

Hedge fund Activism

Updated tables and figures

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The information provided in this file is for educational use only. If you plan to use any information from this document please cite Brav, Jiang, Partnoy, and Thomas (2008) and Brav, Jiang, and Kim (2010), and place the URL in a footnote. Here is a suggested version of the citation:

These results are based on an updated sample [1994-2011] using the same data collection procedure and estimation methods as in Brav, Jiang, Partnoy, and Thomas (2008) and Brav, Jiang, and Kim (2010). For more information please see [Insert the web site URL where this document is located.]

References:

Brav, Alon, Wei Jiang, Frank Partnoy, and Randall Thomas, 2008, Hedge fund activism, corporate governance, and firm performance, *Journal of Finance*, vol. 63, 1729-1775.
Brav, Alon, Wei Jiang, and Hyunseob Kim, 2010, Hedge fund activism: A review, *Foundations and Trends in Finance*, vol. 4(3), 1-66.

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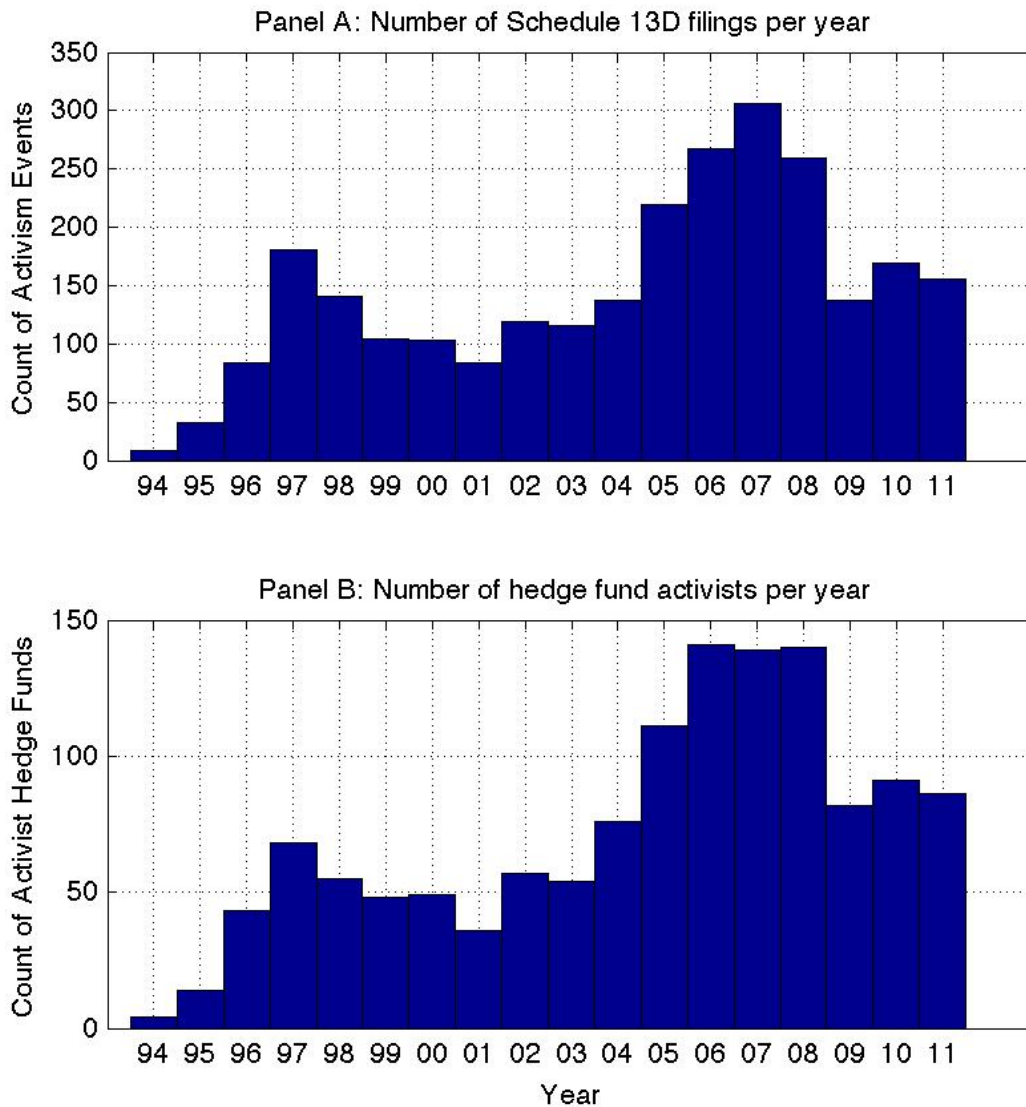
The results presented on page 16 are based on data from the U.S. Census and have been reviewed to ensure that no confidential information is disclosed. Any opinions and conclusions expressed herein are those of the authors and do not necessarily represent the views of the U.S. Census Bureau.

1 Descriptive statistics

1.1 Number of Funds and Activism Events by Year: 1994-2011

Figure 1: Number of Funds and Activism Events by Year: 1994-2011

The sample consists of all Schedule 13D filings over the period 1994-2011 narrowed down to those made by hedge fund managers based on the names and descriptions of the filer type listed in the Schedule's Item 2 ("Identity and Background") combined with Internet/news searches of the filers. We exclude filings that involve risk arbitrage, distress financing, non-regular corporations such as closed-end funds, and firms with non-common share codes (those that differ from 10 or 11) as identified from information from the Center for Research in Security Prices. We include in the sample events in which the hedge fund maintained an activist position in a large public company but owned less than 5% of the company's stock (and, thus, were not required to file a Schedule 13D). For these events we set the event date to the first public announcement of the activist's intervention. The final sample consists of 2624 fund-target firm pairs. See Brav, Jiang and Kim (2010) for additional details on the formation of the sample. The top figure plots the time series of the number of events per year while the bottom figure plots the number of hedge funds filing in a given year.



