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Norwegian School of Economics  
Bergen, Fall 2014

# Activist Hedge Funds

*The Characteristics and Determinants of Abnormal Returns in  
Activist Hedge Fund Targets – an Event Study*

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Master thesis, Financial Economics

NORWEGIAN SCHOOL OF ECONOMICS

This thesis was written as a part of the Master of Science in Economics and Business Administration at NHH. Please note that neither the institution nor the examiners are responsible – through the approval of this thesis – for the theories and methods used, or results and conclusions drawn in this work.



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## Preface

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This Master thesis was written to conclude the Master of Science degree in Economics and Business Administration at the Norwegian School of Economics (NHH) during the fall of 2014. We have specialized in Financial Economics and have used this fall to indulge ourselves in two of the most interesting topics in finance, namely mergers and acquisitions and the hedge fund industry. The topic is anchored in Corporate Finance, but its importance is present within other applications as well, such as Corporate Governance and Business Strategy.

The report has been prepared in the Microsoft Office 2013 suite. Numerical analyses have been conducted mainly in Microsoft Excel and STATA, while text-reading programs such as PERL have been utilized to gather data. Furthermore, we have used Power Point and Mekko Graphics to ensure high quality on graphical illustrations. The data foundation for the thesis is obtained from several sources with EDGAR, the Center for Research in Securities Prices (CRSP) and Compustat as the most critical.

First and foremost, we would like to express our gratitude towards our supervisor, Professor Karin Thorburn, for invaluable counselling. Her expertise, experience and openness have motivated us throughout this process and enhanced our knowledge in both Finance and Econometrics. Furthermore, we would like to thank Professor Alon Brav at Fuqua School of Business and Professor Robin Greenwood at Harvard Business School for access to crucial data sources. Moreover, we would like to thank Knut Olav Rød and Petter Haugen at The Boston Consulting Group for valuable insights and material, as well as Assistant Professor Cornelius Schmidt at NHH for his helpfulness regarding our PERL-script. Last but definitely not least, we would like to thank our parents for sound and vital support throughout our 17-year educational run.

The views, findings and conclusions in this thesis are solely those of the authors.

Bergen, December 2014

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Hans-Marius Lee Ludvigsen

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**Abstract**

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This thesis is a comprehensive study of the activist hedge fund phenomenon, with particular emphasis on target firm and return characteristics. The utilized sample include 3065 activist interventions in U.S. publicly traded companies from 1994 to 2013. In general, we employ different modifications of the event study framework, investigating abnormal returns in target firms caused by activist hedge fund interventions. Our analyses can, to keep contextual tidiness, be divided into four separate examinations. Their yielded results should, however, preferably be contemplated in coherence.

First, we plunge into the target firm characteristics to unveil whether activist hedge funds systematically tilt their investments towards particular company features. Our results indicate that activist hedge funds on average target undervalued companies with below-average size, leverage and profitability, and above-average cash-on-hand ratios and stock liquidity.

Second, we examine the short-term abnormal returns in target firms. Our findings imply statistically and economically positive abnormal returns in the days surrounding the event day, which cannot be attributed to abnormal trading volumes when looking at the overall sample. We show that these figures are significantly higher in economically stable times than in crisis. They are, however, indistinguishable for high frequency (more than ten interventions) and low frequency funds (less than five interventions).

Third, we examine the long-term abnormal returns in target companies by conducting calendar-time monthly portfolio regressions. The findings unanimous imply a positive long-term abnormal return in target firms, independent of the macroeconomic conditions and the hedge fund track record.

Fourth, we are the first, to our knowledge, trying to explain the cross-sectional differences in abnormal returns. We do so by specifying twelve unique models which results imply that target firm cash-to-asset ratio, market capitalization, price-to-book ratio, bid-ask spread, as well as the hedge fund's track record and degree of friendliness in the stated tactic are statistically significant determinants of the long-term abnormal returns in target firms. With respect to the short-term abnormal returns, the overall economic state and the long-term abnormal returns are seemingly significant determinants.

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## Table of Contents

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<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Shareholder Activism – A Theoretical Framework</b>	<b>4</b>
2.1	Shareholder Activism: The Search for a Formal Definition .....	4
2.2	Shareholder Activism: The Toolbox .....	7
2.3	Modelling Shareholder Activism- a Rational Phenomenon? .....	11
2.3.1	The Costs Associated with Shareholder Activism, $c_i$ .....	12
2.3.2	The Benefits Associated With Shareholder Activism, $b_i$ .....	14
2.3.3	Returns to Shareholder Activists.....	16
2.4	Hedge Fund Activists Versus Other Types of Activists.....	17
2.5	A Case Study: McGraw Hill and Jana Partners .....	20
<b>3</b>	<b>The Evolution and Procyclical Nature of Shareholder Activism</b>	<b>22</b>
3.1	The 1990s – Institutional Activist Investors to the Fore .....	22
3.2	The Early 2000s – Hedge Funds Becoming the New Figurehead of Activists.....	23
3.3	The Financial Crisis – Taking its toll on Hedge Fund Activism.....	25
3.4	2011-2014 - Procyclical Activist Hedge Funds Getting Back on Their Feet .....	26
<b>4</b>	<b>Literature Review</b>	<b>29</b>
4.1	Previous Research on Abnormal Returns .....	29
4.2	Difference in Time Spans and Sample Size - Implications.....	30
4.3	Target Firm Characteristics .....	31
4.4	Abnormal Returns and Value Creation.....	32
4.4.1	Short-Term Abnormal Returns .....	32
4.4.2	Long-Term Abnormal Returns .....	34
<b>5</b>	<b>Methodology</b>	<b>36</b>
5.1	Specifying the Abnormal Returns.....	36
5.2	Event Window Determination .....	38
5.3	Conceptual Framework and Hypotheses .....	39
5.3.1	Target Firm Characteristics .....	41
5.3.2	Short-Term Abnormal Return .....	41
5.3.3	Long-Term Abnormal Returns .....	42
5.3.4	Cross-Sectional Differences in Abnormal Returns .....	42
<b>6</b>	<b>Data</b>	<b>44</b>
6.1	Construction – Gathering and Structuring the Data .....	44
6.1.1	U.S. Securities and Exchange Commission (SEC) and Section 13.....	44
6.1.2	Merging Datasets – Robin Greenwood and Alon Brav.....	45
6.1.3	Restricting the Sample.....	46
6.1.4	Extending the Dataset.....	47
6.2	Description of the Data Sample .....	48
6.2.1	Potential Biases and Descriptive Statistics.....	48

6.2.2	Statistical Properties of the Return Data.....	49
6.2.3	Comparison to Other Studies for Short-Term Abnormal Returns.....	51
<b>7</b>	<b>Descriptive Statistics and Target Firm Characteristics</b>	<b>53</b>
7.1	Number of Deals and Market Capitalization.....	53
7.2	Target Firm Characteristics.....	55
7.3	Trading Data – Liquidity and Discounts.....	59
7.4	Change in Investment Objectives.....	60
<b>8</b>	<b>Short-Term Abnormal Returns</b>	<b>62</b>
8.1	Short-Term Value Creation.....	62
8.2	Time Trends and Patterns in Value Creation - Headwinds and Tailwinds.....	64
8.3	High Frequency Funds – Able to Create Additional Value?.....	66
8.4	Concluding Remarks for Short-Term Analyses.....	68
<b>9</b>	<b>Long-Term Abnormal Returns</b>	<b>69</b>
9.1	Long-Term Calendar-Time Monthly Portfolio Regression.....	69
<b>10</b>	<b>Explaining the Cross-Sectional Differences in Abnormal Returns</b>	<b>73</b>
10.1	Cross-Sectional Differences in LTARs.....	73
10.1.1	Regressors.....	74
10.1.2	Econometric Pitfalls.....	75
10.1.3	Regression Results.....	76
10.1.4	Remarks and Limitations.....	80
10.2	Cross-Sectional Differences in STARs.....	81
10.2.1	Unique regressors.....	81
10.2.2	Regression Results.....	82
<b>11</b>	<b>Conclusion</b>	<b>85</b>
<b>12</b>	<b>References</b>	<b>86</b>
<b>Appendix A:</b>	<b>Enhanced Literature Review</b>	<b>94</b>
	Potential Wealth Expropriation in Activist Hedge Fund Literature.....	94
	Operational Performance and Improvements.....	95
	Corporate Governance.....	96
	Regulations and Organizational Setup:.....	97
	Stakeholders and compensation policies.....	98
	Increasing the geographical span: research outside the U.S.....	98
	Specialized Topics Within Hedge Fund Activism:.....	99
	Agency costs, Free-Rider Problems and Management Entrenchment:.....	101
<b>Appendix B:</b>	<b>Sample Selection Criteria for Selected Studies</b>	<b>105</b>
<b>Appendix C:</b>	<b>Box-Plot Diagrams</b>	<b>109</b>

<b>Appendix D: Early Evolution of Shareholder Activism</b>	<b>110</b>
<b>Appendix E: Section 13</b>	<b>114</b>
<b>Appendix F: Comprehensive Methodology</b>	<b>115</b>
The Event Study Outlined.....	115
Hypothesis Testing and Econometrics.....	117
<b>Appendix G: Logit Regressions on Cross-Sectional Differences in LTAR</b>	<b>122</b>

### List of tables

1. Overview of findings in earlier studies on target firm characteristics
2. Statistical properties of the cumulative abnormal return data
3. Change in investment objectives
4. Calendar-time portfolio regressions
5. Multicollinearity check
6. Effects on long-term abnormal returns regression
7. Effects on short-term abnormal returns regression

### List of figures

1. The process of passive investing versus the process of active investing
2. Continuum based on the degree of shareholder activity
3. Shareholder activism tactics by degree of friendliness
4. McGraw Hill case study – revenue and cash development
5. McGraw Hill case study – total shareholder return
6. McGraw Hill case study – return development with activist
7. Index development, cost of debt versus equity yield and hedge fund events
8. Literature review – difference in time periods for earlier studies
9. Literature review – short-term abnormal returns
10. Literature review – cumulative distribution function
11. Literature review – summary of long-term abnormal returns in studies reviewed
12. CAR event window summary
13. Effects on short-term abnormal returns in target firms
14. Effects on long-term abnormal returns in target firms
15. Data chapter – activist hedge fund launches
16. Data chapter – Number of deals by year in analyses
17. Data chapter – Distribution of short-term and long-term CARs
18. Data chapter – short-term returns review; comparison analysis
19. Number of activist events in full sample
20. Assets under management and number of events with market cap > 1bn USD
21. Number of activist hedge funds in the sample
22. Market Capitalization development in sample versus NYSE/AMEX
23. EBIT margin in sample versus historical average
24. EBIT margin for target firms versus NYSE/AMEX
25. Cash-to-assets ratio for target firms versus historical average
26. Cash-to-assets ratio for target firms versus NYSE/AMEX
27. Debt-to-assets ratio for target firms versus historical average
28. Debt-to-assets ratio for target firms versus NYSE/AMEX



29. Bid-ask spread for target companies versus NYSE/AMEX
30. P/B for target firms versus NYSE/AMEX
31. Changes in investment objectives for 12-13 versus 94-11
32. Short- term abnormal returns - CAR vs. Abnormal volume, short-term
33. Short- term abnormal returns - CAR structured by year
34. Short- term abnormal returns - CAR in crisis versus economically stable periods
35. Short- term abnormal returns – CAR for high frequency funds vs. low frequency funds
36. Short- term abnormal returns – run-up for high frequency funds versus low frequency funds
37. Long-term abnormal returns – probability discounted CAR
38. Long-term abnormal returns – relative distribution of deals done by high frequency funds and low frequency funds



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## 1 Introduction

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*“Shareholder activism is not a privilege - it is a right and a responsibility. When we invest in a company, we own part of that company and we are partly responsible for how that company progresses. If we believe there is something going wrong with the company, then we, as shareholders, must become active and vocal.”*

Mark Mobius, Fund Manager at Franklin Templeton Investments

Since its first sporadic signs taking place already in the first half of the 20<sup>th</sup> century, the phenomenon of shareholder activism has expressively amplified in terms of both volume, fame and popularity. In the late 1990s, shareholder activism interlaced with another rapidly growing phenomenon; hedge funds, forming the branch in the investment strategy universe we know today as hedge fund activism.

The impact of U.S. hedge fund activism is underlined by growth figures over the last pair of decades; in 1995, the number of activist hedge funds was 18 - 18 years later, in 2013, the corresponding figure had grown to 85. In addition, the assets under management of activist hedge funds have grown from just over of \$9 bn in 2002, to tenfold the figure in 2013, \$90 bn. Activist hedge funds' tendency to make headlines, combined with their latest shift towards targeting “blockbuster” companies, have also contributed to its increased popularity and relevance. Prominent examples of the latter are the public feud between Carl Icahn and Bill Ackman in Herbalife Ltd. (2013), Daniel Loeb's spin-off campaign in Sony Corp. (2013) as well as Icahn's push for share repurchases in Apple Inc. (2014).

This thesis aims to unveil and explain the potential drivers behind the surge in popularity and volume of activist hedge fund interventions, with particular emphasis on the return characteristics. We are curious to see whether the funds historically have been able to create significant risk-adjusted returns both in the short- and long-term. Furthermore, we want to investigate whether there are any significant differences in returns across economic trends and fund characteristics. Lastly, we want to address any cross-sectional differences in returns that may exist, trying to uncover its determinants.

Our starting point is shareholder activism in general, building a sound theoretical framework, explaining and defining the phenomenon of shareholder activism, as well as its toolbox. We

develop a model aiming to explain the rationality behind shareholder activism given its costs and benefits. We also discuss the structural and regulative differences between hedge fund activists and other types of shareholder activists, before presenting a case study of a successful hedge fund activist campaign.

Next, chapter 3 describes the evolution and procyclical nature of shareholder activism from the 1990s up to present, emphasizing both changes in regulations, sentiment and macroeconomic conditions affecting the shareholder activism.

Before conducting our analyses, we considered it a necessity to plunge into the theme's existing literature. We have performed a comprehensive literature review of 39 studies written on the relatively broad topic of shareholder activism. We have spent sound amounts of time contemplating their approaches and comparing their findings in order to uncover consistencies, inconsistencies, potential pitfalls and best practices. A review of the literature regarding target firm characteristics and returns is included in chapter 4, while the rest can be read in Appendix A.

Chapter 5 gives a brief outline of the methods and procedures utilized in our analysis sections. We also state the formal hypotheses of which we aim to answer through our analyses.

Chapter 6 yields a description of our dataset, in which we have put significant time and effort. We discuss both its construction and potential shortcomings, as well as its statistical properties. Our final sample consists of 3065 activist hedge fund events in U.S public companies from 1994 to 2013, and is, to the authors' knowledge, the largest and most complete database of activist hedge fund interventions both in terms of number of events and years covered. Particularly, no dataset does, to our awareness, include events from 2012 and 2013, which we have hand-collected. The comprehensive dataset carries properties allowing us to compare trends across times of economic crisis and times of economic stability. In addition, it allows us to compare return characteristics across activist hedge funds with varying track records.

Chapter 7 recaps the descriptive statistics and the development in target firm characteristics. We compare the average target firm characteristics by year both against its own average, and against the NYSE/AMEX average. In the lights of our findings on target firm characteristics,

we also consider the development in investment objectives stated initially by the activist hedge funds.

In chapter 8 we analyze the short-term abnormal returns in the target firms in the days surrounding the announcement date. We find evidence of significant positive short-term abnormal returns, which are not mainly explained by abnormal trading volumes. We also conduct analyses comparing the short-term abnormal returns in times of crisis and times of economic stable times, as well as on hedge funds with different track records.

Next, we focus on the long-term abnormal returns (12 months). In chapter 9, we conduct a calendar-time monthly portfolio regression to see whether activist hedge funds have historically created positive risk-adjusted returns. Our results imply that they have, regardless of macroeconomic conditions and track record.

In chapter 10, we try to explain the cross-sectional differences in both long-term and short-term abnormal returns. We specify several OLS-regression models where the dependent variable is long-term (short-term) abnormal returns and the independent variables are target firm characteristics, hedge fund characteristics, intervention characteristics and macroeconomic conditions. In addition, we include the long-term abnormal returns as an explanatory variable when trying to explain the short-term abnormal returns, to see whether the market correctly anticipates the gains from activist hedge fund interventions. We uncover several significant relationships. However, the chapter also discusses the potential econometric pitfalls and limitations of the analysis.

Overall, we feel confident to label our thesis as one of the, thus far, deepest dives into the American activist hedge fund universe. We particularly emphasize the development in hedge fund activism during the prior 20 years, its return characteristics, as well as the properties of the target firms. To the extent of our knowledge, we are the first to conduct several of our analyses, e.g. showing the development of target firm characteristics over time, as well as explaining the cross-sectional differences in abnormal returns based on factors independent of the hedge fund itself.

We hope this thesis will contribute towards further research on hedge fund activism.

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## 2 Shareholder Activism – A Theoretical Framework

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In order to assess the returns to hedge fund activism in a timely manner, we find a thorough theoretical framework necessary. The subsequent chapter is organized by first giving a definition of shareholder activism and its motives. Second, we sketch out the different ways and methods of executing shareholder activism. Third, we model a formal framework showing the rationality behind activism. Fourth, we discuss the differences between hedge fund activists and other types of activists, emphasizing differences relevant to the determination of returns. Last, we present a case study of a successful activist hedge fund campaign.

### 2.1 Shareholder Activism: The Search for a Formal Definition

Shareholder activism is, like any other form of investing, fundamentally stimulated by some sort of perceived underperformance. Passive investing, in its most traditional form, is about identifying underperforming companies/stocks, enter into a long position and wait around for the gap between stock price and the intrinsic value to diminish, partially neglecting the shareholder power. Activist investing differs by nature because of its active engagement and efforts in influencing and unlocking the value of the investment object. We can say that passive investing is about identifying underperformance, while active investing is about identifying underperformance, the underlying reason(s) for the underperformance and possible ways to break it off and unlock value.

