Hedge fund activism and short-term value creation prior to the initial filing: evidence from US firms

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Abstract: Hedge funds trade on non-public information which is not clearly disclosed to the market at the time of schedule 13D or 13G filings. Using a hand-collected dataset of US hedge funds interventions we provide new evidence on the value of non-public information at the time the filer surpasses the 5% threshold and the filing obligation is triggered. We find returns are abnormally high prior to the disclosure and more importantly prior to the 5% threshold date but only for schedule 13D events. Both 13D and 13G targeted firms generate abnormal returns in the post filing period which are significantly lower than the 13D returns prior to the filing date. The novelty of our approach is that it distinguishes gains resulting from insider trading around the 5% threshold event from those generated by information asymmetry around the filing event.

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1   Introduction

Is chasing a 13D or 13G targeted stock immediately after the filing the best course of action for investors? Financial markets have always been driven by differences in how much people know. Better informed investors have an advantage, for example, as a result of superior skill or by acquiring pertinent information before others, which they may be able to exploit (see Hirshleifer et al., 1994). As Grossman and Stiglitz (1980) put it 'those

who expend resources to obtain information do receive compensation'. Such information asymmetries do present opportunities to investors for earning abnormal returns. Hedge fund activism introduces an asymmetry between insiders and outside investors and as shown by prior literature hedge funds trade based on private information (Massoud et al., 2011; Ivashina and Sun, 2011; Agarwal et al., 2013).

In this study we exploit Securities and Exchange Commission (SEC) disclosure requirements to examine whether hedge funds hold valuable non-public information resulting from their internal assessments of active and passive targets around disclosure and pre-disclosure dates. Hence we go beyond established evidence on the value of asymmetric information around the filing date by focusing on abnormal returns at the earlier time when the fund actually intervenes in the market.[1] We carry out the analysis using a hand-collected dataset of Schedule 13D ('active') and Schedule 13G ('passive') filings made by the same group of hedge funds during the 2005–2013 period. Capturing both active and passive block holdings by the same hedge fund is an important feature of the research design since it helps identify more clearly the effects of activism on short-term value creation (see Clifford, 2008).

We focus on hedge funds as shareholder activists since they are more 'eclectic investors' (Klein and Zur, 2009), experienced and sophisticated (Lipton, 2013), managed by highly incentivised managers (Clifford, 2008), and are subject to less SEC regulations than other funds. More precisely, they are not required to register with the SEC or make periodic reports like mutual funds or pension funds. Hedge funds follow high risk investment strategies including the use of leverage, 'short-selling' or other speculative investment practices. Furthermore, they set a minimum level of income or assets for investors and charge high fees. These characteristics, their organisational form and managerial incentives make hedge funds a considerable threat for target firms and ultimately the market (Clifford, 2008).

The Schedule 13D filing date has attracted significant attention in prior studies since investors have to disclose their ownership stake with the SEC revealing information about the purpose of transaction and their identity. Schedule 13D filings are often seen by investors as a signal that the targeted stock is undervalued and poised to appreciate. The vast majority of the previous literature provides evidence of short-term value creation (e.g., Becht et al., 2008, 2017; Brav et al., 2008; Clifford, 2008; Klein and Zur, 2009; Greenwood and Schor, 2009; Boyson and Mooradian, 2011; Gow et al., 2014; Bebchuk et al., 2013; Collin-Dufresne and Fos, 2015) and a run-up in the stock return before the initial filing (Brav et al., 2008; Collin-Dufresne and Fos, 2015). For example, Brav et al. (2008) find that price and abnormal trading volume increase about ten days prior to the 13D filing date while Collin-Dufresne and Fos (2015) report a 6% cumulative abnormal return in the $(t - 10, t + 1)$ window around the filing date and about 3% in the $(t - 1, t + 1)$ window.

Schedule 13G filings have received less attention in the literature. Yet acquiring 5% or more of a stock, a 13G investor may be signalling that a stock is a good buy and it is likely to appreciate in value. Giglia (2016) notes that investors could also 'hide' their 'active' purposes through a Schedule 13G filing for short-term gains. She points out the inappropriate use of Schedule 13G filings by investors who have 'active' purposes, silently increasing their stake at lower cost in order to avoid market and regulatory scrutiny. However, if 13G filers follow this strategy, we should notice similar

abnormalities to 13D filers in returns, volume and volatility during the stock building phase, especially around the *event* date that the filing obligation is triggered.

Gantchev and Jotikasthira (2018) used activist hedge funds' 13F filings to estimate activist toeholds in potential targets, highlighting the possibility of widespread activism threat propagation beyond the firms being targeted. However, a 13F holding does not necessarily lead to an active or a passive intervention in the near future. Beyond that, hedge funds are generally reluctant to reveal their private information on target firms during the stock building period in order to avoid 'free-riding' from other market participants. There is also a significant number of Schedule 13D filings where hedge funds exit the target company without stating their plans or proposals or even changing their beneficial ownership. And the target stock may have advanced significantly during the days prior to the filing leaving unsuspected investors with plunging prices. Clifford (2008) examines the effects of 'active' versus 'passive' activism by hedge funds and finds that hedge funds with 'active' blocks earn larger excess stock returns and improve performance more than a control group of the same hedge funds with 'passive' blocks.

In this paper we examine whether hedge funds hold valuable non-public information for their active and passive targets. We analyse whether hedge funds' non-public information is reflected into the target firm's abnormal returns, returns volatility and volume prior to an event date and explore whether the filer's intentions matter. What sets apart this study from much of the previous literature is that we specifically assess the importance of insider information at a specific event date prior to the filing date with the SEC. The event date is the time the hedge fund surpasses the 5% threshold and a filing event is triggered. Hence our approach provides a more powerful test of the value of a hedge fund's internal assessment of target firms. We carry out our empirical tests using information on both 13D and 13G filings made by the same group of hedge funds. More specifically, we test the following hypotheses for both 13D and 13G filings at the trigger event and filing dates:

H1 The stock price abnormal return to hedge fund interventions is expected to be zero on the trigger event (filing) date.

H2 The stock price abnormal volume to hedge fund interventions is expected to be zero on the trigger event (filing) date.

H3 The stock price abnormal volatility to hedge fund interventions is expected to be zero on the trigger event (filing) date.

We exclude from our sample events where the filing date matches or is very close (one day) from the event date in order to avoid possible abnormalities caused by the filing revelation. We calculate abnormal returns using standard event study methodology. Furthermore, we calculate abnormal return volatility (AVAR) and abnormal volume for Schedule 13D filings, Schedule 13G filings and for control samples of similar non-targeted firms based on industry (three-digit SIC), exchange, and size. The results show the existence of statistically significant and positive abnormal returns, AVAR and volume at the (–10, 0), (–5, 0) and (–1, 0) windows prior to the event date, and for the (–45, 0) window prior to the filing date, albeit abnormal returns are significant only for Schedule 13D filings. Our findings suggest that hedge funds have non-public information on their 'active' targets during the stock building window prior to the official disclosure with the SEC. Abnormal returns are positive and statistically significant after the filing

date for both 13D and 13G target firms. However, these returns are significantly lower compared to the 13D returns prior to the filing date.

Our findings are consistent with recently proposed changes by the SEC[2] for amendments to the rules governing beneficial ownership reporting under Exchange Act Sections 13(d) and 13(g). There is no clear indication in our data whether investors intervened in a firm actively through 13D filings, since they exited without stating specific plans or proposals. Although as a beneficial owner, activists might have had conversations with the management, in our case this kind of information was never made publicly available through official filings. On the other hand, while the 13G filings were intended for 'passive investors', in our setting they appear very much alike the 'active' 13D filings in terms of publicly available information. With no sightings of 'active' plans or proposals in the 13D filings, our findings of much higher abnormal returns during the period leading to the Schedule 13D filing date raise concerns about the effects of information asymmetries on market efficiency.[3]

The rest of the paper is organised as follows. Section 2 describes the institutional background and construction of the data sample. Section 3 describes the methodology, and Section 4 reports the results. Section 5 concludes.

2   Institutional background and data description

Under Rule 13d-1(a) of the 1934 Securities Exchange Act, investors who hold more than 5% of any class of securities of a publicly traded company and intend to influence the control of a target company must file a Schedule 13D form, which must be submitted to the SEC within 10 days. However, under Rule 13d-1(c), SEC provides the 'passive investor' exemption under which investors who

a   have no intention to intervene in the company's internals

b   are not qualified institutional investors

c   hold less than 20% of a company's common stock, may file a short-form statement on Schedule 13G.[4]

We construct a hand-collected data set of US hedge funds activist interventions over the period 2005–2013, which records both the Schedule 13D and Schedule 13G filing dates. We use the Historical SEC Edgar Archives from the Edgar Database of the SEC (https://www.sec.gov/cgi-bin/srch-edgar) and collect the Schedule 13D filings first. We then limit the filers to hedge funds only and collect the Schedule 13G filings made by these hedge funds.

Previous literature uses a variety of processes to identify hedge funds. In this paper, we form our sample of hedge funds following Brunnermeier and Nagel (2004) and Griffin and Xu (2009). The procedure we follow, while more laborious, is an important part of the research design since it helps us identify 'pure' hedge funds in the sense of Brunnermeier and Nagel (2004) and Griffin and Xu (2009). We search the Investment Adviser Public Disclosure website (https://www.adviserinfo.sec.gov/IAPD/default.aspx) for each of the 'Reporting Persons'[5] of the Schedule 13D filings and include in our sample only firms that were registered as investment advisers with the SEC and thus,

filed an ADV form.[6] The ADV form must have been filed by investment advisers who manage more than $25 million in assets.[7]

We then search the 'Item 5' section of the ADV form. In this section investment advisers are required to disclose information about their business, employees, clients, fee schedule, disciplinary events involving the advisers and their employees, and conflicts of interest. We focus on the 'clients' subsection, where the advisers disclose information about the approximate number of their clients along with the amount of total regulatory assets under management.[8]

The next step is to examine the 'compensation arrangements' subsection where filers report their compensation types, i.e.

a   percentage of assets under management

b   hourly charges

c   subscription fees (for a newsletter or periodical)

d   fixed fees (other than subscription fees)

e   commissions

f   performance-based fees

g   other.

We include in our sample only those firms that at least 50% of their clients were either 'pooled investment vehicles (other than investment companies and business development companies)' or 'high net worth individuals' or a combination of the above and charged performance-based fees.

We kept in our sample Schedule 13G filings under Rule 13d-1(c) but we excluded financial firms[9] owing to differences in the information flow. Clifford (2008) includes in his sample Schedule 13D filings with specific plans and proposals which offers investors additional information about the firm. We differentiate from Clifford (2008) by limiting our sample to the subsample of Schedule 13D filings which did not state specific plans or proposals because the information on the target firm is twofold: reflecting the new ownership and the hedge fund's plans, simultaneously. Under this limitation, in both filing type's hedge funds hold more than 5% on the target firm and only the investors' future plans on the target firm differ. Under this caveat, Schedule 13D filers have three possible tactics to follow after the initial filing:

a   hold or increase/decrease their shares without stating specific plans or proposals

b   file an amendment stating specific plans or proposals

c   exit.

On the other hand, Schedule 13G filers may:

a   hold or increase/decrease their shares

b   switch to 'active' filing a Schedule 13D with or without specific plans and proposals

c   exit.

So, in both cases hedge funds have a complete discretion on when and whether to follow a more aggressive agenda by simply filing an amendment (13D/A) or switch filing (13G

to 13D). Furthermore, our dataset does not contain 'wolf pack' Schedule 13D filings and Schedule13G filings converted to Schedule 13D filings. We also exclude Schedule 13D filings where ownership of more than 20% was stated. We identified 151 'pure-play' hedge funds (Ben-David et al., 2013), which filed a total of 640 Schedule 13D filings and 1011 Schedule 13G filings.

We match targeted firms with a control sample of similar firms based on year, exchange, industry (three-digit SIC) and size (market value). In particular, we use the coarsened exact matching restricting control firms to the same stock exchange, three-digit SIC and size. Then, we identify the nearest neighbour of each targeted firm. We exclude from our sample events that did not have a match. If the nearest neighbour had missing values, we moved to the next one.

Finally, we perform two robustness tests. First, we allow for possible seasonality effects using the same calendar windows for the target firms one year earlier. Second, we match 13D filings with a control sample of 13G filings using different matching criteria. In particular, we follow Brav et al. (2018) and create a matching sample based on year, industry (two-digit SIC), (log) market value, market-to-book ratio, return on assets (ROA) measured at $t - 1$, and the change in the target firm's ROA measured between years $t - 3$ and $t - 1$.

The stock returns were downloaded from the CRSP database and the exchange, industry and fundamentals are from Compustat.

3   Methodology

We examine the market's reaction to hedge fund activist interventions using an event-study methodology. We assume that capital markets are efficient and examine the impact of new information on the stock's return. We compare Schedule 13D with Schedule 13G filings in the $(-45, 0)$ window where $t = 0$ is the filing date. We define the date where the hedge fund surpasses the 5% threshold as the event date. Investors have a ten-calendar day[10] period to disclose their new holdings with the SEC either with a Schedule 13D or with a Schedule 13G filing.