1.2 Summary of Events by Hedge Funds’ Stated Goals and Tactics

Table 1: Summary of Events by Hedge Funds’ Stated Goals and Tactics

The sample includes 2624 events. Panel A reports the summary of activism events sorted by the hedge funds’ stated objective. The “General undervaluation” objective includes events in which the hedge fund believes that the company is undervalued and/or that the fund can help the manager maximize shareholder value. All events in this objective category involve either the stated intent for passive engagement or communication with the management. The “Capital structure” category includes activism targeting firms’ payout policy and capital structure in which the hedge fund proposes changes geared toward the reduction of excess cash, an increase in firm leverage, or higher payout to shareholders. It also involves issuance of securities by the target companies, such as modifying seasoned equity offerings or proposing debt restructuring. The “Business strategy” objective includes activism targeting issues related to operational efficiency, business restructuring, mergers and acquisitions, and growth strategies. The “Sale of the target” category involves activism in which hedge funds attempt either to force a sale of the target company to a third party, or, in a small minority of the cases, to acquire the company themselves. The “Governance” category includes events in which hedge funds attempt to rescind takeover defenses, to oust the CEO or chairman, to challenge board independence and fair representation, to demand more information disclosure and question potential fraud, and to challenge the level or the pay-for-performance sensitivity of executive compensation. Percentages sum up to more than 100% since one event can have multiple objectives. However, the first category and the other four categories are mutually exclusive. We report the fraction of events that had begun hostile (“Initially Hostile”) and the fraction of events that had turned hostile (“Ex-post Hostile”) within each category. Panel B provides information on the tactics undertaken by hedge funds, sorted from the least to most aggressive, and the percent of events in each category relative to the full sample. The first tactic category includes events in which the hedge fund states that it intends to remain passive or to communicate with the board/management on a regular basis with the goal of enhancing shareholder value. The second tactic category includes events in which the hedge fund seeks board representation without a proxy contest or confrontation with the existing management/board. The third tactic category includes cases where the hedge fund makes formal shareholder proposals, or publicly criticizes the management and demands change. The fourth category includes events in which the hedge fund threatens to wage a proxy fight in order to gain board representation, or to sue the management for breach of duty. The fifth category includes events in which the hedge fund launches a proxy contest in order to replace the board. The remaining two tactic groups include events in which the hedge fund sues the company with the intention to take control of the company. Activist events can fall within more than one category.

	Full Sample Statistics		Subsample Statistics	
	Number of Events	% of Sample	% initially Hostile	% Ex-post Hostile
General undervaluation	1562	59.5	NaN	NaN
Capital structure	332	12.7	20.5	45.5
Business strategy	468	17.8	26.3	62.6
Sale of target company	398	15.2	22.6	56.5
Governance	813	31	24.1	59

Panel B: Summary of Hedge Funds’ Tactics

Tactic categories	% of Events
1. The stake is for investment purposes. Alternatively, the intent is to communicate with the board/management to enhance shareholder value	43.1
2. The hedge fund seeks board representation without a proxy contest or confrontation with the existing management/board	12.9
3. The hedge fund makes formal shareholder proposals, or publicly criticizes the company and demands change	22.9
4. The hedge fund threatens to wage a proxy fight in order to gain board representation, or to sue the company for breach of fiduciary duty etc.	6.5
5. The hedge fund launches a proxy contest in order to replace the board	8.5
6. The hedge fund sues the company	3
7. The hedge fund intends to take control of the company, for example, with a takeover bid	3.1

1.3 Hedge Funds' Capital Commitment and Investment Horizon

Table 2: Hedge Funds' Capital Commitment and Investment Horizon

Panel A provides the size of the hedge funds' stakes both in terms of dollar values (at cost, in 2011 millions of dollars), and as a percentage of the outstanding shares of the target companies. We report the 5th, 25th, 50th (median), 75th, and 95th percentiles of the sample. The "Initial" columns report the stake that hedge funds take at their initial 13D filing. The "Max" columns report the maximum reported stakes that the funds accumulated in the targets as revealed from subsequent 13D/A filings. Panel B lists the length of holding period (in number of days) at different percentiles of the sample for the subsample that has exit information. Exit date is determined as the date in which there has been a resolution of the activist's demands. If this date is missing we look for the date in which the fund's stake in the target declined to below 5%. We report both the number of completed events as well as those that are still going or the date of exit cannot be firmly determined. In each panel, the statistics for the full sample and the subsample of initially hostile events are reported separately.

Panel A: Hedge Funds' Invested Capital								
Full Sample					Hostile Subsample			
	Initial		Max.		Initial		Max.	
	Percent Ownership	Invested Cap' (in \$1M)	Percent Ownership	Invested Cap' (in \$1M)	Percent Ownership	Invested Cap' (in \$1M)	Percent Ownership	Invested Cap' (in \$1M)
5th	5	0.9	5.2	1.1	4.8	1.2	5.1	1.2
25th	5.4	4.4	7	5.8	5.7	3.9	7.3	5.2
Median	6.4	13.5	9.5	18.6	6.8	16.2	9.7	21
75th	9.4	41.3	14	54.7	9.6	54.3	13.8	67.7
95th	21.8	185.1	31	244.9	19.8	251.7	43.7	330.1
Average	9	55.4	12.9	70	8.8	65.5	14.4	87.7

Panel B: Hedge Funds' Investment Horizon (in days)		
	Full Sample	Hostile Subsample
5th	34	13
25th	148	65
50th	348	179
75th	728	405
95th	1954	1143
Average	581	325
Not Completed as of Sep/2013	563	12
Total Number of Completed Events	2060	245

Synopsis of Table 2: Hedge fund activism does not generally involve controlling blocks. The median initial (maximum) percentage stake that a hedge fund takes in the target is 6.4 (9.5)%. Instead, to facilitate value-enhancing changes as minority shareholders, activists must work with and win support from other shareholders, especially on issues that require shareholder voting. These features distinguish the activist hedge funds from the corporate raiders in the 1980s who sought to obtain full control to internalize all the benefits from their intervention. Moreover, the fact that the median (average) duration of completed interventions is 348 (581) days implies that hedge fund activists are not short-term investors.

1.4 Characteristics of Targeted Firms

Table 3: Characteristics of Target Companies

This table reports the characteristics of target companies and comparison to a set of matched companies. The first three columns report the mean, median, and standard deviation of the characteristic for the target companies. All potentially unbounded variables are winsorized at the 1% and 99% extremes. Columns (4) through (6) report the average difference between the sample firms and the matched firms (firms in the same two-digit SIC industry and same MV and BM quintiles), the t-statistic for the average difference, and the Wilcoxon signed rank statistic, which is asymptotically normal, for paired difference. Size matching is dropped for MV comparison, and book-to-market matching is dropped for BM and Q analysis. The last five columns list the proportion of target firms that fall into each of the quintile groups formed by the CRSP/Compustat universe. All variables are retrieved from the year prior to the event year (and from the event year if the data item from the year before is missing); or from two years prior to the event year if the first two data items are missing. MV is market capitalization in millions of dollars; Q is defined as (book value of debt + market value of equity)/(book value of debt + book value of equity); BM is the book-to-market ratio defined as (book value of equity/market value of equity); GROWTH is the growth rate of sales over the previous year; ROA is return on assets, defined as EBITDA/lagged assets; CF is cash flow, defined as (net income + depreciation and amortization)/lagged assets; STKRET is the buy-and-hold return during the 12 months before the announced activism; LEV is the book leverage ratio defined as debt/(debt + book value of equity); CASH is defined as (cash + cash equivalent)/assets; DIVYLD is dividend yield, defined as (common dividend)/MV; PAYOUT is the total payout ratio, defined as (sum of common dividend payments and share repurchases)/MV; RND is R&D (missing values are imputed as zeros) scaled by lagged assets; HHI is the Herfindahl-Hirschman index of sales in different business segments as reported by Compustat; GINDEX is the Gompers, Ishii, and Metrick (2003) governance index where high index values represent lower shareholder rights or higher management entrenchment; ANALYST is the number of analysts covering the company from I/B/E/S; INST is the proportion of shares held by institutions. The characteristic AMIHUD is the Amihud (2002) illiquidity measure, defined as the yearly average (using daily data) of $1000\sqrt{|Return|}/(DollarTradingVolume)$.

