

**Market Reaction to Announcement of Hedge Fund Activism
and Takeovers: A US Study.**

by

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Abstract

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This paper studies the impact of hedge fund activism and takeovers on public firms in the United States of America. The research examines samples of 13D filings which show that a positive abnormal return is achieved when activists announce their intentions for a target company. I have taken sample data from the SEC EDGAR website between 2005 and 2012. The significant positive abnormal return for the activism target firm is calculated as 11 percent around the announcement date. The returns are explained by the performance of hedge fund activists and the process by which they force target firms into takeovers. The paper also shows that the firms targeted by the activists have a higher probability of being acquired.

August 30, 2013

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Chapter 1

Introduction

1.1 Purpose of Study

This paper investigates the ways activist hedge funds influence the sale of target firms and how they affect the market share of firms that were involved. The research explains how the market reacts to the announcement of a hedge fund activists' involvement in a firm and why this involvement results in takeovers and higher returns. The paper also showcases that the firms targeted by the activists have a higher probability of getting merged or acquired.

To construct a sample for this paper, I have used schedule 13D filings from the SEC website that is filed by the activist hedge funds, if they have ownership of above 5 percent in the target firm.

1.2 Background

Means and Berle (1932) discussed in their book the conflict of interest between ownership and control, which gave the foundation to the corporate governance field. This conflict of interest causes a separation between shareholders and management and imposes agency costs on the shareholders. In their book they mentioned that the managers have all the control and that the shareholders are powerless.

During the 1980s, shareholder activism became a new phenomenon in the field of corporate governance. In the paper by Grossman and Hart (1980), they explained that

shareholders do not spend funds on monitoring managers, as the incentive is small and it is shared with other investors who bear no cost: the free rider issue. These shareholder activists however, have large ownerships in public companies and are now known as “shareholder champions” as they resolve conflict between powerless shareholders and management. Shleifer and Vishny (1986) explained that large shareholders may mitigate the free rider problem faced by minority investors as the cost incurred by shareholders to monitor the management is covered by the return they get on the large size of their ownership in a target company.

In this earlier period, shareholder activists’ efforts were often proved to be ineffective in monitoring firm management. For example, in a paper by Karpoff (2001), he concluded that firm’s performance has very little to do with the role of investor activists. In some circumstances institutional investors have tried to change the management, but have always faced resistance with high costs and are often unsuccessful. The reasons behind the ineffectiveness in changing the management could be explained by the conflicts of interest and legal and regulatory constraints faced by these institutions. As a result, these large shareholders generally prefer to sell the stocks of firms that are poorly managed, rather than staying the course and making a change in the management.

The activist hedge fund, an evolved form of shareholder activism was introduced in late 1990s to the corporate governance framework. During 2002 they firmly established themselves as investors who could force target management to agree with their alternative strategic proposal. If the proposal was ignored, the activist may start a campaign and fight to realize their demands. In recent years, hedge funds have gained

popularity worldwide with unconventional investment strategies and extraordinary returns.

This paper examines the abnormal return achieved by the activists by forcing target firms into takeovers. One of the reasons for the takeovers is that the activists invest in companies which they perceive as undervalued or mismanaged. Activist purchases large number of shares and try to get involved in the company's Board and the management.

According to recent research findings, hedge funds monitor management better than the institutional shareholders. As an activist they have diversified portfolios with large assets under management and face fewer legal and regulatory constraints. Kahan and Rock (2006) conclude that the existence of few regulatory constraints and high incentives make hedge fund activism less costly and more successful than the institutional investors. Also, the announcement of a hedge fund activist's involvement in a target firm usually results in positive abnormal returns.

Hedge fund activism has faced criticism. For example, Katz and McIntosh (2007) comment as follows:

“Ignoring the long-term interests of public companies and the interests of traditional shareholders, hedge fund activists often have pressured companies to sell themselves, in whole or in part, or to incur significant debt to fund large scale stock buybacks.”

There has been considerable research on mergers and acquisitions, with target firms earning high positive returns while the acquirers have attained zero or negative returns.

The reason for the failure of the merger to the acquiring party would be the rationale on which the deal is based.

1.3 Need for Study

One of the hypotheses is that the hedge funds are good at identifying companies which are undervalued and find potential buyers for them. Under this hypothesis, investors expect high returns as they believe that the firms will be acquired soon at a good premium. From the activist's point of view, merger or acquisition is the best way to exit the target firm.

For this paper I have collected data from the SEC website for the schedule 13D filings between 2005 and 2012, focusing on events in the United States. The sample covers many events and in addition, the ten years will help me analyze the long-term returns. One of the main objectives of this paper is that the target firms will earn "good" returns for the period in which the activists help the target firm to either merge or be acquired.

This study was inspired by Greenwood and Schor's (2007) paper that argues that hedge fund activists' main purpose is to make a profit from the takeover premium by selling the target firm. Although this may not be true in a broader scale of data, the paper does show importance of mergers and acquisitions for hedge fund activism. This has galvanized me to write a research paper on takeovers that involve hedge fund activists' campaigns, considering both the takeover and the activism aspect. It investigates the reason hedge fund activists' induce the takeover process and how this activist involvement affects the

short - term market share of the target and acquiring firms. This paper also discusses the consequences of the takeover deal for the target firm.