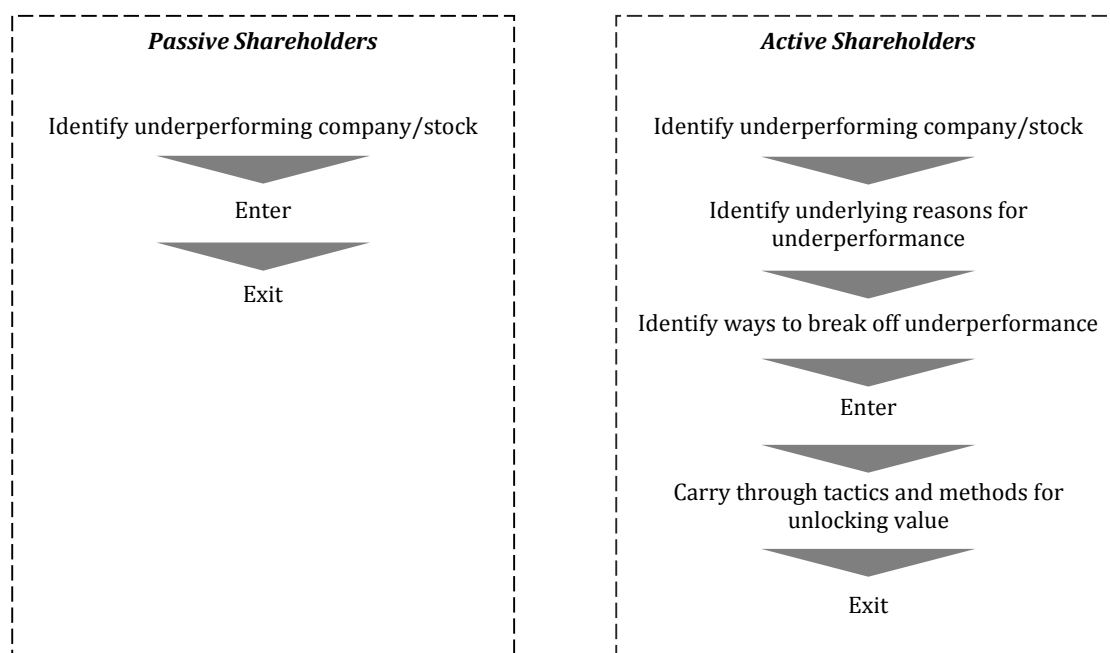
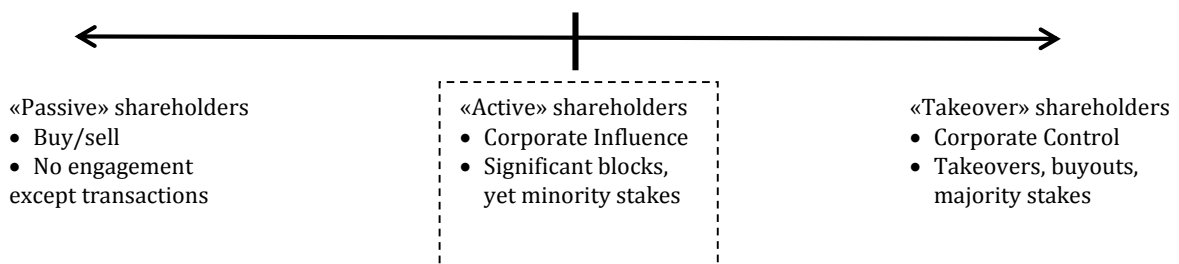


Figure 1: The process of passive investing versus the process of active investing.

Arguments could be made that the traditional (passive) form of investing, in which the investor buys and sells stocks, could be considered active per se, because the investor expresses his opinion through transaction actions. A dissatisfied investor could simply sell his shares to express his dissatisfaction, a behavior known as “the Wall Street Walk” or “to vote with ones feet”. In addition, we do not refuse the fact that many passive investors utilize their voting rights. However, to keep conceptual tidiness, we consider the type of investing mainly involving buying and selling stocks as passive. In addition, investors in the market for “corporate control”, i.e. investors aiming for takeovers, buyouts and majority positions are also evidently active. Nevertheless, in this thesis we distinctly define activist shareholders as investors in the market for “corporate influence”. Our definition of activist shareholders is thus shareholders who can be viewed as an intermediate case on the continuum, holding significant blocks, yet being minority shareholders. Their position is right in the middle of traditional, passive buy/sell-investors and investors in the market for “corporate control”.



*Figure 2: Continuum based on the degree of shareholder activity*

Several definitions of shareholder activism are available. Some state that shareholder activism is simply trying to change the status quo through “voice”, without a change in the control of the firm (Gillan and Starks, 1996). Some call it “relationship investing”, addressing the cooperative association between a corporation and one or more institutional investors, with both sides working together to identify the fundamental drivers of underperformance and make changes aimed to unlock value. We emphasize, however, that shareholder activism events need not to be of a cooperative nature, thus “relationship investing”, might not be a well-suited label. According to Becht et al. (2006), shareholder activism refers to “a range of actions taken by shareholders to influence corporate management and boards”. No matter how one engineers the definition of shareholder activism, the common denominator seems to be that activist shareholders are investors under the perception that the company’s current performance, governance structure, management or activities are not optimal, and attempt to revoke a change in the company to improve the performance.

In other words, shareholder activism is, ultimately, a response to the potential gains from addressing the agency conflict at the core of publicly traded companies with absentee owners, when the board fails to perform the required monitoring tasks (Gillan and Starks, 2007). This is supported by financial theory frameworks on monitoring, stating that large, institutional shareholders are more effective at monitoring than a wide and disperse base of owners. Support is also provided by research papers (Brickley et al., 1988; Mehran, 1992) stating that more concentrated ownership and appointment of external board members, *ceteris paribus*, lead to more effective monitoring of managers. In addition, the appointment of external board members lead to a significant run-up in the particular company's stock price, i.e. unlocking shareholder value (Rosenstein and Wyatt, 1990). This explains why activist shareholders frequently seek board representation in their ways of executing activism. However, one must keep in mind that increased institutional ownership (thus a lower number of total shareholders) will decrease liquidity in the stock (Mukherji et al., 1997; Becht, 1999) which might in turn limit exit possibilities and lock-in value. Thus, taking significant blocks in a company to exercise monitoring efforts to unlock value must be weighed against the negative effects of lower liquidity.

The lion's share of the agency and monitoring problems arises because of the constructed discrepancies between ownership and control in companies, and the conflicts of interest it introduces. This may manifest through agency costs of free cash (Jensen, 1986), as well as other types of myopic or suboptimal behavior, justifying the activist engagement and monitoring efforts. In addition, shareholder activism may also target specific events, best illustrated by M&A-cases. For example when the target company has accepted/turned down a takeover offer and the activist shareholders disagree and seek to reverse the decision, or when the target company has made a bid for another company and the activists aim to block the merger.

Shortly summarized, shareholder activism is the label on investors buying significant blocks, yet minority positions (generally 5-20%) in companies, trying to influence management and boards using methods which will be outlined in the next section. It is always stimulated by some sort of perceived underperformance. This perceived underperformance commonly manifests itself on a deep and implicit level, for instance through agency conflicts, suboptimal or value-destroying managerial behavior (perks or empire building), unfavorable business mixes, capital structures and strategies, inconvenient structures of manager compensations or unfavorable board compositions. Activist target these companies, utilizing a wide range of tools and tactics



to call for change, ameliorate monitoring efficiency and unlock shareholder value. As summarized by Black (1992), “shareholder activism can resolve monitoring and incentive problems in widely-held companies and improve corporate performance”.

**2.2 Shareholder Activism: The Toolbox**

While identifying underperformance and the reasons for it are important parts of shareholder activism, what have truly attracted attention is their variety of methods and ways to influence the management, address change and unlock shareholder value. As activist shareholders’ interests are aligned with the remaining shareholders’, the activist shareholders’ main goal of maximizing their own profit is per definition the same as “maximizing shareholder value”. First, activist investors utilize their voting rights to exercise corporate influence. In addition to buying blocks typically in excess of 5%, activists (particularly hedge funds) push up their effective ownership share (and thus voting rights significance) by the use of derivatives and borrowed shares, a phenomenon labelled “empty voting” (Brav and Mathews, 2011).

Further, as the underlying reasons for underperformance in the target companies, i.e. the activists’ objectives, vary to a great extent, so do the activists’ tools for promoting change. E.g. shareholder activism frequently include monitoring developments, meetings with management, requests of special disclosure and open public meetings for large shareholders, board members and management. Shareholder activism methods may, however, also differ greatly in its degree of friendliness. For the sake of the intuition, we can separate the activist tactics on a continuum based on its degree of friendliness by nature, where the extreme points are friendly activism and hostile activism.

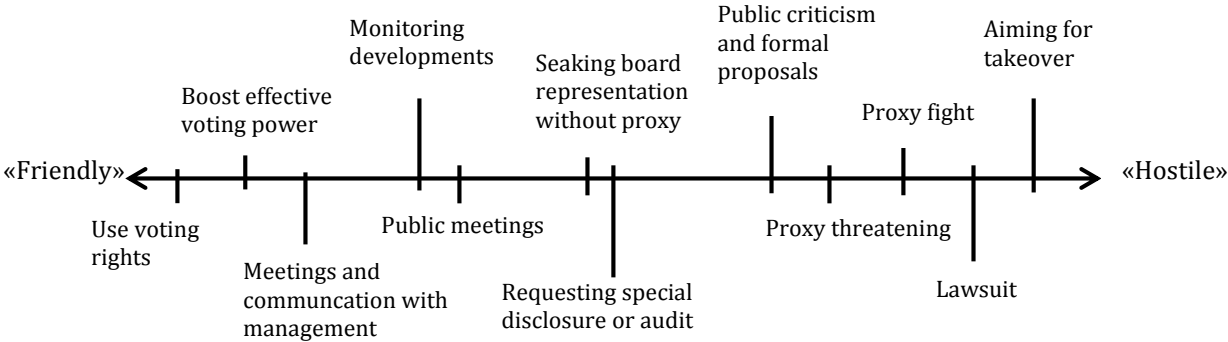


Figure 3: Shareholder activism tactics by degree of friendliness

Shareholder activism, in its friendliest form, might simply be communication between the activists and the board and management of the target firms, where they aim to reach agreements for what changes are needed in order to unlock shareholder value. According to a presentation by Brav (2014), this apparition of activism accounts for 43% of all hedge fund activism events from 1994-2011. This type of activism is typically characterized by cooperation between the activists and the management, where the activist investor takes on a monitoring role, aiming to align the interests of management and shareholders, thus unlocking value from discontinued agency conflicts or a refocused business strategy. Another type of friendly activism is represented by the cases when the activist shareholder seeks board representation, however without a proxy contest or other forms of hostile confrontation, accounting for almost 13% of the hedge fund activist events from 1994-2011 (Brav, 2014) . These friendly activist tactics are typically characterized by a very general statement in the “purpose of transaction”-paragraph in the SC 13D-filing (Item 4), exemplified by Carl Icahn’s statement in his filing on Hertz Global Holdings Inc. in August 2014.

*“The Reporting Persons [the activist investors] acquired their positions in the Shares in the belief that they were undervalued. The Reporting Persons intend to have discussions with representatives of the Issuer's management and board of directors relating to shareholder value, accounting issues, operational failures, underperformance relative to its peers and the Reporting Persons' lack of confidence in management. The Reporting Persons may also seek shareholder board representation if appropriate.”*

There is, however, no smoke without fire, and the hostile reputation particularly affiliated with hedge fund activism is not unwarranted. Of the activist tactics hostile of nature, the most prominent examples are the cases where the activists publicly criticize the board or management, threaten to wage or carry through a proxy fight, sue the company or intend to take control of the company.

The latter is, in all fairness, an activism tactic in the market for corporate control, rather than corporate influence. However, it is reasonable to include it in the cases where the activists intend to take control of the firm as response to an event-specific underperformance. For instance when the activists seek to block M&A-related activity (thus transactions where the investors’ intent to take control over a firm is not a response to an explicit event are still not considered as active in this regard). A prominent example is when Mylan Laboratories Inc., in 2004, made a

takeover bid for King Pharmaceuticals. Carl Icahn immediately jumped into a position in Mylan Laboratories Inc. of 6.8%, publicly expressing his negative stand towards the potential deal in a public letter, stating that the deal would be “*an egregious mistake*” that would change Mylan into a “*much riskier hybrid focusing on branded products*” (Pollack, 2004). The hostility manifested through an open debate where Mylan’s CEO, Robert Coury, stated that “*It is unfathomable that Icahn, a Mylan shareholder for a little more than one month, could reasonably conclude what is in the best long-term interest for all Mylan shareholders*” (Abboud and Berman, 2004). Carl Icahn answered by putting \$5.4 billion on the table, offering to buy Mylan as a whole to block the potential acquisition. Icahn’s proposed takeover was not carried through, however; nor was the acquisition of King Laboratories. While intending to take complete control over a firm is, seemingly, an effective way of exercising activism, it is a rare phenomenon. Brav et al. (2010) reports that this tactic is used only in 4.6% of the activist hedge fund events. This modest figure is probably attributed to a combination of the high amount of capital needed to take complete control, lowering the credibility of potential takeover threats. In addition, most cases are sorted out at lower ownership stakes.

Most common of the methods classified as hostile, is making formal proposals and publicly criticizing the company. The criticism can manifest through several forms, however; the most frequently used are public letters (often attached to the SC 13D filing). A well-illustrating example is Dan Loeb’s, CEO of Third Point Partners, public letter to the Board of Directors in Sunterra Corporation, a vacation ownership company in which Third Point Partners held just less than 10% of the shares. The letter is dated July 17<sup>th</sup>, 2006, and clearly expresses Third Point’s disbelief in the board and management:

*“...Do not in any way interpret our significant holdings as a sign of support for either management or the Company's board of directors....”* Loeb also stated that he was perplexed by the hiring of the new COO, Keith Maib, after investigating his “*apparently sketchy employment history*”.

Further, Loeb gives his opinion on the future of the company, mainly in capital letters, calling for a sale of the company, threatening with a proxy fight.

*“...Indeed, as the largest owner of the Company, we have one simple and explicit message to deliver to the Board: WE DEMAND THAT YOU DEVOTE YOUR FULL RESOURCES AND*

*ATTENTION TO SELLING SUNTERRA - EITHER IN WHOLE OR IN ITS TWO COMPONENT PIECES - AS EXPEDITIOUSLY AS POSSIBLE...*”

*“While you seem to be more comfortable dealing in numbers in the millions, the math here is simple: 20% of the outstanding shares are needed to call a special meeting to remove the Board. Over 25% of the shares (based simply on public correspondence with you over the past three weeks) would be in favor of doing this should you not immediately determine that attempting to run the Company yourselves is not an option and that selling the Company is the only logical and responsible option that you have.”*

Another method, obviously classified as “hostile”, is to threaten with, or execute a proxy fight. A proxy fight is an extremely disciplining tool in the activists’ possession, and may be seen as an extension of the public criticism, putting their money where their mouth is. A proxy fight is, simply defined, when a group of (often prominent) shareholders join forces and try to gather enough shareholder proxies to win a corporate vote, often aiming to vote out the company management or board and replace them with their own nominees. Proxy fights, in many aspects, epitomize shareholder activism, as activist shareholders can utilize both their own voting power, as well as the power of conviction and communication, in order to team up with other shareholders to gather enough proxy votes. However, threats of proxies and proxy fights put to effect only accounts for approximately 20% of the hedge fund activist events (Brav et. al 2010). It would be fair to attribute a solid share of this relatively humble figure to the costs tied to a proxy campaign. This is supported by both empirical and anecdotal evidence. In a survey in the late 1980s conducted by Stephen M. Bainbridge, the costs of a proxy contest were estimated to \$1.8m, however; this figure is probably much higher today. Gantchev (2012) estimate the proxy contest to be the, by far, most expensive part of the activist process, averaging to \$5.94M. Carl Icahn, not unfamiliar with the concept of proxy fights, stated that *“At a large public company, mailing, printing and other costs can run into the millions of dollars.”* (Greenbackd, 2009)

While the costs of proxy fights, ranging from \$2-10 m, does not appear like an astronomic figure; we have to keep in mind that the average market cap of firms targeted by activist hedge funds in our sample is \$763 million, while the average ownership stake is just above 9%, yielding an initial investment just south of \$70 million. These figures are in line with Brav et al. (2010). Thus, proxy fight costs in the ballpark of \$5 million are economically significant relative to the size of the investment.

### 2.3 Modelling Shareholder Activism- a Rational Phenomenon?

As outlined above, the shareholder activist toolbox is filled with numerous ways of exercising activism, varying both along their degree of friendliness and along the cost aspect. As most methods of activism are clearly tied to certain types and amounts of costs, it becomes evident that this has to be taken into account when considering whether activism is a rational phenomenon. This is confirmed by Ralph V. Withworth, principal of activist hedge fund Relational Investors L.L.C, stating in a letter to the SEC that “...*only a few investors have the expertise and resources to execute a short slate campaign which in our experience can cost upwards of \$10,000,000 at a typical large US. Company*”.

For activism to be rational, like for any other investment decision, the expected benefits derived by the activist shareholders (whether a hedge fund, mutual fund, pension fund or private investor) must outweigh the costs. As the costs of exercising activism are substantial, this can obviously be a major obstacle. The core of the problem originates from one of the most traditional frameworks regarding economics and corporate governance, the free-rider problem. This is, shortly put, the situation where some individuals benefit from a good, without paying their share of the cost of the benefit. Translated to the activist setting, the situation occurs because activist shareholders typically bear all the costs associated with intervention but receive only a fraction of the returns corresponding to the size of their minority stake. One can immediately see some potential hitches; as shareholder activists bear all the costs tied to a particular activist tactic, and on average only receive just over 9 % of the gains. Thus, for shareholder activism to be rational either the costs have to be sufficiently low, or the gains sufficiently high.