$t - 60$	Event date	Filing date ($t = 0$)
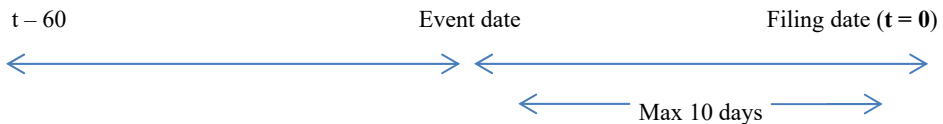
We identify as new information the possible private information through a non-publicly available channel (event date) and the publicly available information from the SEC (filing date). Consistent with the hypothesis that hedge fund manager protect proprietary information (Aragon et al., 2013), we assume that hedge funds do not leak their beneficial ownership prior to the event date. We explore whether there exist statistically significant abnormal returns, return volatility and volume for the targeted firm between 'active' and 'passive' interventions in terms of filing type (Schedule 13D vs. Schedule 13G). Due to their nature, Schedule 13D filings contain more information about the transactions. In order to avoid bias in discriminating between 13D and 13G abnormal returns, we limit the sample of Schedule 13D filings to those where filers do not disclose any plans or proposals about the target firm. These filings are comparable with the

Schedule 13G filings where the assumption of 'not influencing the firm' stands due to the filing's nature. In this sense, we are able to test any differences that may exist in the reaction of the market to the 13D and 13G disclosures on a level playing field. The filing event period covers 45 pre-filing trading days[11] and the filing date (–45, 0). We get 45 trading days prior to the filing date since 13D filers are obliged to report in detail their transactions in the item 5c section. However, this information is not available for 13G filings. We exclude from our sample events where the filing date matches or is within one day from the event date to avoid possible abnormalities caused by the filing revelation.

Abnormal returns are assessed in terms of realised returns and the returns that would normally be expected by the market. We follow Brown and Warner (1980), who define an abnormal return AR_{it} as the difference between the actual return of stock i at the event day t and the expected stock return at the event day t predicted by an estimated asset pricing model:

$$AR_{it} = R_{it} - E(R_{it}) \tag{1}$$

where R_{it} is the actual return of stock i at event day t, $i = 1, 2, …, N$, with N denoting the total number of stocks, while $E(R_{it})$ denotes the expected stock return at time t. The expected returns represent the returns that would have been observed during the event window in the absence of the event. We set the estimation window at a fixed length of 206 actual trading days, comprising 252 to 46 trading days prior to the filing date (where $t = 0$ is the filing date).

We calculate expected returns using the market model, the Carhart four-factor model, and the Fama-French five-factor (FF5) model. The market model is represented by the following linear regression model estimated by least squares:

$$R_{it} = \alpha_0 + \beta_1 R_{mt} + u_{it} \tag{2}$$

where R_{mt} is the return on the market, defined as the value-weighted return of all CRSP firms incorporated in the USA and listed on the NYSE, AMEX, or NASDAQ that have a CRSP share code of 10 or 11 at the beginning of month t, share information and price data also at the beginning of month t.

The Carhart and FF5 models are extensions of the Fama-French three-factor (FF3) model. The Carhart model adds momentum (MOM) to the three Fama-French factors: market ($R_{mt} - R_{ft}$), size (SMB) and value (HML). The FF5 model adds robust minus weak (RMW) profitability and conservative minus aggressive (CMA) investment to FF3. The Carhart and FF5 models are given, respectively, by:

$$R_{it} - R_{ft} = \alpha_0 + \beta_1 (R_{mt} - R_{ft}) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + u_{it} \tag{3a}$$

$$R_{it} - R_{ft} = \alpha_0 + \beta_1 (R_{mt} - R_{ft}) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 RMW_t + \beta_5 CMA_t + u_{it} \tag{3b}$$

where R_{ft} is the one-month T-bill rate.

We calculate standardised abnormal returns (SAR_{it}) following Patell (1976) and Dodd and Warner (1983) by normalising each firm's abnormal return by the square-root of its estimated forecast variance:

$$SAR_{it} = AR_{it} / s_{AR_{it}} \tag{4}$$

where

$$s_{AR_{it}} = \left\{ s_i^2 \left(1 + \frac{1}{L_i} + \frac{(R_{mt} - \bar{R})}{\sum_{t=1}^{L_i} \left((R_{mt} - \bar{R})^2 \right)} \right) \right\}^{1/2} \tag{5}$$

Here s_i^2 is the estimated residual variance from the market, Carhart or FF5 model for stock i, and $\bar{R}$ is the average market return over the L_i days used for the regression. The standardised cumulative abnormal returns over the event period are obtained by the summation of the standardised abnormal returns over the event window divided by the square root of the number of days in the window. The resulting standardised cumulative excess return (SCAR) is assumed to have a standard normal distribution with zero mean and unit variance. To test the significance of the average standardised cumulative excess return (SCAAR) in a sample of N stocks we use a standard normal statistic:

$$Z = SCAAR\sqrt{N} \sim N(0, 1) \tag{5}$$

In order to calculate short-term AVAR, we follow Landsman and Maydew (2002), DeFond et al. (2007), Landsman et al. (2012) and Devos et al. (2015) who define AVAR ($AVAR_{it}$) as the stock return variance $\left(\overline{AR_{it}^2} \right)$ over the event window, scaled by the stock return variance $\left(s_i^2 \right)$ over the estimation window. This is calculated as:

$$AVAR_{it} = \overline{AR_{it}^2} \big/ s_{it}^2 \tag{6}$$

The stock return variance over the event window is the mean squared abnormal return of each firm over the examined event windows divided by the variance of each firm's residuals calculated over the (–252, –46) estimation period. When AVAR is greater than 1, the firm's stock has greater than normal volatility.

We estimate mean-adjusted abnormal trading volume changes associated with activist interventions following Ajinkya and Jain (1989), Cready and Ramanan (1991) and Campbell and Wasley (1996) who define mean-adjusted abnormal trading volume as the share turnover rate minus the normal turnover rate measured over the estimation window, –252 trading days to –46 days relative to the filing date:

$$AV_{it} = V_{it} - \bar{V}_t$$

where V_{it} is the number of shares of firm i traded on day t divided by number of shares outstanding on the event window and $\bar{V}_t$ is the mean trading volume over the estimation period.

4   Empirical results

Table 1 reports descriptive statistics of firm specific and filer specific information. Hedge funds tend to target companies that are generally 'value' firms, with low market value relative to book value. Table 1 show that more activist 13D filers target on average firms with lower market to book ratios than 13G filings. At the event date, 13D target firms have on average larger market values of than 13G firms. Schedule 13D target firms have

higher ROA with a median value of 3.94% compared to 2.85% for 13G firms. Also, at the event date, 13D and 13F filers own 6.58% and 7.47%, respectively, of the shares outstanding. The filing delay, which is the gap between the event and the filing date, for the full sample (clean events) is 8.50 (6.91) days for Schedule 13D filings and 13.82 (7.48) for Schedule 13G filings.

Table 1   Descriptive statistics

SC 13D (640 events)					
	Mean	*Std. dev.*	*p.25*	*p.50*	*p.75*
Firm characteristics					
MV (in millions)	1,244.65	2,044.25	154.28	432.64	1,423.93
ROA	−5.80	70.20	−3.72	3.94	8.29
Market-to-book ratio	0.39	0.58	0.08	0.16	0.44
Event characteristics					
Initial stake (in percent)	6.58	2.09	5.25	5.71	7.11
Filing delay – full sample (days)	8.5	4.74	6	9	10
Filing delay – clean events (days)	6.91	3.21	4	8	10
SC 13G (1011 events)					
	Mean	*Std. dev.*	*p.25*	*p.50*	*p.75*
Firm characteristics					
MV (in millions)	972.34	1,506.97	135.30	400.08	1,121.69
ROA	−8.89	41.45	−11.70	2.85	8.26
Market-to-book ratio	0.79	0.98	0.24	0.42	0.89
Event characteristics					
Initial stake (in percent)	7.47	2.31	5.98	6.58	8.12
Filing delay – full sample (days)	13.82	19.78	7	10	11
Filing delay – clean events (days)	7.48	2.74	6	8	10

4.1   Filing date

Tables 2–4 report the cumulative average abnormal returns (CAARs), standardised cumulative average abnormal returns (SCAARs), AVAR and cumulative mean-adjusted abnormal volume (CAAV) for the 45-trading day window prior and after the filing date, and the 91-trading day window surrounding the filing date. We compare the Schedule 13D with Schedule 13G events (Table 2), Schedule 13D events with a control sample of firms (Table 3), and Schedule 13G events with a control sample of firms (Table 4). The control sample is based on year, exchange, industry (three-digit SIC) and size. First, we examine the full sample. Then we exclude events where the ten-calendar day window is violated, and create a subsample of 'clean' events. We also exclude from our sample the events where the filing date coincides with the event date.

Table 2 presents CAARs, SCAARs, AVAR and CAAV for the 91-trading day window surrounding the filing date as well as for 45-trading days prior and after the filing date for Schedule 13D and Schedule 13G events. The main difference of these filings is that Schedule 13G filers have no intention of influencing control over the stock

issuer. However, prior to the initial filing, market participants are not aware of the forthcoming disclosure filing and/or filing type, so we expect Schedule 13D and Schedule 13G events to perform similarly.

In Panel A we present the results for the full sample. In Panel B we exclude events where the 10-calendar day disclosure period is violated to avoid biasing the computed returns and volume statistics. CAARs, SCAARs, AVAR and CAAV are positive and statistically significant for Schedule 13D filing during the pre-and post-filing periods. In particular, the CAAR for Schedule 13D filings using the market model, as shown in column (1), is 12.4% for the (–45, 0) pre-filing window and is statistically significant at the 1% level and much higher than the 4.3% cumulative abnormal return in the post-filing (0, +45) period. Schedule 13G filings have slightly positive CAARs of 1.2% and 3.2% in the pre and post filing periods, respectively, albeit only the latter CAAR is statistically significant. Interestingly, Schedule 13D abnormal returns are much higher than Schedule 13G returns for all the examined measures with the difference (Schedule 13D minus Schedule 13G) being positive and statistically significant at the 1% level during the pre-filing period, and for the 91-trading day window surrounding the filing date. Notably, the proportion of the positive Schedule 13D abnormal returns is 66.71% (67.15%) for the full sample ('clean' events) which in both cases are higher when compared with the Schedule 13G filings. We obtain similar results using the Carhart and Fama-French five-factor models as shown in columns (2)–(3), respectively, and when we restrict our sample to 'clean' events. AVAR and volume for 13D filings are larger compared to 13G filings but the differences are significant only in the pre-filing window.

Figure 1   CAARs surrounding the initial filing – full sample (see online version for colours)
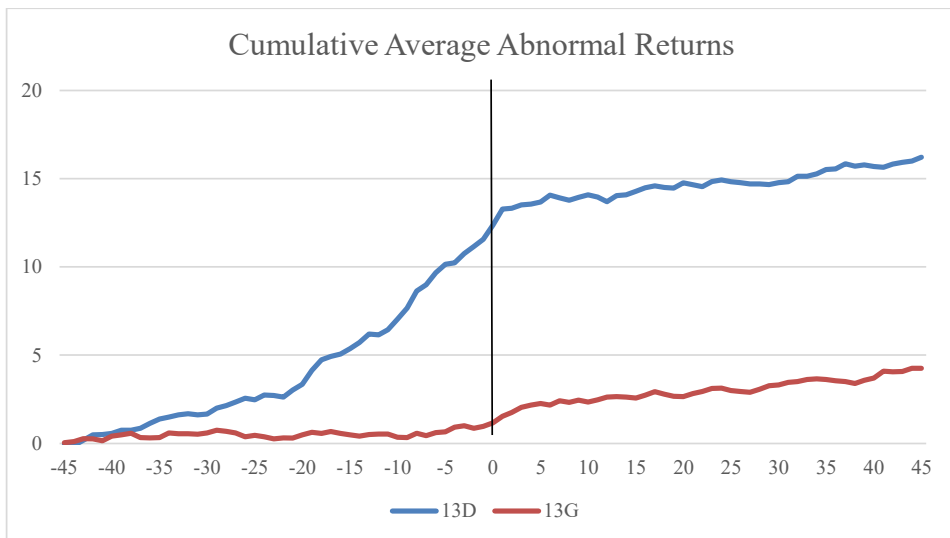
Note: The y axis measures the CAARs in percent for schedule 13D and Schedule 13G filings calculated using the market model for the period (–45, 45) where $t = 0$ is the filing date.