1.4 Statement of Purpose

The objective of this research paper is to find out the roles hedge fund activists have in takeovers of target firms and how it affects the value distribution for the firms involved.

This objective could be explained by the following hypothesis:

1. H0 *The announcement of activist's involvement through the filing of schedule 13D does not lead to market reaction of positive short- term return.*
1. H1 *The announcement of activist's involvement through the filing of schedule 13D does lead to market reaction of positive short- term return.*
2. H0 *The announcement of takeover does not lead to positive abnormal returns for the target company*
2. H1 *The announcement of takeover does lead to positive abnormal returns for the target company*

Chapter 2

Literature Review

As mentioned in Chapter 1, this research is motivated by the paper of Greenwood and Schor (2007) which concluded that a hedge fund activist's only motive in initiating an activist campaign is to sell their target firm and make a profit from the takeover premium. The research also speaks about the importance of takeovers for hedge fund activists.

2.1 Hedge funds

In recent times hedge funds have become a worldwide popular investment tool, being subject to both appreciation and criticism. They raise capital from high net worth individuals and are less regulated compared to other funds such as, mutual and pension funds. They have flexibility when it comes to investing; they can take speculative positions in derivatives such as options and can short stock. Being an illiquid investment, hedge fund investors have to give advance notice if they want to sell their holdings. The managers of hedge fund try to seek positive returns and for that they demand very high fees (SEC, 2003; Brown et al. 1999; Coggan, 2008). The investment record of hedge funds easily exceeds the other funds available in the market.

Hedge funds have been criticised of playing a negative role in the 2007-2008 financial crisis by affecting the financial system with their risky strategies. At the beginning of 2008 there were more than 10,000 hedge funds with approximately \$1.9 trillion assets under management. Many hedge funds have gone out of business largely due the financial crisis and as a result many investors pulled back their assets, which put the total

assets under management to approximately \$1.3 trillion at the end of June 2009. Nevertheless, hedge funds have come back strongly and once again have become an important part of our financial system.

It is believed that Alfred Winslow Jones founded the first hedge fund in the late 1940s. He opened an investment fund on the basis of picking stocks that he thought would increase in value. To minimize the risk, he took short positions in other stocks, thereby “hedging his risk”, from which the hedge fund term originates. Jones develops a new strategy known as market – neutral: taking long positions in undervalued stocks and simultaneously take short positions in overvalued stocks. This strategy provided leverage to invest more with limited resources, to potentially earn higher returns (Brown et al., 1999).

2.2 Hedge Fund’s Strategies

Hedge funds use a variety of strategies to achieve positive returns. These can be divided into four categories: arbitrage, direction, equity long-short and event-driven.

An arbitrage fund as the name suggests, exploit the market efficiencies to gain risk free positive returns using complicated statistical models to find correlations between various stocks. Directional funds forecast trends in different markets such as stocks, commodities or currency, and create their portfolios accordingly. The equity long-short strategy was used by Alfred Winslow Jones in 1950s, by taking long and short positions in order to minimize market risk. Event-driven hedge funds try to force companies into merger or acquisition and make profit from the premium. Mergers create lots of price volatility in the target firm that provides investment opportunities for hedge funds.

Finally, when companies fail to invest in a good investment opportunities and share price falls, hedge funds try to get involved with the company's management. These types of hedge funds are known as activist hedge funds.

2.3 What is hedge fund activism?

There are many interventions used by shareholders if they are not satisfied with the performance of a target firm. This intervention includes shareholders voting against motions of the Board at AGM's and EGM's: selling of their shares. According to Jensen and Ruback (1983), investor activism is defined as:

“Holding large debt or equity positions in a company and actively participating in its strategic direction”.

This definition best explains the earlier forms of activism because it doesn't explain the impact activists have on the sale of a firm by opposing the management. Jensen and Ruback definition of activist was used by Bethel, et al (1998) in creating a sample of pension funds, money managers, banks and insurance companies that held a large ownership in firms that actively participate in share repurchases and asset divestiture. They sometimes have been referred to as ancestors to today's activists (Brav et al. 2008).

There are several reasons why activist hedge funds are so successful than shareholder activists. Bratton (2007) believes that the institutional activists free-rider problem have not been resolved completely and hence proxy fights is the only way to make major changes in a target company.

2.4 Does activism create value?

The opinions as to whether hedge funds create value through their activism vary greatly. There are many issues regarding what type of value the activist might create and for whom. The market believes that hedge funds activists are short termed and have their own interests Bainbridge (2005), which is against the shareholders or the company's long - term prospect. Partnoy, et al (2006) found that the abnormal return generated by the hedge fund activist is between 5 to 7 percent in the short- term and their involvement improves the operating performance of the target firm.