To put it formally, we utilize a framework presented by Cheffins and Armour (2012) as a starting point. We denote the expected costs of exercising the intended activist tactic  $c_i$ , the expected benefit caused by the activism accruing to all shareholders of the firm  $b_i$ , and the stake held by the activists as  $\alpha$ . As a result of our definition of activist shareholders being in the market for corporate influence rather than control,  $0 < \alpha < 0.5$ . Employing activist agendas will thus be rational iff.

$$b_i \alpha > c_i$$

The model presented is simple, nonetheless powerful, as shareholder activism, like any other form of economically rational investing, is about making net profits. In order to fully understand the rationale behind shareholder activism, a more thorough contemplation on the elements in the model is desirable.

### 2.3.1 *The Costs Associated with Shareholder Activism, $c_i$*

The costs brought along with shareholder activism are important factors when considering whether shareholder activism is a rational phenomenon. However, these costs are composed by several different types, differing both in type and size. Cheffins and Armour (2012) use a classification of costs where they separate financing costs from transaction costs. We, however, classify the costs in four groups based on their inherent features and where in the activist process they arise: financing costs  $c_{fi}$ , transaction costs  $c_{ti}$ , execution costs  $c_{ei}$  and monitoring costs  $c_{mi}$ .

*Financing costs* relates to the costs of providing the capital needed to make the initial investments. Particularly, hedge funds are in the competitive market for investor capital flow, i.e. they are dependent on investors willing to back the investment (Burkart and Dasgupta, 2013). In booms, this might not be much of a problem, as the access to capital is easy. In a depressed economic state, however, when financing is expensive, spreads are high and investors have generally lost faith in the market, the total financing costs may be high enough to offset the benefits. This might, at least to some extent, explain the significant drop in activist events during the financial crisis, as factors driving financing costs upwards will, ceteris paribus, reduce the range of companies where activism is rational (as a higher benefit is needed to outweigh the increased costs). In addition, there is an administrative component to the financing costs tied to providing funds, for example the hiring of investment bankers, time spent on making presentations, host meetings, etc.

Further, a significant portion of the financing costs arises because the activists forgo some of the benefits of risk-spreading available to passive, diversified investors (Cheffins and Armour, 2012). Reported in Brav et al. (2008), the average size of activist hedge funds was \$ 793 million, pre financial crisis, while a 5% stake in an average top quintile (market capitalization) target firm was \$760 million. Thus, by buying a top quintile target firm, the hedge fund will introduce an extreme amount of idiosyncratic risk. This effect is significant also for companies

in lower quintiles as the typical activist hedge fund portfolio consists of 8-10 positions (Pancholi, 2012).

*The transaction costs* mainly comprise costs tied to the transaction process, i.e. when funds are already in place. First, this includes both costs related to the search after and research on potential target firms. Second, the transaction costs include the costs accruing due to buying a significant stake in the open market, which encompass fees to brokers, bid-ask spreads, communication costs (letters, calls, filing a SC 13D) and stock price appreciation (depreciation) when accumulating (exiting) the position in the open market. While technological and regulatory progress have contributed to lower search and communication costs, it have also lead to more efficient markets, taking its toll on the activists returns when trying to enter or exit the position in the open market, as their actions will immediately be common knowledge and digestible news for the other investors.

*Monitoring costs* include two types of costs. The first are the direct costs tied to the act of monitoring the management, as this is both time and effort consuming. In addition, the monitoring costs have an indirect component arising from the reduction in liquidity in the stock following the significant stake taken by the activist. The rationale is as follows; in order for monitoring to be a rational phenomenon, the stake in the company needs to be significant in size (to mitigate the free-rider problem), as the monitor must be able to capture a satisfactory share of the value unlocked from increased monitoring. However, when taking a stake at this size (5%-10%), the activist simultaneously reduce the number of shareholders, and increase the ownership concentration, leading to a decrease in liquidity (Mukherji et al., 1997; Becht, 1999). This will, all else equal, reduce the value and impede exit possibilities of the stock.

The last sub-group of costs, *the execution costs* relates to the costs of the activist process arising after the position is acquired, and not including the costs of monitoring. They can be separated into two sub-groups; administrative costs and action costs. The administrative costs encompass the costs tied to disclosure, hosting meetings, communication, research etc. The action costs however account for specific actions undertaken by the activist, mainly including costs related to demanding negotiations, aiming for board representation and proxy contests. The costs consist mainly of legal and other fees of hiring advisors, solicitors, corporate governance experts, investment banks and advertising firms. According to a study by Gantchev (2012), the average costs tied to the pursuit for board representation is \$1.83m. Nelson Peltz of Trian

Partners, for instance, paid Bear Stearns \$1.6m for advisory work on his hunt for board seats in H.J. Heinz in 2006. Furthermore, the average costs tied to demanding negotiations and executing a proxy contest is \$2.94m and \$5.95m, respectively. This brings the total execution costs up to an average of \$10.7m in cases which go all the way to an executed proxy contest (Gantchev, 2012).

Having seen total shareholder activism costs adding up to over \$10 million (execution costs may be lower if activist investors do not engage in proxy contests, however; the financing costs, transaction costs and monitoring costs are not quantified), one can make a fast “back of the envelope” calculation to get a grasp of their significance. For shareholder activism to be rational, if one assumes the total expected costs add up to \$10 million, for an activist taking a 9% stake in a company, the total expected returns (to all company’s shareholders) is going to have to count up to at least:

$$b_i \alpha > c_{fi} + c_{ti} + c_{mi} + c_{ei}$$

$$b_i * 9\% > \$10 \text{ million} \rightarrow b_i > \$111.1 \text{ million}$$

Thus for a sample-average market cap company, with a market cap of \$763 million, this yields a return break-even point for the shareholder activists at 14.6% return on the company’s stock, i.e. the net returns to the activist is not positive until the stock return of the target firm is pushed above ~15%.

### 2.3.2 *The Benefits Associated With Shareholder Activism, $b_i$*

The total benefits from shareholder activist intervention to a target company’s shareholders as a whole  $b_i$  is comprised of any increase in shareholder return originating from the activist intervention. The percentage of shares owned by the activists  $\alpha$ , will set an upper bound for the proportion of these benefits the activist shareholders will capture. Cheffins and Armour (2012) suggest that an additional constraint,  $\lambda$ , on the proportion of the benefits an activist will secure arises. Investors typically anticipate an activist shareholder’s effort once the activist’s intention is public knowledge, and drive the price upwards. I.e. when the public observes an activist accumulate shares in a company, they do not wait around for the other shoe to drop, and immediately bid up the price to account for the expected activist intervention value. Thus  $\lambda$  is



the maximum block of shares which can be purchased “stealth”, before the transaction is public knowledge. Cheffins and Armour (2012) thus modify their model to:

$$(\operatorname{argmin}\{\alpha, \lambda\})b_i > c_i$$

However, this modification puts a quite strong restriction on the post-disclosure stock price run-up as it assumes that the price run-up happens instantly and perfectly at the moment of disclosure. Empirical results, however, show a continued run-up in the time period after disclosure. Thus, shares which are not bought “stealth”, might, in fact, also be able to capture benefits, although maybe not to the same extent as the shares bought “stealth”, as they are acquired at a higher price. Hence, we rather model the reduction in benefits due to this price run-up as a transaction cost.

At the most fundamental, for shareholder activism to be rational, given its associated costs, a necessary condition is that there exist companies where  $b_i > 0$ . Thus these companies must be undervalued relative to their fundamental value, or there must exist ways in increasing their intrinsic value (for instance through an outright sale of the company). However, being undervalued per se is not necessarily enough to make a company a rational target for shareholder activism. This is because the extent to which an undervalued company represents an opportunity to generate benefits from activism depends on the suitability of bringing about change. One limiting factor to this is the ownership structure in a company, however; the literature is conflicting on this point. Cheffins and Armour (2012) argue that disperse stock ownership is a necessary condition for an influence-based intervention, because particular large owners may veto unwelcomed shareholder resolutions. Brav et. al (2010) however, argue that large, institutional shareholders and concentrated ownership may be an advantage for activists, as institutional investors are assumed to be more sophisticated and able to understand and support activist agendas, and also more impactful as their stakes are higher.

Another factor which might affect a company’s suitability of bringing about change is the shareholder rights; the legal rules regarding shareholders’ rights to determine the composition of the board, exercise a veto over board initiatives, counteract advantages management has in securing shareholder support, solicitation of proxies etc. Legal reforms enhancing shareholder rights should thus encourage shareholder activism, as activist can then launch credible campaigns against a wider range of companies.

In some rare cases shareholder activists may be able to capture private benefits,  $p_i$ , which, by definition, do not need to be shared with other shareholders (Rock, 1994; Cheffins and Armour, 2012). One hypothetical way to do this would be by prompting the target to enter into one-sided transactions with another entity controlled by the activist, this phenomenon labelled “tunneling” is, however, illegal. Another method is “greenmailing”, which is when the target firm must buy the shares back directly from the activist, at a premium (bon voyage bonus), in order to make the insurgent activist go away, often to prevent a takeover. In addition, a private benefit may be captured by hedge funds with a net short position in a company, however with significant voting power through the use of derivatives and borrowed shares to push for corporate actions that generate a negative  $b_i$  and thus a positive  $p_i$ . Nonetheless, the latter cases are not considered here, as we focus only on activists with a net long position.

Our modified model of rational shareholder activism is thus that shareholder activism is rational of nature iff.

$$(b_i\alpha) + p_i > c_{fi} + c_{ti} + c_{mi} + c_{ei}$$

### 2.3.3 Returns to Shareholder Activists

While the modified model for rational shareholder activism gives a theoretical answer to when shareholder activism is profitable, it does not say anything about the historical profitability to activist shareholders; whether the left hand side (LHS) or right hand side (RHS) of the model has traditionally dominated activist events. Both Brav et al. (2008) and Boyson and Mooradian (2007) find that activist hedge funds on average perform better than a matching sample of hedge funds of different styles, indicating that the active component has been profitable,  $LHS > RHS$  on average. Gantchev (2012), however; finds that the mean net activist return is close to zero, but that the top quartile of activists earn higher returns on their activist holdings than their non-activist holdings, indicating that on average, our model is an equilibrium model which balances:

$$(b_i\alpha) + p_i = c_{fi} + c_{ti} + c_{mi} + c_{ei}$$

However; for the best-in-class activists, the activist component yields positive net returns, indicating  $LHS > RHS$ . One limitation of our model, in the lights of utilizing it in empirical studies, would be that some of the factors would be close to impossible to quantify. This particularly applies to the private benefits. If the private benefits traditionally have been of

economic significance, this would imply a downward bias in the empirical findings on returns. We would however, argue that some of the cost components are also impossible to correctly quantify, thus deciding on the potential bias' direction would be mainly conjectures.

#### **2.4 Hedge Fund Activists Versus Other Types of Activists**

If, on average, our shareholder activist model was not balancing, there would be an arbitrage opportunity tied to exercising activist intervention. Nonetheless, there is clear empirical evidence that the most highly skilled activists are able to earn stable and significant positive net profits. These best-in-class activists have one important common denominator; they are all activist hedge funds (Klein and Zur, 2009). So what enables certain activist hedge funds to systematically earn positive net profits on an investment strategy of which the average investor breaks even?

First, we find it necessary to briefly define the term hedge fund. As the term has no legal definition, we follow the approach of Klein and Zur (2011) and Brav et al. (2010). Thus, we define a hedge fund as an investment vehicle that is relatively free from the regulatory controls of the Securities Act of 1933, the Securities Exchange Act of 1934 and the Investment Company Act of 1940. The funds are usually organized as limited partnerships or limited liability corporations.

Activism, both with respect to hedge funds and other shareholder activists (mainly mutual funds and pension funds) is still defined as a strategy in which a fund purchases a significant block (above 5% in the lion's share of the cases) in a publicly-traded firm with the stated intent of influencing the firm's policy, agency conflicts or performance. We argue, however, that hedge funds differ substantially from mutual funds and pension funds along several dimensions that make them better suited for shareholder activism; an assertion that finds substantial support in several research papers written on the topic.

First, hedge funds are, as mentioned, lightly regulated. They are only available to institutional clients and a limited number of wealthy individuals, relative to mutual funds and pension funds. In addition, they are not subject to the strict fiduciary standards mentioned above, nor the ERISA and "prudent man" regulations. Hedge funds do not need to be severely diversified in order to qualify for tax benefits, while mutual funds cannot own more than 10% of a company or invest more than 5% of the fund's total assets in any one security (Klein and Zur, 2006; Brav

et al., 2010; Clifford, 2008; Kahan and Rock, 2007). Hedge funds can thus hold large amounts of stock in their portfolio without a tax penalty. Due to the lack of diversification requirements, hedge funds can ultimately acquire the target, a definite tool enhancing their relative negotiating power with the firm's management. In other words, while mutual funds and pension funds are stuck in the market for corporate influence, the hedge funds can enter the market for corporate control if the market for corporate influence is insufficient.

Second, their intervention in the target companies carries a significant amount of flexibility as hedge funds (in opposition to mutual funds and pension funds) can utilize both the derivatives market and the stock lending market in order to increase effective voting rights through undisclosed transactions (Hu and Black, 2006; Christoffersen et. al, 2006). Thus, hedge funds are able to accrue large blocks of voting rights, either through direct or indirect purchase of common shares, enhancing the significance of their voting power. This may be one of the reasons why hedge funds are, reportedly, extremely successful in getting existing management to acquiesce to their demands, with average success rates (across initial demands and tactics) in excess of 60% (Klein and Zur, 2006).

Third, hedge funds have a greater ability than mutual funds and pension funds to invest in illiquid assets. While mutual funds are required to redeem shares on short notice, hedge funds are not subject to similar requirements (Kahan and Rock, 2007). As mutual funds are required to maintain sufficient liquidity in their portfolios to allow for daily withdrawal requests from shareholders, hedge funds operate with lock-up periods, preventing investors from withdrawing their principal, often up to at least 6 months (Clifford, 2008). As successful campaigns may require funds to hold large, illiquid blocks, and more concentrated ownership carries lower liquidity, liquidity concerns impose costs on the mutual funds which are less evident for hedge funds (Aragon, 2007). In addition to making hedge funds less sensitive to sudden liquidity shocks.

The fourth, and last, obvious difference between hedge funds and mutual/pension funds is the organizational structure of the fund. Put more formally, the hedge fund structure's suitability to engage in activism. Hedge fund managers are free from "pay-for-performance" restrictions imposed on mutual fund managers by the Investment Advisors Act of 1940. As mutual fund managers are paid in a percentage of the fund's asset under management, a hedge fund manager's compensation package, in contrast, consists of a percentage of invested funds as well

as a percentage (often 20%) of the fund's excessive returns. Thus the manager can personally benefit from a successful activist campaign. In addition, a hedge fund manager typically invests a substantial amount from their personal wealth into their own funds (Brav et al., 2010). Thus, they have a strong incentive for making profits and investment returns, better aligning the interests of the manager and the investor, hence mitigating potential agency conflicts.

Hedge funds typically target companies rich in cash and short-term investments, with low debt ratios, often increasing debt, payouts and monitoring efforts while reducing cash, hence aiming to reduce the agency problems of free cash flows. However, as discussed earlier, monitoring, while being an important component in unlocking value, does not come without costs. The benefits, on the other hand, were enjoyed by all shareholders. Looking back at our model for rational shareholder activism, the difference between hedge fund activists and other shareholder activists, and thus the reason some hedge fund activists systematically earn positive returns from active campaigns, stem from both the benefit side and the cost side of the inequality:

$$(b_i\alpha) + p_i > c_{fi} + c_{ti} + c_{mi} + c_{ei}$$

The impact on the benefit side is mainly due to the structural and regulatory differences separating hedge funds from mutual funds. As hedge funds can increase their effective voting power, and hence significance of influence, through utilization of the derivatives and the stock lending market. In addition, their lightly regulated reality, allowing them to eventually buy out the target firms, gives the hedge funds a definite tool, enhancing their bargaining power. Thus, it is fair to say that on average:

$$[(b_i\alpha) + p_i]_{Hedge\ Funds} > [(b_i\alpha) + p_i]_{Other\ Institutional\ Activists}$$

There is however, also an element affecting the cost dimension of activism, namely the organizational structure and compensation system in the hedge funds. As it, to a larger extent than in mutual funds, mitigates agency conflicts in the fund internally. Thus, on average, we can say that:

$$[c_i]_{Hedge\ Funds} < [c_i]_{other\ institutional\ activists}$$

## 2.5 A Case Study: McGraw Hill and Jana Partners

In mid-2011, Jana Partners put their money where their mouth was, and approached McGraw Hill, an educational publisher, which had been performing poorly over the last couple of years. The company had experienced stagnant growth, but accumulated large amounts of cash.

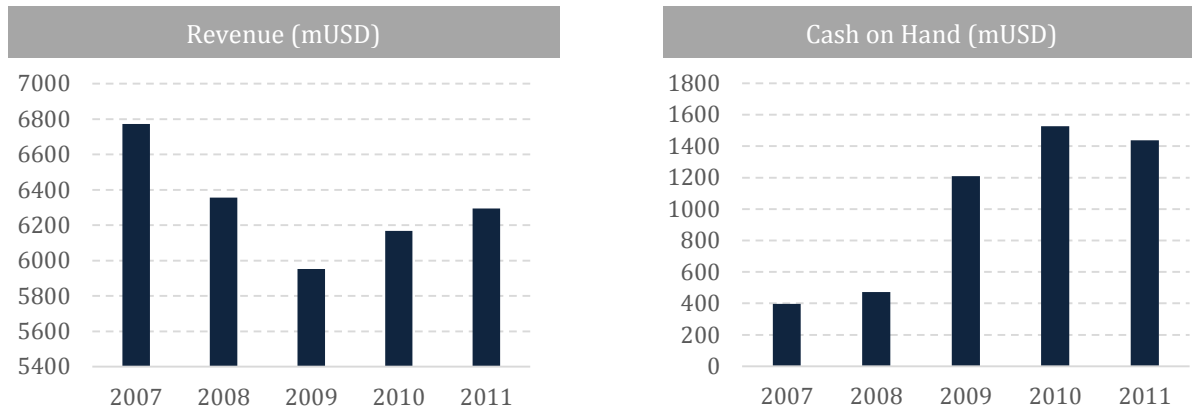


Figure 4: McGraw Hill case study – revenue and cash development

The performance had been followed by poor returns to shareholders, and the valuation had now hit rock bottom compared to peers, trading at a ~15% discount on several multiples (Bloomberg, 2014).

