insider trading groups formed the same way as in Table 4. Insider Buy firms have CARs of 6.62%, 3.68%, 6.43%, and 27.34% for the Board, Payout, Restructure, and Takeover outcomes, respectively, while the CARs for Insider Sell firms are -0.85%, 0.91%, -0.07%, and 15.67%, respectively. The differences are positive and significant for all the outcomes except the Board outcome. This result indicates that insider buys not only predict the likelihood of achieving these outcomes but also predict to what extent these outcomes benefit the firm.

Overall, results in this section provide clear evidence that target insiders have and trade on information about future campaign outcomes. This explains at least part of the return predictability documented above.

6. INSIDER TRADING AND CAMPAIGN RESISTANCE

This section examines the third hypothesis of this study: insiders take advantage of their role in the negotiation to extract more personal wealth. A campaign announcement is also the start of a negotiation between the hedge funds and the firm, which affects the campaign outcomes and the value creation of the campaign. Target insiders, who are decision makers of the firm, have both the incentive and the ability to influence the negotiation to extract more personal wealth.

Boyson and Pitchler (2018) find that campaign resistance announcements are associated with negative market reactions. They identify campaign resistance including provisions of Entrenchment index ((Bebchuk, Cohen, and Ferrell (2009)), lawsuits and bylaw changes limiting shareholder ability to call special meetings or act by written consent, overly rejecting hedge fund advances, appointing non-hedge fund directors when hedge funds are lobbying for board seats, and etc. In this paper, I manually collect a subset of these events that are seemingly more directly against the hedge funds' intervention, including limits to shareholder bylaw amendments, bylaw changes limiting shareholder ability to call special meetings or act by written consent, and disclosures of overly rejecting hedge fund advances. This process results in 200 resistance events, 78 of which occur within 60 business days of the activism campaign announcement. Figure 2 plots the probability of resistance in 12 30-day windows following the campaign announcement. Apparently, most of the resistance events occur within the first few months. To confirm that resistance is associated with negative market reactions, I report the CAR in several different windows in Panel A of Table 8. As shown, resistance events within 30 days of the campaign announcement are associated with negative and significant CARs. The $(-1, +1)$ CAR is about 1% in magnitude.

When the firm is seriously resisting the campaign, we would expect the firm to have lower returns in the future after the campaign announcement since it has a lower probability of achieving successful campaign outcomes. I separate the target firms based on whether there is a resistance announcement within the first 60 days of the campaign announcement. Figure 3 reports the CARs of the resisting and non-resisting firms. The result suggests that the resisting firms have negative return in the first 60 days likely because of the resistance announcements. But in a longer window,

the resisting firms have much higher CAR than non-resisting firms. This result puts a question mark on the real purpose of these resistance announcements.

Do insiders profit from trading around the resistance announcement? If the resistance announcement results nothing but a longer window and a better price for insiders to conduct their informative trades, we would expect insiders to trade around it. I examine this conjecture using regressions similar to those in Table 2 where I include firm control variables as well as indicators of months around activism campaign announcements. This is to make sure that post-resistance indicators are not capturing changes caused by campaign announcements. The results are reported in Table 8 Panel B. As shown in the first two columns, insider buying is significantly higher in the month before and after the resistance month. In the last two columns, both Resistance + 1 and Resistance + 2 carry negative and significant coefficient in the last two columns. These results suggest that insiders indeed buy more and sell less around the resistance. One might argue that insiders buy shares to better resist the campaign. But I find it not likely as the number shares they buy is usually too small to be able to influence the negotiation given that the hedge funds own at least 5% of the firm. These results seem to suggest that insiders are using resistance and trading interactively to extract more personal wealth.

7. ROBUSTNESS TESTS

In this subsections 7.1 to 7.3, I test some alternative explanations to the return predictability of post-announcement insider trades. And subsections 7.4 and 7.5 address some other concerns one might have from the previous sections.

7.1 Is the Information from Outside Insiders?

According to the SEC's definition, insiders mainly include firm executives, directors, and blockholders who own more than 10% of the firm. There are two interesting observations from the data. First, a hedge fund activist is sometimes the blockholder of the firm before filing a 13D, or it sometimes becomes a blockholder following the 13D filing. Second, some of the directors of the target firm are representatives of institutional investors. Given these two observations, it is possible that the superior information is possessed only by insiders who are closely related to institutional investors including the hedge fund activists.¹⁶ That is, the return predictability might be simply driven by the campaign specific information possessed by "outside insiders" about the specific plans of the hedge fund activists. For example, activist-affiliated directors or the hedge fund activist itself might profit from trading before more plans are disclosed to the market. To examine whether the previous results are only driven by "outside insiders," I re-estimate the regressions in Table 5 by excluding insider trades by 10% owners and outside directors. Table 9 reports the results. The coefficient on `Activism_BuyPost` is still positive and significant. In terms of the magnitude, the coefficient is 1.3567 compared to 1.0149 in Table 5. Thus this result mitigates the concern that the return predictability is driven by trades of "outside insiders." And it seems to suggest that the superior information is likely from the firm executives.

7.2 Market Reaction and Long-Term Performance

One may be concerned that the post-announcement insider trading is completely driven by the magnitude of market reaction and thus contains no additional information about the target firm

¹⁶ Wong (2016), Foroughli (2017) and Brav, Dasgupta, and Mathews (2018) show that an important technique used by hedge fund activists is forming "wolf packs" with other institutional investors before the activism announcements. This behavior is criticized by regulators. See, for example, Bloomberg, March 18, 2016, "Hedge Fund 'Wolf Pack'".

and the activism campaign. That is, high market reactions are on average overreactions, and low market reactions are on average underreactions, and insiders are simply observing this pattern and capitalizing on this observation.

To mitigate this concern, I examine post-announcement stock returns of target firms with different market reactions. I assign all activism targets into equally sized quintile groups based on their ex post announcement CARs.¹⁷ Targets with the lowest CARs are assigned to the Low CAR group. Targets with the highest CARs are assigned to the High CAR group. I report the average monthly returns of the one-, three-, six-, and nine-month strategies discussed in Section IV.B. The results are reported in Table 10. Panel A and B report the equal weighted and value weighted alphas of the time series regressions of calendar-time portfolio monthly returns from the four factors, respectively. In both panels, CAR does not predict future stock returns. The negative and insignificant Low - High alphas suggest that a high CAR does not necessarily suggest an overreaction and vice versa. That is, market reactions to activism announcements are simply noisy, and insiders trade when the market reaction deviates from what they think is reasonable.

7.3 Insider Trading and Proxy Contests

I also identify and test an alternative explanation of the return predictability documented above. Although insider buys are often considered information-driven, there could be exceptions. Insiders are also decision-makers of the target firm, and they are involved in deciding the level of collaboration of the firm. If the target firm and the insiders choose not to resist the hedge fund activists, they may want to accumulate shares in preparation for the potential proxy contest threats.

¹⁷ I do not form portfolios every year. When there are only limited number of targets, the high (low) CAR in that year may not be high (low) in the context of the whole sample period. Also, a pooled sort is adequate as the goal of this test is not testing a trading strategy.

Moreover, Fos (2017) finds that firms on average experience positive market reaction around proxy contest announcements. Therefore, it is possible that the higher stock returns and insider buys are both driven by the hostile relationship between the target firm and the hedge fund activist.

I take two steps to test this explanation. First, I examine the market reactions to proxy contest announcements and announcements of proxy contest outcomes. Second, I examine the probability of proxy contest and that of proxy contest outcomes conditional on insider trading. The results are shown in Table 11. Consistent with Fos (2017), Panel A shows that proxy contest announcements are on average associated with positive market reactions. The magnitude of the market reaction in the $(-10, +10)$ window is 4.15%. I also show that the market reacts negatively if the target firm wins. The market reactions are positive but statistically insignificant for hedge fund activists' victories and settlement agreements between two parties. If the target is acquired, the announcement CARs in all three windows are larger than 20% and statistically significant. Overall, Panel A shows that there are indeed certain events where target firms experience higher returns. Then I examine whether insider trading predicts higher probabilities of these events. In Panel B, I report the probabilities of a proxy contest and the proxy contest outcomes for each insider trading group. It shows that the Insider Buy targets have a probability of 7.81% to end up in a proxy contest, while the Insider Sell targets have a probability of 6.12% to end up in a proxy contest. Next, conditional on an outcome being observed, the Insider Buy and Insider Sell targets are equally likely to end the proxy contest with the target's victory or with the target being acquired. Not surprisingly, hedge fund activists are less likely to win and are more likely to reach a settlement agreement with the target if insiders buy shares following the announcement.