Table 2   Abnormal returns, return volatility and volume of Schedule 13D filings, Schedule 13G filings and their difference

Panel A: Filing date – All events

t = Filing date	Schedule 13D			Schedule 13G			Difference		
	(1)	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*
CAAR									
(−45, 0)	0.124***	0.120***	0.120***	0.012	0.010	0.008	0.112***	0.110***	0.110***
Pos: Neg	427:213	423:217	418:222	486:525	477:534	479:536			
(0, +45)	0.043***	0.041***	0.039***	0.032***	0.034***	0.035***	0.011	0.006	0.004
Pos: Neg	359:281	364:276	353:287	544:467	556:455	563:462			
(−45, +45)	0.158***	0.153***	0.152***	0.042***	0.042***	0.041***	0.117***	0.112***	0.111***
Pos: Neg	426:214	431:209	420:220	539:472	542:469	532:479			
SCAAR									
(−45, 0)	0.368***	0.374***	0.380***	−0.007	−0.009	−0.011	0.375***	0.384***	0.039***
(0, +45)	0.114***	0.115***	0.112***	0.077***	0.087***	0.087***	0.038	0.029	0.025
(−45, +45)	0.458***	0.465***	0.468***	0.065***	0.071**	0.069***	0.393***	0.394***	0.399***
AVAR									
(−45, 0)	3.402***	3.653***	3.743***	1.867***	2.007***	2.069***	1.535***	1.645***	1.674***
(0, +45)	1.375***	1.493***	1.536***	1.539***	1.657***	1.684***	−0.163	−0.164	−0.148
(−45, +45)	2.389***	2.574***	2.640***	1.708***	1.839***	1.883***	0.681***	0.735***	0.757***
CAAV									
(−45, 0)	0.308***			0.163***			0.145***		
(0, +45)	0.118***			0.070***			0.049*		
(−45, +45)	0.418***			0.229***			0.188***		
Number of obs.	640	640	640	1,011	1,011	1,011			

Notes: The table presents CAARs, SCAARs, AVAR, and CAAV for Schedule 13D, Schedule 13G filings, and their difference, 45 days before and after the filing date using the market model (1), the Carhart model (2), and the FF5 model (3). In each case, we calculate the number of positive and negative events. Panel A presents the results for the full sample. Panel B presents the results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 2   Abnormal returns, return volatility and volume of Schedule 13D filings, Schedule 13G filings and their difference (continued)

Panel B: Filing date – 'Clean' events

		Schedule 13D			Schedule 13G			Difference		
	t = Filing date	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*
CAAR	(−45, 0)	*0.126****	*0.124****	*0.123****	0.008	0.006	0.005	0.118***	0.117***	0.118***
	Pos: Neg	323:158	322:159	318:163	320:316	313:353	313:353			
	(0, +45)	*0.035****	*0.031****	*0.029****	*0.039****	*0.043****	*0.044****	−0.004	−0.012	−0.015
	Pos:Neg	259:222	262:219	253:228	360:306	369:297	373:301			
	(−45, +45)	*0.152****	*0.146****	*0.143****	*0.043***	*0.045***	*0.045***	*0.108****	*0.101****	*0.098****
	Pos: Neg	315:166	318:163	309:172	360:306	362:304	353:311			
SCAAR	(−45, 0)	*0.373****	*0.382****	*0.388****	−0.007	0.010	−0.010	*0.380****	*0.392****	*0.398****
	(0, +45)	*0.088****	*0.087****	*0.083****	*0.086****	*0.104****	*0.105****	0.003	−0.017	0.100
	(−45, +45)	*0.434****	*0.441****	*0.442****	*0.072**	*0.085****	*0.085****	*0.362****	*0.356****	*0.357****
AVAR	(−45, 0)	*3.322****	*3.577****	*3.668****	*1.722****	*1.820****	*1.857****	*1.600****	*1.757****	*1.831****
	(0, +45)	*1.058****	*1.146****	*1.181****	*1.666****	*1.775****	*1.805****	*−0.608**	*−0.629**	*−0.624**
	(−45, +45)	*2.189****	*2.360****	*2.423****	*1.698****	*1.803****	*1.836****	*0.490***	*0.558***	*0.587***
CAAV	(−45, 0)	*0.324****			*0.203****			*0.121****		
	(0, +45)	*0.106****			*0.106****			*0.000*		
	(−45, +45)	*0.420****			*0.304****			*0.116***		
Number of obs.		481	481	481	666	666	666			

Notes: The table presents CAARs, SCAARs, AVAR, and CAAV for Schedule 13D, Schedule 13G filings, and their difference, 45 days before and after the filing date using the market model (1), the Carhart model (2), and the FF5 model (3). In each case, we calculate the number of positive and negative events. Panel A presents the results for the full sample. Panel B presents the results for the 'clean' events excluding the events where the ten-day disclosure period is violated. * , ** , *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 3   Abnormal returns, return volatility and volume of Schedule 13D filings, a control sample and their difference

		Schedule 13D			Schedule 13G			Difference	
t = Filing date	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*
CAAR (−45, 0)	0.123***	0.122***	0.122***	−0.002	−0.003	−0.002	0.125***	0.125***	0.124***
Pos: Neg	392:206	387:209	387:209	299:299	298:300	298:300			
(0,+45)	0.046**	0.045***	0.043***	−0.019*	−0.014	−0.014	0.064***	0.059***	0.057***
Pos: Neg	338:250	332:256	330:258	290:308	286:310	283:315			
(−45, +45)	0.161***	0.159***	0.157***	−0.022	−0.018	−0.017	0.182***	0.177***	0.175***
Pos: Neg	397:201	395:203	393:2005	272:326	283:315	279:319			
SCAAR (−45, 0)	0.364***	0.374***	0.381***	−0.009	−0.017	−0.015	0.373***	0.391***	0.531***
(0,+45)	0.120***	0.125***	0.116***	−0.032	−0.021	−0.019	0.152***	0.146***	0.135***
(−45, +45)	0.459***	0.474***	0.472***	−0.044	−0.042	−0.038	0.503***	0.516***	0.510***
AVAR (−45, 0)	3.360***	3.584***	3.654***	1.266***	1.333***	1.365	2.094***	2.252***	2.289***
(0,+45)	1.401***	1.530***	1.571***	1.410***	1.511***	1.540	−0.009	0.019***	0.031***
(−45, +45)	2.381***	2.558***	2.613***	1.340***	1.424***	1.454***	1.041***	1.134***	1.159***
CAAV (−45, 0)	0.244***			−0.014*			0.258***		
(0,+45)	0.073***			0.027*			0.046***		
(−45, +45)	0.309***			0.013			0.296***		
Number of obs.	598	598	598	598	598	598			

Panel A: Filing date – All events

Notes: The table presents CAAR, SCAARs, AVAR, and CAAV for Schedule 13D filings, a control sample, and their difference, 45 days before and after the filing date using the market model (1), the Carhart model (2), and the FF5 model (3). The control sample is formed by using the coarsened exact matching restricting control firms to the same stock exchange, three-digit SIC and size. In each case, we calculate the number of positive and negative events. Panel A presents the results for the full sample. Panel B presents the results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 3 Abnormal returns, return volatility and volume of Schedule 13D filings, a control sample and their difference (continued)

Panel B: Filing date – 'Clean' events

		Schedule 13D			Schedule 13G			Difference		
	t = Filing date	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
CAAR	(−45, 0)	0.125***	0.126***	0.127***	−0.005	−0.006	−0.006	0.130***	0.132***	0.133***
	Pos: Neg	299:153	295:157	294:158	219:233	210:242	224:228			
	(0, +45)	0.036***	0.099***	0.034***	−0.010	−0.008	−0.009	0.047***	0.043***	0.043***
	Pos:Neg	245:207	240:212	240:212	222:230	222:230	216:236			
	(−45, +45)	0.153***	0.153***	0.153***	−0.017	−0.016	−0.016	0.170***	0.169***	0.169***
	Pos: Neg	294:158	295:157	295:157	203:249	215:237	208:242			
SCAAR	(−45, 0)	0.369***	0.384***	0.394***	−0.012	−0.020	−0.020	0.382***	0.404***	0.414***
	(0, +45)	0.092***	0.078***	0.093***	−0.016	−0.011	−0.008	0.109***	0.108***	0.102***
	(−45, +45)	0.435***	0.456***	0.460***	−0.032	−0.035	−0.032	0.467***	0.489***	0.492***
AVAR	(−45, 0)	3.273***	3.507***	3.582***	1.274***	1.333***	1.360***	1.999***	2.174***	2.222***
	(0, +45)	1.071***	1.171***	1.206***	1.351***	1.443***	1.470***	−0.281***	−0.272***	−0.264***
	(−45, +45)	2.171***	2.339***	2.393***	1.314***	1.389***	1.416***	0.857***	0.950***	0.977***
CAAV	(−45, 0)	0.262***			−0.015			0.277***		
	(0, +45)	0.059***			0.030			0.029		
	(−45, +45)	0.312***			0.015			0.297***		
Number of obs.		452	452	452	452	452	452			

Notes: The table presents CAAR, SCAARs, AVAR, and CAAV for Schedule 13D filings, a control sample, and their difference, 45 days before and after the filing date using the market model (1), the Carhart model (2), and the FF5 model (3). The control sample is formed by using the coarsened exact matching restricting control firms to the same stock exchange, three-digit SIC and size. In each case, we calculate the number of positive and negative events. Panel A presents the results for the full sample. Panel B presents the results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 4 Abnormal returns, return volatility and volume of Schedule 13G filings, a control sample and their difference

Panel A: Filing date – All events

t = Filing date	Schedule 13D			Schedule 13G			Difference		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
CAAR									
(−45, 0)	0.016	0.016	0.012	0.009	0.009	0.007	0.007	0.009	0.005
Pos: Neg	452:453	450:455	445:460	455:450	450:455	452:453			
(0, +45)	0.035***	0.039***	0.040***	0.011	0.012	0.014	0.025*	0.027**	0.026**
Pos: Neg	512:393	521:384	525:380	464:441	479:426	476:429			
(−45, +45)	0.050***	0.052***	0.048***	0.019	0.021	0.020	0.030	0.031	0.017
Pos: Neg	492:413	488:419	481:426	457:448	468:437	468:437			
SCAAR									
(−45, 0)	0.001	0.004	0.000	0.011	0.012	0.010	−0.010	−0.009	−0.010
(0, +45)	0.087***	0.102***	0.100***	0.029	0.034*	0.036*	0.058**	0.068***	0.064**
(−45, +45)	0.082**	0.099***	0.093**	0.039	0.045	0.045	0.043	0.054	0.048
AVAR									
(−45, 0)	1.899***	2.036***	2.085***	1.325***	1.382***	1.413***	0.575***	0.654**	0.672**
(0, +45)	1.553***	1.666***	1.693***	1.415***	1.518***	1.557***	0.137	0.148	0.136
(−45, +45)	1.732***	1.858***	1.896***	1.372***	1.452***	1.487***	0.360**	0.406**	0.409**
CAAV									
(−45, 0)	0.157***			0.010			0.147***		
(0, +45)	0.072***			0.031**			0.042*		
(−45, +45)	0.226***			0.040			0.186***		
Number of obs.	905	905	905	905	905	905			

Notes: The table presents CAAR, SCAARs, AVAR and CAAV for Schedule 13G filings, a control sample, and their difference, 45 days before and after the filing date using the market model (1), the Carhart model (2), and the FF5 model (3). The control sample is formed by using the coarsened exact matching restricting control firms to the same stock exchange, three-digit SIC and size. In each case, we calculate the number of positive and negative events. Panel A presents the results for the full sample. Panel B presents the results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 4 Abnormal returns, return volatility and volume of Schedule 13G filings, a control sample and their difference

Panel B: Filing date – 'Clean' events

		Schedule 13D			Schedule 13G			Difference		
	t = Filing date	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
CAAR	(−45, 0)	0.008	0.006	0.004	−0.003	−0.002	−0.001	0.011	0.008	0.005
	Pos: Neg	298:299	291:306	290:307	289:308	287:310	290:307			
	(0, +45)	0.038***	0.041***	0.042***	0.001	0.005	0.005	0.037**	0.036**	0.037**
	Pos:Neg	336:261	340:257	348:249	302:295	316:281	310:287			
	(−45, +45)	0.043**	0.044**	0.041**	−0.002	0.003	0.005	0.045	0.040	0.036
	Pos: Neg	327:270	328:269	322:275	291:306	299:298	298:299			
SCAAR	(−45, 0)	0.001	−0.000	−0.002	−0.012	−0.011	−0.010	0.013	0.010	0.008
	(0, +45)	0.090***	0.108***	0.105***	0.007	0.014	0.012	0.083**	0.094**	0.093
	(−45, +45)	0.084**	0.098***	0.094**	−0.004	0.005	0.003	0.087	0.093	0.091
AVAR	(−45, 0)	1.742***	1.832***	1.863***	1.280***	1.334***	1.365***	0.463***	0.499***	0.498***
	(0, +45)	1.674***	1.771***	1.802***	1.360***	1.464***	1.506***	0.314	0.306	0.296
	(−45, +45)	1.713***	1.807***	1.838***	1.320***	1.340***	1.436***	0.393**	0.407**	0.402**
CAAV	(−45, 0)	0.194***			0.019			0.175***		
	(0, +45)	0.105***			0.042**			0.063**		
	(−45, +45)	0.294***			0.060*			0.234***		
Number of obs.		597	597	597	597	597	597			

Notes: The table presents CAAR, SCAARs, AVAR and CAAV for Schedule 13G filings, a control sample, and their difference, 45 days before and after the filing date using the market model (1), the Carhart model (2), and the FF5 model (3). The control sample is formed by using the coarsened exact matching restricting control firms to the same stock exchange, three-digit SIC and size. In each case, we calculate the number of positive and negative events. Panel A presents the results for the full sample. Panel B presents the results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Figure 1 presents the CAARs for the full sample of Schedule 13D and Schedule 13G filings calculated using the market model for the (–45, 45) window, where $t = 0$ is the filing date. Schedule 13D targets show much higher CAARs than those of Schedule 13G targeted firms with most of the difference accounted for in the (–45, 0) window.

Figure 2 presents the daily mean-adjusted abnormal volume for the full sample of Schedule 13D and Schedule 13G filings. The daily mean-adjusted abnormal volume is positive and higher from the beginning of the examined window for Schedule 13D events when compared with Schedule 13G events, reaching its highest level 8 days prior the filing date for both filing types.