Firm Characteristic	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)		(11)		
	Mean	Median	Std. Dev.	Avg. Diff.	T-stat	Diff	Wilcoxon	% in Q1	% in Q2	% in Q3	% in Q4	% in Q5	% in Q1	% in Q2	% in Q3	% in Q4	% in Q5	% in Q1	% in Q2	% in Q3	% in Q4	% in Q5	
MV	835.3	134.6	3538.4	-1906.1	-47.59		-60.73	23.8%	27.1%	21.9%	16.4%	10.9%											
BM	0.840	0.645	0.752	0.125	51.35		59.79	19.1%	16.0%	17.3%	20.0%	27.5%											
Q	1.953	1.365	2.178	-0.605	-53.56		-60.28	29.2%	19.8%	19.8%	18.6%	12.6%											
GROWTH	0.245	0.047	1.328	0.041	3.45		-13.06	26.2%	25.5%	17.5%	15.9%	14.8%											
ROA	0.035	0.072	0.274	-0.022	-9.66		-10.28	23.6%	20.8%	22.0%	18.8%	14.7%											
CF	-0.008	0.041	0.309	-0.016	-6.13		-7.30	24.2%	21.3%	21.4%	17.9%	15.3%											
STKRET	0.026	-0.081	0.915	-0.036	-4.60		-9.29	34.3%	21.5%	14.9%	14.2%	15.2%											
LEV	0.342	0.274	0.413	0.008	4.08		2.11	25.6%	17.3%	17.2%	18.5%	21.4%											
CASH	0.205	0.102	0.239	0.012	6.32		4.97	19.1%	19.1%	19.8%	21.2%	20.8%											
DIVYLD	0.007	0.000	0.017	-0.002	-11.46		-9.64																
PAYOUT	0.028	0.000	0.063	0.004	8.08		4.92																
CAPEX	0.059	0.028	0.099	-0.006	-7.72		-10.07	17.8%	23.6%	22.1%	15.9%	17.4%											
RND	0.057	0.000	0.138	0.009	7.64		4.81																
HHI	0.841	1.000	0.231	-0.006	-3.22		-3.16	20.5%	30.9%	30.9%	48.6%	15.4%											
GINDEX	8.897	9.000	2.537	0.242	4.15		3.96	25.7%	19.5%	22.2%	17.2%	15.4%											
ANALYST	5.249	4.000	5.009	0.006	0.12		0.50	33.6%	18.1%	20.0%	15.7%	12.5%											
INST	0.432	0.398	0.365	0.059	27.69		27.17	22.0%	15.1%	19.8%	21.0%	22.1%											
AMIHUD	0.491	0.208	0.903	-0.163	-20.46		-19.70	15.1%	19.2%	21.3%	24.0%	20.4%											

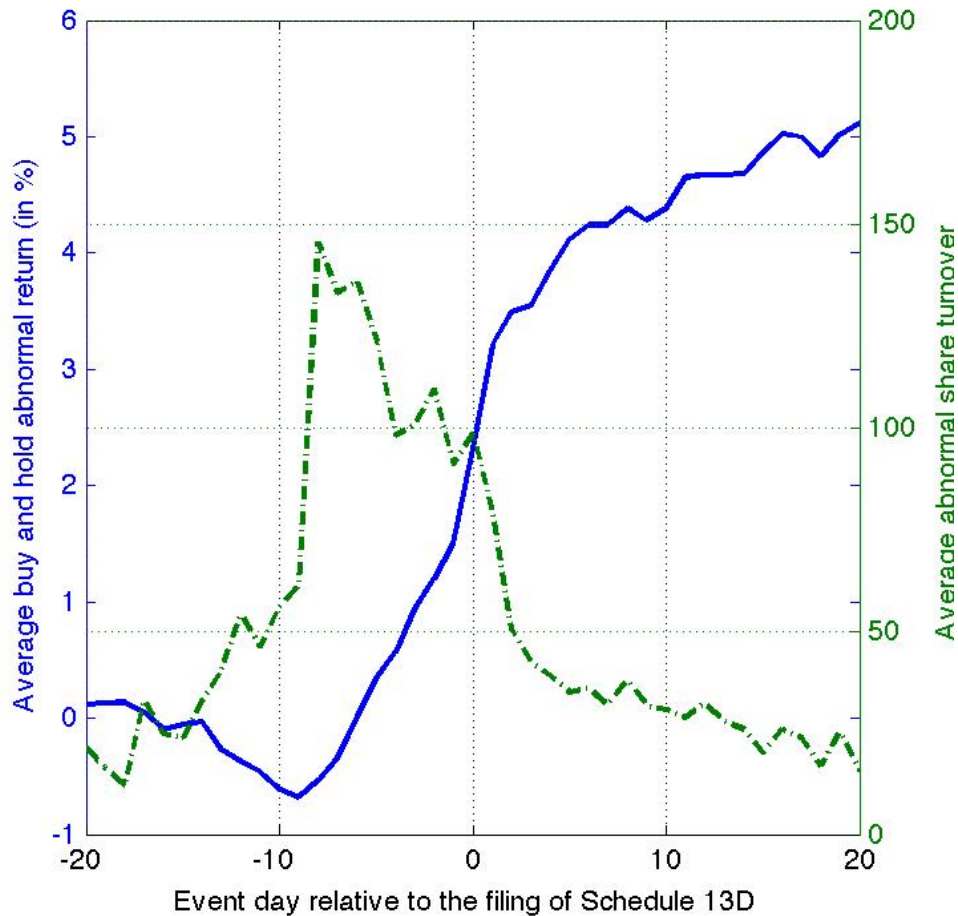
Synopsis of Table 3: Large-cap firms are less likely to be targeted. Moreover, activist hedge funds resemble value investors. Target firms have higher leverage but lower dividend yield relative to those of matched peers. Targets also have significantly higher institutional ownership, which is an important factor for activist hedge funds, since they often rely on the understanding and support from fellow shareholders in order to implement the changes given their minority stakes in the target firms. Target companies exhibit higher trading liquidity than comparable firms. High liquidity makes it easier for the activists to accumulate a stake within a short period of time without incurring adverse market impact. Finally, measured by the governance index that tracks the 24 takeover defenses that firms can adopt and the laws of the state in which the targets are incorporated, target firms tend to have more takeover defenses (or weaker shareholder rights).