These results in Table 11 suggest that the market reactions to proxy contests and proxy contest outcomes are small in magnitude unless the target is acquired. Moreover, Insider Buy firms

do not have a significantly higher probability of getting into a proxy contest or being acquired. These two findings together provide evidence against the argument that the level of collaboration between activists and targets drives both insider buys and future stock returns.

7.4 Post-Announcement Insider Trades in Longer Intervals

When forming portfolios based on the post-announcement insider trading, I use insider trades in the 30-day interval immediately following the campaign announcement. This is because using longer intervals would include more insider trades that are not motivated by target insiders' disagreement with the campaign announcement return. To further confirm this argument, I repeat Panel B and C of Table 4 by constructing the portfolios using insider trades in longer intervals. In Panel A and B of Table 12, I assign firms into mutually exclusive groups based on insider trades in the 45-day interval following the campaign announcement. In Panel A where equal weights are used, the Buy minus Sell portfolios generate alphas of 2.58%, 1.85%, 1.29%, and 0.90%, respectively, for the 1-month, 3-month, 6-month, and 9-month strategies. Both the 3-month and 6-month strategies have lower returns than in Table 4. Furthermore, in Panel B where value weights are used, Buy minus Sell portfolios generate much lower returns than in Table 4. And except for the 1-month strategy, none of the strategies generates statistically significant alphas. In Panel C and D, I construct the portfolios using insider trades in the 60-day interval following the campaign announcement. Buy minus Sell portfolios generate even lower alphas than those in Panel A and B above. These results are consistent with the story that the informative insider trades are motivated by target insiders' disagreement with the campaign announcement return. And these trades occur immediately following the campaign announcement.

7.5 Campaign Outcomes or Regular Corporate Events

In Section 5, I document that post-announcement insider trades predict the probabilities and the value of successful campaign outcomes including board or management turnovers, increase in payout, corporate restructuring, and the firm being acquired in the future. Becht et al (2017) identify these events as campaign outcomes based on the internal classification of one of the largest hedge funds in their sample. However, it is still possible that the insider trades are just predicting these corporate events with and without an activism campaign. To mitigate this concern, I use a placebo test to show that post-announcement insider trades have predictive power of these future events because of the activism campaign.

To be more specific, I re-estimate Table 7 using insider trades in the 30-day interval immediately prior to the campaign announcement instead. If insider trades had predictive power of these corporate events in general, we would expect the similar results as in Table 7. The new results are reported in Table 13. Panel A of Table 13 shows whether these pre-announcement insider trades predict the probabilities of the campaign outcomes. Buy_{Post} indicator has positive and significant coefficient only in column 2 where the dependent variable is the indicator of board or management turnovers, but the magnitude of this coefficient is much smaller than in Table 7. Similar to Table 7, both insider buying and selling predict a lower probability of the firm being acquired in the future, suggesting that the insiders foresee the merger announcement before the campaign announcement. But the pre-announcement insider buying does not predict the probability of increases in payout and corporate restructurings. Panel B of Table 13 reports the market reactions to these campaign outcomes. Except for Takeover, Insider Buy firms do not have higher market reactions to these campaign outcomes than Insider Sell firms. These results suggest that insider trades do not have predictive power of these corporate events in general. The post-announcement insider trades predict these outcomes because these trades are triggered by target

insiders' disagreement with the campaign announcement return, which reflects the value of these outcomes adjusted for the probability of achieving them.

8. CONCLUSION

In this paper, I use a large sample of hedge fund activism campaigns between 1994 and 2016 to provide some insights about how insiders behave when information asymmetry increases. Hedge fund activism campaign announcements trigger a substantial increase in information asymmetry between target firm insiders and outside investors. I find that insiders increase their trading activities immediately in response to the campaign announcement to exploit their increased information advantage. These post-announcement insider trades predict the future stock returns. The return predictability the post-announcement insider buys in the relatively longer window suggests that the market underreacts to these insider buys, which also points towards a potentially profitable trading strategy. Results that this return predictability derives at least partly from the ability of these insider trades to predict both the likelihood and the value of successful campaign outcomes in the future, which reveals the information the insiders are trading on following the campaign announcement.

A campaign announcement is also the start of a negotiation between the hedge funds and the target firm where insiders play an important role. I find that resisting firms generate higher returns than non-resisting firms, which questions the real purpose of these resistance announcements. One may argue that the resistance helps the campaign achieve better campaign outcomes. But this explanation is not consistent with the documented negative market reaction to the resistance announcement. This study does not provide clear evidence that insiders are

manipulating the resistance, but there is evidence that insiders make personal profits by trading around these resistance announcements.

Panel A. Probability of Insider Buy

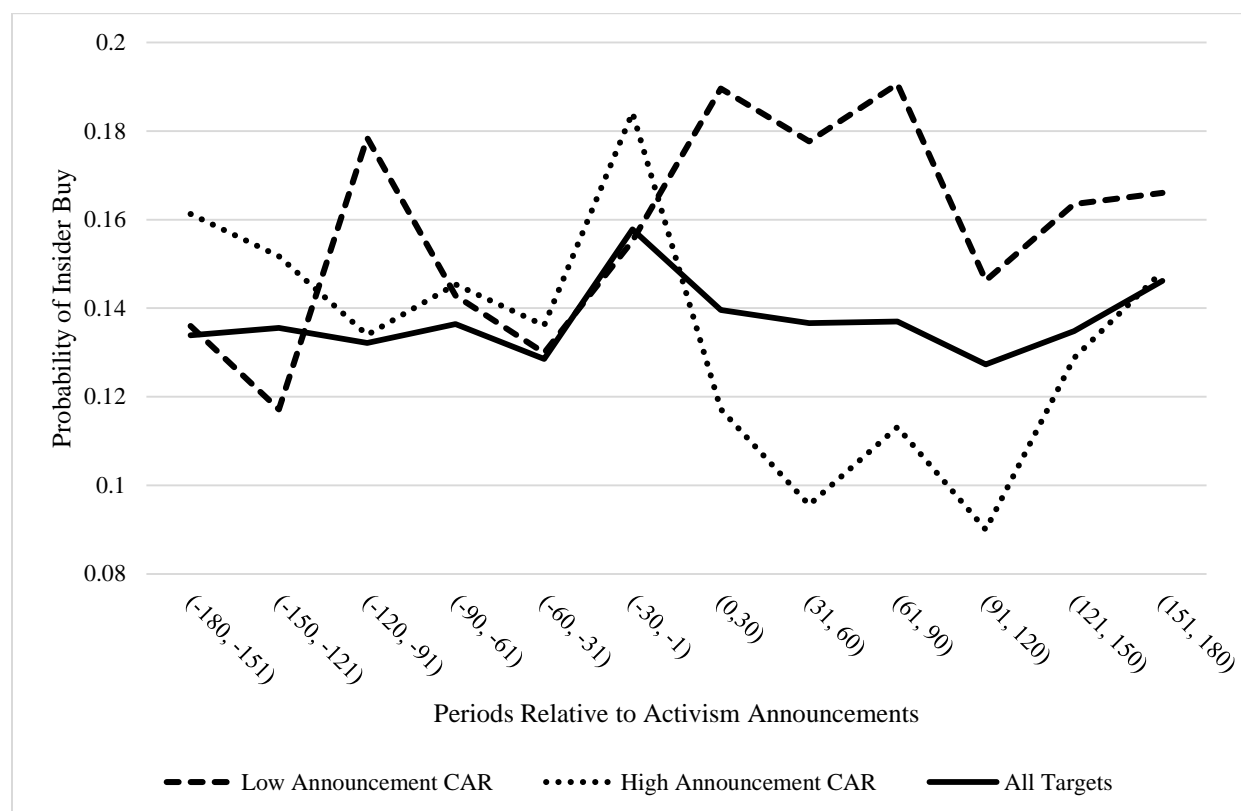


Figure 1. Insider Trading around Activism Announcements

This figure plots the insider trading pattern in the 360 day window around the activism announcements. I sort all firms by their (-10, 10) cumulative abnormal returns (CAR) into quintile groups and examine the insider trading of firms in the highest and lowest groups. CAR is the cumulative firm raw return in excess of the cumulative market return in the same window. In each 30 day window, the probability of insider buying (selling) is calculated as the average insider buy (insider sell) indicator across all firms in each portfolio. Panel A reports the probability of having insider buy transactions in each window. Panel B reports the probability of having insider sell transactions in each window.