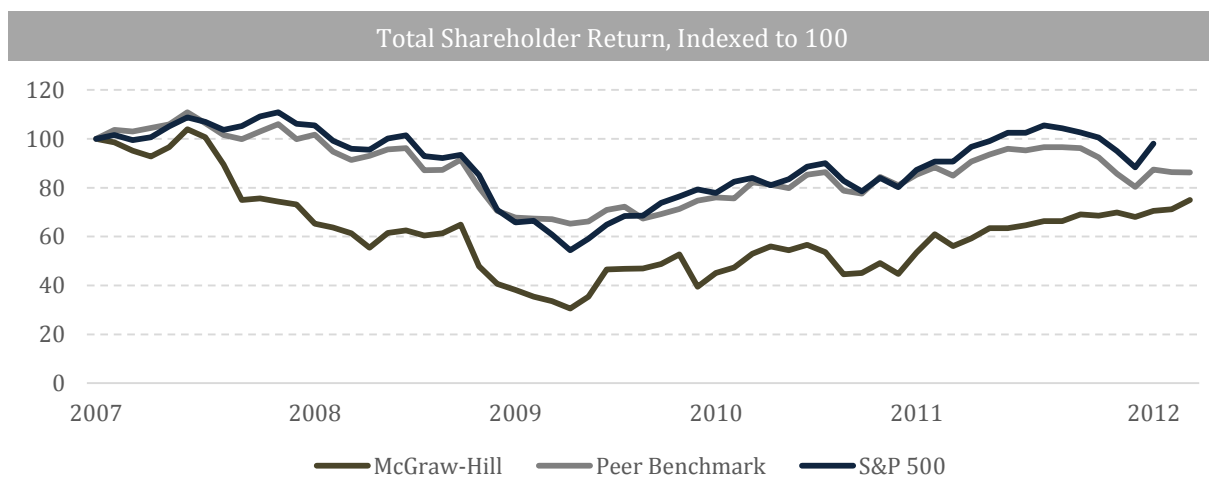


Figure 5: McGraw Hill case study - total shareholder return

Jana Partners expressed “You’re stuck with us. If we don’t succeed this year, we’ll be back next year” (Bloomberg, 2014). They listed demands; split the company into separate entities and pursue an aggressive share buyback program. McGraw-Hill agreed, and issued a public statement stating a “Comprehensive portfolio review... designed to unlock superior shareholder value”. Several demands were met, both breaking the company into two entities

and increasing the buyback program, thereby avoiding a proxy fight. The results were also positive:

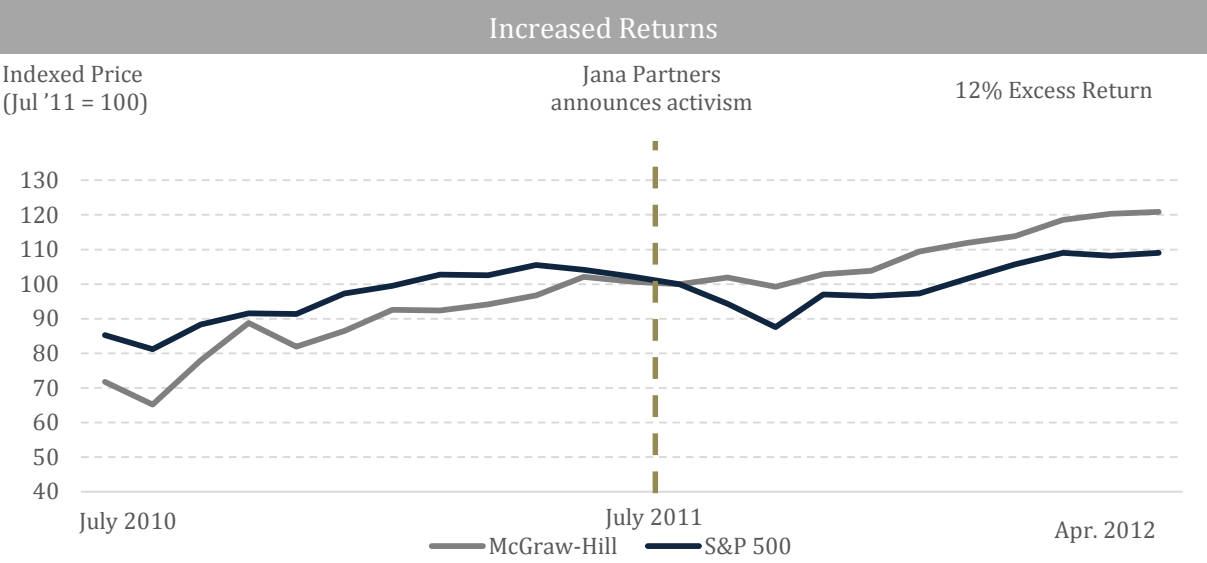


Figure 6: McGraw Hill case study – return development with activist

Note that the previous successful case study says nothing about risk-adjusted returns. We turn to this in a moment, but find it useful for illustrating the desired process of the activists.

To summarize, this chapter has discussed the definitions of shareholder activism, as well as its reasons and varying methods of execution. Further, we discussed the rationale behind the activist phenomenon, as well as potential reasons for why hedge fund activist may be able to systematically outperform other types of activists. We now have a theoretical framework to investigate and analyze the return characteristics of hedge fund activists.

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### **3 The Evolution and Procyclical Nature of Shareholder Activism**

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As we aim to analyze and unveil patterns in activist hedge fund returns across different macroeconomic conditions, we find it natural to describe the evolution of shareholder activism and its procyclical nature. Our starting point is the 1990s, as this is also the starting point of our sample. For a description of shareholder activism in the U.S. before 1990, we refer the reader to appendix D.

#### **3.1 The 1990s – Institutional Activist Investors to the Fore**

The 1990s was, mainly, a decade where most of the activism was accounted for by public pension funds, mutual funds and union funds. While they submitted fewer proxy proposals than before, they became more active in initiating dialogue with targeted companies' management and boards, as well as in utilizing media to notify current investors in the target firms about the problems and intended solutions.

Even though the 1990s brought with it a decline in the takeover market, and regulatory and legislative changes enhanced the ability of shareholders to communicate on voting issues, hedge fund managers were slow to get on the activist wave. This, despite the fact that hedge funds per se rapidly extended its reach as an investment option and developed through what the chairman of the SEC called “a seismic boom” (Cheffins and Armour, 2012). While there were only 300 reported hedge funds in the U.S at the start of the decade, that figure grew to approximately 3000 in 1998, while the assets under management grew from \$40billion to \$300 billion (Partnoy and Thomas, 2007).

While the most newsworthy hedge fund players in the 1990s were those carrying out macro bets, without any activist agendas, some hedge funds started utilizing shareholder proposals to proclaim publicly for change in public companies in the second half of the decade. A describing example is Greenway Partners, which used shareholder proposals to push for changes in companies like U.S Shoe, Woolworth and Unisys Corp. However, hedge fund activists were still the exception rather than the rule, as illustrated by Tiger Fund, a Julian Robertson founded hedge fund that had historically been a traditional value-oriented hedge fund. When they picked up a sizeable portion in U.S. Airways Group calling for change in the corporate governance, the Wall Street Journal characterized the accumulation of such a stake as “an unusual step for a money manager to take” (Pulliam and Pacelle, 1999).



Whereas hedge fund activism was still rather uncommon phenomenon in most industries, the financial sector proved out to be an exception. In 1996, *U.S Banker* ran a story about Stephen Gordon, a former investment banker running Genesis Financial Partners, who “loved to take big positions in community-based financial institutions” with a track-record of poor performance, and “throw his weight around” (Zuckerman, 1996). Hedge fund activism in other industries did however, happen sporadically, even though not to today’s extent. Prominent examples are Soros Fund Management, Gabelli Funds and Farallon Capital Management, as well as earlier mentioned Carl Icahn and Steel Partners taking on stakes across a range of industries. Thus, while hedge funds in the 1990s primarily were not activist players, the hedge fund activism in the financial sector, and the glimpses of hedge fund activism elsewhere could be perceived as a warning shot of what was about to come. While we were only observing the tip of the iceberg, the hedge fund activists were picking up severe pace in the late 90s, getting ready to take on the center stage.

### **3.2 The Early 2000s – Hedge Funds Becoming the New Figurehead of Activists**

In 2001, The Wall Street Journal wrote, “dissatisfied shareholders are aggressively pushing companies to find new ways to unlock shareholder value”. The mentioned shareholders were hedge fund managers, who had traditionally been passive in nature, stepping into the fields of activism. Only four years later, in 2005, the Wall Street Journal wrote “Hedge Funds are the new Sheriffs of the Boardrooms” and the Business Week referred to an “exploding number of activist hedge funds” (Cheffins and Armour, 2012). Our dataset yields the same story, by showing a vast surge in hedge fund activism starting post dot-com crisis, indicating the first real glimpse of procyclical behavior observed by activist hedge funds over the last two decades (Burkart and Dasgupta, 2013).

Hedge Fund Activists did not beat around the bush, and in opposition to their 1940s origins, “the Wall Street Walk” did not seem like a suited option to express dissatisfaction with the performance of their target companies. Their strategies and lines of actions were point-blank and strikingly more aggressive than what earlier activists had utilized. This was well encapsulated by Institutional Investor’s description of activist hedge funds, using phrases like “no nonsense”, “seize the board”, “put the company in play”, “do whatever it takes to increase the stock price” to describe hedge fund activists (Taub, 2003).

Hedge fund activism also took varieties of forms, from public pressure on portfolio companies to change its business strategy, to the running of proxy contests to gain seats on the board (Kahan and Rock, 2007). Illustrating examples include when Third Point Management picked up a 6% stake in Star Gas, a heating oil distributor, in 2005. Third Point's manager, Daniel Loeb first openly and severely criticized the management, before letting the CEO, Irik Sevin, feel his wrath through a public letter attached to the SC 13D filed in February 2005:

*"...It is time for you to step down from your role as CEO and director so that you can do what you do best: retreat to your waterfront mansion in the Hamptons where you can play tennis and hobnob with your fellow socialites". Loeb further wondered, "How it is possible to select your elderly 78-year-old mom to serve on the Company's Board of Directors and as a full-time employee? We further wonder under what theory of corporate governance one's mom sits on a Company board?" and stated that "I was amused to learn, in the course of our investigation, that at Cornell University there is an "Irik Sevin Scholarship". One can only pity the poor students who suffers the indignity of attaching your name to his academic record".*

The tactic worked, and a month later mister Sevin bowed to the pressure and threw in the towel both as CEO and as Director.

The reasons for the procyclical mid-2000s hedge fund activism rush are addressed by Cheffins and Armour (2012), who mention numerous factors which may have contributed to make it a "activist hedge fund-friendly" environment. First, deregulation regarding the investor eligibility to invest in hedge funds accounted for its part of contribution to the hedge fund boom in the late 1990s and early 2000s. Second, a potential driver of the hedge fund activist surge was the vast number of undervalued companies left behind after the dot.com bubble bust. In addition, high profile scandals like Enron, Tyco and Worldcom brought the quality of management in U.S. public companies to the table, and, combined with low valuation multiples, reinforced the idea that shareholder value could be created through active engagement.

Other factors emphasized in Cheffins and Armour (2012) were the cheap and easy accessible debt markets, as well as the cash accumulation in public companies. The S&P 500 companies had in 2005, accumulated between them \$650 billion in cash, double the corresponding figure from 2000. The cash build-up prompted activist shareholders to argue that executives should return funds earning trivial returns in the corporate treasury, to shareholders by increasing

dividends, share buybacks or put the business up for sale, all which were relatively easy to arrange due to favorable conditions in the debt market.

### 3.3 The Financial Crisis – Taking its toll on Hedge Fund Activism

The dramatic and rapid share price drop that accompanied the financial crisis in the years around 2007-2009 theoretically could have increased the number of hedge fund activist events through a vast number of companies with potential discrepancies between share price and intrinsic value.

However, despite the potential of finding undervalued companies and a ripe market for industry consolidations, the financial crisis took its toll on hedge fund activism, both regarding the number of deals carried through and the number of activist hedge funds in total. The main reason that hedge fund activism dwindled was what Financial Times, in 2007, referred to as the “credit crunch”. The cheap debt from the mid 2000s was gone (see figure 7) and it became harder to convince boards to change their balance sheet by adding costly debt to increase payouts. To carry through divestitures or spin-offs also became harder, seeing that there were few prospective bidders. This was all well summed up in a 2007 article in Financial Times:

*“Today, pushing a company to take on more leverage would be dismissed as downright foolish. Investors also have more pressing concerns. When the stability of the banking system is in doubt, shareholders are less likely to join a campaign to shake up HSBC’s corporate governance. However, in today’s more austere environment, companies will also find it harder to cover up their poor performance. Activist investors may find they have a greater choice of legitimate targets, but fewer tools to work with.”* (Larsen, 2007).

With unfavorable debt markets, complicating the targeting of payouts, capital structure or spinoffs/divestitures, hedge fund activists had to target business strategy and operating efficiency. However, with markets overwhelmed by uncertainty and distrust, shareholders generally were skeptical to activism aiming to change status quo. This was addressed in a Financial Times article in 2009: *“Big long-only investors don’t want to know about unlocking value right now. They’re still just concentrated on preserving it.”* (Jones, 2009).

The results of the credit crunch and financial crisis were brutal from an activist hedge fund perspective. Hedge fund returns were all-time low in 2008, assets under management fell as a

rock due to investors' withdrawals, amplifying the procyclicality of activism (see Chapter 7). Cerberus Capital, a leading investor in the collapsed US car industry received redemption requests amounting to \$5.5 billion of their \$7.7 billion under management (Jones, 2009). Steel Partners' assets under management fell by half and Carl Icahn had to contribute \$500 million of his own personal fortune to pay out investors seeking for exit. The activist hedge funds did, in fact, particularly badly. As they, by construction, use hedging to a much less extent than many of their corresponding funds utilizing other strategies, they became severely sensitive to the share price decline. In addition, the share price decline was particularly heavy in the small/mid-cap companies, where activist hedge funds tend to focus their investments.

To summarize, the financial crisis made its presence significantly felt on activist hedge funds. Many of them reduced their portfolios in order to focus on a smaller number of companies. Some funds even had to close down; The Children's Investment Fund Management left the activist sector in 2009, the same year as Atticus Capital closed down. Harbinger Capital Partners shut their doors in 2010, while Icahn closed his activist hedge fund in 2011, stating that he would continue to use his own fortune to pursue activist campaigns instead.

### **3.4 2011-2014 - Procyclical Activist Hedge Funds Getting Back on Their Feet**

While the financial crisis took its toll on hedge fund activism, the latest years have shown signs of recovery. Prominent activist players, like Third Point, Jana Partners, Pershing Square Capital Management and Carl Icahn are back in the game like never before, targeting large, public companies, often with huge piles of cash, throwing their weight around. Market capitalization does not seem to be an obstacle of significance, as some of the most prominent activist hedge funds have accumulated stakes in several blockbusters companies lately. Examples are Jana Partners' and Carl Icahn's positions in Netflix, Third Point Partners' stakes in Google, Fedex and Cisco, Carl Icahn's position in Apple and Pershing Square Capital Management's position in Canadian Pacific Railway Ltd. Part of this shift towards targeting larger companies may be attributed to changes in corporate governance regulations from 2010, such as "Say-on-pay" rules (see Dodd-Frank Wall Street Reform and Consumer Protection Act).

Piles of cash, increased payouts and leverage ratios evidently seem to be on the activist menu once again, while recovering from the credit crunch during the financial crisis. Favorable debt markets make companies with balance sheets filled with accumulated cash easy targets. In 2012 and 2013, 25% of the deals targeted payouts and capital structure explicitly.

The markets and environment strikingly recall the hedge fund activist-friendly environment of the early 2000s (post dot-com crisis), with favorable debt markets, industries ready for consolidations and investors once again confident in investing in stocks and hedge funds (see figure 7). While 2011 was a year for activist hedge funds to recover consciousness, 2012 and 2013 might have been the start of a new surge in hedge fund activism. This supports the observations of procyclical activist hedge fund behavior. While the dot-com crisis and, in particular, the Financial Crisis took its severe toll on hedge fund activism, the years of booms have traditionally been accompanied by increases in hedge fund activist campaigns. This procyclical phenomenon can be largely explained by the hedge funds need and competition for investor flow, as well as macroeconomic conditions (Burkart and Dasgupta, 2014).

In this chapter, we have outlined the evolution of hedge fund activism as well as its apparent procyclical behavior. This gives a sound and needed theoretical foundation to build upon in our subsequent analyses, when investigating activist hedge fund return characteristics across times with different macroeconomic conditions.