2 Short-run Market Reaction

2.1 Abnormal Return Centered Around the Filing of Schedule 13Ds with the SEC

Figure 2: Abnormal Return Centered Around the Filing of Schedule 13Ds with the SEC

The solid blue line (left axis) plots the average buy-and-hold centered around the filing of the Schedule 13D with the SEC, in excess of the buy-and-hold return of the value-weight market, from 20 days prior the 13D file date to 20 days afterwards. The dashed green line (right axis) plots the increase in percentage points of the share trading turnover during the same time window compared to the average turnover rate during the preceding (-220, -21) event window.

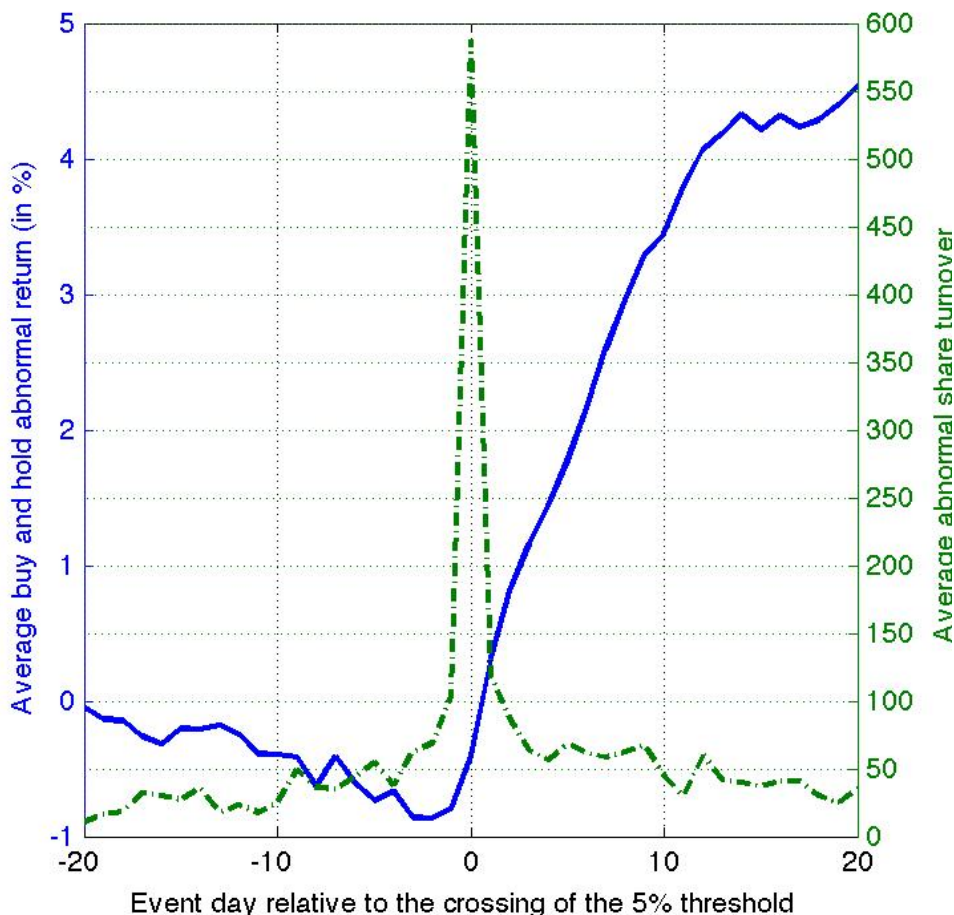


Synopsis of Figure 2: The buy-and-hold abnormal return over the period beginning 20 days prior to the filing of a Schedule 13D with the SEC to 20 days afterwards is approximately 5.0%. This is consistent with the idea that the market perceives hedge fund activism as value-enhancing. The spike in abnormal trading volume does not occur on the event day but rather during the 10-day period before the filing of the Schedule 13D. The 10-day lead seems to coincide with the fact that investors are required to file Schedule 13D no later than 10 days after the transaction that causes them to go over the 5% threshold. Therefore, it is possible that the filing fund may be engaging in additional buying prior to the announcement of activism.

2.2 Abnormal Return Centered Around the Date that Triggers the Requirement to File the Schedule 13D

Figure 3: Abnormal Return Centered Around the Date that Triggers the Requirement to File the Schedule 13D

Investors are required to file Schedule 13D no later than 10 days after the transaction that causes them to go over (“cross”) the 5% threshold. The solid blue line (left axis) plots the average buy-and-hold return around the “cross” date, in excess of the buy-and-hold return of the value-weight market, from 20 days prior the 13D file date to 20 days afterwards. The dashed green line (right axis) plots the increase in percentage points of the share trading turnover during the same time window compared to the average turnover rate during the preceding (-220, -21) event window.