Figure 1 continued

Panel B. Probability of Insider Sell

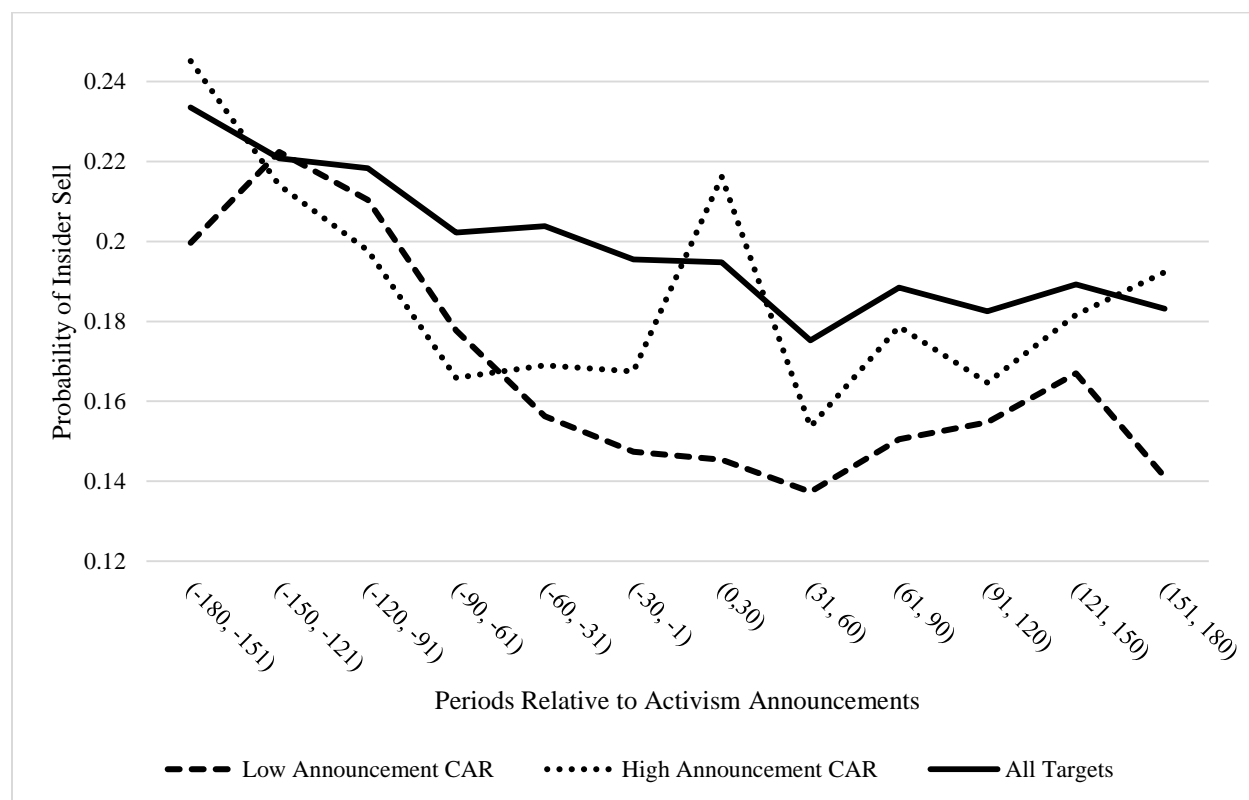
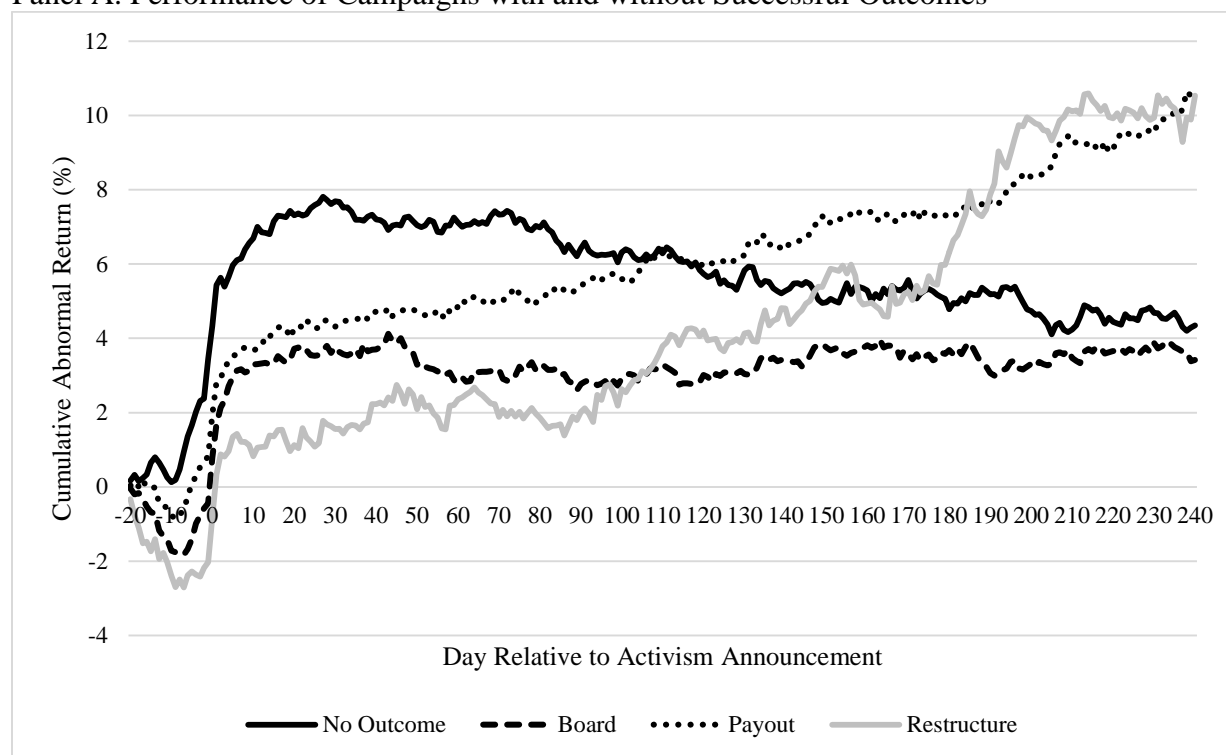




Figure 2. Short-Term Stock Performance of Activism Targets

This figure shows the short-term cumulative abnormal returns (CARs) of No Insider Trade, Insider Buy, and Insider Sell targets. An activism target is assigned into the Insider Buy group if it has insider buy transactions in the 30 day window after the activism announcement. An activism target is assigned into Insider Sell group if it has only insider sell transactions in the 30 day window after the activism announcement. Other firms fall into No Insider Trade group. CAR is the cumulative firm raw return in excess of the cumulative market return in the same window.