In contrast to study done on shareholder activism, by (Karpoff, (2001) showed an insignificant impact on firm performance and operations.

Mayer, et al (2006) concluded that the UK pension fund Hermes outperformed the relative benchmark after the involvement of activist investors. Similar results were shown by Klein and Zur (2007).

Chapter 3

Methodology

This chapter explains the methodology used to calculate the results for activism and takeovers. I will use an Event study to calculate the performance of both hedge fund activism and takeovers, with the date of the initial 13D filing and the announcement of takeover as event dates.

Measuring abnormal returns

The daily price for the companies was collected from the WRDS database. The return can be calculated by the percentage change relative to the previous day i.e.:

$$R_t = \frac{(RI_t - RI_{t-1})}{RI_{t-1}} \quad 3.1$$

For any stock i , the return at time t can be written as:

$$R_{it} = K_{it} + e_{it} \quad 3.2$$

K_{it} is the normal return and e_{it} the abnormal return. The unexpected component of the security is measured by e_{it} which can be written as:

$$e_{it} = R_{it} - K_{it} \quad 3.3$$

To calculate K_{it} , I will use the Ordinary Least Squares (OLS) Market Model approach. In this instance, the model uses past values of a stock i relative to the S&P 500 index denoted as m to calculate expected return in future. The formula to calculate expected return K_{it} is:

$$K_{it} = \alpha_i + \beta_i R_{mt} \quad 3.4$$

Where α_i and β_i are the intercept and slope respectively of the OLS regression between daily return of stock i and the daily return of the market m over a given period.

The market model to calculate the abnormal return is calculated by:

$$e_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \quad 3.5$$

The intercept α_i and the slope β_i must be calculated during the estimated period before the event date. For the hedge fund activism event the estimation window consist of 260 trading days return starting before the filing. The intercept and slope calculated in this period is used for the initial 13D filing event date.

3.1 Short - term returns

To calculate the abnormal returns I will use the Cumulative Abnormal Return (CAR) method. CAR calculates the cross- sectional mean abnormal return and add them over a given time period. This methodology was used by Greenwood and Schor (2007) for activism and Bradley et al. (1988) for the announcement day return.

I calculate the abnormal returns for 20 trading days before and after the event. To test if there is any significant abnormal returns on any specific day, the mean abnormal (AR) is calculated using the formula:

$$AR_t = \frac{1}{N} \sum_{i=1}^N e_{it} \quad 3.6$$

The 20 trading day period is chosen to check for any leaked information on the of 13 D filing by the activist. To test the hypothesis on short term returns, the Cumulative Abnormal Return is calculated over different period. The formula for CAR for time period t_1 and t_2 is:

$$CAR(t_1, t_2) = \sum_{t=t_1}^{t_2} AR_t$$

3.7

The daily CARs and ARs are calculated for target firms around the announcement of the initial 13D filing and the announcement of the takeover.

3.2 Data

To construct an event sample, data were collected from the SEC EDGAR database by merging all Schedule 13D and Def 14A filings for the eight year period between 2005 and 2012. I collected 776 events of Schedule 13 D filings filed by 41 hedge funds between the eight year periods. As mentioned in Chapter 2, 13Ds are filed with Securities and Exchange Commission within 10 days by the acquirer after attaining ownership of more than 5 percent in the target firm. The schedule 13D form includes the name of the target firm, the name of filer(s), the number of shares purchased, acquisition date and the purpose of transaction. Purpose of transaction item gives the detail of the transaction explaining whether the ownership is a passive or an active investment. In active investment, the activist gets involved in an event such as merger, to make changes in firms' structure and to make changes in corporate governance.

Several papers such as Ruback and Mikkelson (1985) stated that mergers are followed by the announcement of minority ownership. To the sample of 13Ds, the data also include Def 14A filings which are filed by investors who are involved in proxy fight against the firm's management.

To create the event list, "Purpose of Transaction" statement helped in identifying whether or not the hedge fund activist is pursuing an activist strategy. If the ownership is only for

the purpose of “investment”, then those data were excluded from the sample. However, these passive investment filing were used in some of the tests which follow. For each hedge fund activist and target firm, there are multiple filings which results because of the changes in the activist position in the target firm. Most of such filings are excluded from the sample for which the purpose of transaction is not changed. I then take out events where the initial filing was more than two years before the takeover became effective of the target company. If the period between takeover and initial 13 D filing was more than two years, it is assumed that there was no intention of selling the target firm.

The Schedule 13D statements imply that the hedge fund activist demands are classified in to seven categories: (1) involvement with the management, (2) corporate governance issues, (3) involvement in proxy contest, (4) capital structure issues, (5) sale of target firm, (6) blocking merger or acquisition, and finally, (7) bankruptcy and financing issues. Activists are grouped according to Schedule 13D filings, and not by the target firm’s action.

In addition to the data included in the “Purpose of Transaction” statement, the SEC allows activist’s to file more filings as exhibits. These exhibits could be press releases or letters to its Board or to the management of the target firm. These filings, along with the statements in Item 4 of the schedule 13D, contribute to the market with the explanation of action the hedge fund activist needs the firms to take.