Figure 7: Index development, cost of debt versus equity yield and no. of hedge fund events. Highlighted: Economic crisis

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## 4 Literature Review

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When preparing our thesis, we conducted a thorough literature review, spending time to investigate and understand results found by other researchers. Furthermore, we have closely looked at the methodologies used, and the factors considered to explain the phenomenon of hedge fund activism. This chapter focuses on empirical and theoretical literature written on this topic, and will help us understand earlier research in-depth. Moreover, it will give us the fundament to compare our own results in subsequent chapters to those of earlier studies. By studying 39 empirical and theoretical studies from recognized journals, we have screened, to our knowledge, the entire literature in the field. Hence, we are rather well positioned to conclude on the similarities and the discrepancies that exist in the research on the topic. As previously noticed, we focus solely on the U.S. in this review. Several research papers have looked into activist investors and hedge funds in particular. Research topics span from abnormal returns to wealth expropriation of bondholders, geographical differences, and long-term effects of activism. In this chapter, we focus on abnormal returns to target shareholders, while only briefly discussing other themes. We refer the interested reader to an extensive literature review in Appendix A, where we cover all topics the authors have found related to the theme, in depth. This chapter is organized in the following manner: First, we look at previous articles and their results to give the reader an understanding of earlier research. Second, we emphasize the difference in the previous researchers' time span. Third, we investigate findings on target firm characteristics. Finally, we examine the differences in the papers investigating abnormal returns to get a sound understanding of best practices and potential pitfalls to avoid.

### 4.1 Previous Research on Abnormal Returns

The evidence of positive abnormal returns in the target firm's stock around filing- or announcement day is the most incontrovertible<sup>1</sup>. However, for long-term abnormal returns the results are somewhat inconsistent. Klein and Zur (2009) find positive abnormal returns in the subsequent year of activism, in line with Stokman (2007) and Clifford (2008). Greenwood and Schor (2009) however, only find significant positive long-term abnormal returns for targets ultimately acquired. Brav et al. (2008; 2010) find no evidence of negative abnormal drift during the 1-year period subsequent to announcement, suggesting that the short-term abnormal run-up not comes at the expense of longer-term returns. However, no evidence of positive abnormal

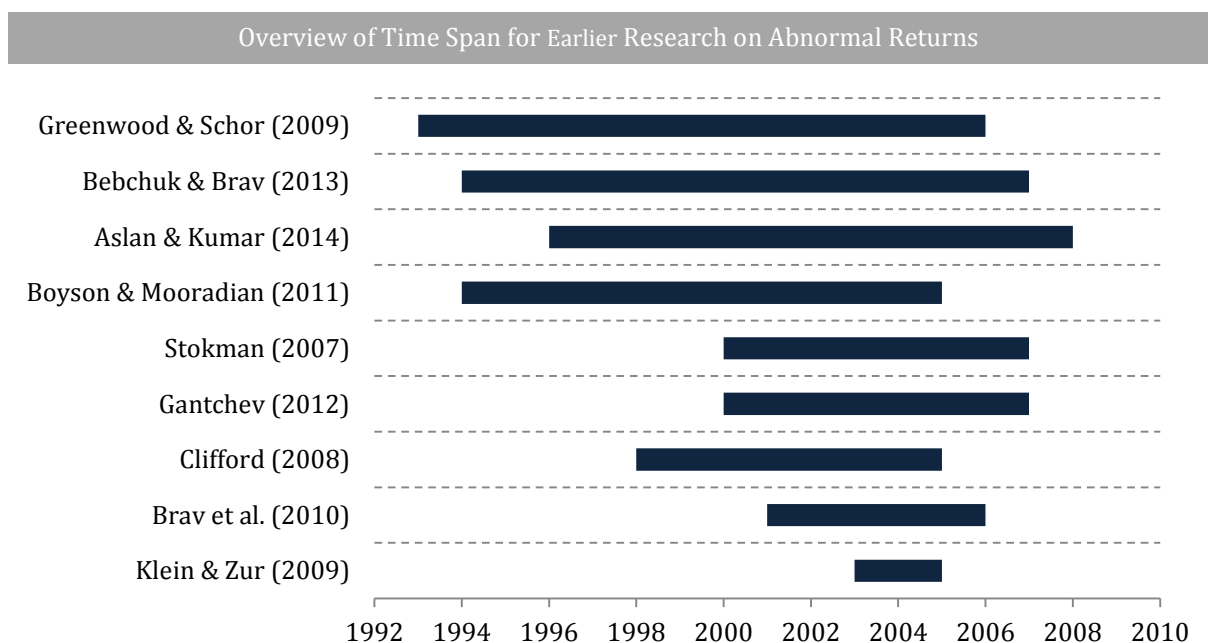
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<sup>1</sup> See e.g. Klein and Zur (2006), Boyson and Mooradian (2007), Greenwood and Schor (2009), Clifford (2008), Brav et al. (2008 & 2010), Bebchuk et al. (2013), Stokman (2007)

returns in the long-term is found either. Boyson and Mooradian (2011) find evidence of abnormal stock-returns and improved operating performance in the long-run, however; these results are only valid for high frequency funds.

#### 4.2 Difference in Time Spans and Sample Size - Implications

Earlier research papers have used time spans with large differences to investigate the effects of activist hedge funds. When utilizing samples from different time periods incorporating different economic cycles, one will also often experience different results, especially with respect to returns. As seen from the graph below, there are large discrepancies in the time span studied.



*Figure 8: Difference in time periods for earlier studies*

Furthermore, the number of total events vary both as consequence of the time period as well as selection criteria. Researchers have included everything from approximately 150 to above 2000 events. As there exists no complete database of activist hedge fund events, there have also been discrepancies in the selection criteria (see Appendix B for full overview). E.g. Professor Alon Brav has more or less used all 13Ds filed by activist hedge funds in his research, searching through various databases to find out whether the filing constitutes a hedge fund or not. Others have collected information regarding only some activist hedge funds and subsequently found whether they have filed 13Ds in their time period. These differences, we show, lead to different conclusions both due to small sample sizes, short time trends and various event windows. We



now turn to investigate target firm characteristics, time trends, what is written on short-term returns and subsequently long-term returns, with the aforementioned differences in mind.

### 4.3 Target Firm Characteristics

On the issue of target firm characteristics, researchers agree on certain things, while disagreeing on others. First, there is consensus on the matter of size: targets are smaller companies than control samples, making it less capital intensive to accumulate shares. Second, most have found lower valuation metrics in target firms compared to control samples. Zhu (2013) argues that this leaves larger room for improvement, and easier to gain support from current shareholders. On the issue of profitability, most researchers agree both in terms of targets' low growth and strong profitability (ROA) compared to control samples. In terms of capital structure and liquidity, there is to say the least, inconsistency. While some studies find that targets have higher cash-to-asset ratios than control samples, others find the opposite. The same applies for leverage ratios, where some studies find higher leverage for target firms, and others argue for indistinguishable leverage ratios. Furthermore, Greenwood and Schor (2009) find that target firms have thin analyst coverage, disagreeing with Brav et al. (2010), using a similar approach for matching portfolios, and more or less same time span of data, but different sample size. We summarize most findings in the table below. Signs of “+” indicates higher or larger ratios than control firms, while “÷” goes in the opposite direction. Lastly “-“ indicates figures not distinguishable from the control sample.

	Boyson & Mooradian (2010)	Klein & Zur (2006)	Brav et al. (2010)	Zhu (2013)	Clifford (2008)
<b>Size &amp; valuation</b>					
Market Cap	÷	÷	÷	÷	
Valuation metric	÷	÷		÷	÷
<b>Profitability</b>					
Growth	÷		÷		
ROA	+	+	+		+
<b>Capital structure</b>					
Cash/Assets	-	+		÷	÷
Leverage	-	-	÷	÷	
Payout ratio	÷		÷	÷	-
<b>Data</b>					
N	418	155	1032	1264	788
Time period	1994-2005	2003-2005	2001-2006	1994-2007	1998-2005
Comparison	Matching portfolios	Matching portfolios	Compustat universe	Compustat universe	Passive investors

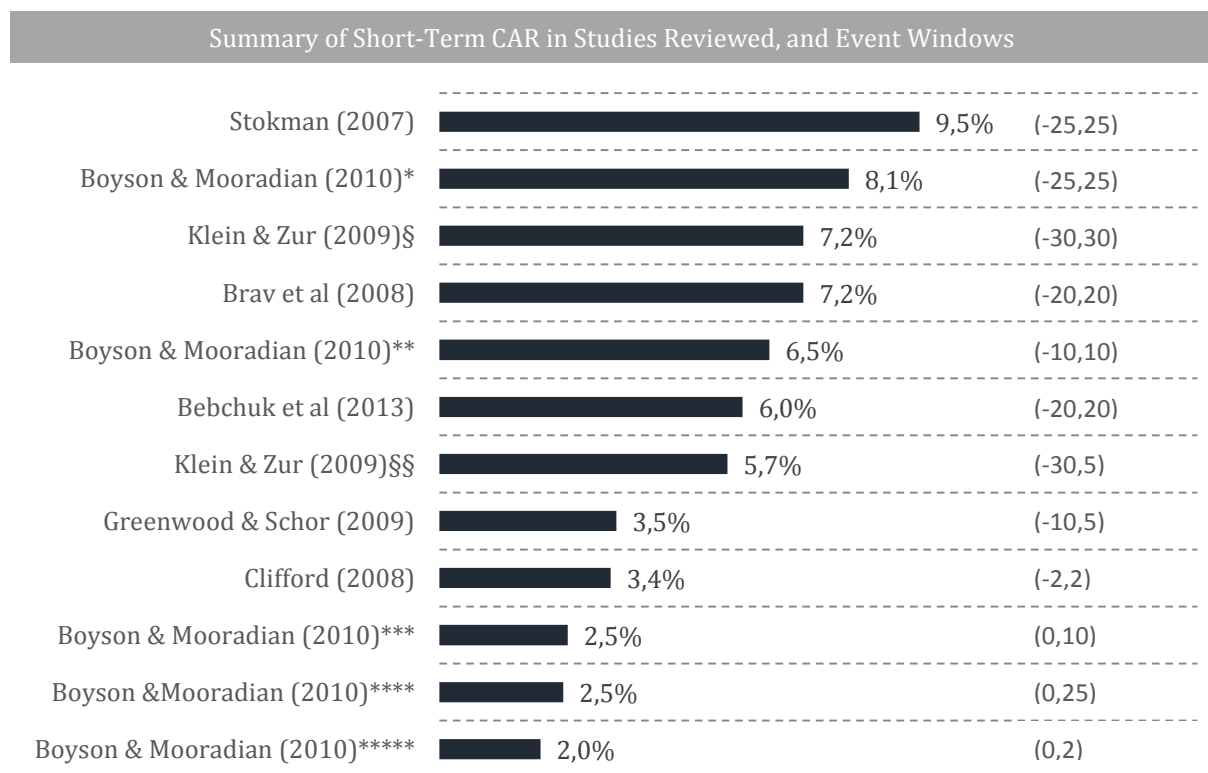
Table 1: Overview of findings in earlier studies of on target firm characteristics

Despite the absence of uniform results, some conclusions are apparent. First, historically targets have been small companies with low valuation metrics, having sound profitability. We show in our “Descriptive Statistics and Target Firm Characteristics” – chapter the reason behind some of the differences, as we graph the development of most interesting ratios and measures, and show differences in time trends.

#### 4.4 Abnormal Returns and Value Creation

##### 4.4.1 Short-Term Abnormal Returns

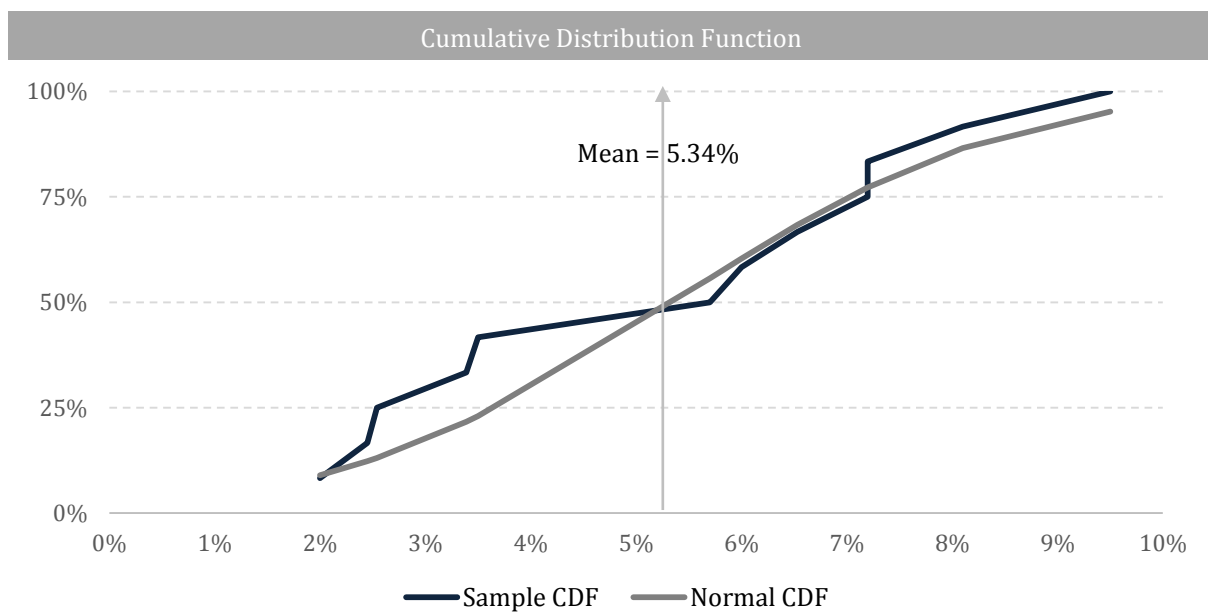
The natural question to ask when assessing hedge fund activism is, of course, whether they get bang for their buck, i.e. whether the firms they target earn positive abnormal returns, and hence create shareholder value. Several research papers have looked into target firm abnormal returns, both short-term to see whether the shareholders immediately price in a successful activist campaign discounted for the risk of failure, and longer-term returns to assess whether activist actually create value and are not shortsighted.



\*§ - Boyson & Mooradian (2010) and Klein & Zur (2009) investigates different event windows. Furthermore, Klein & Zur (2009) includes more or less only confrontational events

Figure 9: Review of cumulative short-term abnormal returns

The studies reviewed unanimously agree on positive abnormal short-term returns on average in their studies, with a total average of 5.3%. They range from a low 2% found by Boyson and Mooradian (2010) in their (0,2) event window, to a maximum of 9.5% in Stokman's (2007) (-25,25) window. Figure 10 shows the cumulative distribution of the returns. With a low sample size in mind, the distribution is platykurtic (negative excess kurtosis). Furthermore, it points to a lower probability of experiencing events at the far end of either tail, while observations around the mean are more frequent than for normally distributed variables. Moreover, the distribution is weak but positively skewed to the right (0.07), indicating that tail events happen more frequently at the upside of the average. We discuss the shortcomings related to the mentioned research in the data chapter, showing that multiple factors bias the estimate of the short-term abnormal returns, most prominently too short or too long event windows, short time series and small sample sizes.



*Figure 10: Cumulative distribution functions across studies reviewed*

Considerable amounts of research have been done to understand what creates short-term abnormal returns, and researchers agree that this mainly lies in the different objectives hedge funds seek to complete. Brav et al. (2010), Greenwood and Schor (2009) and Clifford (2008) find that abnormal returns are the highest when the stated objective is to eventually sell the target firm or spin-off certain business units. Objectives purely targeting capital structure or corporate governance earned the lowest abnormal returns, in contrast to Boyson and Mooradian

(2011) who found that highest the abnormal returns were achieved for corporate governance related objectives.

#### 4.4.2 Long-Term Abnormal Returns

While the evidence of positive abnormal returns for the target firms in the short-term is strong, the research on target firms' long-term returns are somewhat inconclusive. We review five studies on long-term abnormal returns covering at least a six month window. Due to differences in both sample sizes, event windows, years covered and analysis, we find the small number of studies less relevant to analyze statistically. Rather, we look at them seeking to understand differences.

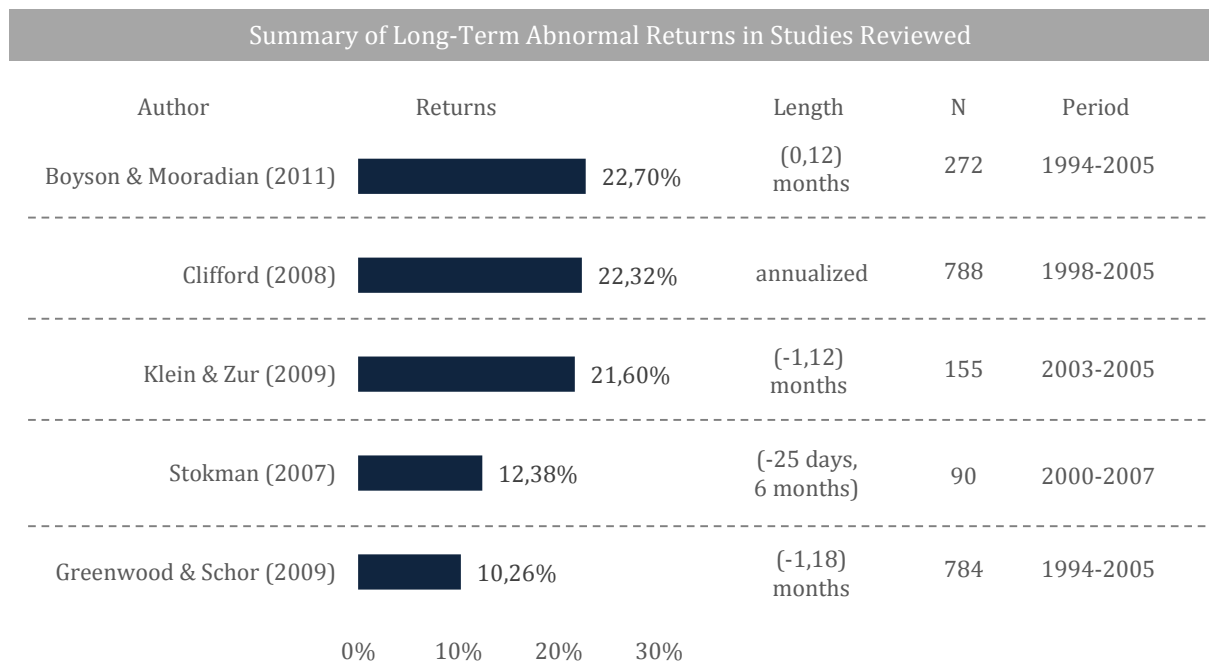


Figure 11: Summary of long-term abnormal returns in studies reviewed

The result is an average of the aforementioned researchers of 17.9%. However, the comparison is not really fair as they are not unanimous in neither their significance nor their results. While Stokman (2007) finds significant positive abnormal returns over the 6-month window for all events, Greenwood and Schor (2009) find significant positive long-term abnormal returns for targets that are ultimately acquired. Hence, the illustrated 10.26% are pulled up by these events, and Greenwood and Schor's (2009) analysis on long-term returns, conditional on the outcome, shows 25.85% Cumulative Abnormal Returns (CAR) for targets acquired, but not distinguishable from zero for all other targets. Their results are in line with the results of Clifford

(2008), who finds that improvements in operating performance mainly are attributable to spinoffs of underperforming assets. The results of Greenwood and Schor (2009) and Clifford (2008) are partly conflicting with Boyson and Mooradian (2007) who found that the most dramatic changes in performance relate to cases where the activists seek corporate governance changes. Furthermore, Klein and Zur (2009) look at confrontational events, not including general and unspecified objectives. In conclusion, the differences are significant and large. We find that studies looking at average holding period (e.g. Brav et al., 2010) indicate periods of approximately 1 year. Hence, studies below this will not necessarily be able to capture the changes conducted by the activist. Furthermore, there are large differences in selection criteria yielding different sample sizes, as well as event windows and time period covered. By example, Stokman (2007) who first locates hedge funds and thereby their filings, exclude a large number of funds and may be biased towards less profitable funds when only reviewing 90 deals in the U.S. markets. Furthermore, due to Klein and Zur's (2009) short time period, their results may just reflect the average return of the years included. As shown later, there are large differences in yearly CAR, and between periods of crisis and economically stable times. This may suggest biases leading to the discrepancy.