Figure 2 Daily mean-adjusted abnormal volume surrounding the initial filing – full sample (see online version for colours)
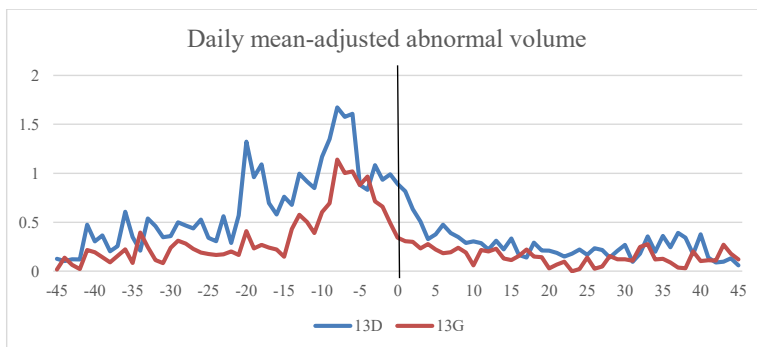
Notes: The y axis measures the daily mean-adjusted abnormal volume for Schedule 13D and Schedule 13G filings for the period (–45, 45) where $t = 0$ is the filing date.

We further examine hedge fund interventions comparing them with a control sample of non-targeted firms. We compare both Schedule 13D and Schedule 13G filing day events with a control sample of non-targeted firms based on year, exchange, industry (three-digit SIC) and size (market value). The results are presented in Tables 3 and 4 for 13D and 13G filings, respectively.

Table 3 confirms evidence of robust short-term value creation during the pre-and the post-filing periods for the Schedule 13D events while the control sample of non-targeted firms does not present significant positive abnormal returns results during the same period. Abnormal returns differences between the two samples are highly positive and significant. Also, AVAR and volume for 13D filings are larger compared to the control group.

Table 4 presents the results for the Schedule 13G events and for the control sample of non-targeted firms. We find no evidence of short-term value creation for both samples prior to the filing date and for the control sample after the filing date. AVAR and volume for 13G filings are larger compared to the control group but the differences are significant only in the (–45, 0) window.

Figures 3 and 5 present the CAARs for the full sample of Schedule 13D and Schedule 13G firms, respectively, along with the control sample of non-targeted firms using the market model for the (–45, 45) window, where $t = 0$ is the filing date. Schedule 13D targets experience positive CAARs while those for non-targeted firms remain close to zero for the whole (–45, 45) window. Schedule 13G filings have positive CAARs starting

five days prior to the filing date which remain higher than those of the control sample in the post-filing period.

Figures 4 and 6 present the daily mean-adjusted abnormal volume for the full sample of Schedule 13D and Schedule 13G firms, respectively, along with a control sample of non-targeted firms. The daily mean-adjusted abnormal volume is positive and higher from the beginning of the examined window for Schedule 13D and Schedule 13G events when compared with the control sample of non-targeted firms until about ten days after the filing date.

Figure 3 CAARs surrounding the initial filing – full sample (see online version for colours)
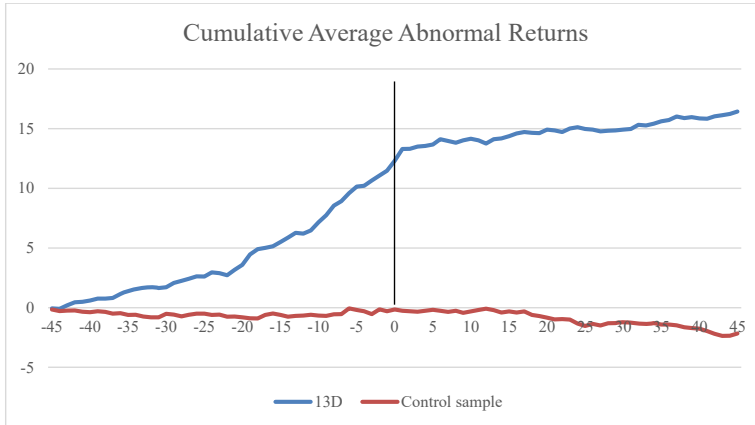
Notes: The y axis measures the CAARs in percent for Schedule 13D and a control sample of non-targeted firms calculated using the market model for the period (–45, 45) where $t = 0$ is the filing date.

Figure 4 Daily mean-adjusted abnormal volume surrounding the initial filing – full sample (see online version for colours)
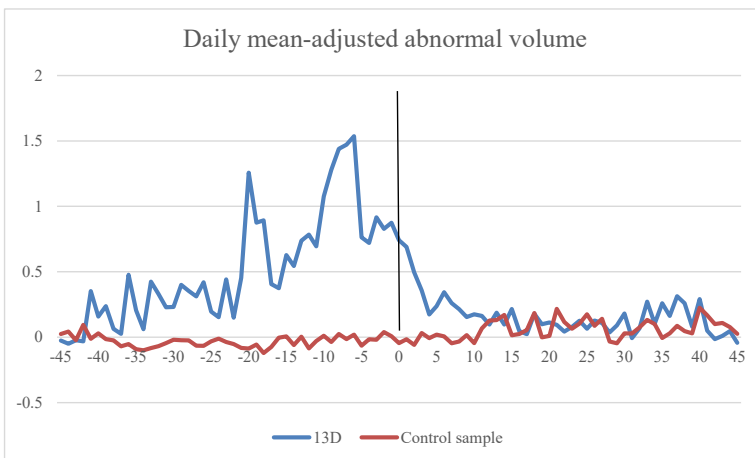
Note: The y axis measures the daily mean-adjusted abnormal volume for Schedule 13D and a control sample of non-targeted firms for the period (–45, 45) where $t = 0$ is the filing date.

Figure 5   CAARs surrounding the initial filing – full sample (see online version for colours)
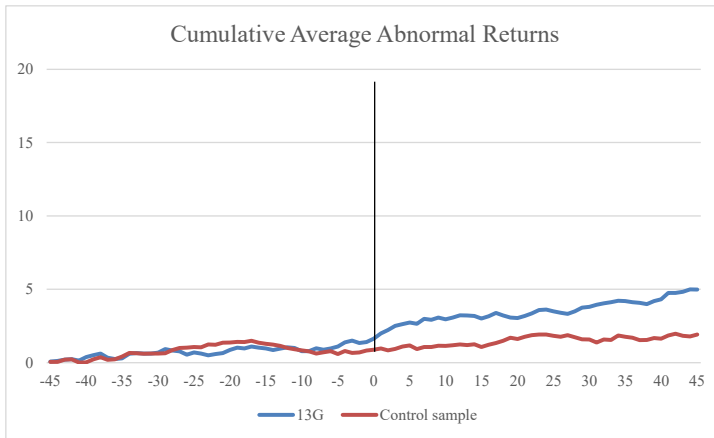
Note: The y axis measures the CAARs in percent for Schedule 13G and a control sample
of non-targeted firms calculated using the market model for the period (–45, 45)
where $t = 0$ is the filing date.

Figure 6   Daily mean-adjusted abnormal volume surrounding the initial filing – full sample
(see online version for colours)
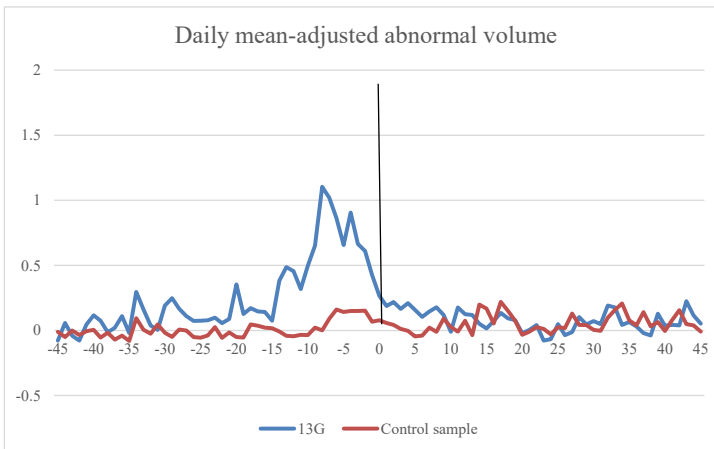
Note: The y axis measures the daily mean-adjusted abnormal volume for Schedule 13G
and a control sample of non-targeted firms for the period (–45, 45) where $t = 0$ is
the filing date.

4.2   Main event

Our results, from the previous section, indicate the existence of strong positive abnormal
returns, return volatility and volume during the pre-filing period of which abnormal
returns are significant only for Schedule 13D events. We surmise these findings are
indicative of the presence of insider trading in the market given the nature of the 'activist'
13D intervention. However, there is no evidence of significant differences in abnormal
returns or abnormal volatility and volume between 13D and 13G targets in the post filing

period. All the measures are positive and significant in this period albeit significantly lower than the corresponding measures in the pre filing period for 13D targeted firms. These findings are indicative of the presence of asymmetric information in the post filing period, notably information associated with target firm insiders who are likely to have better information than other investors in the market about how the firm will be affected by the fund's involvement. As we find no statistical difference between 13D and 13G targeted firms in this period, we conjecture the information asymmetry reflects market beliefs that 13D or 13G targets are undervalued firms. For example, Brav et al. (2008) note that hedge funds typically target 'value' firms, with low market value relative to book value. Of course, whether such firms are truly undervalued time will tell. Yet prices cannot perfectly reflect the information which is available either because is too costly to access (Grossman and Stiglitz, 1980) or because market participants find it too difficult to interpret the information disclosed in the initial filings.

In answering the question, we posited at the start of the paper, the evidence so far suggests that most gains appear to have been made before disclosure. While abnormal returns continue to be positive on average after disclosure, caution needs to be exercised as the immediate post filing returns may be noisy indicators as to where the stock of the targeted firm is heading over the ensuing days or weeks. We turn next to investigate this issue further. Specifically, we examine whether most of the gains in the targeted stock occur before the date where the filer surpasses the 5% threshold and the obligation to disclose the new holdings with the SEC is triggered, the main event date for our purposes. Before the event date, hedge funds still build their stake and since our dataset does not include 'wolf packs', the information about the new ownership is not available to other market participants. After the *event* date the hedge fund must file a Schedule 13D or 13G within 10 days. We restrict our dataset to events where the *event* date lags at least one day from the filing date meaning that the new information could be publicly available at least one day after the event date.

Table 5 presents the daily abnormal returns around the *event* date starting ten days before and ending ten days after the *event* date for the Schedule 13D and Schedule 13G filings for both the full sample (Panel A) and the 'clean' *event* sample (Panel B). The results show the existence of positive abnormal returns for Schedule 13D filings starting from day-5 for the market model, the Carhart and FF5 models. In contrast, the Schedule 13G filings present positive and statistically significant results about three and seven days after the main event date, namely after the filer made the decision to acquire more than 5% of the stock.

We employ the same methodology as in the previous section to calculate CAARs, SCAARs, AVAR and CAAV using as $t = 0$ as the *event* date. Table 6 presents the results for the Schedule 13D and Schedule 13G filings using three different windows (–10, 0), (–5, 0) and (–1, 0). The results show that Schedule 13D filings perform better in terms of abnormal returns for all examined windows when compared to Schedule 13G filings made by the same hedge funds prior the *event* date. Moreover, abnormal volume is positive and statistically significant for both filing types with Schedule 13D filings having higher abnormal volume than Schedule 13G filings. Differences between the two groups of targeted firms are positive and statistically significant for every examined measure and window.