The price of target firm is gathered from the Wharton Research Data Services (WRDS) and to calculate the abnormal returns, the S&P 500 index is used. The event sample consists of daily return for trading days before the initial filing and the takeover date.

Chapter 4

Results

4.1 Activism results

The returns of hedge fund activism around the 13D filing date, using the market model are shown in Appendix A. The first part of Appendix A show the daily breakdowns of the average returns of the hedge fund activism event sample for 1 month (20 trading days) before and after the 13D filing event date. For abnormal performance measurement methods the event date ($t=0$) is significantly positive at returns of 1.7% . The days before and after the 13D filing are both significantly positive. The daily breakdown for both measurements shows that many days in the month before and after the 13D filing are significantly positive, although none as significant as the event date.

This pattern was also observed by previous studies and could be caused by several factors. Firstly, several hedge fund activists could file their initial 13D filings in a single target company close together as a so-called ‘wolf pack’. Secondly, there could be a market reaction prior to the 13D filing due to the accumulation of a 5% stake by the activist. Thirdly, here could be some information leakage on the transaction, as the 13D filing only needs to be made within 10 days after the stake has been acquired⁸². Finally there are two contrasting explanations for the positive returns in the days after the event. Assuming an efficient market, the significantly positive returns can be due to the release of new information after the initial 13D was filed (Klein & Zur, 2006). However the positive returns could also be a sign of an imperfectly efficient market reaction after the event date and that the market underreacted to the 13D filing.

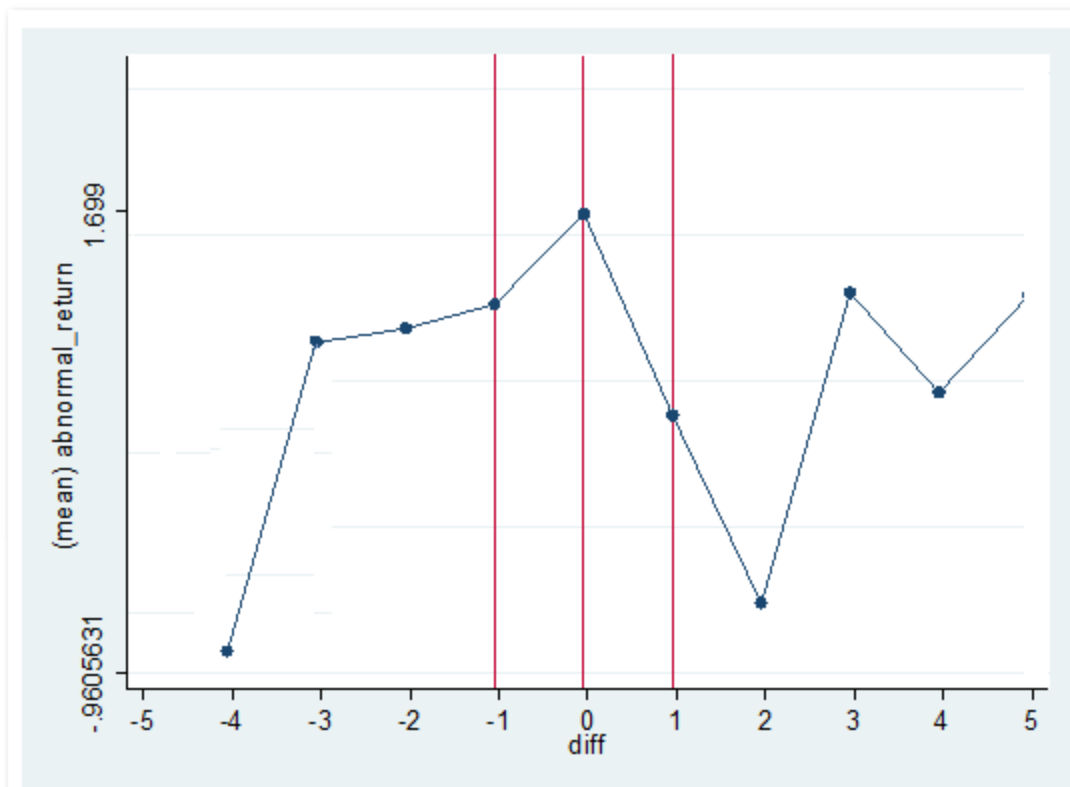
In this chapter, we try to prove whether the hypothesis is correct, or whether (a) the announcement of activist's involvement through the filing of Schedule 13D does not lead to market reaction of positive short- term return, or (b) the announcement of merger does lead to positive abnormal returns for the target company.

Table 4.1

```
Linear regression                                Number of obs =      52
                                                F( 0,    51) =    0.00
                                                Prob > F      =      .
                                                R-squared     =  0.0000
                                                Root MSE     =  .17457
```

cumulative~n	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
_cons	.0535991	.0242089	2.21	0.031	.0049978	.1022004

Figure.4.1



The Cumulative Abnormal Returns (CARs) surrounding the schedule 13D filing date for 3 trading day CAR is 3.4 percent, while for 20 trading day before and after the 13D filing, the target firm's CAR is 12.2 percent. The CARs recorded are more than those reported by Brav et al. (2006).