After a thorough review of the existing empirical literature on activist hedge funds, we believe we are left with a sound understanding of limitations and pitfalls in previous papers. Some methodological issues have been identified, and subsequently will lay the basis for both the methodology and data chapter. We leave obvious reasons as sample size and time trends out.

- First, event windows for short-term analysis need to be able to capture the run-up from the ten-day interval after the block holder has bought its shares, towards the filing date. Papers using time trends from  $t=0$  (filing date), shows significantly lower CARs.
- Second, an event window for long-term analysis should be no less than 10 months, so that the hedge fund has time to achieve some changes.
- Finally, target firm characteristics should be investigated in different periods to correct for economic cycles.

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## 5 Methodology

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This chapter summarizes the methodology utilized, as well as the hypotheses of which we aim to answer. More formally, the chapter starts with a definition of abnormal returns and the framework used to specify the abnormal returns. Next, we give a brief discussion of the event windows utilized in our analyses. Last, we specify a conceptual framework, as well as stating the hypotheses formally. For a description of the event study method and the econometric techniques applied, we refer the reader to Appendix F.

### 5.1 Specifying the Abnormal Returns

The methodology applied in our analyses seeks to capture the value creation associated with hedge fund activism (manifesting through the filing of a 13D), through the wealth effects identified for target shareholders. As defined in Eckbo (2007) “an event study seeks to establish whether the cross-sectional distribution of returns at the time of an event is abnormal (i.e. systematically different from predicted)”. We identify such wealth effects by collecting information regarding the market reaction to the announcement, simplified to the stock price reaction of target shares. Hence, it is critical that we are able to attribute the change in the stock price solely to the event, and not by other sources of information becoming available at the time interval and such affecting valuations. To do this, we first need a definition of a normal return expected if the event where not to occur.

In order to calculate the normal returns needed to separate the fraction of realized returns which can be accounted for as abnormal, we employ the Fama-French Carhart Four factor model. The pricing model utilizes the Fama-French (FF) Three-factor model (Fama-French, 1993) extending it with a momentum factor (Carhart, 1997).

$$E[R_{i,t}|X_t] = r_f + \beta_{iM} \times R_{Mt} + \beta_{iSMB} \times SMB_t + \beta_{iHML} \times HML_t + \beta_{iMOM} \times MOM_t \quad (1)$$

Where  $E[R_{i,t}|X_t]$  is the expected (normal) return given the conditioning information (market movements, SMB, HML and MOM) at time  $t$ ,  $r_f$  is the risk-free return rate,  $R_{Mt}$  is the market portfolio risk premium,  $SMB_t$ , Small Minus Big (market capitalization), accounts for the excess return of a portfolio of small cap companies over a corresponding portfolio of large cap companies.  $HML_t$ , High Minus Low (Book-to-Market ratio) is a zero-cost portfolio long value stocks and short growth stocks. The last factor,  $MOM_t$  incorporates the momentum factor, (i.e.

the tendency for the movement of a stock's next direction to be the same as its last direction), as a self-financing portfolio long past winner stocks and short past losers. The betas encapsulate the individual stock's historical movement sensitivity, or factor loadings, towards the corresponding factor. An ex-post version of the four-factor model allows for conditional prediction of individual stock returns and empirical testing of the four-factor model, by yielding a relationship for realized, observed returns.

$$R_{i,t} = E[R_{i,t}|X_t] + AR_{i,t} \quad (2)$$

The abnormal return term ( $AR_{i,t}$ ) represents firm specific details affecting returns that are not captured and explained through the firm's sensitivity towards the four factors. Since the estimation window is not overlapping the event window, announcement of hedge fund activist intervention should by construction not be captured by the four factors, hence be encapsulated in the firm-specific, abnormal return term.

$$AR_{i,t} = R_{i,t} - E[R_{i,t}|X_t] \quad (3)$$

Once the model has been properly calibrated by determining the parameters needed, one can accumulate the daily abnormal returns over a desired period under consideration, the event window ( $T_1$  to  $T_2$ ), to add up the full wealth effect from activist hedge fund intervention. The resulting measure is called Cumulative Abnormal Returns (CAR):

$$CAR_i = \sum_{T_1}^{T_2} AR_{i,t} \sim N[0, \sigma_i^2(a, b)] \quad (4)$$

$$\text{where } \sigma_i^2(a, b) = (b - a + 1)\sigma_{e_t}^2 \quad (5)$$

Having defined  $CAR_i$  this way, it now represents the returns to firm  $i$  not explained by the four-factor model, hence determined by firm-specific factors like hedge fund activist interventions, over the period under consideration. In order to make the CAR data testable, we aggregate over our large sample of companies to form averages. By the Central Limit Theorem (Walpole et al. 2002) we get the sample average CAR

$$\overline{CAR} = \frac{1}{N} \sum_{i=1}^N CAR_i \sim N[0, VAR(\overline{CAR})] \quad (6)$$

## 5.2 Event Window Determination

The methodology utilized is adopted in order to elude everyday random influences on stock prices and pinpoint the wealth effects originating from the activist hedge fund intervention. In a perfect world, one would obviously want to rule out all news and effects affecting the target firm under consideration until the only effect left is that resulting from the hedge fund activist involvement. However, as this is virtually impossible to execute practically, we will have to lean on the assumption that firm-specific effects on returns are randomly distributed and may have either a positive or a negative effect, i.e. letting the law of large numbers work in our favor. As the CARs are corrected for general market information through the four-factor model, and later averaged, we would expect effects not related to the activist intervention to be negligible in the aggregate over short periods of time. Wider event windows have, however, a higher likelihood of capturing effects of randomly generated, firm-specific return shocks. Thus a narrow event window is preferable when considering noise effects.

On the other hand, empirical studies have shown that markets may not be perfectly efficient when pricing in activist intervention, i.e. that information may leak (see for example Brav et al., 2010 or Klein and Zur, 2008). Hence a wider event window might be preferred to encapsulate the complete price effect originating from the activist involvement. For instance, several empirical studies reveal a significant price run-up in the 10-day window prior to announcement day (date 0), indicating a leakage of information that activist hedge funds are accumulating stocks in a company, kicking off both abnormal trading volumes and returns before the “official” announcement date. In addition, markets seem to use a few trading days after announcement day to act on, or adjust their reactions, to fully reflect their expectations. Taken into account these phenomena, a longer event window is desirable. Thus, we face a trade-off between precision of the estimate and the ability to isolate the effects of the event and ability to capture the full effect generated by the activist intervention. We chose event windows by an heuristic approach, adjusting it to best fit the particular analyses we execute. In cases where the event-window may have significant impact on the results, we examine alternative event windows to test the robustness of our findings.

In addition, when looking at short-term returns, the full wealth effect from a successful activist hedge fund campaign will naturally not be reflected in the price immediately. There is always a probability that the campaign will end up being unsuccessful. Thus, when looking at short-



term returns, we are actually looking at the wealth effects of a successful activist campaign discounted to adjust for the probability of failure. As activist campaigns are on average long-term (8-16 months), we also examine the long-term value creation of activist hedge funds (12 months) to reveal the value creation with ex-post figures, where the probability-weighting discount should, on average, be neglected. Hence, when examining short-term abnormal returns, we look at the (-15, +15), (-12, +10) and (-12, +2) event day windows, where date 0 is the date of announcement (filing 13D). When addressing long-term abnormal returns, we use event windows of (0, +12) months, with date 0 still being the announcement day.

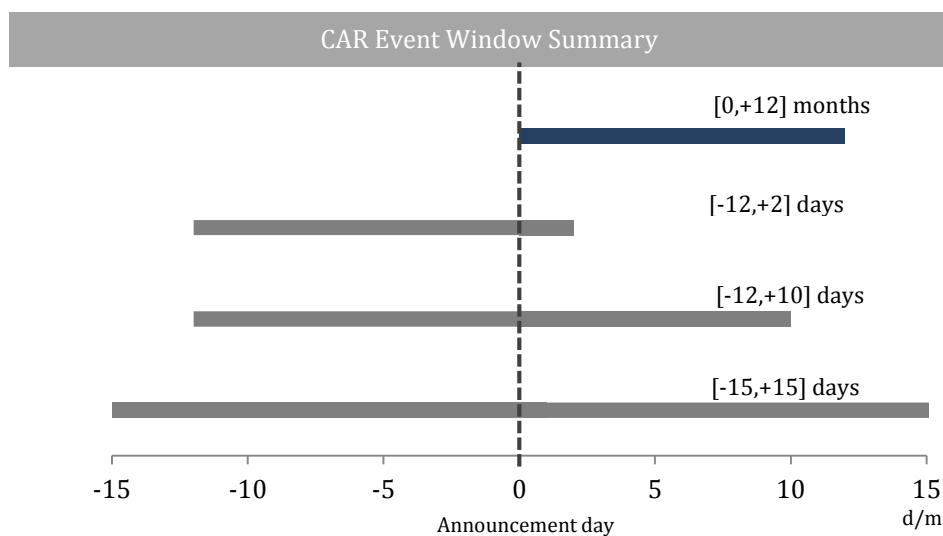


Figure 12: CAR event window summary (blue: in months, grey: in days)

### 5.3 Conceptual Framework and Hypotheses

As we want to examine the wealth effect on target firm shareholders from activist hedge fund intervention both in the short- and long-run, we develop a conceptual framework with a starting point in Stokman's (2007) conceptual model. However, we modify it somewhat to fit our hypotheses to a larger extent.

The first effect we want to address is the target firm stock price movements associated with activist hedge funds accumulating and announcing significant positions, formally the short-term stock price run-up in the days surrounding the announcement day.

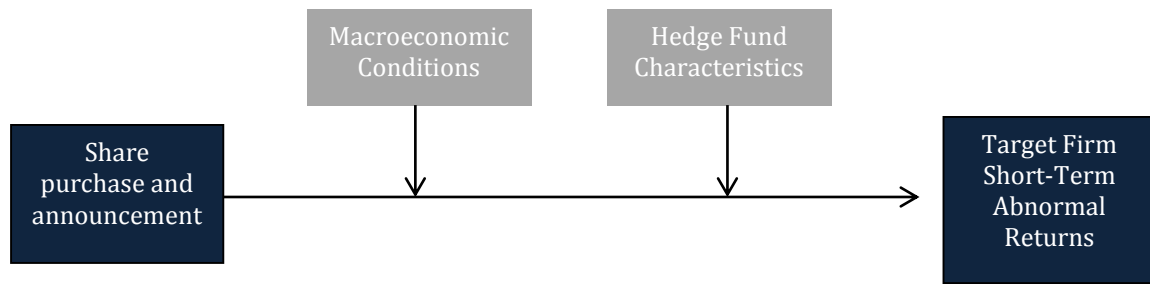


Figure 13: Effects on short-term abnormal returns in target firms.

Next, we want to examine whether the short-term price run-up is temporary, or whether the hedge fund activists actually create longer-term shareholder value. In addition, we want to explain the cross-sectional differences in abnormal returns across target firms, both short-term and long-term.

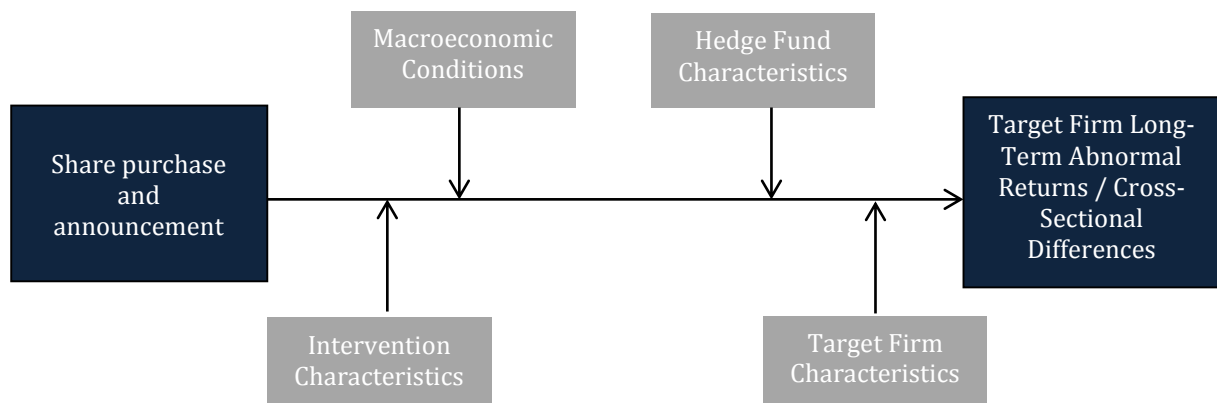


Figure 14: Effects on long-term abnormal returns and cross-sectional differences in abnormal returns in target firms

We design numerous hypotheses, and conduct several analyses to examine these effects as precise as possible. We have proposed hypotheses and executed analyses within four “research blocks”, which, despite being heavily interdependent, are treated separately in this chapter to keep conceptual and methodical tidiness. The four “blocks” are target firm characteristics, short-term abnormal returns, long-term abnormal returns and cross-sectional differences in abnormal returns.

### 5.3.1 Target Firm Characteristics

We first want to examine the development in target firm characteristics, and compare the characteristics of companies targeted by hedge fund activists to the average company. We propose a number of hypotheses:

- The average target firm market capitalization has become higher over the years, even when correcting for inflation and the general growth of the average company on the NYSE/Amex-exchange, as seen by activist campaigns covered in media.
- The Price-to-Book ratios of target firms are on average lower than the P/B-ratio of the average NYSE/Amex-company, thus activists target undervalued/low growth companies.
- The EBIT-margin is on average lower in target firms than in non-target firms. The same applies to the debt-to-asset-ratio. This should, all else equal, yield larger room for improvements and utilization of idle debt capacity.
- Activist hedge funds are shifting towards targeting companies with higher cash-to-asset-ratios, even when adjusting for the general increase in cash-to-asset-ratios over time in the average NYSE/Amex-company.
- Activist hedge funds target companies with below-average bid-ask spreads (higher liquidity) to ensure quicker exit opportunities and smoother accumulations.

### 5.3.2 Short-Term Abnormal Return

Next, we want to look at the short-term price movements in the target firm stock.

- There is, on average, a significant abnormal price run-up in the days surrounding announcement of activist hedge fund intervention.
- The short-term abnormal return is not explained solely by abnormal trading volume, but by the hedge funds' expected value impact discounted for the probability of success.
- The abnormal short-term return is lower in times of economic crisis, than in steady economic times, due to decreased demand for stocks and less M&A opportunities for targets.
- The short-term announcement abnormal return is higher for an activist hedge fund with a solid and considerable track record (high frequency fund, with more than ten deals on their track record) than for an activist hedge fund with insignificant track-record (low frequency fund, with less than five deals on their track record).

### 5.3.3 Long-Term Abnormal Returns

Further, we want to address the potential long-term value creation by activist hedge funds.

- Target firms earn, on average, a significant 12-month abnormal return, i.e. the activist hedge funds are long-term value creators (systematically positive alpha) at the margin, and the short-term run-up is not offset by a longer-term decline in stock price.
- The long-term abnormal return is lower in times of economic crisis, than in steady economic times, because of a climate favoring status quo over changes.
- The long-term abnormal return is higher in firms targeted by high frequency hedge funds than in firms targeted by low frequency funds), due to learning effects and knowledge accumulation.

### 5.3.4 Cross-Sectional Differences in Abnormal Returns

Lastly, we want to examine what explains the cross-sectional differences in abnormal returns, by running regressions of 12-month abnormal returns, as well as the short-term abnormal returns, on target firm characteristic, hedge fund characteristics, intervention characteristics and year dummies.