Panel A. Performance of Campaigns with and without Successful Outcomes



Panel B. Performance of Campaigns Being Acquired

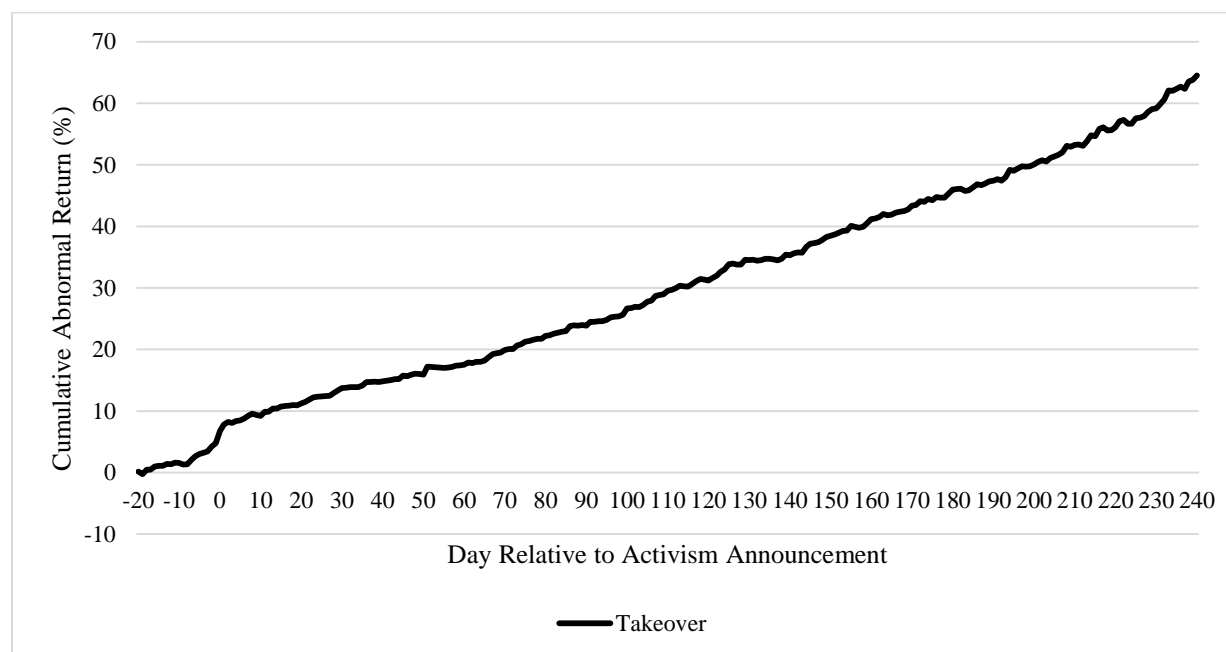


Figure 3. Campaign Outcomes and Stock Performance

This figure shows the cumulative abnormal returns (CARs) of target firms with and without successful campaign outcomes. CAR is the cumulative firm raw return in excess of the cumulative market return in the same window.

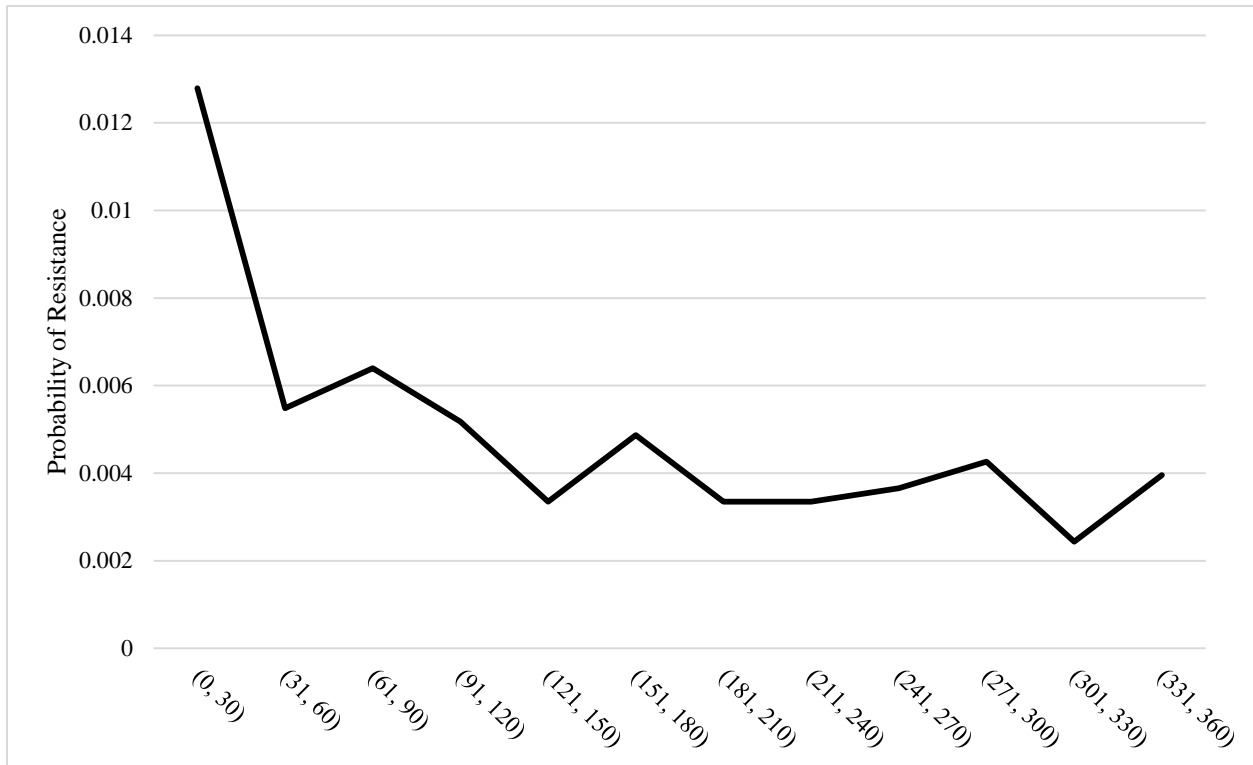


Figure 4. Target Firm Resistance around Activism Announcements

This figure plots the insider trading pattern in the 360 day window following the activism announcements. In each 30 day window, the probability of resistance is calculated as the average resistance indicator across all firms.



Figure 5. Stock Performance of Resisting and Non-Resisting Firms

This figure shows the cumulative abnormal returns (CARs) of target firms with and without resistance in the 60 days immediately following the activism announcement. CAR is the cumulative firm raw return in excess of the cumulative market return in the same window.

Table 1. Number of Activism Campaigns

This table reports the number of activism announcements (events) over calendar years. The second column shows the number of events identified through the 13D filings; the third column shows the number of events included in my sample after merging with insider trading data; the fourth and fifth columns show the number of events followed by insider buys and sells in the 30 day window after the events, respectively; the sixth column shows the number events that are led to proxy contests within a year.

Year	Number of campaigns	Number of campaigns in my sample	Number of campaigns followed by insider buys	Number of campaigns followed by insider sells	Number of campaigns leading to proxy contest
1994	9	6	3	1	1
1995	32	25	3	8	1
1996	97	68	13	16	2
1997	201	127	25	31	4
1998	153	117	40	20	7
1999	111	81	23	14	5
2000	114	83	16	19	6
2001	89	74	24	13	2
2002	139	94	23	23	14
2003	124	94	16	19	6
2004	150	120	14	29	24
2005	240	201	33	53	23
2006	325	245	42	60	31
2007	382	310	62	67	31
2008	310	251	67	40	34
2009	156	118	30	15	11
2010	185	150	16	28	13
2011	188	156	30	36	20
2012	199	163	40	31	17
2013	213	167	31	54	28
2014	219	186	37	49	23
2015	341	245	50	60	27
2016	300	203	41	46	15
Total	4277	3284	679	732	345

Table 2. Insider Trading among Target Firms

This table reports the results of panel regressions of insider trading variables on indicators months around activism announcements. The sample includes all target firms. Insider Buy (Sell) is an indicator that equals 1 if there are insider buys (sells) in the month t and 0 otherwise. $\text{Log}(1+\text{Insider Buy Shares})$ is the natural log of 1 plus the number of shares bought by insiders. $\text{Log}(1+\text{Insider Sell Shares})$ is the natural log of 1 plus the number of shares sold by insiders. Announcement indicators equal 1 if month t is an activism announcement month and 0 otherwise. Stated Goals indicators equal 1 if the activism announcement has clearly stated goals and 0 otherwise. Other control variables are defined in the Appendix. Standard errors are clustered at the firm level. t -statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