Table 4.2

```

Linear regression
Number of obs =      52
F( 0, 51) =      0.00
Prob > F      =      .
R-squared     =      0.0000
Root MSE     =      .04007

```

abnormal_r~n	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
_cons	.0115405	.0055568	2.08	0.043	.0003847	.0226963

Target takeover returns

The event date return for takeover is statistically significant and positive, with abnormal return of 9.5 percent. The results of daily returns suggest that, in comparison to the 13D filing, there is negligible information that is leaked in the trading days before and there is a quick inclusion of new information in the price after the takeover announcement date.

Table 4.3

```

Linear regression
Number of obs =      52
F( 0, 51) =      0.00
Prob > F      =      .
R-squared     =      0.0000
Root MSE     =      .01576

```

average_ab~n	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
_cons	.0049566	.0021855	2.27	0.028	.0005691	.0093441

CARs for many event windows are statistically significant and positive. The CAR return for the 10 trading day window is 17.6 percent and for the 3 day window is 15.8 percent. These outputs are slightly less than comparable studies.

Table 4.4

```

Linear regression                                Number of obs =      52
                                                F( 0,    51) =     0.00
                                                Prob > F      =      .
                                                R-squared     =  0.0000
                                                Root MSE     =  .17336

```

cumulative~n	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
_cons	.0545226	.0240403	2.27	0.028	.0062597	.1027856

Chapter 5

Conclusions

The purpose of this paper was to show the role of hedge fund activists in takeovers. The activism where a takeover is pursued generates maximum return during the initial 13D filing. Furthermore, activism campaigns enhance the probability that the target firm will eventually be acquired, thereby increasing the likelihood of takeover premium.

The paper suggests that activists mainly target small firms as most of these firms are undervalued and underperform compared to other industries, having negligible analyst coverage. The activists should have ownership of more than 5 percent in pursuing target firm for any takeover. If these hedge fund activists carry on with such development, these activists may become successful at pursuing larger firms for takeovers.

The activist's target firm CARs around the initial filing day is around 1.2 percent to 10.3 percent for a 40 days window. The positive return during the month of 13D filing provides evidence of information leakage. The paper shows that the market includes the probability of selling of the target firm prior to the announcement. Also there is no impact on the short- term return of the acquirer during the takeover.

Activism announcement return hypotheses

1. H0 *The announcement of activist's involvement through the filing of schedule 13D does not lead to market reaction of positive short term return.*
- H1 *The announcement of activist's involvement through the filing of schedule 13D does lead to market reaction of positive short term return.*

On the date of filing there are significant positive abnormal returns seen among different windows around the 13D filing date. Hence we can say that there is significant market reaction on the announcement of 13D filing. Therefore we reject the null hypothesis.

2. H0 *The announcement of takeover does not lead to positive abnormal returns for the target company*

2. H1 *The announcement of takeover does lead to positive abnormal returns for the target company*

It can be seen that there is significant positive short-term returns for the target companies around the takeover announcement. Hence we reject the null hypothesis.

This paper has some limitations such as small sample and limited number of hedge fund activists which were included. The small sample has therefore affected the significance of the test and also the measurement of abnormal returns.

Chapter 6

Recommendations

There are several questions which can be investigated in the future regarding the long-term returns created for the acquirers firm. This can be shown by investigating the performance of the acquirer firm post acquisition. This research could also study the types of acquiring firms and their corporate governance structure.

Another recommendation would be to search how different ‘timings’ of certain strategy in the activist campaign, such as acquiring a seat on the Board affects the market reaction. There could be some investigation regarding the bargaining power of hedge fund activist as well as the method of payment influencing the takeover.

Finally, the decline in short-term return for target firms due to the information leakage (like CEO resignation) could further be investigated. This research could provide more details about the hedge fund activism and in general the takeover process.

References

- Bainbridge S.M., 2005, "Shareholder Activism and Institutional Investors,"
UCLA School of Law, Law-Econ Research Paper 05-20.
- Berle, A.A., and Means, G.C., 1932, *The Modern Corporation and Private Property*,
New York, Macmillan Publishing Co.
- Bethel, J.E., J Porter Liebeskind, and T C. Opler, 1998, "Block Share
Purchase and Corporate Performance," *Journal of Finance* 53, pp. 605-634.
- Bratton, W.W., 2007, Is the hostile takeover irrelevant? A look at the evidence, *Working
paper*
- Brav, A., Jiang, W., Partnoy, F., and Thomas, R., 2008, Hedge fund activism, Corporate
Governance and firm performance, *European Corporate Governance Institute (ECGI) –
Working Paper*
- Brealey, R.A., and Myers, S.C., 2000, *Principles of corporate finance*, 6th edition,
McGraw Hill, New York
- Brown, S.J., Goetzmann, W.N., and Ibbotson, R.G., 1999, Offshore hedge funds,
survival and performance, 1989 – 95, *Journal of Business*, vol. 72, no. 1
- Coggan, Aug 15, 2008, *Guide to hedge funds*, The Economist
- Clifford, C., 2007, Value creation or destruction? Hedge funds as shareholder
activists, *Working paper. Journal of Corporate Finance* 14(4), 323-336.
- Dodd, P., and Ruback, R., 1977, Tender offers and stockholder returns: An empirical
analysis, *Journal of Financial Economics*, 5: 351-374