- Cross-sectional differences in long-term abnormal returns can be largely explained by target firm characteristics (such as accounting and valuation metrics), hedge fund characteristics (track record), intervention characteristics (initial stake, stated objective and stated tactic) and year-specific dummies.
- In the target firm, higher cash-to-asset ratio, a lower EBIT-margin (proxy for profitability) a lower debt-to-asset ratio and a lower bid-ask spread will, ceteris paribus, increase the long-term abnormal return, as they provide greater opportunities for improvements.
- Price-to-book and market capitalization should, all else equal, yield negative but small coefficients because the Fama-French framework should have already captured these effects through the estimation of normal returns.
- In the activist hedge fund, a higher initial stake and a solid track record will, ceteris paribus, increase abnormal return, because of greater voting power and incentives to push for changes.

- Regarding the intervention characteristics, we think that a more aggressively stated objective and a more hostile stated tactic will decrease the long-term abnormal returns, due to the higher costs associated with hostile tactics.
- The short-term abnormal returns can be partially explained by the long-term abnormal return, as the market correctly anticipates the wealth effect of activist intervention.
- With earlier research in mind, e.g. Greenwood and Schor (2009), we think that the short-term abnormal returns should be partially explained by the stated objectives.

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## 6 Data

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Event studies require a large amount of data, and we have spent considerable time and effort gathering and structuring ours. The authors recognize that the soundness of our conclusions is highly dependent on whether the data is obtained in a reasonable manner. Hence, we devote significant time and attention to our data sample; construction, sources utilized, description and comparable studies. Further, we will present biases that may influence our study. Lastly, we discuss whether our sample will capture the necessary factors needed for our thesis and its representativeness for hedge fund activism in general by doing a comparison and benchmark analysis to earlier studies.

### 6.1 Construction – Gathering and Structuring the Data

#### 6.1.1 U.S. Securities and Exchange Commission (SEC) and Section 13

Despite not going to give a full overview of SEC, we believe it is important to understand the aspect of the filing system related to our thesis since there is no research database covering hedge fund activism in full scale. This will give a deeper understanding of both the dataset creation, and its limitations. The SEC's filing system contains "the disclosure of important market-related information, maintaining fair dealing, and protecting against fraud". Hence, we can utilize it to gather important information about activist events. We needed a list of transactions with identifying information we could use to gather characteristics of targets through COMPUSTAT and stock prices from Chicago Research Center in Securities Prices (CRSP). To obtain this list, we began with SEC and section 13.

Section 13(D)(1) of the Securities Exchange Act of 1934, requires an investor to disclose their purchase when acquiring a stake of >5% and the investor has an intention to influence corporate control (Brav & Miller, 2014). Furthermore, a large amount of the 13Ds are filed by passive investors, who choose to have the option to later engage in activist events. After investors have reached the 5% threshold, they have ten days to file. The 13D contains information regarding both the investor, his interest in the security (however, this may often yield limited information), and the source and amount of funds used. It covers key areas such as the identity of the investor, acquired stake, filing date, price paid, and purpose of the transaction. In particular, item 4 of a 13D requires the filer to declare the reasons for purchasing the shares, particularly if the intention is to engage in M&A activity, asset sale, capital structure or dividend policy changes,

or propose other types of corporate changes. We subsequently separate the intended actions into the following categories: General undervaluation, capital structure, business strategy, sale of target company and governance objectives. This is done largely due to the structure of Brav et al.'s dataset, as it yields the opportunity to look at time trends and make comparisons. For events with limited information in the 13D, we use news searches (Factiva) to obtain necessary information. Furthermore, we separate the stated actions of the hedge funds into different tactic categories, based on whether they are friendly or hostile in nature. For the interested reader, we review Section 13D and its counterpart 13G in depth in Appendix E.

### *6.1.2 Merging Datasets – Robin Greenwood and Alon Brav*

As mentioned, Professor Robin Greenwood (Harvard Business School) and Professor Alon Brav (Fuqua School of Business) provided us with valuable help and resources during this thesis. Regarding their recent work on hedge fund activism, they were able to offer us their identified events. Brav's dataset contains deals from 1994-2011, and Greenwood's from 1993-2006. However, their datasets differ significantly due to their difference in research question. While Brav's dataset has been utilized in many different papers, Greenwood's has not. Criticism has been raised towards activist research (Allaire et al., 2014) due to large differences in datasets. Therefore, we find it important to cross check and add potential missed filings.

Brav et al.'s dataset contains 2624 events from the 1994-2011 period. Although not utilized in a study yet, they gather all SEC filings (13Ds) in the period, and exclude some events where the purpose of the transaction is not directly related to hedge fund activism. This includes bankruptcy reorganization or the financing of a distressed firm, engagement in M&A risk arbitrage or when the target is a closed-end fund or other non-regular businesses (Brav, Jiang and Kim, 2010). They further use news search to gather information about motives, responses and the development of the deals. Lastly, they locate deals in companies with large market capitalizations where the hedge fund has acquired less than 5%. This is done by gathering all 13F filings (published each quarter and showing all of the hedge funds holdings), and identifying companies with market values larger than \$1 bn where the ownership of the hedge fund is larger than 2%. See Brav et al.'s *Hedge Fund Activism, Corporate Governance, and Firm Performance* (2008) for a full description of their dataset.

Greenwood and Schor's (2009) dataset is constructed in a different way, because it contains both institutional activist engagements as well as hedge funds' interventions. They merge all 13D and DFAN14A (definite proxy statements) filings from the SEC database, reducing their sample substantially. They subsequently exclude targets that are closed-end funds as well as firms unidentified by CRSP, and end up with 980 activist events where 784 is hedge fund unique in the time period from the third quarter of 1993 to the third quarter of 2006.

Hence, we cross-check Brav et al.'s and Greenwood and Schor's datasets, and use the names of hedge funds from Brav et al.'s dataset to find potential missed filings. We localize 77 13Ds in Greenwood and Schor's dataset, which we implement into Brav et al.'s, all dated before 2001. Furthermore, we found one additional hedge fund, not included in Brav et al.'s dataset, which had done one deal in 1996. After this session, we are left with a comprehensive dataset from 1994 to 2011, containing 2705 deals in total.

### *6.1.3 Restricting the Sample*

The number of hedge fund activist events in the period we are seeking to understand is large; hence, we have restricted our dataset during the period by allowing our sample to only cover certain criteria:

#### *1. Targets listed on American stock exchanges*

There are several reasons as to why we impose such a limitation. First, it avoids the differences in regulations by countries. Second, it covers a more similar market environment being exposed to similar macroeconomic factors. Even though this may lead to somewhat a bias in our interpretation of hedge fund activism in general Bryan et al. (1998) emphasized that 58 of the 100 largest companies ranked by market capitalization were American. Furthermore, Prequin's Special Report on Hedge Fund Activism (2014) notices that 66% of activist funds are headquartered in North America and that these funds largely invests in the US. This is confirmed by Activist Insight's "An annual review of trends in shareholder activism" (2014) where they state that 71% of publicly targeted companies by activists in 2013 were US companies. Furthermore, they have surveyed institutional investors finding that 90% prefers to invest in activist funds in North America.



2. *We exclude events where the intention is bankruptcy reorganization or the financing of a distressed firm or engagement in M&A risk arbitrage*

We do this as to not mix objectives of the hedge funds. The nature of the intent and the consequence differs largely from those of shareholder activism, in line with Brav et al. (2008).

3. *Closed-end funds regarded as targets are excluded*

We exclude closed-end funds because they are not regarded as regular corporations, and refer the reader interested in activism in closed-end fund to Bradley et al. (2007).

#### 6.1.4 Extending the Dataset

We wanted to investigate effects post financial crisis as well; hence, we needed an increased time span to get reliable results. Therefore, we collected all filings between 2011 and 2013, utilizing PERL coding to download all SC 13Ds in the period following Garcia and Norli's (2012) Crawling Edgar paper. Private Equity companies, corporate raiders and institutional investors hold several 13Ds and only approximately 10% of all 13D-filings in 2012 and 2013 were made by activist hedge funds. Therefore, we employed the text-reading program to identify hedge funds. We used all the names in the existing database to find deals from hedge funds we had already located. However, there has been a considerable amount of new hedge funds coming into play since 2011 (Prequin Special Report, 2014). We use several sources<sup>2</sup> to identify new activist funds, and include these in our search for additional 13D filings. We added 12 funds in 2012 and 28 funds in 2013 in line with Prequin's hedge fund database.

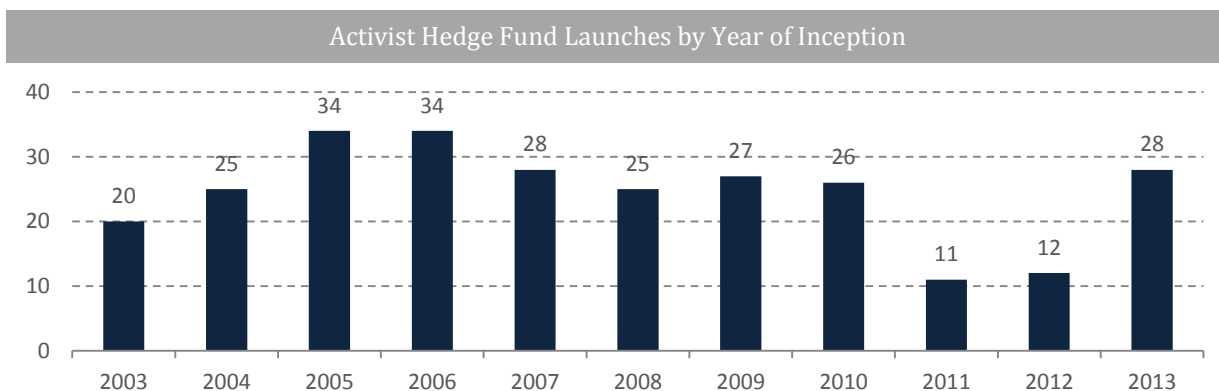


Figure 15: *Activist Hedge Fund Launches*

<sup>2</sup> Activist Insight, Prequin, FactSet Sharkwatch, Bloomberg, SDC Platinum, Factiva news search, The Boston Consulting Group (BCG)

We consequently add 391 deals for 2012 and 2013 from both hedge funds launched prior to 2012 and new ones identified in 2012 and 2013. For these years, we hand collect the purpose of the transaction, initial stake bought by the hedge fund, and the stated tactic, enabling us to do subsample analyses later on. In total, we are left with 3065 events.

## 6.2 Description of the Data Sample

### 6.2.1 Potential Biases and Descriptive Statistics

First, the three restrictions enforced in 6.1.3 require us to test whether we have introduced any severe selection biases and hence distorted the true picture of hedge fund activism. Second, the usage of COMPUSTAT and CRSP lead to events being dropped due to insufficient accounting and stock price information. Third, we may have a bias towards smaller targets due to the nature of the SEC filings requirements. We argue, however, that our restrictions and precautions taken have helped us avoid the largest pitfalls and yield a representative sample.

The restrictions imposed are explained in detail above in 6.1.3. Furthermore, we find that even though COMPUSTAT and CRSP remove events without sufficient information, it does so relatively evenly over the sample period. As seen from the graph below, the same distribution of missing deals applies over time. Hence, we believe this should rule out any significant bias towards more or less profitable periods.

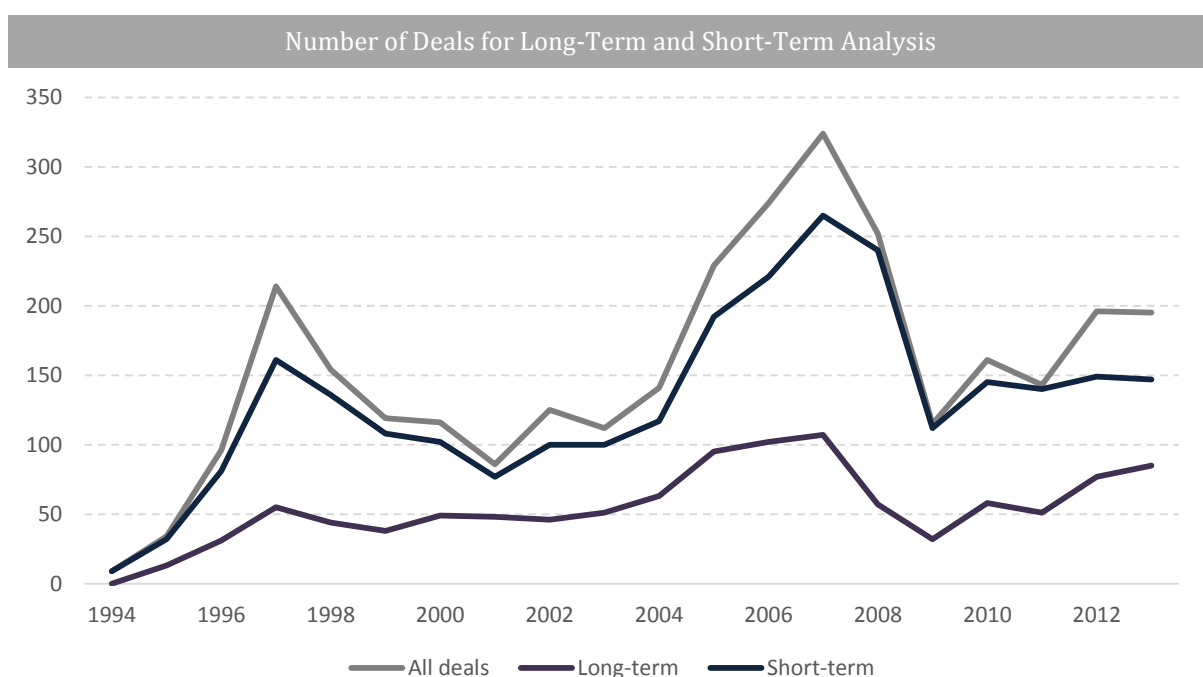


Figure 16: Number of deals by year in analyses

As seen, a large number of deals is excluded in the long-term analysis. This is mainly due to accounting data missing from COMPUSTAT. However, we are left with over 1000 deals in this analysis as well. Moreover, a considerable fraction of the deals in companies with large market capitalizations has been done the last years, e.g., Icahn's stake in Apple, Herbalife and Time Warner. Due to the size of these companies, the activists usually acquire significantly less than 5 percent. This will systematically bias our dataset towards smaller deals. Hence, we believe it is necessary to use time and effort to locate deals below the five percent threshold. We employ Factiva news search, Prequin's activist hedge fund database, Activist Insight, SDC Platinum, FactSet's Sharkwatch and sources from The Boston Consulting Group to locate these deals. Earlier empirical research (Brav et al., 2008) found only 27 events during the period of 2001 to 2006. We find 28 additional deals for 2012 and 2013 with an initial stake <5%. Despite not a large number, we believe the process strengthens our dataset and increases its reliability.

Furthermore, the restrictions enforced are chosen both due to Brav et al.'s dataset as well as best practices in the hedge fund activism literature. We provide an overview in Appendix B, constituting several research papers on hedge fund activism and their selection criteria as well as their construction of their datasets.

Wachtell, Lipton, Rosen & Katz (Empirical Work on the Long-Term Effects of Activist Interventions; 2014) criticize Bebchuk, Brav and Jiang's (2013) latest research arguing that the time trend covered (1994-2007) has exaggerated performance. As previously explained we investigate a longer time trend covering both periods of crisis (dot-com and the financial crisis), and periods when financial markets have experienced tailwinds. Therefore, we are able to cover years of both low and high returns, and hence argue that our sample is not biased towards certain periods or macroeconomic conditions.

In conclusion, we believe that the construction of the dataset has led to a representative sample of the activist hedge fund activity in the U.S.

### *6.2.2 Statistical Properties of the Return Data*

As seen from Table 2 the average short-term cumulative abnormal return (CAR) in our sample is 6%, and the average long-term CAR is to 25%, both significant at the 1% level. However, as the subsequent graphs and table show, the data is somewhat skewed.

Return series	Short-term	Long-term
Mean (t-stat. p-value)	5,74 % (12,22. 0%)	25 % (16,54. 0%)
Standard deviation	22,3 %	49,9 %
Median (Wilcoxon signed rank test. p-value)	5 % (13,05. 0%)	15 % (14,40. 0%)
Kurtosis	8,2	5,0
Skewness	0,7	1,2
Shapiro-Wilk W test for normality (p-value)	n/a	0,92 (0%)
Shapiro-Francia W test for normality (p-value)	0,93 (0%)	0,92 (0%)
N	2702	1102

*Table 2: Statistical properties of the return data*

Even though the t-test can be interpreted as robust, and with large sample sizes will yield correct conclusions according to the central limit theorem<sup>3</sup>, we list the median value for both short-term and long-term CAR. We accompany the value with a Wilcoxon signed-rank test, indicating statistical significant values different from zero. The table also provides us with indication of skewness, especially for long-term CARs, as the median is left of the mean. This is indicative of positive skewness, which increases the mean in the data. We however find that it does not bias the results significantly. First, the median is still significantly different from zero. Second, based on the large deviation in long-term CARs, we argue that the median does not deviate too much from the mean.

We show the distribution of both short-term CARs and long-term CARs and the cumulative distribution frequency in the following graphs.