Table 5   Daily abnormal returns around the event date

Panel A: Event date – all events

| | Schedule 13D | | | | | | Schedule 13G | | | | | |
| | (1) | | (2) | | (3) | | (1) | | (2) | | (3) | |
t = Event date	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value
−10	0.349	0.142	0.306	0.201	0.333	0.164	−0.172	0.394	−0.177	0.384	−0.158	0.440
−9	−0.052	0.732	−0.094	0.536	−0.110	0.480	−0.190*	0.097	−0.196*	0.091	−0.197*	0.093
−8	0.115	0.526	0.074	0.686	0.084	0.644	0.014	0.919	0.012	0.931	−0.008	0.956
−7	0.314	0.105	0.327*	0.086	0.300	0.116	0.036	0.795	0.018	0.896	−0.018	0.899
−6	0.055	0.809	0.095	0.682	0.094	0.684	−0.040	0.822	0.000	0.999	−0.006	0.973
−5	0.700***	0.002	0.685***	0.002	0.668***	0.003	0.061	0.651	0.084	0.539	0.087	0.523
−4	0.674**	0.023	0.662**	0.027	0.692**	0.020	0.095	0.641	0.122	0.549	0.101	0.617
−3	0.386**	0.016	0.368**	0.020	0.398**	0.013	−0.018	0.921	0.009	0.963	0.005	0.977
−2	0.706****	0.009	0.685**	0.011	0.682**	0.012	0.105	0.621	0.144	0.498	0.149	0.484
−1	0.386*	0.070	0.423*	0.048	0.440**	0.040	−0.239	0.364	−0.198	0.455	−0.168	0.527
0	1.324****	0.000	1.379***	0.000	1.392***	0.000	0.045	0.861	0.075	0.771	0.080	0.754
1	0.525****	0.000	0.524***	0.000	0.504***	0.001	0.172	0.222	0.172	0.230	0.149	0.297
2	0.277**	0.033	0.227*	0.078	0.257**	0.044	0.064	0.634	0.089	0.509	0.056	0.675
3	0.286****	0.007	0.272**	0.014	0.271***	0.016	0.212*	0.085	0.178	0.153	0.188	0.129
4	0.303****	0.007	0.276**	0.018	0.254**	0.037	0.175	0.130	0.155	0.182	0.194*	0.094
5	0.378****	0.004	0.406***	0.002	0.415***	0.001	−0.002	0.987	0.028	0.811	0.024	0.836
6	0.249*	0.076	0.185	0.205	0.150	0.307	−0.091	0.448	−0.097	0.415	−0.077	0.524
7	0.447****	0.000	0.409***	0.001	0.408***	0.001	0.290**	0.043	0.265*	0.059	0.261*	0.066
8	0.384****	0.005	0.348**	0.014	0.331**	0.018	0.270**	0.015	0.329***	0.003	0.294***	0.008
9	0.396**	0.019	0.431**	0.013	0.433**	0.010	0.173	0.102	0.147	0.154	0.114	0.265
10	0.244*	0.088	0.154	0.281	0.142	0.326	0.193*	0.068	0.179	0.101	0.202	0.065

Notes: The table presents average abnormal stock returns (AAR) ten days before and after the event date for Schedule 13D and Schedule 13G filings using the market model (1), the Carhart model (2), and the FF5 model (3). Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 6   Abnormal returns, return volatility and volume of Schedule 13D filings, Schedule 13G filings and their difference

Panel B: Event date – 'clean' events

| | Schedule 13D | | | | | | Schedule 13G | | | | | |
| | (1) | | (2) | | (3) | | (1) | | (2) | | (3) | |
t = Event date	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value
−10	0.502	0.100	0.466	0.129	0.510*	0.097	−0.224	0.432	−0.234	0.413	−0.214	0.454
−9	−0.024	0.882	−0.078	0.639	−0.107	0.527	−0.236	0.113	−0.225	0.134	−0.218	0.151
−8	0.065	0.774	0.015	0.947	0.011	0.959	0.030	0.861	0.018	0.918	0.011	0.945
−7	0.344	0.114	0.351	0.102	0.315	0.143	0.128	0.464	0.123	0.476	0.088	0.614
−6	−0.043	0.867	−0.010	0.969	−0.009	0.973	−0.231	0.136	−0.214	0.182	−0.222	0.160
−5	0.770***	0.005	0.777***	0.005	0.740***	0.007	−0.021	0.897	0.018	0.914	0.025	0.881
−4	0.771**	0.044	0.797**	0.040	0.817**	0.035	−0.224	0.221	−0.186	0.305	−0.225	0.217
−3	0.300*	0.061	0.279*	0.079	0.300*	0.061	0.034	0.875	0.087	0.686	0.065	0.762
−2	0.651**	0.018	0.638**	0.020	0.620**	0.025	0.297	0.317	0.302	0.308	0.315	0.288
−1	0.424*	0.086	0.473*	0.058	0.503**	0.044	−0.583***	0.000	−0.565***	0.000	−0.510***	0.001
0	1.158***	0.003	1.239***	0.002	1.247***	0.002	0.347	0.310	0.396	0.243	0.400	0.237
1	0.477***	0.006	0.492***	0.005	0.459**	0.010	0.142	0.383	0.192	0.245	0.163	0.321
2	0.342***	0.009	0.269**	0.040	0.289**	0.027	0.032	0.853	0.083	0.622	0.049	0.771
3	0.383***	0.002	0.391***	0.003	0.394***	0.003	0.146	0.335	0.129	0.395	0.138	0.360
4	0.192	0.100	0.191	0.120	0.148	0.260	0.205	0.117	0.179	0.170	0.200	0.121
5	0.170	0.196	0.211	0.103	0.231*	0.074	0.022	0.854	0.018	0.875	0.026	0.820
6	0.260	0.103	0.211	0.195	0.175	0.291	−0.020	0.868	−0.004	0.971	0.000	0.995
7	0.317**	0.024	0.325**	0.018	0.325**	0.019	0.343**	0.012	0.315**	0.020	0.277**	0.039
8	0.302*	0.066	0.269	0.109	0.271	0.106	0.121	0.323	0.181	0.134	0.176	0.145
9	0.255	0.117	0.249	0.126	0.276*	0.086	0.262**	0.048	0.222*	0.080	0.179	0.155
10	0.190	0.235	0.085	0.590	0.076	0.633	0.243**	0.047	0.293**	0.018	0.335***	0.007

Notes: The table presents average abnormal stock returns (AAR) ten days before and after the event date for Schedule 13D and Schedule 13G filings using the market model (1), the Carhart model (2), and the FF5 model (3). Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 6　Abnormal returns, return volatility and volume of Schedule 13D filings, Schedule 13G filings and their difference (continued)

Panel B: Filing date – 'clean' events

		Schedule 13D			Schedule 13G			Difference	
t=Filing Date	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
CAAR (−10, 0)	0.049***	0.050***	0.050***	−0.007	−0.005	−0.005	0.056***	0.054***	0.055***
Pos.:Neg.	254:226	260:220	261:219	285:379	297:367	303:361			
(−5, 0)	0.041***	0.042***	0.042***	−0.002	0.001	0.001	0.042***	0.042***	0.041***
Pos.: Neg.	260:220	266:214	274:206	307:357	316:348	318:350			
(−1, 0)	0.016***	0.017***	0.018***	−0.002	−0.002	−0.001	0.018***	0.019***	0.019***
Pos.: Neg.	255:225	257:223	272:208	319:345	316:348	319:345			
SCAAR (−10, 0)	0.138***	0.145***	0.147***	−0.027*	−0.023	−0.024	0.165***	0.169***	0.176***
(−5, 0)	0.115***	0.123***	0.124***	−0.008	−0.004	−0.003	0.123***	0.127***	0.127***
(−1, 0)	0.043***	0.047***	0.048***	−0.002	−0.001	0.001	0.045***	0.048***	0.047***
AVAR (−10, 0)	5.771***	6.242***	6.360***	2.731***	2.891***	2.939***	3.041***	3.351***	3.421***
(−5, 0)	6.809***	7.407***	7.545***	3.192***	3.376***	3.438***	3.617***	4.031***	4.107***
(−1, 0)	8.027***	8.670***	8.812***	4.471***	4.772***	4.873***	3.556*	3.898*	3.939*
CAAV (−10, 0)	0.152***			0.097***			0.055***		
(−5, 0)	0.099***			0.073***			0.026*		
(−1, 0)	0.048***			0.040***			0.008		
Number of obs.	480	480	480	664	664	664			

Notes: The table presents CAARs) SCAARs, AVAR, and CAAV for Schedule 13D, Schedule 13G filings, and their difference, (−10, −5, −1) days before the event date using the market model (1), the Carhart model (2), and the FF5 model (3). In each case, we calculate the number of positive and negative events. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 7   Daily abnormal returns around the event date

Panel A: Event date – all events

| | Schedule 13D | | | | | | Schedule 13G | | | | | |
| | (1) | | (2) | | (3) | | (1) | | (2) | | (3) | |
t = Event date	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value
–10	0.138	0.484	0.097	0.627	0.181	0.470	0.195	0.090	0.164	0.167	0.092	0.466
–9	–0.045	0.777	–0.053	0.742	–0.014	0.938	–0.093	0.476	–0.057	0.652	–0.002	0.993
–8	0.134	0.486	0.068	0.729	–0.018	0.942	0.054	0.721	0.068	0.651	0.124	0.500
–7	0.354*	0.081	0.374*	0.061	0.364	0.102	0.092	0.495	0.067	0.615	–0.005	0.977
–6	0.109	0.644	0.175	0.470	0.066	0.813	–0.171	0.139	–0.137	0.244	–0.186	0.155
–5	0.765***	0.001	0.747**	0.002	0.848***	0.004	0.209	0.161	0.214	0.135	0.127	0.364
–4	0.625**	0.046	0.622*	0.051	0.794*	0.054	0.211	0.249	0.186	0.295	0.246	0.255
–3	0.387**	0.023	0.352**	0.038	0.278*	0.099	0.077	0.640	0.029	0.861	0.014	0.938
–2	0.759***	0.008	0.746***	0.008	0.712**	0.013	0.042	0.757	0.082	0.552	0.063	0.708
–1	0.436*	0.054	0.484**	0.035	0.600*	0.025	–0.177	0.215	–0.168	0.241	–0.224	0.176
0	1.131***	0.001	1.184***	0.000	1.009***	0.007	0.177	0.216	0.200	0.171	0.226	0.150
1	0.421***	0.001	0.450***	0.000	0.426***	0.004	0.017	0.884	0.017	0.889	–0.127	0.349
2	0.278**	0.033	0.211	0.100	0.277**	0.041	0.055	0.653	–0.022	0.865	0.056	0.690
3	0.287***	0.009	0.334***	0.004	0.453***	0.002	–0.035	0.772	0.046	0.705	0.074	0.561
4	0.277**	0.019	0.277	0.025	0.145	0.296	–0.012	0.922	–0.018	0.883	–0.124	0.361
5	0.399***	0.004	0.448***	0.001	0.261**	0.049	0.016	0.885	0.066	0.567	–0.041	0.763
6	0.214	0.138	0.195	0.191	0.211	0.234	–0.076	0.525	–0.032	0.786	–0.086	0.558
7	0.504***	0.000	0.463***	0.000	0.333**	0.026	0.265*	0.050	0.280*	0.039	0.264*	0.096
8	0.379***	0.009	0.357**	0.018	0.280	0.115	–0.006	0.960	–0.067	0.585	–0.022	0.880
9	0.419**	0.010	0.429**	0.017	0.311*	0.068	0.059	0.658	0.102	0.475	0.151	0.389
10	0.291*	0.054	0.198	0.201	0.140	0.425	–0.118	0.430	–0.229	0.136	–0.080	0.575

Notes: The table presents average abnormal stock returns (AAR) 10 days before and after the event date for Schedule 13D and a control sample using the market model (1), the Carhart model (2), and the FF5 model (3). The control sample is formed by using the coarsened exact matching restricting control firms to the same stock exchange, three-digit SIC and size. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 7   Daily abnormal returns around the event date (continued)

Panel B: Event date – 'clean' events

| | Schedule 13D | | | | | | Schedule 13G | | | | | |
| | (1) | | (2) | | (3) | | (1) | | (2) | | (3) | |
t = Event date	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value
–10	0.209	0.394	0.166	0.506	0.181	0.470	0.087	0.483	0.084	0.509	0.093	0.466
–9	0.000	0.998	–0.022	0.899	–0.014	0.938	–0.005	0.974	0.017	0.900	–0.001	0.993
–8	0.055	0.819	–0.015	0.950	–0.018	0.942	0.152	0.402	0.136	0.454	0.124	0.500
–7	0.358	0.110	0.384*	0.084	0.364	0.102	0.019	0.901	–0.006	0.968	–0.005	0.977
–6	0.022	0.936	0.076	0.784	0.066	0.813	–0.238**	0.056	–0.184	0.149	–0.186	0.155
–5	0.852***	0.003	0.885***	0.003	0.848***	0.004	0.118	0.422	0.147	0.300	0.128	0.364
–4	0.747*	0.065	0.778*	0.059	0.794*	0.054	0.226	0.311	0.198	0.359	0.247	0.255
–3	0.291*	0.080	0.250	0.138	0.278*	0.099	0.129	0.504	0.054	0.780	0.015	0.938
–2	0.732**	0.010	0.749***	0.008	0.712**	0.013	–0.054	0.739	0.021	0.898	0.064	0.708
–1	0.477*	0.070	0.551**	0.040	0.600**	0.025	–0.297*	0.069	–0.274*	0.094	–0.224	0.176
0	0.919**	0.015	1.011***	0.007	1.009***	0.007	0.144	0.332	0.185	0.225	0.226	0.150
1	0.370**	0.010	0.408***	0.005	0.426***	0.004	–0.114	0.365	–0.106	0.412	–0.127	0.349
2	0.354***	0.009	0.267**	0.048	0.277**	0.041	0.176	0.208	0.085	0.552	0.057	0.690
3	0.395***	0.002	0.462***	0.001	0.453***	0.002	–0.018	0.891	0.064	0.621	0.074	0.561
4	0.176	0.153	0.177	0.171	0.145	0.296	–0.001	0.992	–0.052	0.703	–0.124	0.361
5	0.166	0.218	0.232*	0.080	0.261**	0.049	–0.083	0.537	–0.016	0.904	–0.041	0.763
6	0.237	0.161	0.224	0.192	0.211	0.234	–0.137	0.315	–0.084	0.538	–0.085	0.558
7	0.355**	0.016	0.342**	0.020	0.333***	0.026	0.163	0.299	0.225	0.158	0.265*	0.096
8	0.296*	0.087	0.280	0.117	0.280	0.115	0.057	0.678	0.010	0.941	–0.022	0.880
9	0.291*	0.089	0.283	0.104	0.311*	0.068	0.105	0.484	0.127	0.433	0.152	0.389
10	0.239	0.154	0.141	0.412	0.140	0.425	–0.008	0.949	–0.100	0.473	–0.079	0.575

Notes: The table presents average abnormal stock returns (AAR) 10 days before and after the event date for Schedule 13D and a control sample using the market model (1), the Carhart model (2), and the FF5 model (3). The control sample is formed by using the coarsened exact matching restricting control firms to the same stock exchange, three-digit SIC and size. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 8 Abnormal returns, return volatility and volume of Schedule 13D filings, a control sample and their difference