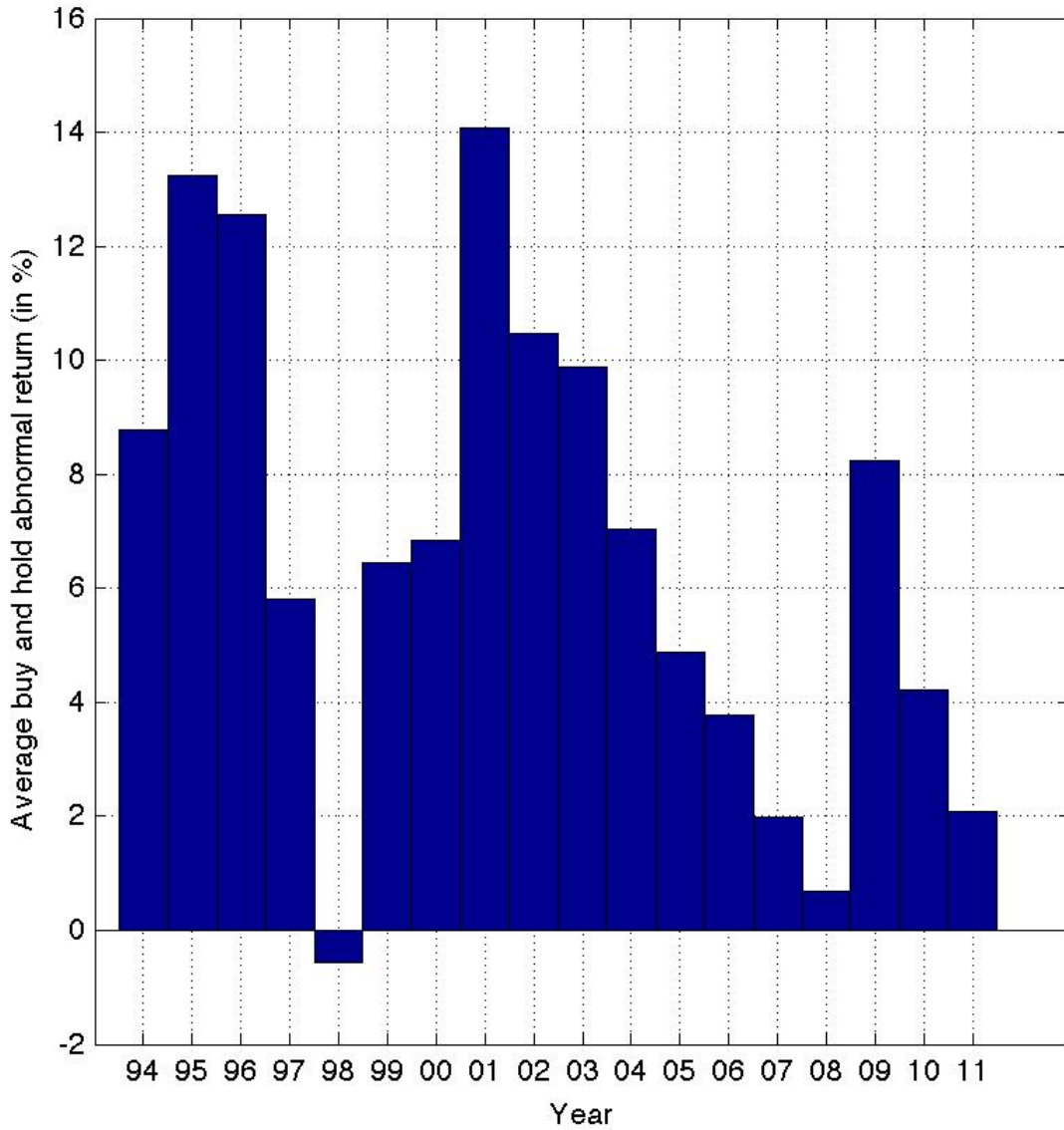


Synopsis of Figure 3: Now that activism events are centered around the day activists cross the 5% threshold (rather than the day they file the Schedule 13D with the SEC as in Figure 2) we can see that most of abnormal trading volume occurs during the day the activist investor crosses the 5% threshold. Turnover on the day the activist hedge funds cross the 5% threshold is, on average, 600% higher than normal. We can also see that the positive price drift begins on the day activists cross the 5% threshold for about ten days.

2.3 Short-run Market Reaction By Year

Figure 4: Short-run Market Reaction By Year

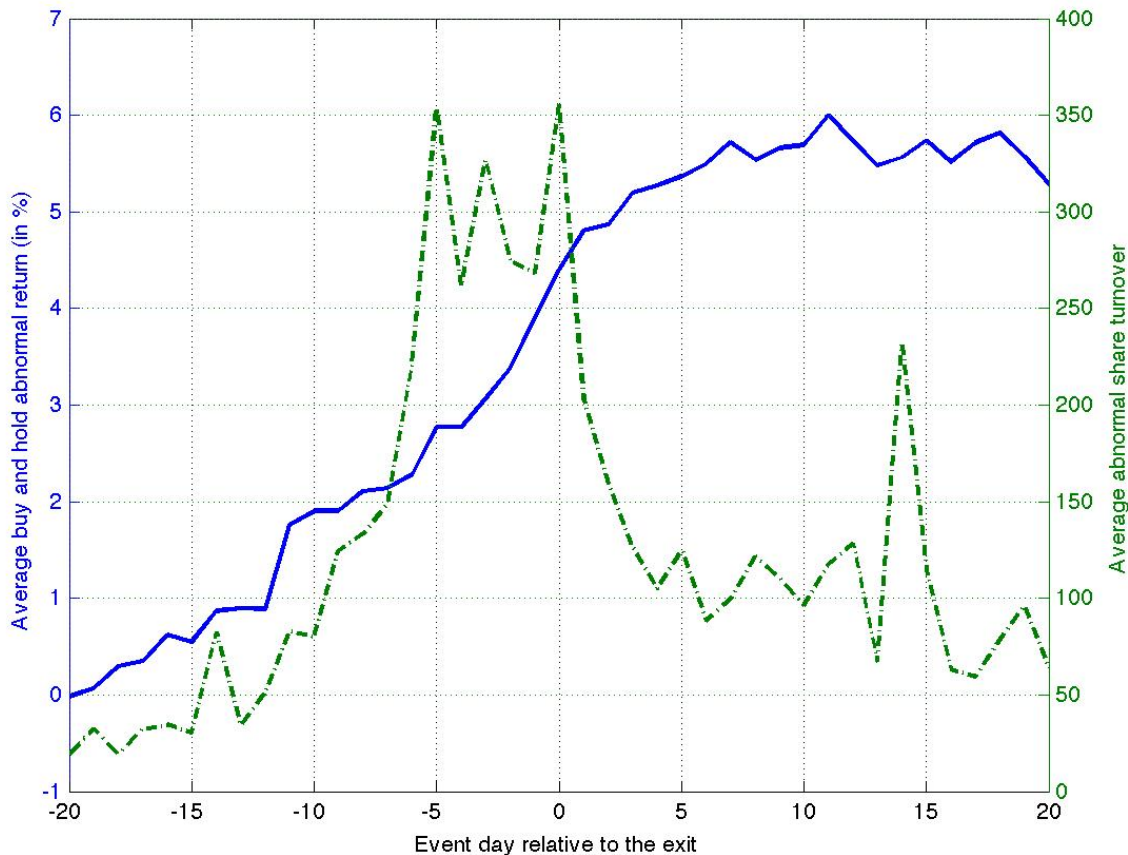
Annual average event-day buy and hold abnormal returns centered around the filing of the Schedule 13D with the SEC in each year from 1994-2011 (See notes to Figure 2 for the calculation of the event returns).



2.4 Buy-and-Hold Abnormal Return Around Activists' Exit

Figure 5: Buy-and-Hold Abnormal Return Around Activists' Exit

The solid line (left axis) plots the average buy-and-hold target return net of the value weight market around activists' exit, defined as the filing of an amendment to Schedule 13D in which the fund reveals that the percent of shares held in the target declined below the 5% reporting threshold. If this date is missing we replace it with the date in which it is announced that the activist has divested its stake in the target (this latter date included events in which the target firm is acquired or liquidated). The event period lasts from 20 days prior to the amendment to the 13D file date to 20 days afterwards. The dashed green line (right axis) plots the increase in percentage points of the share trading turnover during the same time window compared to the average turnover rate during the preceding (-200, -21) event window.