VARIABLES	(1) Insider Buy	(2) Log(1+Insider Buy Shares)	(3) Insider Buy	(4) Log(1+Insider Buy Shares)	(5) Insider Sell	(6) Log(1+Insider Sell Shares)	(7) Insider Sell	(8) Log(1+Insider Sell Shares)
Announcement - 2	-0.0020 (-0.44)	-0.0026 (-0.05)	0.0021 (0.20)	0.0401 (0.55)	-0.0240*** (-2.98)	-0.2840*** (-3.48)	-0.0185** (-2.00)	-0.2466*** (-2.66)
Announcement - 1	0.0052 (0.66)	0.106 (1.57)	0.0051 (0.54)	0.1284 (1.49)	-0.0346*** (-4.87)	-0.3452*** (-4.59)	-0.0340*** (-3.70)	-0.3220*** (-3.51)
Announcement	0.0410*** (5.57)	0.5486*** (7.23)	0.0563*** (5.91)	0.6820*** (7.09)	-0.0173** (-2.28)	-0.1362* (-1.73)	-0.0044 (-0.57)	-0.0135 (-0.24)
Announcement + 1	0.0279*** (3.64)	0.4002*** (5.33)	0.0344*** (3.63)	0.4456*** (4.76)	-0.0255*** (-3.19)	-0.2704*** (-3.35)	-0.0132 (-1.40)	-0.1537 (-1.62)
Announcement + 2	0.0255*** (3.41)	0.3071*** (4.18)	0.0270*** (2.80)	0.3067*** (3.18)	-0.0383*** (-5.36)	-0.3971*** (-5.48)	-0.0368*** (-4.22)	-0.3865*** (-4.36)
Stated Goals - 2			-0.0120 (-0.94)	-0.1243 (-1.01)			-0.0160 (-0.94)	-0.1090 (-0.62)
Stated Goals - 1			0.0004 (0.01)	-0.0653 (-0.47)			-0.0017 (-0.01)	-0.0659 (-0.30)
Stated Goals			-0.0455*** (-3.06)	-0.3990** (-2.54)			-0.0381** (-2.34)	-0.3634** (-2.12)
Stated Goals + 1			-0.0195 (-1.37)	-0.1351 (-0.88)			-0.0369** (-2.42)	-0.3483** (-2.26)
Stated Goals + 2			-0.0044 (-0.27)	0.0038 (0.03)			-0.0044 (-0.27)	-0.0322 (-0.19)
Constant	0.0029** (2.54)	-0.0289*** (-2.86)	0.0030** (2.57)	0.0285*** (2.79)	0.0105*** (6.42)	0.0167 (1.18)	-0.0105*** (-6.42)	0.0172 (1.21)
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	265,709	265,709	265,709	265,709	265,709	265,709	265,709	265,709
R-squared	0.025	0.028	0.025	0.028	0.050	0.190	0.050	0.055
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cluster	Firm & Month	Firm & Month	Firm & Month	Firm & Month	Firm & Month	Firm & Month	Firm & Month	Firm & Month

Table 3. Characteristics of Activism Targets with Different Insider Trading

This table reports the mean and median of target firm characteristics. Size is the market capitalization in million. B/M is the B/M ratio. Past Year Return is cumulative return of the 11 months before the event month with 1 month lag. Past Month Return is return of the month before the event month. ROA is calculated as EBITDA divided by firm size. Book Leverage is calculated as total debt divided by sum of total debt and market capitalization where total debt is the sum of current debt and long-term debt. Dividend Yield is calculated as total dividend divided by the sum of market capitalization and book value of preferred stocks. CapEx/Net PPE is calculated as capital expenditure divided by total net property, plant, and equipment. R&D/Assets is calculated as R&D expenditure divided by total assets. I assign activism targets into three mutually exclusive portfolios based on insider trading in the 30 day window before and after the announcement. Targets with no insider trading activities are assigned into No Insider Trade group. Targets with insider buys are assigned into Insider Buy group. Targets with only insider sells are assigned into Insider Sell group.

	No Insider Trade		Insider Buy		Insider Sell	
Number of Events	2049		679		556	
	Mean	Median	Mean	Median	Mean	Median
Size (in million)	1009.3	181.4	962.1	177.0	1935.9	420.8
B/M	0.8485	0.6636	0.7787	0.6289	0.6566	0.5261
Past Year Return (%)	-4.0662	-9.8325	-3.3917	-11.9094	10.5371	-0.5858
Past Month Return (%)	-0.6913	-0.9278	-2.3124	-1.3188	0.8058	-0.2140
ROA	0.0424	0.0768	0.0448	0.0746	0.0892	0.1129
Book Leverage	0.2515	0.1732	0.2585	0.1825	0.2221	0.1375
Dividend Yield	0.0118	0.0000	0.0093	0.0000	0.0099	0.0000
CapEx/Net PPE	0.3533	0.2199	0.5214	0.2370	0.4080	0.2313
R&D/Assets	0.0548	0.0000	0.0553	0.0000	0.0538	0.0000
Announcement CAR (-10, 10) (%)	4.1210	2.4352	6.1845	2.4516	6.1899	5.2805

Table 4. Long-Term Stock Performance of Activism Targets

This table reports the long-term stock return of activism targets. I assign activism targets into three mutually exclusive portfolios based on insider trading activities in the 30 day window following the announcement. Targets with no insider trading activities are assigned into No Insider Trade group. Targets with insider buys are assigned into Insider Buy group. Targets with only insider sells are assigned into Insider Sell group. I report the average monthly returns of four strategies. In the 1-month strategy, the target is held for the second month after the event month. In the three-, six-, and nine-month strategies, the target is held for three, six, and nine months, respectively, starting the second month after the event month. Panel A reports the pooled averages of raw returns. I calculate the average monthly raw returns for each target and then average across all targets in each group to obtain the average monthly raw return of the group. Panel B and C report the equal weighted and value weighted alphas of the time series regressions of calendar-time portfolio monthly excess returns on Fama-French three factors and Momentum, respectively. t-statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Panel A. Pooled Averages of Monthly Raw Returns

	All Sample	No Insider Trade	Insider Buy	Insider Sell	Buy - Sell
(+2, +2)	0.58%*	0.73%*	1.21%	-0.71%	1.93%**
t-stat	(1.92)	(1.89)	(1.63)	(-1.16)	(2.00)
(+2, +4)	0.67%***	0.63%***	1.32%***	0.04%	1.28%**
t-stat	(3.70)	(2.68)	(3.18)	(0.11)	(2.21)
(+2, +7)	0.86%***	0.72%***	1.52%***	0.54%*	0.98%*
t-stat	(5.22)	(3.80)	(3.13)	(1.77)	(1.70)
(+2, +10)	0.89%***	0.88%***	1.26%***	0.51%*	0.76%
t-stat	(6.36)	(5.07)	(3.41)	(1.83)	(1.63)

Panel B. Equally Weighted Four-Factor Model Alphas

	All Sample	No Insider Trade	Insider Buy	Insider Sell	Buy - Sell
(+2, +2)	-0.13%	0.11%	1.14%	-1.86%***	2.22%*
t-stat	(-0.30)	(0.25)	(1.42)	(-1.97)	(1.95)
(+2, +4)	0.26%	0.02%	1.34%**	-0.60%	1.96%**
t-stat	(0.90)	(0.07)	(2.26)	(-1.03)	(2.52)
(+2, +7)	0.40%*	0.09%	1.24%***	-0.16%	1.38%**
t-stat	(1.85)	(0.40)	(2.78)	(-0.38)	(2.41)
(+2, +10)	0.30%*	0.23%	0.75%**	-0.08%	0.82%*
t-stat	(1.73)	(1.11)	(2.14)	(-0.25)	(1.78)

Panel C. Value Weighted Four-Factor Model Alphas

	All Sample	No Insider Trade	Insider Buy	Insider Sell	Buy - Sell
(+2, +2)	-0.12%	0.29%	0.67%	-1.59%*	1.64%
t-stat	(-0.27)	(0.52)	(0.77)	(-1.68)	(1.36)
(+2, +4)	0.10%	-0.27%	1.10%	-0.55%	1.67%*
t-stat	(0.30)	(-0.72)	(1.58)	(-0.89)	(1.94)
(+2, +7)	0.18%	-0.05%	1.02%**	-0.45%	1.46%**
t-stat	(0.75)	(-0.16)	(2.23)	(-0.98)	(2.38)
(+2, +10)	0.13%	-0.07%	0.80%**	-0.37%	1.15%**
t-stat	(0.63)	(-0.24)	(2.13)	(-0.96)	(2.38)