Panel A: Filing date – all events

		Schedule 13D			Schedule 13G			Difference	
t =Filing date	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*
CAAR (−10, 0)	*0.048****	*0.048****	*0.049****	0.006	0.007	0.007	*0.042****	*0.042****	*0.043****
Pos.:Neg.	321:274	340:255	332:263	231:304	293:302	303:292			
(−5, 0)	*0.041****	*0.041****	*0.042****	0.005	0.005	0.006	*0.036****	*0.036****	*0.036****
Pos.: Neg.	319:279	327:268	341:254	288:307	306:289	302:293			
(−1, 0)	*0.016****	*0.017****	*0.017****	0.000	0.000	0.001	*0.016****	*0.016****	*0.016****
Pos.: Neg.	316:279	329:266	335:260	280:315	294:301	295:300			
SCAAR (−10, 0)	*0.142****	*0.146****	*0.150****	0.011	0.011	0.012	*0.132****	*0.136****	*0.138****
(−5, 0)	*0.123****	*0.127****	*0.131****	0.007	0.006	0.008	*0.116****	*0.120****	*0.123****
(−1, 0)	*0.052****	*0.054****	*0.056****	−0.004	−0.004	−0.003	*0.056****	*0.058****	*0.059****
AVAR (−10, 0)	*5.812****	*6.201****	*6.274****	*1.483****	*1.532****	*1.574****	*4.329****	*4.670****	*4.700****
(−5, 0)	*7.670****	*8.199****	*8.276****	*1.689****	*1.737****	*1.775****	*5.981****	*6.462****	*6.501****
(−1, 0)	*10.810****	*11.357****	*11.370****	*1.691****	*1.755****	*1.794****	*9.118****	*9.601****	*9.576****
CAAV (−10, 0)	*0.139***			0.001			*0.139****		
(−5, 0)	*0.092****			0.002			*0.090****		
(−1, 0)	*0.047****			0.002			*0.046****		
Number of obs.	595	595	595	595	595	595			

Notes: The table presents CAARs, SCAARs, AVAR, and CAAV for Schedule 13D filings, a control sample, and their difference. Panel A presents the results using the market model (1), the Carhart model (2), and the FF5 model (3). The control sample is formed by using the coarsened exact matching restricting control firms to the same stock exchange, three-digit SIC and size. In each case, we calculate the number of positive and negative events. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 8　Abnormal returns, return volatility and volume of Schedule 13D filings, a control sample and their difference (continued)

Panel B: Filing date – 'clean' events

	Schedule 13D			Schedule 13G			Difference		
t=Filing Date	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*
CAAR									
(−10, 0)	0.047***	0.048***	0.048***	0.003	0.004	0.005	0.044***	0.044***	0.043***
Pos.:Neg.	239:212	259:192	253:198	214:237	219:332	229:335			
(−5, 0)	0.040***	0.042***	0.042***	0.003	0.003	0.005	0.038***	0.039***	0.037***
Pos.: Neg.	241:210	250:201	256:195	213:238	230:221	230:221			
(−1, 0)	0.014***	0.016***	0.016***	−0.002	−0.001	0.000	0.016***	0.017***	0.016***
Pos.: Neg.	238:212	249:202	254:197	199:252	218:233	221:230			
SCAAR									
(−10, 0)	0.133***	0.142***	0.144***	0.004	0.006	0.008	0.129***	0.136***	0.136***
(−5, 0)	0.115***	0.124***	0.126***	0.003	0.004	0.006	0.112***	0.119***	0.120***
(−1, 0)	0.040***	0.044***	0.045***	−0.008	−0.007	−0.006	0.048***	0.051***	0.051***
AVAR									
(−10, 0)	5.601***	6.050***	6.135***	1.522***	1.561***	1.600***	4.079***	4.489***	4.535***
(−5, 0)	6.925***	7.524***	7.623***	1.789***	1.836***	1.876***	5.137***	5.689***	5.747***
(−1, 0)	7.875***	8.494***	8.531***	1.749***	1.807***	1.853***	6.126***	6.687***	6.678***
CAAV									
(−10, 0)	0.153***			−0.001			0.155***		
(−5, 0)	0.100***			0.000			0.100***		
(−1, 0)	0.048***			0.001			0.047***		
Number of obs.	451	451	451	451	451	451			

Notes: The table presents CAARs, SCAARs, AVAR, and CAAV for Schedule 13D filings, a control sample, and their difference, and their difference, (−10, −5, −1) days before the event date using the market model (1), the Carhart model (2), and the FF5 model (3). The control sample is formed by using the coarsened exact matching restricting control firms to the same stock exchange, three-digit SIC and size. In each case, we calculate the number of positive and negative events. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 7 reports daily abnormal returns around the *event* ($t = 0$) date starting ten days before and ending ten days after the *event* date for the Schedule 13D and a control sample of non-targeted firms for both the full sample (Panel A) and the 'clean' *events* sample (Panel B). Similar to Table 5, the results in Table 7 show the existence of positive abnormal returns for Schedule 13D filings starting from day-7 for the market model and the Carhart model while the control group of firms does not present significant abnormal returns.

Table 8 provides a comparison of cumulative results between the Schedule 13D filings and the control group of non-targeted firms. CAARs, SCAARs and CAAVs for the control sample are close to zero and statistically insignificant. Notably, the differences between the Schedule 13D filings and the control group of firms are highly positive and statistically significant confirming short-term value creation prior to the event date.

We then compare the Schedule 13G filings with a control group of non-targeted firms. The daily abnormal returns are presented in Table 9 where the results are mixed for the full sample and the 'clean' sample of Schedule 13G targeted firms with some evidence of positive abnormal returns close to the filing date mainly for 13G firms.

In Table 10, we provide a comparison between the Schedule 13G filings and the control group of non-targeted firms cumulative results. We find that Schedule 13G filings and target firms have slightly negative CAARs and SCAARs which are statistically significant in the (–10, 0) window. AVAR and volume are significantly greater for 13G firms.

A question that arises is whether the abnormal returns and high level of turnover that we observe prior to the main (trigger) event date are indeed created by hedge fund activists' exploiting private information rather than recognising these firms are already special and hence attract considerable investor interest.[12] To address this question, we follow Wong (2020) by asking the same question, namely, whether 'many investors would independently and spontaneously decide to accumulate shares in the target firms on the same day.' To do so we calculate the total trading volume for the 60-day window around the trigger event date for both the 640 Schedule 13D and 1,011 Schedule 13G filings. The total turnover is calculated for each campaign day and is presented as a percentage of normal trading volume as follows:

$$Turnover = \frac{Vol_{i,t}}{Avg\left(Vol_{i,t-120}...Vol_{i,t-60}\right)} \tag{8}$$

where the normal trading volume is calculated using the average trading volume from day-120 to day-60 prior the event date. If the ratio equals one, we conclude there is no abnormal turnover on that date. As shown in Figures 7 and 8, the turnover on the event date is about 673% and 525% for Schedule 13D and Schedule 13G filings, respectively. As Wong (2020) notes "since the trigger date is not publicly observable until the 13D [or 13G] is filed, the high level of turnover cannot be a public reaction to the activist's campaign". Note that the endogeneity concern in Wong's (2020) study is that 'pack members are merely joining campaigns that are more likely to be successful, rather than causing such success'. Our dataset does not contain 'wolf pack' Schedule 13D filings albeit we cannot exclude the possibility that wolf packs may be formed informally.

Table 9   Daily abnormal returns around the event date

Panel A: Event date – all events

| | Schedule 13D | | | | | | Schedule 13G | | | | | |
| | (1) | | (2) | | (3) | | (1) | | (2) | | (3) | |
t = Event date	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value
−10	−0.037	0.868	−0.029	0.897	−0.012	0.958	−0.183	0.139	−0.153	0.211	−0.163	0.181
−9	−0.181	0.15	−0.189	0.142	−0.211	0.104	−0.189	0.108	−0.118	0.314	−0.132	0.253
−8	0.025	0.863	0.048	0.748	0.026	0.861	−0.403***	0.000	−0.415***	0.000	−0.435***	0.000
−7	0.042	0.787	0.041	0.792	−0.012	0.940	−0.022	0.858	−0.040	0.750	−0.036	0.776
−6	−0.071	0.713	−0.010	0.959	−0.032	0.870	−0.045	0.716	−0.052	0.675	−0.067	0.596
−5	0.063	0.667	0.060	0.684	0.072	0.623	−0.211*	0.079	−0.297	0.017	−0.285**	0.025
−4	0.041	0.853	0.084	0.702	0.088	0.687	0.096	0.419	0.091	0.440	0.066	0.576
−3	0.048	0.814	0.039	0.847	0.026	0.898	0.039	0.784	0.016	0.911	0.018	0.895
−2	0.092	0.690	0.121	0.604	0.127	0.586	0.001	0.993	0.064	0.565	0.040	0.716
−1	−0.239	0.414	−0.205	0.486	−0.170	0.565	−0.051	0.650	−0.021	0.851	−0.024	0.835
0	−0.017	0.949	0.016	0.955	0.020	0.940	−0.154	0.169	−0.163	0.140	−0.157	0.159
1	0.278*	0.055	0.310**	0.038	0.273*	0.065	0.000	0.998	−0.042	0.741	−0.063	0.635
2	0.038	0.800	0.096	0.518	0.085	0.567	−0.157	0.193	−0.069	0.576	−0.099	0.430
3	0.201	0.134	0.188	0.171	0.189	0.168	−0.133	0.266	−0.141	0.240	−0.203*	0.094
4	0.113	0.331	0.103	0.381	0.119	0.308	−0.168	0.151	−0.169	0.148	−0.117	0.325
5	0.051	0.696	0.097	0.451	0.067	0.605	0.167	0.213	0.148	0.274	0.110	0.411
6	−0.148	0.249	−0.129	0.325	−0.105	0.431	0.004	0.980	0.048	0.752	0.074	0.621
7	0.305**	0.049	0.267*	0.081	0.266*	0.085	0.462	0.104	0.493*	0.084	0.514*	0.071
8	0.299**	0.011	0.355***	0.003	0.319***	0.007	0.074	0.501	0.098	0.373	0.059	0.593
9	0.159	0.166	0.117	0.299	0.093	0.412	−0.075	0.496	−0.080	0.462	−0.060	0.587
10	0.262**	0.016	0.256**	0.025	0.284	0.013	0.069	0.519	0.039	0.727	0.028	0.803

Notes: The table presents average abnormal stock returns (AAR) ten days before and after the event date for Schedule 13G and a control sample using the market model (1), the Carhart model (2), and the FF5 model (3). Panel A presents the results for the full sample. Panel B presents results for the 'clean' events, excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 9 Daily abnormal returns around the event date (continued)

Panel B: Event date – 'clean' events

| | Schedule 13D | | | | | | Schedule 13G | | | | | |
| | (1) | | (2) | | (3) | | (1) | | (2) | | (3) | |
t = Event date	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value	AAR %	p-value
−10	−0.111	0.725	−0.087	0.784	−0.069	0.830	−0.016	0.911	−0.012	0.934	0.002	0.988
−9	−0.242	0.144	−0.244	0.145	−0.257	0.127	−0.196	0.143	−0.118	0.369	−0.124	0.342
−8	0.037	0.844	0.030	0.877	0.012	0.947	−0.416***	0.001	−0.428***	0.001	−0.441***	0.001
−7	0.126	0.514	0.170	0.379	0.115	0.552	−0.102	0.486	−0.115	0.435	−0.124	0.410
−6	−0.226	0.175	−0.188	0.285	−0.198	0.253	0.059	0.713	0.052	0.744	0.049	0.760
−5	−0.039	0.827	−0.019	0.917	−0.005	0.979	−0.281*	0.063	−0.360**	0.021	−0.319**	0.047
−4	−0.314	0.103	−0.283	0.141	−0.296	0.123	0.084	0.535	0.085	0.527	0.040	0.769
−3	0.099	0.676	0.135	0.570	0.097	0.683	0.136	0.478	0.116	0.534	0.111	0.555
−2	0.384	0.241	0.379	0.249	0.395	0.231	0.131	0.309	0.161	0.232	0.150	0.273
−1	−0.598***	0.000	−0.607***	0.000	−0.551***	0.001	−0.135	0.332	−0.120	0.392	−0.097	0.496
0	0.350	0.327	0.402	0.259	0.400	0.263	−0.186	0.150	−0.224*	0.080	−0.221*	0.088
1	0.156	0.380	0.236	0.207	0.193	0.297	0.080	0.585	0.020	0.897	−0.013	0.935
2	0.018	0.926	0.106	0.572	0.086	0.649	−0.189	0.206	−0.104	0.496	−0.15	0.326
3	0.089	0.588	0.083	0.618	0.085	0.609	−0.130	0.359	−0.132	0.348	−0.193	0.175
4	0.156	0.222	0.155	0.226	0.171	0.181	−0.032	0.828	−0.005	0.972	0.06	0.678
5	0.012	0.927	0.062	0.616	0.033	0.788	−0.057	0.669	−0.079	0.559	−0.112	0.405
6	−0.063	0.618	−0.045	0.725	−0.027	0.840	−0.177	0.366	−0.126	0.520	−0.112	0.569
7	0.335**	0.018	0.292**	0.038	0.240*	0.087	0.239	0.150	0.303	0.068*	0.312*	0.060
8	0.130	0.318	0.190	0.146	0.178	0.177	−0.001	0.996	0.019	0.878	0.014	0.905
9	0.233	0.108	0.158	0.259	0.116	0.410	−0.085	0.521	−0.089	0.487	−0.091	0.487
10	0.273**	0.029	0.314**	0.014	0.362***	0.005	−0.002	0.985	0.012	0.925	−0.008	0.953