Synopsis of Figure 5: We measure approximately 5% average abnormal returns leading up to the filing date, and roughly flat afterward. Trading volume tends to spike during the 10-day window leading up to the filing. This pattern indicates that hedge funds tend to exit after positive stock returns, and their exit overall does not have a positive or negative impact on the stock price.

3 Longer-term Average Returns

Table 4: Long-term Abnormal Returns

The table reports statistics on long-term abnormal returns associated with targets of hedge fund activism. We report regression estimates and t-statistics from value-weighted calendar-time portfolio regressions. The 'portfolio holding period,' indicates the holding period in months relative to the month of the hedge fund intervention. For example, the portfolio with holding period [+1, +12], continually adds target firms that have had an activist event in the preceding month and holds these firms through a year after their respective activism event. The regression takes the form:

$$r_{pt} - r_f = \alpha_p + \beta_{p,RMRF}RMRF_t + \beta_{p,SMB}SMB_t + \beta_{p,HML}HML_t + \beta_{p,MOM}MOM_t + \epsilon_{pt}$$

We report regression results separately for all targets in Panel A, "Small" target firms in Panel B and "Large" target firms in Panel C. A target firm is considered "Small" ("large") if its market capitalization at the time it enters the portfolio is lower (higher) than the first decile of market capitalization breakpoint as calculated by Fama and French. These breakpoints are formed using only NYSE stocks. α_p is the estimate of the regression intercept from the factor model. $\beta_{p,RMRF}$ is the loading on the market excess return. $\beta_{p,SMB}$, $\beta_{p,HML}$ and $\beta_{p,MOM}$ are the estimates of portfolio factor loadings on the Fama-French size and book-to-market factors, and the Carhart momentum factor. We obtain the factor returns, market capitalization breakpoints, and monthly risk-free rates from Ken French's web site at Dartmouth College. R^2 is the adjusted R^2 from the regressions and N is the number of monthly observations. We set a minimum of ten firms per month for all portfolios.

Panel A: Target firm four-factor model regressions						
Holding period (in months)						
	[-36,-25]	[-24,-13]	[-12,-1]	[+1,+12]	[+13,+24]	[+25,+36]
α	-0.68	-1.19	-1.40	0.04	0.04	0.40
	-2.95	-5.08	-5.47	0.17	0.22	1.55
$\beta_{p,RMRF}$	1.00	0.97	1.00	0.94	1.06	0.87
	17.42	17.33	16.77	17.09	23.62	14.91
$\beta_{p,SMB}$	0.62	0.46	0.36	0.49	0.44	0.67
	9.00	6.57	4.81	6.94	7.61	8.98
$\beta_{p,HML}$	-0.06	0.16	0.41	0.45	0.29	0.08
	-0.79	2.17	5.06	5.96	4.77	0.99
$\beta_{p,MOM}$	-0.11	-0.17	-0.12	-0.11	0.02	0.00
	-2.49	-3.76	-2.46	-2.38	0.64	0.05
R^2	0.74	0.7	0.66	0.69	0.8	0.7
N	211	211	211	211	200	188

Panel B: "Small" target firms			
Holding period (in months)			
	[+1,+12]	[+13,+24]	[+25,+36]
α	0.45	-0.04	0.40
	1.58	-0.13	1.07
$\beta_{p,RMRF}$	0.73	0.77	1.01
	11.27	11.53	11.59
$\beta_{p,SMB}$	0.95	1.06	1.14
	11.40	12.49	10.20
$\beta_{p,HML}$	0.32	0.28	0.23
	3.64	3.09	1.99
$\beta_{p,MOM}$	-0.15	-0.08	0.14
	-2.87	-1.59	2.12
R^2	0.64	0.68	0.65
N	205	193	181

Panel C: "Large" target firms			
Holding period (in months)			
	[+1,+12]	[+13,+24]	[+25,+36]
α	0.06	0.08	0.40
	0.23	0.36	1.50
$\beta_{p,RMRF}$	0.97	1.09	0.81
	16.93	22.06	13.13
$\beta_{p,SMB}$	0.43	0.37	0.71
	5.93	5.92	8.82
$\beta_{p,HML}$	0.47	0.29	0.07
	6.03	4.34	0.90
$\beta_{p,MOM}$	-0.10	0.02	-0.04
	-2.12	0.52	-0.82
R^2	0.68	0.77	0.68
N	206	194	180

Synopsis of Table 4: Alphas in the post-targeting period ($[+1, +12]$, $[+13, +24]$ and $[+13, +36]$) are insignificant in the full sample as well as the two size sorted subsamples implying that prices do not revert to pre-event levels for up to three years after the initiation of activism. Therefore, the evidence refutes the market over-reaction hypothesis and supports the hypothesis that hedge fund activism creates value for shareholders.

4 Target Firm Performance in Years Before and After Targeting by Hedge Fund Activists

Table 5: Target Firm Performance in Years Before and After Targeting by Hedge Fund Activists

This table reports changes in target firm performance in years before and after being targeted by activist hedge funds. Estimates from the following regression are reported:

$$y_{i,t} = \sum_{j=-3}^3 \gamma_j D_{i,j} + \beta_1 \ln(MV_{i,t}) + \beta_2 \ln(Age_{i,t}) + \beta_3 B/M_{i,t} + \alpha SIC3 + \alpha_t + \epsilon_{i,t}$$