Fama, E.F., 1998, Market efficiency, long-term returns, and behavioural finance, *Journal of Financial Economics* 49, 283-306

Greenwood, R., and Schor, M., 2007, Hedge fund investor activism and takeovers, *Working paper*

Grossman, Sanford J., and Oliver Hart, 1980, Takeover Bids, the Free-Rider Problem, and the Theory of the Corporation.” *Bell Journal of Economics* 11, 42-64.

Jensen, M.C., and Ruback, R., 1983, The market for corporate control: the scientific evidence, *Journal of Financial Economics* 11(1-4): 5-50.

Kahan, Marcel, and Edward B. Rock, 2006 "Hedge Funds in Corporate Governance and Corporate Control," University of Pennsylvania, Institute for Law & Economics Research Paper No. 06-16.

Kaplan, S., and Weisbach, M., 1992, The Success of Acquisitions: Evidence From Divestitures, *Journal of Finance*, 47: 107-138

Karpoff, Jonathan, 2001, “The Impact of Shareholder Activism on Target Companies: A Survey of Empirical Findings,” University of Washington Working Paper.

Katz, D.A.,and McIntosh, L.A., 2007, Corporate Governance Update: Market Shifts Offer Reprieve From Hedge Fund Activism, *Wachtell, Rosen, Lipton & Katz*

Klein, A., Zur, E., 2007, Hedge fund activism, *Working paper*

Mayer, Brecht, M., Franks, J., C., and Rossi, S., 2006, Returns to shareholder activism; Evidence from a Clinical Study of the Hermes U.K. Focus Fund, *ECGI Finance Working Paper No. 138*

Richard S. Ruback and W.H. Mikkelson,. 1985, “An Empirical Analysis of the Interfirm Equity Investment Process,” *Journal of Financial Economics* 14, pp. 523-553.

Mitchell, M.L., and Mulherin, J.H., 1996, The impact of industry shocks on takeover and restructuring activity, *Journal of Financial Economics* 41(2): 193-229

Partnoy, B. A., Jiang, W., F., and Thomas, R., 2006, Hedge fund activism, Corporate governance and firm performance, *European Corporate Governance Institute (ECGI) – Working Paper*

SEC, 2008/2009, *Electronic Data Gathering, Analysis, and Retrieval system (EDGAR)*

Shleifer, A., and Vishny, R.W., 1986, Stock market driven acquisitions, *Journal of financial Economics* 70(3): 295-311

Appendix A

Requirements of the purpose of transaction item in the SEC Schedule 13D filing

Item 4. *Purpose of Transaction*

State the purpose or purposes of the acquisition of securities of the issuer. Describe any plans or proposals which the reporting persons may have which relate to or would result in:

The acquisition by any person of additional securities of the issuer, or the disposition of securities of the issuer;

An extraordinary corporate transaction, such as a merger, reorganization or liquidation, involving the issuer or any of its subsidiaries;

A sale or transfer of a material amount of assets of the issuer or any of its subsidiaries;

Any change in the present Board of directors or management of the issuer, including any plans or proposals to change the number or term of directors or to fill any existing vacancies on the Board;

Any material change in the present capitalization or dividend policy of the issuer;

Any other material change in the issuer's business or corporate structure, including but not limited to, if the issuer is a registered closed-end investment company, any plans or proposals to make any changes in its investment policy for which a vote is required by

Section 13 of the Investment Company Act of 1940;

Changes in the issuer's charter, bylaws or instruments corresponding thereto or other