Notes: The table presents average abnormal stock returns (AAR) ten days before and after the event date for Schedule 13G and a control sample using the market model (1), the Carhart model (2), and the FF5 model (3). Panel A presents the results for the full sample. Panel B presents results for the 'clean' events, excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 10   Abnormal returns, return volatility and volume of Schedule 13G filings, a control sample and their difference

Panel A: Filing date – all events

		Schedule 13G			Control sample			Difference	
t = Filing date	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*
CAAR	(−10, 0)	−0.002	−0.000	−0.001	−0.011***	−0.011**	−0.012***	0.009	0.011	0.011
	Pos: Neg	398:484	411:481	413:479	394:498	394:498	399:493			
	(−5, 0)	−0.000	0.001	0.002	−0.003	−0.003	−0.003	0.003	0.004	−0.001
	Pos: Neg	425:467	412:480	415:477	404:488	410:482	410:482			
	(−1, 0)	−0.002	−0.002	−0.002	−0.002	−0.002	−0.002	−0.001	−0.000	−0.000
	Pos: Neg	410:482	430:452	437:445	400:492	398:494	407:485			
SCAAR	(−10, 0)	−0.021	−0.016	−0.016	−0.024***	−0.025***	−0.026	0.003	0.009	0.010
	(−5, 0)	−0.008	−0.004	−0.002	−0.009	−0.009	−0.009	−0.002	0.005	0.007
	(−1, 0)	−0.004	−0.002	−0.001	−0.006	−0.005	−0.005	0.002	0.004	0.004
AVAR	(−10, 0)	3.428***	3.767***	3.883***	1.298***	1.353***	1.384***	2.130***	2.414**	2.499**
	(−5, 0)	4.507***	5.023***	5.203***	1.373***	1.442***	1.474***	3.134**	3.581*	3.729*
	(−1, 0)	8.470*	9.823*	10.292***	1.340***	1.409***	1.441***	7.131	8.414	8.851
CAAV	(−10, 0)	0.082***			0.007			0.075***	0.075***	0.075***
	(−5, 0)	0.064***			0.006			0.058***	0.058***	0.058***
	(−1, 0)	0.034***			0.004*			0.030***	0.030***	0.030***
Number of obs.		892	892	892	892	892	892	892		

Notes: The table presents CAARs, SCAARs, AVAR, and CAAV for Schedule 13G, a control sample, and their difference. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 10 Abnormal returns, return volatility and volume of Schedule 13G filings, a control sample and their difference (continued)

Panel B: Filing date – 'clean' events

	Schedule 13G			Control sample			Difference		
t = Filing date	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*
CAAR									
(–10, 0)	–0.005	–0.003	–0.004	–0.009*	–0.010*	–0.010*	0.004	0.007	0.006
Pos: Neg	265:330	276:319	282:313	271:324	265:330	266:329			
(–5, 0)	–0.001	0.000	0.000	–0.003	–0.003	0.003	0.001	0.004	0.003
Pos: Neg	286:309	283:312	283:312	275:320	271:324	274:321			
(–1, 0)	–0.003	–0.002	–0.002	–0.003*	–0.003*	–0.003	0.000	0.001	0.001
Pos: Neg	281:314	288:307	292:301	256:339	258:337	266:329			
SCAAR									
(–10, 0)	–0.024	–0.019	–0.020	–0.019*	–0.021*	–0.022*	–0.005	0.002	0.002
(–5, 0)	–0.007	–0.004	–0.003	–0.006	–0.007	–0.007	–0.001	0.003	0.004
(–1, 0)	–0.001	–0.001	0.001	–0.006	–0.007	–0.005	0.004	0.006	0.006
AVAR									
(–10, 0)	2.809***	2.951***	2.988***	1.260***	1.309***	1.341***	1.550***	1.643***	1.647***
(–5, 0)	3.179***	3.337***	3.381***	1.378***	1.427***	1.469***	1.802***	1.910***	1.912***
(–1, 0)	4.237***	4.524***	4.578***	1.369***	1.427***	1.471***	2.869***	3.097***	3.107***
CAAV									
(–10, 0)	0.094***			0.011			0.083***		
(–5, 0)	0.070***			0.009			0.061***		
(–1, 0)	0.038***			0.006			0.032***		
Number of Obs.	595	595	595	595	595	595	595	595	595

Notes: The table presents CAARs, SCAARs, AVAR, and CAAV for Schedule 13G, a control sample, and their difference, (–10, –5, –1) days before the event date using the market model (1), the Carhart model (2), and the FF5 model (3). In each case, we calculate the number of positive and negative events. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 11   Prior year abnormal returns, return volatility and volume of Schedule 13D and Schedule 13G filings

Panel A: Schedule 13D

	t = Filing date	Schedule 13D			Lag Schedule 13D		
		(1)	(2)	(3)	(1)	(2)	(3)
CAAR	(−45, 0)	0.128***	0.124***	0.124***	−0.015*	−0.012	−0.012
	(0, +45)	0.043***	0.040***	0.040***	−0.018*	−0.015	−0.015
	(−45, +45)	0.163***	0.157***	0.156***	−0.034**	−0.028**	−0.027*
SCAAR	(−45, 0)	0.382***	0.387***	0.385***	−0.046**	−0.035*	−0.033
	(0, +45)	0.115***	0.114***	0.114***	−0.065***	−0.060***	−0.058**
	(−45, +45)	0.472***	0.478***	0.477***	−0.110***	−0.094***	−0.090***
AVAR	(−45, 0)	3.373***	3.625***	3.624***	1.123***	1.182***	1.218***
	(0, +45)	1.382***	1.502***	1.502***	1.220***	1.292***	1.324***
	(−45, +45)	2.377***	2.564***	2.563***	1.175***	1.240***	1.274***
CAAV	(−45, 0)	0.301***			−0.012		
	(0, +45)	0.120***			0.006		
	(−45, +45)	0.412***			−0.005		
Number of obs.		618	618	618	618	618	618

Notes: The table presents CAARs, SCAARs, AVAR, and CAAV for Schedule 13D filings and for the same calendar window in the year prior to the filing date (Lag Schedule) 45 days before and after the filing date (Panel A), and Schedule 13G filings and for the same calendar window in the year prior to the filing date (Lag Schedule) 45 days before and after the filing date (Panel B), using the market model (1), the Carhart model (2), and the FF5 model (3). We calculate the above measures for all events that have CRSP values for the prior year estimation period. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 11   Prior year abnormal returns, return volatility and volume of Schedule 13D and Schedule 13G filings (continued)

Panel B: Schedule 13G

t = Filing date	Schedule 13G			Lag Schedule 13G		
	(1)	(2)	(3)	(1)	(2)	(3)
CAAR						
(−45, 0)	0.016	0.015	0.015	−0.020**	−0.017**	−0.018**
(0, +45)	0.025***	0.027***	0.026***	−0.014	−0.009	−0.010
(−45, +45)	0.039**	0.039***	0.038***	−0.033***	−0.026**	−0.029**
SCAAR						
(−45, 0)	0.008	0.006	0.006	−0.047***	−0.041**	−0.044***
(0, +45)	0.062***	0.072***	0.072***	−0.041**	−0.033*	−0.036*
(−45, +45)	0.067**	0.073**	0.071**	−0.087***	−0.074***	−0.081***
AVAR						
(−45, 0)	1.858***	2.002***	2.085***	1.221***	1.290***	1.317***
(0, +45)	1.334***	1.455***	1.492***	1.487***	1.585***	1.617***
(−45, +45)	1.600***	1.733***	1.802***	1.355***	1.438***	1.468***
CAAV						
(−45, 0)	0.168***			0.016		
(0, +45)	0.066***			0.025		
(−45, +45)	0.230***			0.041		
Number of obs.	930	930	930	930	930	930

Notes: The table presents CAARs, SCAARs, AVAR, and CAAV for Schedule 13D filings and for the same calendar window in the year prior to the filing date (Lag Schedule) 45 days before and after the filing date (Panel A), and Schedule 13G filings and for the same calendar window in the year prior to the filing date (Lag Schedule) 45 days before and after the filing date (Panel B), using the market model (1), the Carhart model (2), and the FF5 model (3). We calculate the above measures for all events that have CRSP values for the prior year estimation period. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 12   Abnormal returns, return volatility and volume of Schedule 13D filings, a control sample of Schedule 13G filings and their difference

Panel A: Filing date – all events

t = Filing date	Schedule 13D			Schedule 13G			Difference		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
CAAR									
(−45, 0)	0.126***	0.128***	0.130***	−0.016	−0.013	−0.013	0.142***	0.141***	0.143***
(0, +45)	0.046***	0.048***	0.047***	0.028***	0.035***	0.034***	0.024***	0.013***	0.013***
(−45, +45)	0.163***	0.168***	0.168***	0.010	0.018***	0.018***	0.153***	0.150***	0.150***
SCAAR									
(−45, 0)	0.383***	0.407***	0.415***	−0.057*	−0.050*	−0.048	0.440***	0.157***	0.463***
(0, +45)	0.116***	0.130***	0.130***	0.080***	0.105***	0.102***	0.036***	0.025***	0.028***
(−45, +45)	0.470***	0.508***	0.516***	0.020	0.049	0.046	0.450***	0.459***	0.470***
AVAR									
(−45, 0)	3.757***	4.050***	4.151***	1.550***	1.647***	1.687***	2.207***	2.403***	2.464***
(0, +45)	1.377***	1.506***	1.544***	1.331***	1.467***	1.499***	0.046***	0.039***	0.045***
(−45, +45)	2.567***	2.778***	2.850***	1.446***	1.563***	1.560***	1.121***	1.215***	1.290***
CAAV									
(−45, 0)	0.345***			0.136***			0.209***		
(0, +45)	0.146***			0.048***			0.098***		
(−45, +45)	0.481***			0.182***			0.299***		
Number of obs.	468	468	468	468	468	468			

Notes: The table presents CAARs) SCAARs, AVAR, and CAAV for Schedule 13D, a control sample of Schedule 13G filings, and their difference, 45 days before and after the filing date using the market model (1), the Carhart model (2), and the FF5 model (3). The control sample of Schedule 13G filings is formed by using the coarsened exact matching method and matching each event firm to a Schedule 13D event from the same year and the same industry (two-digit SIC) with the nearest neighbour. The coarsened exact matching is estimated using (log) firm size, market-to-book ratio, return on assets (ROA) measured at $t-1$, and the change in the target firm ROA measured between years $t-3$ and $t-1$. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 12 Abnormal returns, return volatility and volume of Schedule 13D filings, a control sample of Schedule 13G filings and their difference (continued)

Panel A: Filing date – all events

t = Filing date		Schedule 13D			Schedule 13G			Difference		
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
CAAR	(−45, 0)	0.122***	0.121***	0.123***	−0.006	−0.003	−0.005	0.128***	0.124***	0.128***
	(0, +45)	0.064***	0.066***	0.064***	0.031**	0.038***	0.036***	0.033***	0.028***	0.028***
	(−45, +45)	0.179***	0.180***	0.180***	0.025	0.034*	0.029	0.154***	0.146***	0.161***
SCAAR	(−45, 0)	0.325***	0.343***	0.347***	−0.044	−0.031	−0.036	0.369***	0.374***	0.383***
	(0, +45)	0.165***	0.174***	0.174***	0.091***	0.116***	0.109***	0.075***	0.026***	0.065***
	(−45, +45)	0.469***	0.497***	0.501***	0.046	0.082	0.069	0.423***	0.415***	0.432***
AVAR	(−45, 0)	3.700***	3.972***	4.064***	1.585***	1.670***	1.713***	2.115***	2.302***	2.351***
	(0, +45)	1.789***	1.966***	2.002***	1.312***	1.468***	1.502***	0.477***	0.498***	0.500***
	(−45, +45)	2.751***	2.978***	3.041***	1.453***	1.574***	1.612***	1.298***	1.404***	1.429***
CAAV	(−45, 0)	0.294***			0.115***			0.179***		
	(0, +45)	0.151***			0.036			0.115***		
	(−45, +45)	0.438***			0.149**			0.289***		
Number of obs.		273	273	273	273	273	273	273		

Notes: The table presents CAARs) SCAARs, AVAR, and CAAV for Schedule 13D, a control sample of Schedule 13G filings, and their difference, 45 days before and after the filing date using the market model (1), the Carhart model (2), and the FF5 model (3). The control sample of Schedule 13G filings is formed by using the coarsened exact matching method and matching each event firm to a Schedule 13D event from the same year and the same industry (two-digit SIC) with the nearest neighbour. The coarsened exact matching is estimated using (log) firm size, market-to-book ratio, return on assets (ROA) measured at $t − 1$, and the change in the target firm ROA measured between years $t −3$ and $t − 1$. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 13   Abnormal returns, return volatility and volume of Schedule 13D filings, a control sample of Schedule 13G filings and their difference