Table 5. Panel Regressions of Monthly Returns

This table reports the results of panel regressions of monthly return on activism indicator and insider trading activities following the event. Monthly returns are in percentage. For month t , Activism is an indicator that equals 1 if there is an activism announcement between month $t-10$ and $t-2$. Buy (Sell) is an indicator that equals 1 if there are insider buys (sells) between month $t-9$ and $t-1$ and 0 otherwise. Activism_Buy_{Post} (Activism_Sell_{Post}) equals 1 if there is an activism announcement between month $t-10$ and $t-2$ with insider buys (sells) in the month after the announcement month. Other control variables are defined in the Appendix. Standard errors are clustered at the firm level. t -statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

VARIABLES	(1) Monthly Ret	(2) Monthly Ret	(3) Monthly Ret
Activism	-0.1969 (-1.19)		-0.4142** (-2.53)
Buy		0.3623*** (5.61)	0.3590*** (5.61)
Sell		-0.1225* (-1.87)	-0.1224* (-1.89)
Activism_Buy_{Post}			1.0149* (1.79)
Activism_Sell_{Post}			0.0803 (0.27)
Past Year Return	0.1190 (0.59)	0.1367 (0.67)	0.1354 (0.67)
Past Month Return	-3.7703*** (-3.29)	-3.7743*** (-3.29)	-3.7749*** (-3.29)
Log(Size)	-0.0676 (-1.30)	-0.0568 (-1.12)	-0.0569 (-1.12)
Log(B/M)	0.4391*** (4.31)	0.4301*** (4.22)	0.4311*** (4.25)
Negative_B/M	-0.2871 (-1.40)	-0.2876 (-1.40)	-0.2880 (-1.40)
Constant	6.6173*** (56.21)	6.4098*** (48.78)	6.4125*** (48.57)
Observations	1,328,101	1,328,101	1,328,101
R-squared	0.092	0.093	0.095
Industry FE	Yes	Yes	Yes
Month FE	Yes	Yes	Yes
Cluster	Firm & Month	Firm & Month	Firm & Month

Table 6. Stated Goals and Return Predictability

This table reports the results of panel regressions of monthly return on activism indicator and insider trading activities following the event. Monthly returns are in percentage. For month t , Activism is an indicator that equals 1 if there is an activism announcement between month $t-10$ and $t-2$. Buy (Sell) is an indicator that equals 1 if there are insider buys (sells) between month $t-9$ and $t-1$ and 0 otherwise. Activism_Buy_{Post} (Activism_Sell_{Post}) equals 1 if there is an activism announcement between month $t-10$ and $t-2$ with insider buys (sells) in the month after the announcement month. Clear_Goals is an indicator that equals 1 if the activism announcement has clearly stated goals. Clear_Goals_Buy_{Post} (Clear_Goals_Sell_{Post}) equals 1 if there is an activism announcement with clearly stated goals between month $t-10$ and $t-2$ with insider buys (sells) in the month after the announcement month. Other control variables are defined in the Appendix. Standard errors are clustered at the firm level. t -statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

VARIABLES	(1) Monthly Ret	(2) Monthly Ret
Activism	-0.3503* (-1.80)	-0.3071 (-1.28)
Buy	0.3592*** (5.61)	0.4528*** (6.13)
Sell	-0.1227* (-1.88)	-0.3993*** (-4.64)
Activism_Buy_{Post}	1.4073* (1.81)	1.4761* (1.80)
Activism_Sell_{Post}	-0.1879 (-0.48)	-0.3480 (-0.84)
Clear_Goals	-0.1764 (-0.59)	-0.2945 (-0.80)
Clear_Goals_Buy_{Post}	-1.3602 (-1.43)	-1.8130 (-1.58)
Clear_Goals_Sell_{Post}	0.7553 (1.18)	1.1681 (1.63)
Constant	6.4145*** (48.57)	41.6567*** (36.61)
Firm Controls	Yes	Yes
Observations	1,328,101	1,328,101
R-squared	0.095	0.116
Industry FE	Yes	No
Firm FE	No	Yes
Month FE	Yes	Yes
Cluster	Firm & Month	Firm & Month

Table 7. Campaign Outcomes

This table reports statistics about the campaign outcomes. Panel A reports the results of OLS regressions of campaign outcome dummies on indicators of insider trading activities following the event. Outcome dummy indicates whether there are campaign outcomes within 12 months of the activism announcement. Following Becht et al. (2017), campaign outcomes include “Board” (replacement of the CEO, CFO, Chairman, or Nonexecutive directors), “Payout” (share buybacks or increased/special dividends), “Restructure” (divestitures and spin-offs of non-core assets, and blocking of diversifying acquisitions), and “Takeover” (the target firm is acquired). Buy_{Post} (Sell_{Post}) is an indicator that equals 1 if there are insider buys (sells) in the 30 day window following the events and 0 otherwise. Control variables are defined in the Appendix. Panel B reports the CARs in the 21-day window around the event announcements. t-statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Panel A. OLS Regressions of Campaign Outcomes

VARIABLES	(1) Outcome	(2) Board	(3) Payout	(4) Restructure	(5) Takeover
Buy _{Post}	0.1397*** (6.68)	0.1502*** (6.32)	0.0560*** (2.77)	0.0601*** (3.75)	-0.0266* (-1.76)
Sell _{Post}	-0.0211 (-0.98)	-0.0033 (-0.14)	0.0194 (1.00)	0.0032 (0.22)	-0.0269* (-1.80)
Constant	-0.1393 (-1.29)	-0.4350*** (-3.86)	-0.5103*** (-5.04)	-0.5482*** (-6.88)	0.0975 (1.37)
Firm Controls	Yes	Yes	Yes	Yes	Yes
Observations	2,641	2,641	2,641	2,641	2,641
R-squared	0.043	0.053	0.043	0.042	0.008

Panel B. Market Reactions to Campaign Outcomes

(-10, +10) CAR	All Sample	No Insider Trade	Insider Buy	Insider Sell	Buy - Sell
Board	1.34%	-0.48%	6.62%	-0.85%	7.47%
t-stat	(0.89)	(-0.87)	(1.19)	(-1.14)	(1.34)
Payout	2.60%***	2.69%***	3.68%***	0.91%	2.77%**
t-stat	(5.73)	(4.27)	(3.76)	(1.20)	(2.23)
Restructure	3.68%***	3.09%*	6.43%**	-0.07%	6.50%*
t-stat	(2.75)	(1.85)	(2.15)	(-0.03)	(1.82)
Takeover	23.73%***	24.85%***	27.34%***	15.67%***	11.67%**
t-stat	(15.83)	(13.34)	(6.58)	(5.96)	(2.37)

Table 8. Resistance and Insider Trading

This table reports results about the relationship between resistance and insider trading. Panel A reports the cumulative abnormal return (CAR) around resistances. Column 1 focuses on resistance occur within the 30 days following the activism announcements. Column 2 focuses on resistance from day 31 to day 60. CAR is the difference between the firm raw return and market return. Panel B shows the panel regressions of insider trading variables on indicators of months around resistance. Control variables include indicators of months around activism announcements. See Table 2 for more details. Panel C the probability of proxy contests within one year of the activism announcements and the probabilities of proxy contest outcomes conditional on that an outcome has been announced. t-statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Panel A. CARs of Resistance

Resistance	(1, +30)	(+31, +60)
Number of Cases	50	28
(-1, +1)	-0.99%***	-0.07%
t-stat	(-2.66)	(-0.23)
(-1, +5)	-0.60%***	-0.54%
t-stat	(-2.86)	(-1.63)
(-1, +10)	-0.43%***	-0.43%***
t-stat	(-3.57)	(-2.73)

Panel B. Insider Trading Following Resistance

VARIABLES	(1) Insider Buy	(2) Log(1+Insider Buy Shares)	(3) Insider Sell	(4) Log(1+Insider Sell Shares)
Resistance - 2	0.0135 (0.53)	0.1301 (0.52)	-0.0169 (-0.64)	-0.2268 (-0.86)
Resistance - 1	0.0535** (1.99)	0.706** (2.44)	-0.0342 (-1.29)	-0.3091 (-1.13)
Resistance	0.0176 (0.69)	0.3505 (1.23)	0.0030 (0.11)	0.0475 (0.16)
Resistance + 1	0.0534** (1.96)	0.5430** (1.96)	-0.0651** (-2.56)	-0.6630** (-2.57)
Resistance + 2	0.0080 (0.30)	0.1348 (0.49)	-0.0464* (-1.80)	-0.4867* (-1.86)
Constant	0.3511*** (6.78)	3.3724*** (7.37)	-0.5687*** (-7.22)	-5.6658*** (-6.83)
Firm Controls	Yes	Yes	Yes	Yes
Observations	265,709	265,709	265,709	265,709
R-squared	0.102	0.094	0.178	0.186
Firm FE	Yes	Yes	Yes	Yes
Month FE	Yes	Yes	Yes	Yes
Cluster	Firm & Month	Firm & Month	Firm & Month	Firm & Month