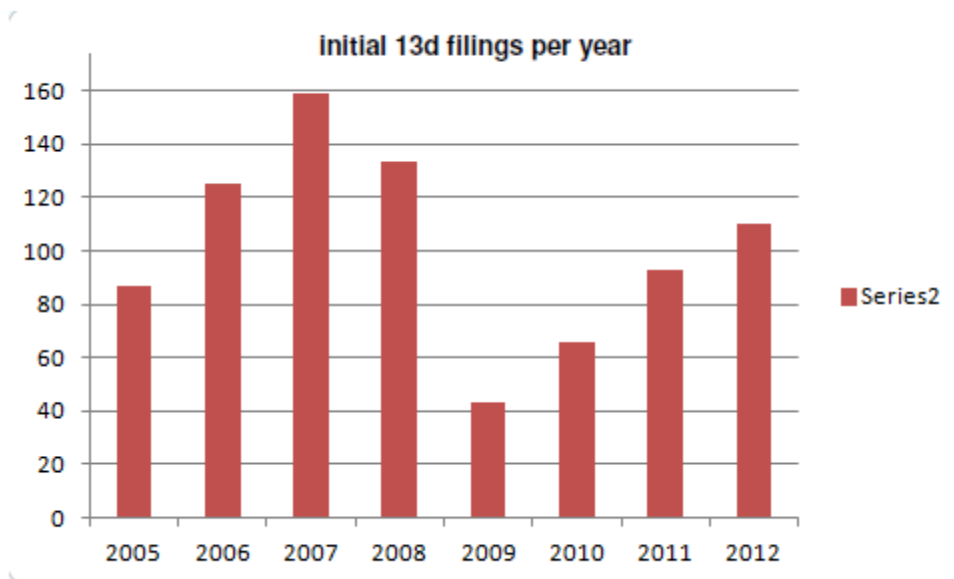
actions which may impede the acquisition of control of the issuer by any person; Causing a class of securities of the issuer to be delisted from a national securities

exchange or to cease to be authorized to be quoted in an inter-dealer quotation system of a registered national securities association;

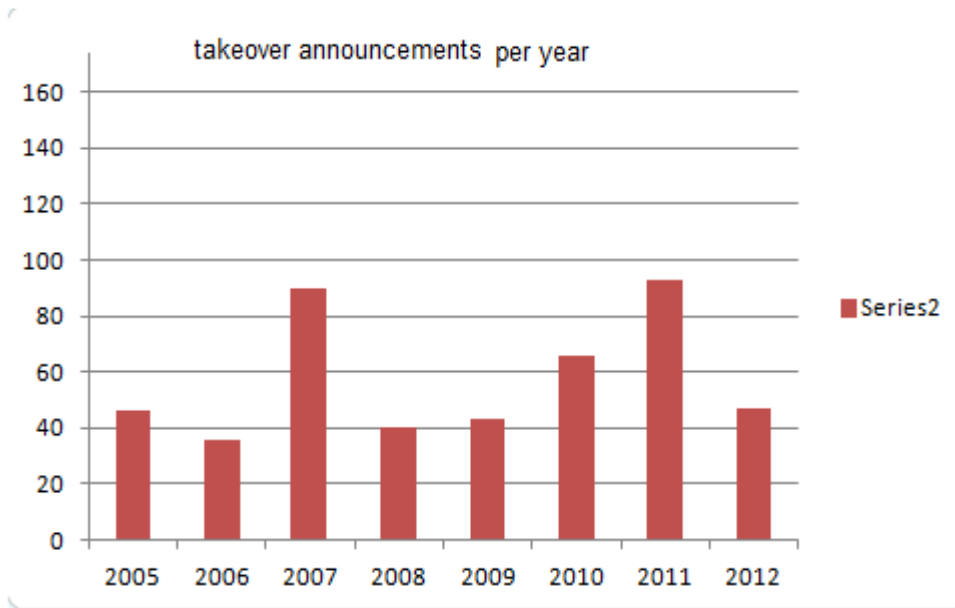
A class of equity securities of the issuer becoming eligible for termination of registration pursuant to Section 12(g)(4) of the Act; or

Any action similar to any of those enumerated above.

Distribution of initial 13D-filing per year



Distribution of takeover announcements per year



Abnormal returns around initial 13D-filing,market model returns

t	AR	p-value	significant?
-20	-0.005	0.867	
-19	0.005	0.043	TRUE
-18	0.001	0.354	
-17	0.003	0.112	
-16	-0.006	0.899	
-15	-0.002	0.644	
-14	0.004	0.143	
-13	0.009	0.027	TRUE
-12	0.000	0.433	
-11	0.011	0.002	TRUE
-10	-0.001	0.659	
-9	0.002	0.254	
-8	-0.003	0.853	
-7	0.006	0.016	TRUE
-6	0.012	0.002	TRUE
-5	0.000	0.449	
-4	0.002	0.348	
-3	0.006	0.042	TRUE
-2	0.007	0.109	
-1	0.006	0.028	TRUE
0	0.016	0.000	TRUE
1	0.010	0.029	TRUE
2	0.001	0.370	
3	0.006	0.030	TRUE
4	0.002	0.187	
5	0.004	0.199	
6	-0.002	0.767	
7	0.003	0.244	
8	0.001	0.378	
9	0.001	0.361	
10	-0.001	0.597	
11	0.006	0.024	TRUE
12	-0.002	0.727	
13	-0.001	0.700	
14	-0.002	0.793	
15	0.001	0.369	
16	0.006	0.015	TRUE
17	0.005	0.244	
18	0.000	0.533	
19	-0.003	0.895	
20	0.005	0.033	TRUE