Panel A: Event date – all events

		Schedule 13D			Schedule 13G			Difference		
	t = Filing date	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
CAAR	(−10, 0)	0.051***	0.051***	0.052***	−0.010	−0.007	−0.007	0.061***	0.058***	0.059***
	(−5, 0)	0.042***	0.043***	0.043***	−0.004	−0.002	−0.001	0.038***	0.045***	0.044***
	(−1, 0)	0.017***	0.018***	0.019***	−0.000	0.000	0.001	0.017***	0.018***	0.018***
SCAAR	(−10, 0)	0.149***	0.156***	0.159***	−0.032*	−0.026	−0.027	0.181***	0.182***	0.186***
	(−5, 0)	0.121***	0.128***	0.130***	−0.014	−0.009	−0.007	0.135***	0.137***	0.137***
	(−1, 0)	0.049***	0.053***	0.053***	−0.003	−0.002	−0.000	0.052***	0.055***	0.053***
AVAR	(−10, 0)	6.639***	7.134***	7.270***	2.343***	2.513***	2.569***	4.296***	4.621***	4.701***
	(−5, 0)	8.448***	9.095***	9.252***	2.922***	3.110***	3.170***	5.526***	5.985***	6.082***
	(−1, 0)	12.129***	12.842***	13.027***	3.570***	3.864***	3.945***	8.559***	8.978***	9.082***
CAAV	(−10, 0)	0.158***			0.066***			0.092***		
	(−5, 0)	0.105***			0.048***			0.057***		
	(−1, 0)	0.054***			0.026***			0.028***		
Number of obs.		468	468	468	468	468	468			

Notes: The table presents the CAARs, SCAARs, AVAR, and CAAV for Schedule 13D, a control sample of Schedule 13G filings, and their difference. (−10, −5, −1) days before the event date using the market model (1), the Carhart model (2) and the FF5 model (3). The control sample of Schedule 13G filings is formed by using the coarsened exact matching method and matching each event firm to a Schedule 13D event from the same year and the same industry (two-digit SIC) with the nearest neighbour. The coarsened exact matching is estimated using (log) firm size, market-to-book ratio, return on assets (ROA) measured at t − 1, and the change in the target firm ROA measured between years t − 3 and t − 1. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Table 13   Abnormal returns, return volatility and volume of Schedule 13D filings, a control sample of Schedule 13G filings and their difference (continued)

Panel B: Event date – 'clean' events

|	Schedule 13D			Schedule 13G			Difference		
t = Filing date	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*	*(1)*	*(2)*	*(3)*
CAAR									
(−10, 0)	0.054***	0.052***	0.052***	−0.004	−0.002	−0.003	0.058***	0.054***	0.055***
(−5, 0)	0.048***	0.046***	0.047***	−0.000	0.002	0.002	0.048***	0.048***	0.049***
(−1, 0)	0.022***	0.022***	0.022**	−0.002	−0.001	−0.000	0.024***	0.023***	0.022**
SCAAR									
(−10, 0)	0.143***	0.143***	0.146***	−0.025	−0.018	−0.021	0.168***	0.161***	0.177***
(−5, 0)	0.127***	0.128***	0.131***	−0.011	−0.005	−0.004	0.138***	0.133***	0.135***
(−1, 0)	0.058***	0.060***	0.061***	−0.011	−0.010	−0.008	0.066***	0.070***	0.069***
AVAR									
(−10, 0)	6.478***	6.932***	7.043***	2.225***	2.362***	2.411***	4.253***	4.570***	4.632***
(−5, 0)	9.890***	10.526***	10.659***	2.931***	3.115***	3.164***	6.959***	7.411***	7.495***
(−1, 0)	15.492***	16.075***	16.258***	3.922***	4.197***	4.223***	11.570***	11.878***	12.035***
CAAV									
(−10, 0)	0.132***			0.059***			0.073***		
(−5, 0)	0.092***			0.047***			0.045***		
(−1, 0)	0.050***			0.025***			0.025***		
Number of obs.	273	273	273	273	273	273			

Notes: The table presents the CAARs, SCAARs, AVAR, and CAAV for Schedule 13D, a control sample of Schedule 13G filings, and their difference, (−10, −5, −1) days before the event date using the market model (1), the Carhart model (2) and the FF5 model (3). The control sample of Schedule 13G filings is formed by using the coarsened exact matching method and matching each event firm to a Schedule 13D event from the same year and the same industry (two-digit SIC) with the nearest neighbour. The coarsened exact matching is estimated using (log) firm size, market-to-book ratio, return on assets (ROA) measured at $t − 1$, and the change in the target firm ROA measured between years $t − 3$ and $t − 1$. Panel A presents the results for the full sample. Panel B presents results for the 'clean' events excluding the events where the ten-day disclosure period is violated. *, **, *** indicate statistical significance at the 10%, 5% and 1% level, respectively.

Figure 7   Total turnover around the main event date: the y axis measures the daily share turnover for the (–30, +30) window around the event date for the full sample of Schedule 13D events (see online version for colours)
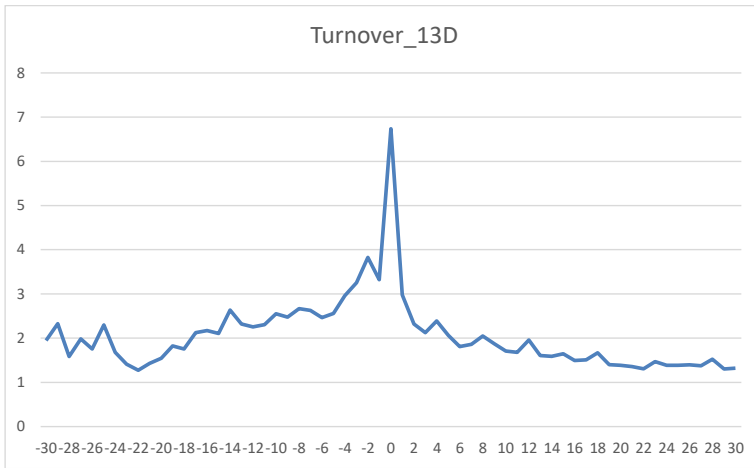
Figure 8   Total turnover around the main event date: the y axis measures the daily share turnover for the (–30, +30) window around the event date for the full sample of Schedule 13G events (see online version for colours)
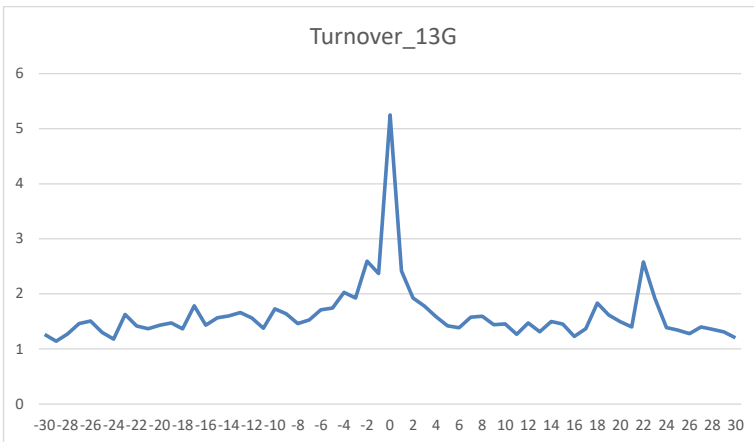
4.3   Robustness analysis – seasonality effects

In this section, we examine whether our findings may be driven by seasonality. In particular, we examine whether average measures during the 45-trading day disclosure period differ from average measures during the same calendar window in the year prior to the filing date. We therefore use the same methodology and calculate abnormal returns, return volatility and volume for the same time period of the previous year. There are 618 Schedule 13D filings and 930 Schedule 13G filings that have non-missing values for the hypothesised estimation and event period of the previous year. Results are presented in Table 11 and show that both Schedule 13D (Panel A) and 13G filings (Panel B) have

negative abnormal return and volume for the same calendar window in the year prior to the filing date. Schedule 13D filings have a negative (–1.5%) and statistically significant CAAR at the 10% level during the previous year 45-trading day window.

4.4   Robustness analysis – coarsened exact matching for Schedule 13G filings

We turn next to perform another robustness test. We hold the Schedule 13D filings as the main sample and create a control sample of Schedule 13G filings with similar characteristics using the same criteria as in Brav et al. (2018) to do the matching. In particular, the control sample of Schedule 13G filings is formed by using the coarsened exact matching method and matching each event firm to a Schedule 13D event from the same year and the same industry (two-digit SIC) with the nearest neighbour, where the coarsened exact matching is estimated using (log) firm size, market-to-book ratio, return on assets (ROA) measured at $t – 1$, and the change in the target firm ROA measured between years $t – 3$ and $t – 1$. The Market, Carhart and FF5 models are used to calculate abnormal returns. We perform the robustness test for both the filing and the event date. Results are presented in Tables 12 and 13 and our findings are similar to our main findings. In particular, CAARs, SCAARs, AVARs and CAAVs are much higher and statistically significant for both the full sample and 'clean' subsample of Schedule 13D filings when compared to Schedule 13G filings, for all the examined models.

5   Conclusions

In this paper, we exploit a hand-collected dataset of hedge fund interventions to test short-term value creation. The novelty of our approach is that it separates gains arising from insider trading vis-à-vis those generated more broadly by information asymmetry. We examine both Schedule 13D and Schedule 13G filings made by the same hedge funds. We find robust, strong and consistent evidence of positive short-term value creation prior to the filing date and more precisely prior to the event date that the fund surpasses the 5% threshold but only for Schedule 13D filings. In particular, Schedule 13D filings present positive and statistically significant CAARS, SCAARs and CAAV at the (–45, 0) window from the filing date and the (–10, 0), (–5, 0) and (–1, 0) windows from the event date while AVAR is much greater than one for all the examined windows. Schedule 13D and Schedule 13G filings generate positive abnormal returns in the post filing period which are not statistically different. The latter finding is not surprising since our research design evaluates both 13D and 13G filings on a level playing field. On the other hand, there is no evidence of short-term value creation prior to the filing date for Schedule 13G firms. We find no evidence of abnormal returns for a control sample of similar albeit non-targeted firms across all evaluation windows. Further robustness tests indicate that our findings are not driven by seasonal effects.

The paper's main implication is that hedge funds hold valuable information for their 'active' targets prior to the initial filing even when no plans or proposals are stated which is reflected into the firm's abnormal returns, return volatility and volume. Both 13D and 13G targeted firms present abnormal returns in the post filing period which are significantly lower than the 13D returns prior to the filing date. The implication of this finding is that investors need to exercise caution in moving quickly into a stock

immediately after a 13D filing since most gains appear to have been made before disclosure. Contrary to some evidence in the literature, our findings suggest that there are no significant short-term gains for Schedule 13G filings during the stock building period. Our findings are also consistent with recently proposed changes by the SEC to reduce information asymmetries, and accelerate the filing deadlines for Schedules 13D beneficial ownership reports.

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Notes

1   We do not suggest that activist hedge funds engage in unlawful insider trading since, tender offers aside, trading on the basis of material; non-public information alone does not violate US law. All we are saying is that activist firms have the potential to exploit material, non-public information around the time they buy a significant block of stock of the target company, and as such their activities may be deemed 'insider trading'.

2   See https://www.sec.gov/news/press-release/2022-22. As stated by SEC Chair Gary Gensler "These amendments would update our reporting requirements for modern markets, reduce information asymmetries, and address the timeliness of Schedule 13D and 13G filings. Investors currently can withhold market moving information from other shareholders for 10 days after crossing the 5% threshold before filing a Schedule 13D, which creates an information asymmetry between these investors and other shareholders. The filing of Schedule 13D can have a material impact on a company's share price, so it is important that shareholders get that information sooner. The proposed amendments also would clarify when and how certain derivatives acquired with control intent count towards the 5% threshold, clarify group formation, and create related exemptions".

3   To the extent that hedge funds are perceived as informed traders who have strong incentives to gather costly information about the target's fundamental value, their intervention may be viewed as enhancing rather than destructing market efficiency, in the sense that prices are more likely to reflect fundamental value rather than short term earnings (see Edmans, 2009).

4   General rules and regulations, Securities Exchange Act of 1934, § 240.13d-102.

5   The 'reporting persons' are stated in the 'item 2' section ('identity and background') of the Schedule 13D filing.

6   Form ADV is the uniform form used by investment advisers to register with both the SEC and state securities authorities.

7   Some advisers that are exempt from registration file reports as an exempt reporting adviser. Information provided to ADV forms must be updated periodically.

8   The available types of clients are:

   a   individuals (other than high net worth individuals)

   b   high net worth individuals

   c   banking or thrift institutions

   d   investment companies

   e   business development companies

   f   pooled investment vehicles (other than investment companies and business development companies)

   g   pension and profit sharing plans (but not the plan participants or government pension plans)

   h   charitable organisations

   i   state or municipal government entities (including government pension plans)

   j   Other investment advisers

   k   insurance companies

   l   sovereign wealth funds and foreign official institutions

   m   corporations or other businesses not listed above

   n   other.

9   SIC code 6,000 to 6,999.

10   The Williams Act suggests that the filing must be made 'within ten days' after surpassing the 5% threshold. However, it is not stated whether it refers to calendar or trading days. In our analysis, we use the straightforward reading of the Act defining the term 'day' as a one calendar day.

11   60 calendar days.

12   We would like to thank an anonymous referee for making this suggestion.