Panel C. Resistance and Probability of Proxy Contests

	No Resistance	Resistance
Proxy Contest	8.26%	13.59%
Firm Win	20.81%	4.76%
Hedge Fund Win	19.13%	33.33%
Settlement	50.67%	61.90%
Target Is Acquired	9.40%	0.00%

Table 9. Excluding Outside Insiders

This table reports the results of panel regressions of post-event monthly return on activism indicator and insider trading activities following the event. For month m , Activism is an indicator that equals 1 if there is an activism announcement between month $m-10$ and $m-2$. Buy (Sell) is an indicator that equals 1 if there are insider buys (sells) between month $m-9$ and $m-1$ and 0 otherwise. $\text{Activism_Buy}_{\text{Post}}$ ($\text{Activism_Sell}_{\text{Post}}$) identifies a group of observations that are preceded by activism announcements between month $t-10$ and $t-2$ with insider buys (sells) in the month after the announcement month. I excluded insider trades by 10% owners and non-executive directors for this test. Other control variables are defined in the Appendix. Standard errors are clustered at the firm level. t -statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

VARIABLES	(1) Monthly Ret	(2) Monthly Ret	(3) Monthly Ret
Activism	-0.2119 (-1.25)		-0.4470** (-2.85)
Buy		0.2923*** (3.73)	0.2876*** (3.71)
Sell		-0.1065* (-1.72)	-0.1082* (-1.76)
Activism_Buy_{Post}			1.3567* (1.75)
Activism_Sell_{Post}			0.2856 (0.90)
Past Year Return	0.1200 (0.59)	0.1357 (0.67)	0.1354 (0.67)
Past Month Return	-3.7703*** (-3.30)	-3.7783*** (-3.30)	-3.7804*** (-3.30)
Log(Size)	-0.0696 (-1.30)	-0.0545 (-1.03)	-0.0547 (-1.03)
Log(B/M)	0.4401*** (4.35)	0.4301*** (4.27)	0.4332*** (4.29)
Negative_B/M	-0.2891 (-1.39)	-0.2886 (-1.39)	-0.2889 (-1.39)
Constant	3.8570*** (56.84)	6.4098*** (52.63)	3.9117*** (52.38)
Observations	1,328,101	1,328,101	1,328,101
R-squared	0.094	0.094	0.094
Industry FE	Yes	Yes	Yes
Month FE	Yes	Yes	Yes
Cluster	Firm & Month	Firm & Month	Firm & Month

Table 10. Announcement CAR and Post-Announcement Performance

This table reports the long-term stock return of activism targets. I assign all activism targets into equally sized quintile groups based on their ex post announcement CARs. Targets with the lowest CARs are assigned into Low CAR group. Targets with the highest CARs are assigned into the High CAR group. I report the average monthly returns of four strategies. In the 1-month strategy, the target is held for the second month after the event month. In the 3-, 6-, and 9-month strategies, the target is held for three, six, and nine months, respectively, starting the second month after the event month. Panel A and B report the equally weighted and value weighted alphas of the time series regressions of calendar-time portfolio monthly returns on Fama-French three factors and Momentum, respectively. t-statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Panel A. Equally Weighted 4-Factor Model Alphas

	Low CAR	2	3	4	High CAR	Low - High
(+2, +2)	-1.27%	-1.08%*	0.44%	0.44%	0.38%	-1.35%
t-stat	(-1.23)	(-1.67)	(0.78)	(0.74)	(0.42)	(-1.14)
(+2, +4)	-0.01%	-0.47%	-0.21%	0.56%	1.03%*	-0.97%
t-stat	(-0.01)	(-1.00)	(-0.51)	(1.29)	(1.71)	(-1.21)
(+2, +7)	0.57%	-0.22%	0.76%	0.52%	0.69%*	-0.05%
t-stat	(1.28)	(-0.60)	(0.68)	(1.64)	(1.67)	(-0.09)
(+2, +10)	0.23%	0.23%	0.40%	0.65%**	0.29%	0.01%
t-stat	(0.58)	(0.75)	(0.68)	(2.49)	(0.79)	(0.01)

Panel B. Value Weighted 4-Factor Model Alphas

	Low CAR	2	3	4	High CAR	Low - High
(+2, +2)	-1.57%	-0.64%	0.40%	0.28%	0.69%	-2.03%
t-stat	(-1.48)	(-0.94)	(0.64)	(0.45)	(0.72)	(-1.64)
(+2, +4)	-0.76%	-0.26%	-0.20%	0.20%	0.71%	-1.39%
t-stat	(-1.27)	(-0.47)	(-0.43)	(0.43)	(0.93)	(-1.46)
(+2, +7)	-0.10%	-0.12%	0.04%	-0.01%	0.66%	-0.70%
t-stat	(-0.17)	(-0.31)	(0.12)	(-0.02)	(1.11)	(-0.85)
(+2, +10)	-0.12%	0.18%	0.29%	0.40%	0.14%	-0.19%
t-stat	(-0.24)	(0.58)	(0.96)	(1.26)	(0.26)	(-0.28)

Table 11. Proxy Contests

This table reports some statistics about activism campaigns that lead to proxy contests between the hedge fund and the target. Panel A reports the cumulative abnormal return (CAR) around proxy contest announcements as well as announcements of different proxy contest outcomes. CAR is the difference between the firm raw return and market return. Panel B reports the probability of proxy contests within one year of the activism announcements and the probabilities of proxy contest outcomes conditional on that an outcome has been announced. t-statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Panel A. Event Announcement CARs

	Proxy Contest Announcement	Firm Wins	Hedge Fund Wins	Settlement	Target Is Acquired
Number of Cases	339	60	64	142	20
(-1, +1)	2.04%***	-1.82%***	0.52%	5.07%	22.24%***
t-stat	(5.30)	(-2.61)	(0.75)	(1.11)	(4.65)
(-5, +5)	2.94%***	-2.49%**	1.04%	6.96%	25.74%***
t-stat	(4.57)	(-2.17)	(0.74)	(0.26)	(4.57)
(-10, +10)	4.15%***	-2.45%*	2.09%	5.53%	27.91%***
t-stat	(4.75)	(-1.68)	(1.31)	(0.85)	(4.71)

Panel B. Conditional Probability of Proxy Contest Outcomes

	All Sample	No Insider Trade	Insider Buy	Insider Sell
Proxy Contest	7.58%	7.91%	7.81%	6.12%
Firm Win	19.40%	20.41%	17.65%	17.65%
Hedge Fund Win	21.12%	18.37%	21.57%	32.35%
Settlement	49.14%	51.70%	49.02%	38.24%
Target Is Acquired	10.34%	9.52%	11.76%	11.76%

Table 12. Return Predictability of Insider Trades in Longer Windows

This table reports the long-term stock return of activism targets. In Panel A and B, I assign activism targets into three mutually exclusive portfolios based on insider trading activities in the 45 day window following the announcement. In Panel C and D, I form portfolios based on insider trading in the 60 day window following the announcement instead. Targets with no insider trading activities are assigned into No Insider Trade group. Targets with insider buys are assigned into Insider Buy group. Targets with only insider sells are assigned into Insider Sell group. I report the average monthly returns of four strategies. In the 1-month strategy, the target is held for the second month after the event month. In the three-, six-, and nine-month strategies, the target is held for three, six, and nine months, respectively, starting the second month after the event month. Panel A and C report the equal weighted alphas of the time series regressions of calendar-time portfolio monthly excess returns on Fama-French three factors and Momentum. Panel B and D report the value weighted alphas. t-statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Panel A. 45-Day Insider Trades (Equally Weighted)