where i and t are indices for firm and year, respectively. The dependent variable (y) includes measures of firm performance, financial policies and governance. ROA is return on assets defined as the ratio of earnings before interests, taxes, depreciation and amortization over lagged firm assets. Leverage is the ratio of debt to the sum of debt and equity. Cash is the ratio of cash (and cash equivalent) to total assets. Capex is the ratio of capital expenditure to lagged assets. DivYield is the ratio of dividends to market capitalization. Payout Yield is the ratio of the sum of dividends and share repurchase to market capitalization. CEO Turnover is a dummy variable equal to one if the firm-year observation experiences a change in CEO. Pay-for-Performance is the ratio of equity-based compensation to total CEO compensation. Among the independent variables, $D_{i,j}$ is a dummy variable equal to one if firm i was (will be) under hedge fund targeting j years ($j = -3, -2, -1, 0, +1, +2, +3$) relative to the current year. $\ln(MV)$ is the log of market value of equity of the firm. $\ln(Age)$ is the log years of the firm's appearance in the CRSP database. B/M is the ratio of the firm's book value to market value of equity. Finally, $\alpha SIC3$ and α_t represent industry (at the three-digit SIC level) and year fixed effects. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Event year -3	ROA 0.016 (1.62)	Leverage 0.020* (1.84)	Cash 0.009* (1.65)	Capex -0.002 (-0.89)	Div. Yield -0.002*** (-3.30)	Payout Yield 0.001 (0.74)	CEO Turnover 0.003 (0.21)	Pay-for-Performance 0.022* (1.68)
Event year -2	0.011 (1.31)	0.011 (1.16)	0.011** (1.97)	-0.005** (-2.17)	-0.002*** (-4.32)	0.002 (1.61)	0.024 (1.52)	-0.001 (-0.11)
Event year -1	0.001 (0.10)	0.008 (0.82)	0.007 (1.34)	-0.006*** (-2.68)	-0.002*** (-3.50)	0.003** (2.51)	0.019 (1.28)	0.016 (1.34)
Event year	-0.010 (-1.07)	0.022** (1.97)	0.005 (1.02)	-0.005* (-1.86)	-0.002*** (-3.19)	0.006*** (3.64)	0.035** (2.29)	0.010 (0.82)
Event year +1	0.008 (1.07)	0.024* (1.92)	0.007 (1.26)	-0.010*** (-4.09)	-0.002*** (-2.54)	0.008*** (4.21)	0.078*** (4.18)	0.042*** (3.43)
Event year +2	0.026*** (4.00)	0.045*** (3.45)	0.008 (1.22)	-0.012*** (-5.94)	-0.002*** (-3.13)	0.004** (2.13)	0.101*** (4.99)	0.044*** (3.58)
Event year +3	0.028*** (3.80)	0.040*** (2.96)	0.004 (0.59)	-0.007*** (-2.89)	-0.001 (-1.10)	0.005** (2.50)	0.037** (2.14)	0.019 (1.49)
ln(MV)	0.040*** (39.74)	-0.003*** (-2.59)	-0.003*** (-5.10)	0.007*** (27.02)	0.001*** (23.13)	0.002*** (20.07)	-0.005*** (-3.25)	0.061*** (29.70)
ln(Age)	0.045*** (18.74)	0.017*** (7.68)	-0.038*** (-28.36)	-0.025*** (-38.03)	0.001*** (9.97)	0.003*** (14.81)	0.018*** (7.92)	-0.021*** (-6.90)
BM	-0.000 (-0.91)	-0.001* (-1.84)	-0.000*** (-3.03)	-0.000 (-1.09)	0.000 (0.95)	-0.000*** (-2.75)	-0.002 (-0.57)	-0.003** (-2.00)
R-Squared	0.137	0.124	0.353	0.222	0.307	0.126	0.021	0.297
Observations	123,514	127,552	128,072	125,061	127,566	117,171	30,298	30,070

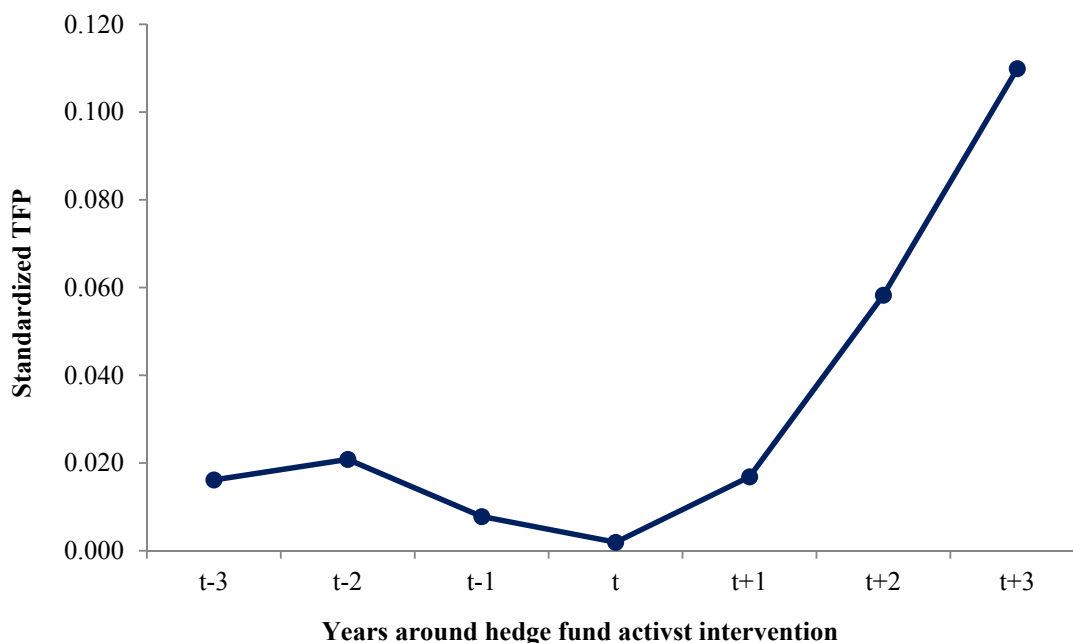
Synopsis of Table 5: The table provides evidence on changes in target firms' measures of corporate policy and performance. The performance of a targeted firm in a given event year is compared to a matched sample based on the three-digit SIC industry, year, book-to-market, firm age, and firm size. The evidence on profitability, as measured by ROA, indicates that targeted companies have *higher* operating profitability than their peers three years prior to intervention. However, their performance deteriorates through the event year and significantly improves three years after the event. Target firm leverage is higher than that of control firms three years before the intervention and becomes even higher from one year post-activism. The evidence on cash holding indicates that there is a gradual decrease in target firms' cash holdings throughout the post-intervention period. Next, target firms' capital expenditures are lower relative to control firms pre-activism and are reduced further from the year after intervention through two years post-intervention. This evidence is consistent with the possibility that targets were investing inefficiently pre-activism. It can also be seen that hedge fund activists force targets to increase payout to shareholders as payout yield, which takes into account both dividend and repurchases, increases significantly in the year of intervention, although by two years post-intervention payout reverts back to that of control firms. Last, CEO turnover is higher for target firms relative to the matched control sample beginning in the year of intervention and remains significantly higher for three years post-intervention. Pay-for-performance also increases in the year after activists' intervention. Collectively, this evidence supports the hypothesis that hedge fund activism enhances firm performance by reducing agency costs associated with free cash flow and by subjecting managers to increased discipline.