Abnormal returns around initial 13D-filing, market adjusted returns

t	AR	p-value	significant?
-20	-0.005	0.885	
-19	0.007	0.014	TRUE
-18	0.002	0.216	
-17	0.001	0.381	
-16	-0.005	0.880	
-15	-0.001	0.596	
-14	0.003	0.174	
-13	0.010	0.010	TRUE
-12	0.001	0.338	
-11	0.012	0.001	TRUE
-10	-0.002	0.725	
-9	0.000	0.484	
-8	-0.002	0.719	
-7	0.005	0.030	TRUE
-6	0.012	0.002	TRUE
-5	0.002	0.296	
-4	0.003	0.223	
-3	0.006	0.054	
-2	0.008	0.066	
-1	0.005	0.043	TRUE
0	0.018	0.000	TRUE
1	0.012	0.013	TRUE
2	0.003	0.197	
3	0.006	0.037	TRUE
4	0.002	0.297	
5	0.003	0.218	
6	-0.002	0.707	
7	0.003	0.240	
8	0.001	0.379	
9	0.001	0.411	
10	0.000	0.570	
11	0.005	0.028	TRUE
12	0.000	0.431	
13	-0.002	0.758	
14	-0.001	0.627	
15	0.003	0.124	
16	0.006	0.010	TRUE
17	0.005	0.240	
18	0.001	0.350	
19	-0.004	0.930	
20	0.003	0.129	

Appendix B

```
clear all
```

```
capture log close
```

```
log using MFIN6690_EventStudyClass, replace
```

```
use "C:\Users\abhinav\Downloads\date2.dta", clear
```

```
gen year=year(date_ann)
```

```
keep if year>=2009 & year<=2011
```

```
sort permno date_ann
```

```
tempfile 13D2009
```

```
quietly save `13D2009', replace
```

```
bysort permno: gen eventcount=_N
```

```
bysort permno: keep if _n==1
```

```
sort permno
```

```
keep permno eventcount
```

```
tempfile eventcount
```

```
quietly save `eventcount', replace
```

```
clear
```

```
use "C:\Users\abhinav\Downloads\crsp2009_2011.dta", clear
```

```
gen year1=year(date2)
```

```
keep if year>=2009 & year<=2011
```

```
sort permno date2
```

```
tempfile crsp_data2009_2011

quietly save `crsp_data2009_2011', replace

sort permno

merge permno using `eventcount'

tab _merge

keep if _merge==3

drop _merge

expand eventcount

drop eventcount

sort permno date2

by permno date: gen set=_n

sort permno set

tempfile crsp_data2009_2011_new

quietly save `crsp_data2009_2011_new', replace

use `13D2009', clear

by permno: gen set=_n

sort permno set

tempfile 13D2009_new

quietly save `13D2009_new', replace

use `crsp_data2009_2011_new', clear

merge permno set using `13D2009_new'
```

```
tab _merge

drop _merge

egen company_id =group(permno set)

sort company_id date2

by company_id: gen datanum=_n

by company_id: gen target=datanum if date2==date_ann

egen tempdate=min(target), by(company_id)

drop target

gen diff=datanum-tempdate

by company_id: gen event_window=1 if dif>=-5 & dif<=5

egen count_event_obs=count (event_window), by(company_id)

by company_id: gen estimation_window=1 if dif<-30 & dif>=-120

egen count_est_obs=count (estimation_window), by(company_id)

replace event_window=0 if event_window==.

replace estimation_window=0 if estimation_window==.

drop if count_event_obs<11

drop if count_est_obs<90

drop if estimation_window==0 & event_window==0

gen predicted_return=.

egen id =group(company_id)

sum id, detail
```

```
scalar id_N=r(max)

local i=1

while `i'<=id_N {

display "Estimating normal performance for firm: " `i'

quietly reg ret sprtrn if id==`i' & estimation_window==1

predict p`i' if id==`i'

replace predicted_return=p`i' if id==`i' & event_window==1

drop p`i'

local i=`i'+1

sort id date2

gen abnormal_return=ret-predicted_return if event_window==1

by id: egen cumulative_abnormal_return=sum(abnormal_return)

sort id date2

by id: egen ar_sd = sd(abnormal_return)

gen test= (1/3)*(cumulative_abnormal_return/ar_sd)

reg cumulative_abnormal_return if dif==0, robust

preserve

collapse (mean) abnormal_return, by(dif)

twoway scatter abnormal_return dif if dif>=-5 & dif<=5, xlab(-5(1)5) c(1) xline(-1)

xline(0) xline(1)

restore
```

```
preserve
```

```
collapse (mean) cumulative_abnormal_return, by(diff)
```

```
twoway scatter cumulative_abnormal_return diff if diff>=-5 & diff<=5, xlab(-5(1)5) c(1)
```

```
xline(-1) xline(0) xline(1)
```

```
restore
```

```
capture program drop bootcumret
```

```
program define bootcumret, rclass
```

```
reg cumulative_abnormal_return if diff==0
```

```
return scalar cumret=_b[_cons]
```

```
end
```

```
bootstrap boottest=r(cumret), reps(1000) saving (boot_diffret, replace): bootcumret
```

```
save event_study_file2009, replace
```

```
log close
```