	All Sample	No Insider Trade	Insider Buy	Insider Sell	Buy - Sell
(+2, +2)	0.02%	0.15%	1.27%*	-1.56%***	2.58%***
t-stat	(0.04)	(0.29)	(1.82)	(-2.23)	(2.81)
(+2, +4)	0.20%	-0.06%	1.24%***	-0.62%	1.85%***
t-stat	(0.81)	(-0.18)	(2.89)	(-1.22)	(2.91)
(+2, +7)	0.38%*	-0.03%	1.22%***	-0.08%	1.29%**
t-stat	(1.94)	(-0.13)	(3.25)	(-0.20)	(2.52)
(+2, +10)	0.28%*	0.13%	0.81%***	-0.11%	0.90%**
t-stat	(1.74)	(0.62)	(2.63)	(-0.34)	(2.21)

Panel B. 45-Day Insider Trades (Value Weighted)

	All Sample	No Insider Trade	Insider Buy	Insider Sell	Buy - Sell
(+2, +2)	-0.16%	0.37%	0.52%	-1.60%**	1.88%**
t-stat	(-0.41)	(0.64)	(0.70)	(-2.30)	(2.05)
(+2, +4)	0.05%	-0.20%	0.75%	-0.43%	1.17%
t-stat	(0.17)	(-0.54)	(1.46)	(-0.79)	(1.64)
(+2, +7)	0.26%	-0.19%	0.65%	0.31%	0.35%
t-stat	(1.15)	(-0.62)	(1.52)	(0.74)	(0.63)
(+2, +10)	0.17%	-0.21%	0.44%	0.28%	0.16%
t-stat	(0.84)	(-0.79)	(1.20)	(0.72)	(0.34)

Panel C. 60-Day Insider Trades (Equally Weighted)

	All Sample	No Insider Trade	Insider Buy	Insider Sell	Buy - Sell
(+2, +2)	0.21%	0.29%	0.95%	-0.72%	1.53%*
t-stat	(0.57)	(0.54)	(1.46)	(-0.99)	(1.70)
(+2, +4)	0.26%	-0.06%	1.24%***	-0.41%	1.70%***
t-stat	(1.10)	(-0.20)	(2.99)	(-0.80)	(2.72)
(+2, +7)	0.36%*	-0.07%	1.09%***	0.03%	1.03%**
t-stat	(1.90)	(-0.28)	(3.13)	(0.09)	(2.14)
(+2, +10)	0.28%*	0.01%	0.67%**	0.06%	0.58%
t-stat	(1.78)	(0.44)	(2.32)	(0.22)	(1.56)

Panel D. 60-Day Insider Trades (Value Weighted)

	All Sample	No Insider Trade	Insider Buy	Insider Sell	Buy - Sell
(+2, +2)	0.02%	0.47%	0.32%	-0.96%	1.15%
t-stat	(0.43)	(0.78)	(0.45)	(-1.35)	(1.27)
(+2, +4)	0.04%	-0.47%	0.78%	-0.20%	1.03%
t-stat	(0.15)	(-1.22)	(1.63)	(-0.37)	(1.50)
(+2, +7)	0.16%	-0.29%	0.42%	0.37%	0.02%
t-stat	(0.77)	(-0.95)	(1.01)	(0.96)	(0.04)
(+2, +10)	0.06%	-0.38%	0.16%	0.42%	-0.27%
t-stat	(0.34)	(-1.36)	(0.48)	(1.17)	(0.60)

Table 13. Pre-announcement Insider Trading and Campaign Outcomes

This table reports statistics about the campaign outcomes. Panel A reports the results of OLS regressions of campaign outcome dummies on indicators of insider trading activities following the event. Outcome dummy indicates whether there are campaign outcomes within 12 months of the activism announcement. Following Becht et al. (2017), campaign outcomes include “Board” (replacement of the CEO, CFO, Chairman, or Nonexecutive directors), “Payout” (share buybacks or increased/special dividends), “Restructure” (divestitures and spin-offs of non-core assets, and blocking of diversifying acquisitions), and “Takeover” (the target firm is acquired). Buy_{Post} (Sell_{Post}) is an indicator that equals 1 if there are insider buys (sells) in the 30 day window before the events and 0 otherwise. Control variables are defined in the Appendix. Panel B reports the CARs in the 21-day window around the event announcements. t-statistics are in parentheses. ***, **, and * represent significance levels of 1%, 5%, and 10%, respectively.

Panel A. OLS Regressions of Campaign Outcomes

VARIABLES	(1) Outcome	(2) Board	(3) Payout	(4) Restructure	(5) Takeover
Buy _{Post}	0.0337 (1.48)	0.0686*** (2.85)	0.0242 (1.24)	0.0056 (0.39)	-0.0308* (-1.89)
Sell _{Post}	0.0223 (1.02)	0.0351 (1.52)	0.0429** (2.29)	0.0084 (0.60)	-0.0368** (-2.34)
Constant	-0.0743 (-0.67)	-0.3872*** (-3.27)	-0.4874*** (-5.08)	-0.5221*** (-7.36)	0.0979 (1.22)
Firm Controls	Yes	Yes	Yes	Yes	Yes
Observations	2,639	2,639	2,639	2,639	2,639
R-squared	0.027	0.040	0.039	0.033	0.006

Panel B. Market Reactions to Campaign Outcomes

(-10, +10) CAR	All Sample	No Insider Trade	Insider Buy	Insider Sell	Buy - Sell
Board	1.34%	0.25%	6.17%	-1.45%**	7.62%
t-stat	(0.89)	(0.47)	(0.99)	(-2.16)	(1.22)
Payout	2.60%***	3.45%***	1.01%	1.83%**	-0.82%
t-stat	(5.73)	(5.79)	(0.86)	(2.38)	(-0.58)
Restructure	3.68%***	5.15%***	-1.36%	4.64%	-6.00%*
t-stat	(2.75)	(2.71)	(-0.49)	(2.37)	(1.76)
Takeover	23.73%***	25.10%***	26.53%***	15.71%***	10.82%**
t-stat	(15.83)	(12.99)	(7.70)	(5.64)	(2.46)

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APPENDIX

VARIABLE DEFINITIONS

Variable	Definitions
Activism	An indicator that equals 1 if there is an activism announcement in the window and 0 otherwise.
Buy	An indicator that equals 1 if there are insider buys in the window and 0 otherwise.
Sell	An indicator that equals 1 if there are insider sells in the window and 0 otherwise.
Activism_Buy _{Post}	An indicator that identifies a group of observations that are preceded by activism announcements with insider buys following the announcement.
Activism_Sell _{Post}	An indicator that identifies a group of observations that are preceded by activism announcements with insider sells following the announcement.
Clear_Goals	An indicator that equals 1 if there is an activism announcement with clearly stated goals in the window and 0 otherwise.
Clear_Goals_Buy _{Post}	An indicator that identifies a group of observations that are preceded by activism announcements with clearly stated goals and with insider buys following the announcement.
Clear_Goals_Sell _{Post}	An indicator that identifies a group of observations that are preceded by activism announcements with clearly stated goals and with insider sells following the announcement.
Board	An indicator that equals 1 if there are replacements of the CEO, CFO, Chairman, or Nonexecutive directors within a year of the activism announcement.
Restructure	An indicator that equals 1 if there are divestitures and spin-offs of non-core assets, and blocking of diversifying acquisitions within a year of the activism announcement.
Takeover	An indicator that equals 1 if the target firm is acquired within a year of the activism announcement.
Payout	An indicator that equals 1 if there are share buybacks or increased/special dividends within a year of the activism announcement.
Outcome	An indicator that equals 1 if at least one outcome is achieved within a year of the activism announcement.
CAR	Cumulative Abnormal Return: the cumulative firm raw return in excess of the cumulative market return in the same window.
Log(Size)	Natural logarithm of market capitalization.
Log(B/M)	Natural logarithm of B/M ratio.
Past Month Return	Return of the month before the event month.

Past Year Return	Cumulative return of the 11 months before the event month with one month lag.
ROA	Return on assets: calculated as EBITDA divided by market capitalization.
Book Leverage	Calculated as total debt divided by sum of total debt and market capitalization where total debt is the sum of current debt and long-term debt.
Dividend Yield	Calculated as total dividend divided by the sum of market capitalization and book value of preferred stocks.
Negative_B/M	An indicator that equals 1 if B/M ratio is negative and 0 otherwise.

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