Figure 6: Target Plant Productivity in Years Before and After Targeting by Hedge Fund Activists

This figure shows the impact of hedge fund activism on the productivity of plants owned by target firms from three years before to three years after the hedge funds intervention. See Brav, Jiang, and Kim (2013)¹ for details on the matching of the hedge fund activism sample over the period 1994-2007 to data from the U.S. Census Bureau on manufacturing establishments over the period 1990-2009 yielding 787,758 plant-year observations. The dependent variable is the standardized total factor productivity (TFP), computed by estimating a log-linear Cobb-Douglas production function by three-digit SIC industry and year, divided by its within-industry standard deviation. For further details see the description in Brav, Jiang, and Kim (2013) on the estimation of productivity measures for manufacturing plants using the US Census Bureau’s plant-level data. Estimates of the year-plant dummy variables around hedge funds intervention, $d[t-3], \dots, d[t+3]$, from the following regression are plotted below:

$$y_{i,t} = \sum_{k=-3}^3 \gamma_k d_{i,t}[t+k] + \gamma Control_{i,t} + \alpha_j + \alpha_t + \epsilon_{i,t},$$

where i and t are indices for plant and year, respectively. The control variables include segment and firm size, measured by the log number of plants in a given industry segment of a given firm and the log number of all plants of a given firm, respectively. Finally the estimation takes into account three-digit SIC industry and year fixed effects (α_j and α_t).



¹Brav, Alon, Wei Jiang, and Hyunseob Kim, 2013, “The real effects of hedge fund activism: Productivity, asset allocation, and industry concentration,” Working paper.

Synopsis of Figure 6: The figure provides evidence that the productivity of target firms' plants prior to intervention is at par (or slightly higher) than their control plants with similar size and age in a given industry and year. Plant productivity deteriorates prior to intervention and then rebounds steadily afterwards to a level significantly higher than that observed pre-activism. Moreover, the economic magnitude of the improvement in plant-level TFP associated with activism is sizeable: a typical target plant experiences an increase in TFP of 10.8% of the standard deviation from years t to $t + 3$. Both the pattern and the magnitude of the TFP dynamics around hedge fund intervention echo the findings of the improved ROA at target firms after the intervention shown in Table 5, column 1. The three-year ROA improvement from the trough in year t is about 3 percentage points, which is about 10% of the standard deviation of ROA during our sample period.

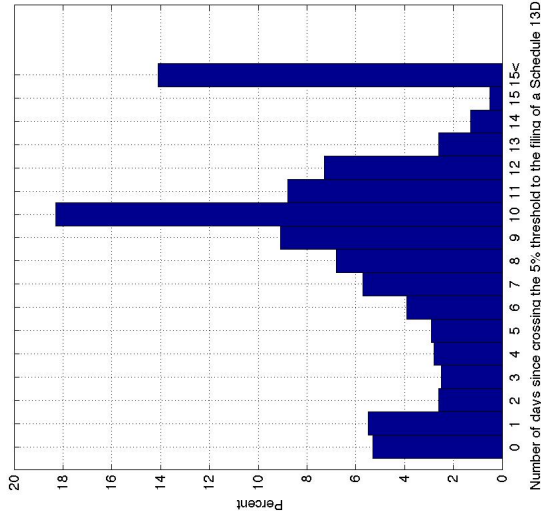
5 13D Reporting Information

5.1 Number of Days between Crossing the 5% Threshold and the Filing of Schedule 13D

Table 6: Initial Filing of Schedule 13D and the Number of Days Since Crossing the 5% Threshold to File

The sample includes 2624 hedge fund activism events over the period 1994-2011. For each activism event in which a hedge fund filed a Schedule 13D with the SEC we search EDGAR for the filing date from the “Filing date” on the filing detail webpage. Similarly, we collect for each event the date that triggered the filing, namely, when the activist crossed the 5% ownership, from the item “Date of Event Which Requires Filing of this Statement.” For the 2563 events with valid date information we then calculate the number of days between these two dates, the “day lag.” The filing of a Schedule 13D on the same day that a fund has crossed the 5% threshold is measured as a 0 lag. Panel A provides the number and sample percentage of events in day-bins ranging from 1 to 15 days and a bin for those events with a day difference beyond 15 days. The same information is given as a bar graph below Panel A. Panel B provides the distribution of days since crossing the 5% threshold by year from 1994 to 2011. We also report the number of events in each year that exceed 10 days. Panel C provides information on the association between the “day lag” for each event and the size of the hedge fund’s invested capital as a percentage of the outstanding shares of the target companies at the time of their initial 13D filings. We report the 5th, 25th, 50th (median), 75th, and 95th percentiles as well as the average for the subsamples of days lags: 0-1, 2-4, 5-7, and 8-10 days as well as the entire sample. For a detailed analysis of disclosures of accumulations of large blocks of stock in public companies by activist investors see Bebchuk, Brav, Jackson and Jiang (2013).²

Panel A: Distribution of the number of days (“lag”) since crossing 5% to the filing of Schedule 13D																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	15 <
Number of Events	136	140	67	65	71	75	101	145	173	234	469	226	186	66	33	13	362
Percent of Sample	5.3	5.5	2.6	2.5	2.8	2.9	3.9	5.7	6.8	9.1	18.3	8.8	7.3	2.6	1.3	0.5	14.1



Panel B: Yearly distribution of day lag							
Year	Num' of Events	Percentile					Num' of days >10
		5th	25th	Median	75th	95th	
1994	8	1	1.5	3	6.5	135	1
1995	29	0	7	10	12.25	24.05	11
1996	83	1.65	8	10	14.75	113.15	40
1997	178	4.4	8	10	14	78	87
1998	137	1.35	8	10	15.25	173.5	66
1999	98	1.4	8	10	12	101.4	39
2000	98	1	8	10	12	53.2	34
2001	83	0.65	7	10	11	23.95	23
2002	118	0	4	9	11	55.4	30
2003	112	0	5	9	11	58.4	32
2004	133	0.15	5.75	9	11	15.55	38
2005	210	0	5	9	11	21	60
2006	259	0	4	9	11	15.55	69
2007	297	0	4	9	11	27.95	84
2008	259	1	7	10	13	559.05	112
2009	136	0.3	7	10	51	722.9	59
2010	169	1	7	10	11	834.05	51
2011	156	0	6	10	11	638.4	50

Panel C: Percent ownership sorted by days lag subsamples					
Percentile	All Events	0 – 1	2 – 4	5 – 7	8 – 10
5th	5	5	5	5	5
25th	5.4	5.3	5.2	5.2	5.3
Median	6.4	7.8	6.1	6	6
75th	9.4	9.9	9.1	8.2	8
95th	21.8	20.7	20.1	19.6	20.7
Average	9	9.3	8.4	7.9	8.5

Synopsis of Table 6: The table provides evidence that a majority of activist hedge funds file their Schedule 13D between 7 and 10 days after they have crossed the 5% threshold, with close to 20% filing on the tenth day itself. The evidence in panel C indicates that activists who take longer to disclose their positions under Section 13(d) do not emerge with larger stakes than investors who disclose more quickly after crossing the 5% threshold.

²Bebchuk Lucian, Alon Brav, Robert Jackson, and Wei Jiang “Pre-disclosure accumulations by activist investors: Evidence and policy,” forthcoming, *Journal of Corporation Law*, 39, Fall 2013.