<sup>3</sup> See Appendix F for details

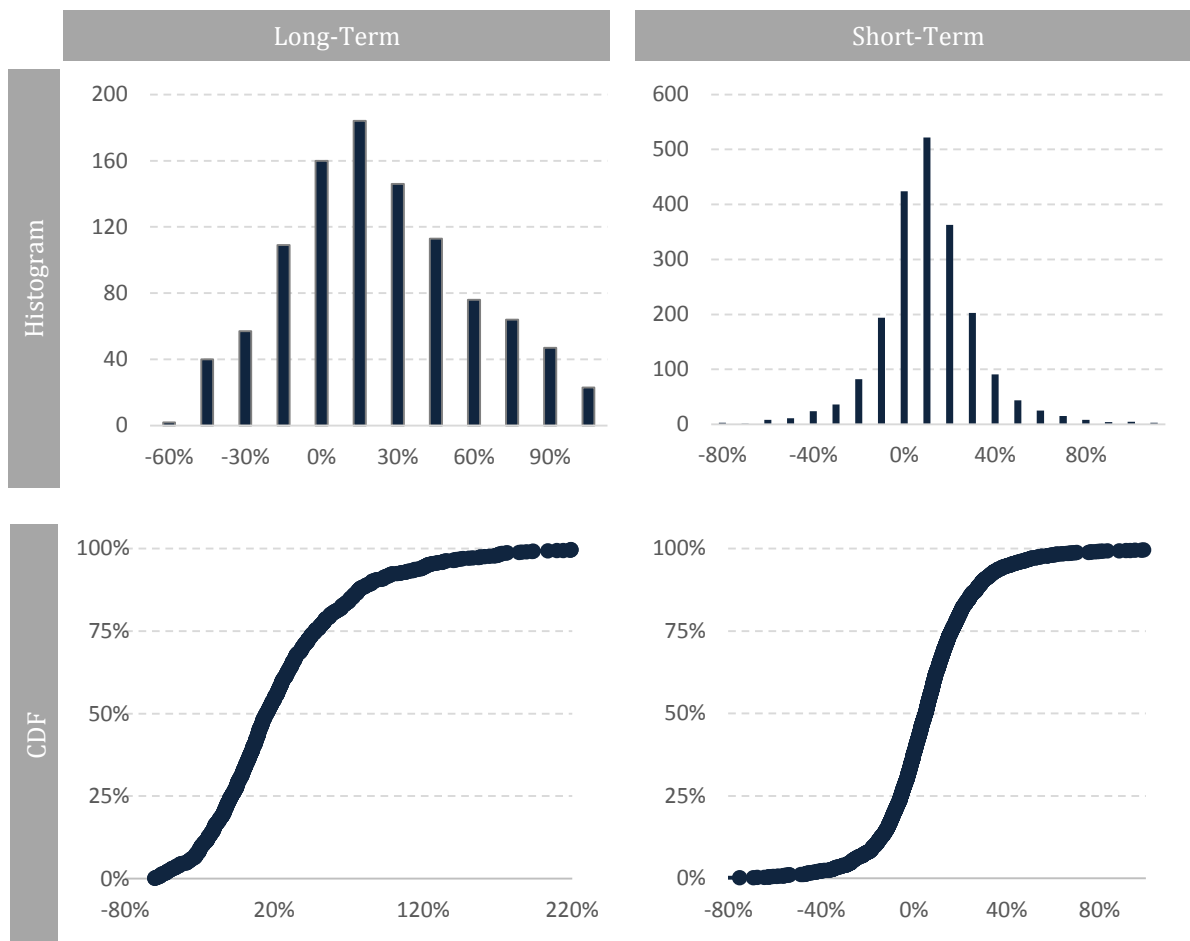















Figure 17: Distribution of short-term and long-term CARs

### 6.2.3 Comparison to Other Studies for Short-Term Abnormal Returns

We perform a detailed review of existing literature related to hedge fund activism and event studies. A fairly large part of our analysis and interpretations have been devoted to understand limitations and criticism of earlier studies as well as to explain the large differences. This includes short time series, low number of deals, and too long/short event windows potentially capturing effects not related to the event analyzed. We have made a significant effort trying to avoid these pitfalls in this study.

Short-Term Returns Review					
Author	Returns	Initial N	Event window	Period	
Stockman (2007)	 9,50%	90	(-25,25)	2000-2007	
Boyson and Mooradian (2010)	 8,1 %	418	(-25,25)	1994-2005	
Klein and Zur (2009)	 7,2 %	151	(-30,30)	2003-2005	
Brav et al (2008)	 7,2 %	1032	(-20,20)	2001-2006	
Boyson and Mooradian (2010)	 6,5 %	418	(-10,10)	1994-2005	
Bebchuk et al (2013)	 6,0 %	1957	(-20,20)	1994-2007	
Ludvigsen and Vollset (2014)	 5,74%	3095	(-12,10)	1994-2013	
Klein and Zur (2009)	 5,7 %	151	(-30,5)	2003-2005	
Greenwood and Schor (2009)	 3,50%	784	(-10,5)	1993-2006	
Clifford (2008)	 3,4 %	788	(-2,2)	1998-2005	
Boyson and Mooradian (2010)	 2,5 %	418	(0,10)	1994-2005	
Boyson and Mooradian (2010)	 2,5 %	418	(0,25)	1994-2005	
Boyson and Mooradian (2010)	 2,0 %	418	(0,2)	1994-2005	

*Figure 18: Short-term Returns Review – Comparison Analysis*

There is a clear pattern, where we suggest that the bottom percentile of studies find low returns because they fail to capture the run up in the ten days prior to the filing. Further, the upper percentile of studies struggles with either a small sample size or a long-event window potentially capturing effects outside the relevant event. The only exception is Klein and Zur (2009)'s CAR at 5.7%. However, we find that the average CAR in 2003-2005 are close to the overall average. Hence, their results may simply reflect their utilized time period. In conclusion, we argue our short-term returns could be representative for hedge fund activism. For the long-term analysis, a similar comparison may be a bit biased due to the reasons mentioned in the literature review.

## 7 Descriptive Statistics and Target Firm Characteristics

We have examined the trends of activist investing, and unveiled some shifts in its features and the target firm characteristics during the last years. This chapter is organized by first investigating the general development of number of deals and the size of the companies targeted. Subsequently, by studying the profitability, leverage ratios, liquidity and valuation metrics of the companies. Lastly, by explaining the shift in objectives by the hedge funds. We aim to uncover potential patterns in the development in target firm characteristics, and the rationale for targeting companies with particular features; this will yield a sound understanding of potential variables to include in later analyses.

### 7.1 Number of Deals and Market Capitalization

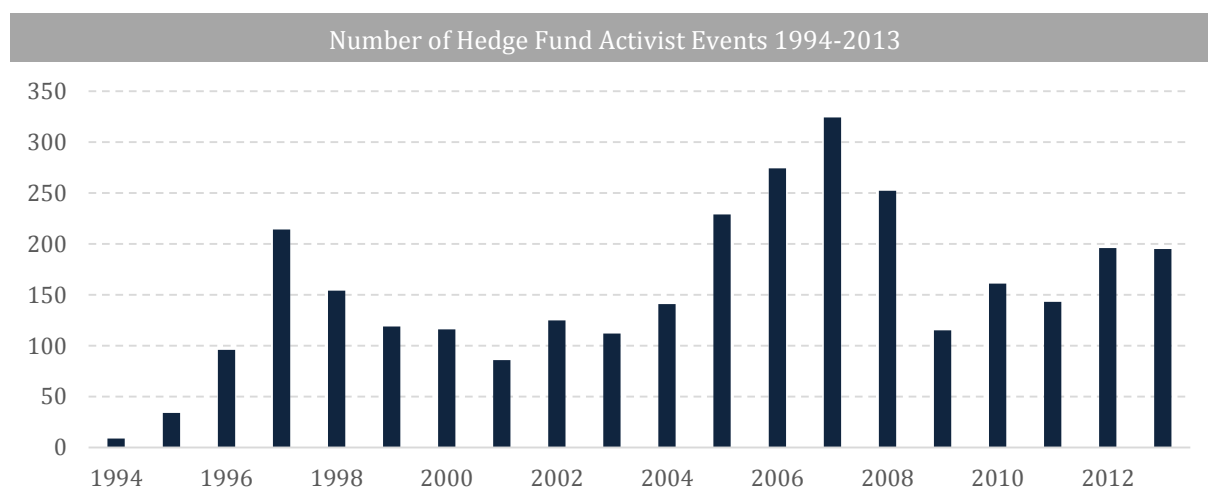
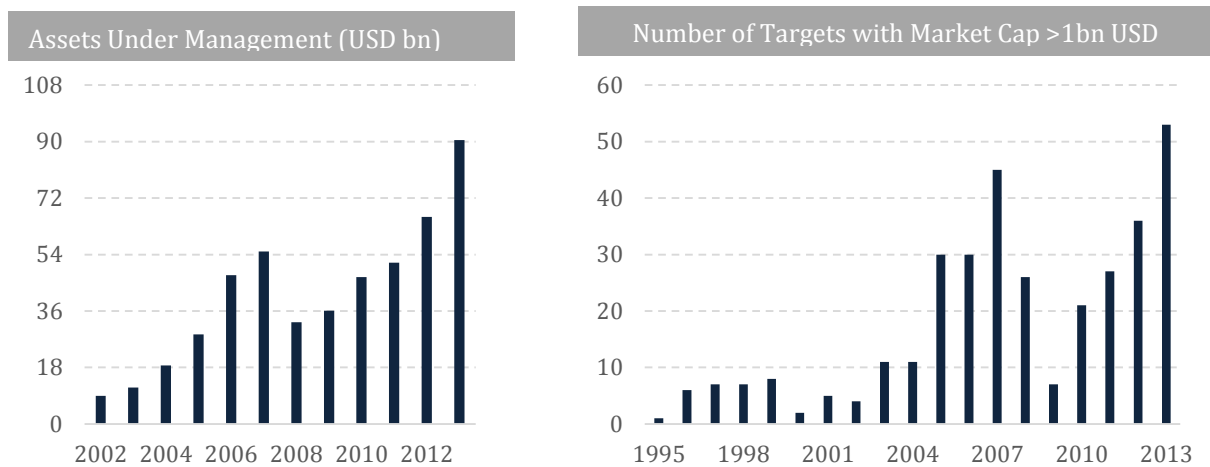


Figure 19: Number of activist events by year (full sample)

Burkart and Dasgupta (2013) find that hedge fund activism is largely procyclical. Figure 19 shows that that activist events are regaining in volume since the financial crisis, which was felt most profoundly in 2009 for the funds. Several activists experienced withdrawal of money from their funds, and their assets under management decreased significantly leading to a lagged effect of the deal activity. Capital markets collapsed and investors shifted towards more liquid assets. The founder of Bulldog Investments expressed it as “*being in the store where everything is 80% off but you have just \$2 in your pocket*” (Cheffins and Armour, 2011). However, times are changing, and 2013 was the year when the activists had the most funds available under their management, during the last decade. As an example, JANA Partners saw its asset under

management increase by \$3bn last year alone (Activist Insight, 2014). This is also reflected in the size of the target companies, developing in line with funds available:



Source: JP Morgan, Hedge Fund Research

Figure 20: Assets under management and no. of events in targets with market cap >1bn USD

Furthermore, we see that the number of hedge funds dropped significantly during the last crisis:

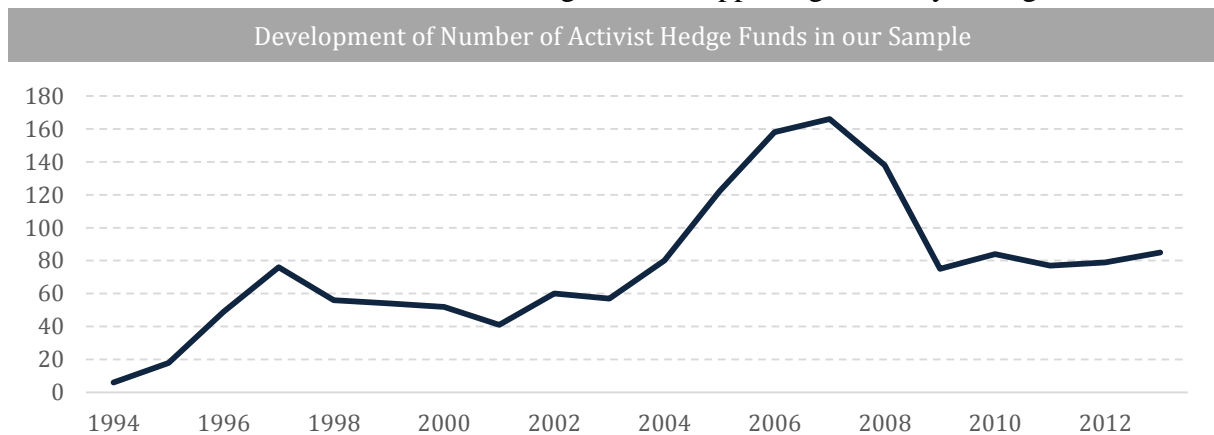


Figure 21: Number of activist hedge funds in our sample

As shown by the figures, in times of crisis (dot-com and the financial crisis) the funds target on average smaller companies and this effects tends to last a year after. Even though the market capitalization of all companies shrink, we see that the effect of less funding available, combined with tougher conditions with respect to changes in the companies, outweighs the former. The number of deals has not returned to pre-financial crisis levels, but the activists have a broader choice of targets. Even though market capitalization in general will increase over time, the difference is explained by the increase in funds available for the activists more than larger market capitalizations in general.



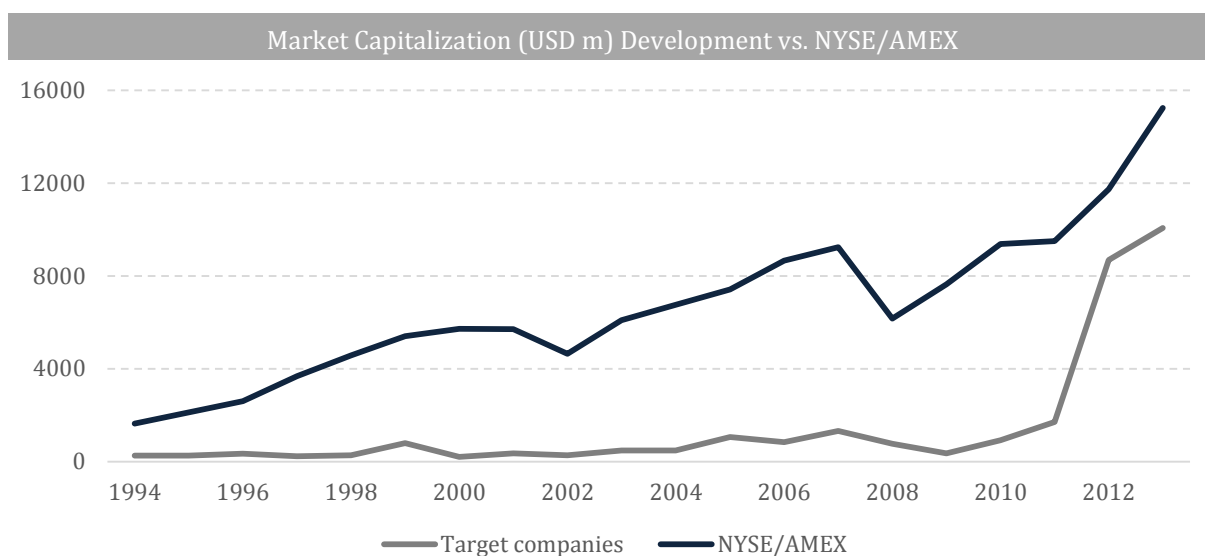


Figure 22: Market Capitalization development in sample versus NYSE/AMEX

We show that the size of the smallest targets has not changed much, but there is a significant larger spread in the size of the targets, indicating a larger choice of targets (boxplot in Appendix C).

Furthermore, the number of companies worth more than \$10 bn that were targeted by hedge fund activists in 2013 was almost twice the number in 2012. Beyond increased funds, this may also be attributed both to the reputation of some of the activists as well as their ability to enhance voting rights at low costs. First, high frequency activists, such as Carl Icahn and Bill Ackman's Pershing Square, have gained a significant reputation over the last years from increased attention in media. For example, the "13D Activist Fund" is a mutual fund investing solely in activist targets. In addition, headlines in the Wall Street Journal have several times included Icahn's and other activists' names. Furthermore, we see that the largest targets are targeted by "high frequency funds".

## 7.2 Target Firm Characteristics

Historically, most funds using activism as its main investment strategy have targeted companies with poor performance relative to peers (Gillan and Starks, 2007). When looking at the target companies isolated, we see that the funds now target companies with above average EBIT-margins.

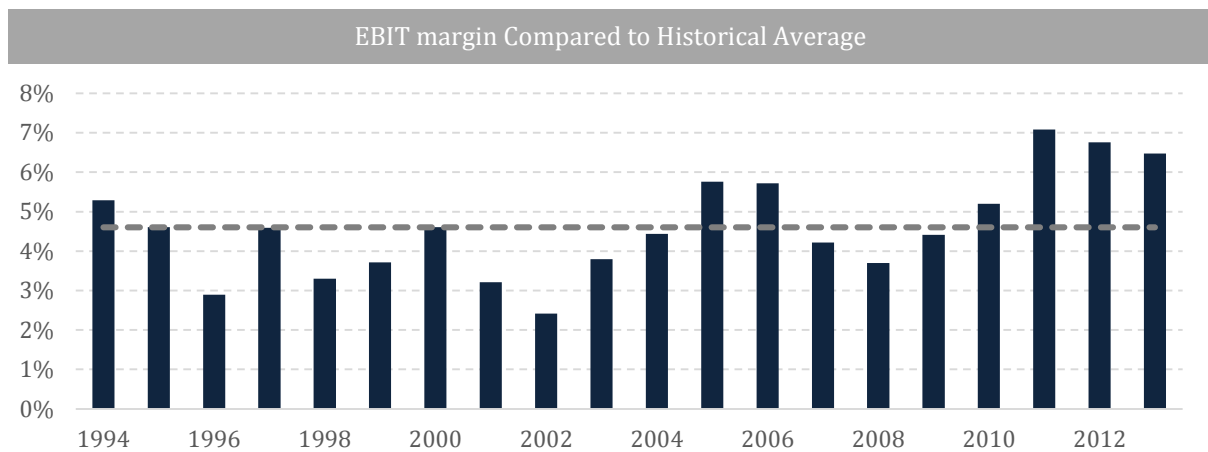


Figure 23: EBIT margin for target firms versus historical average

However, compared to the universe of companies (NYSE/AMEX) we see that the target companies are still underperforming their peers, and that the shift towards higher operating profits is a general trend.

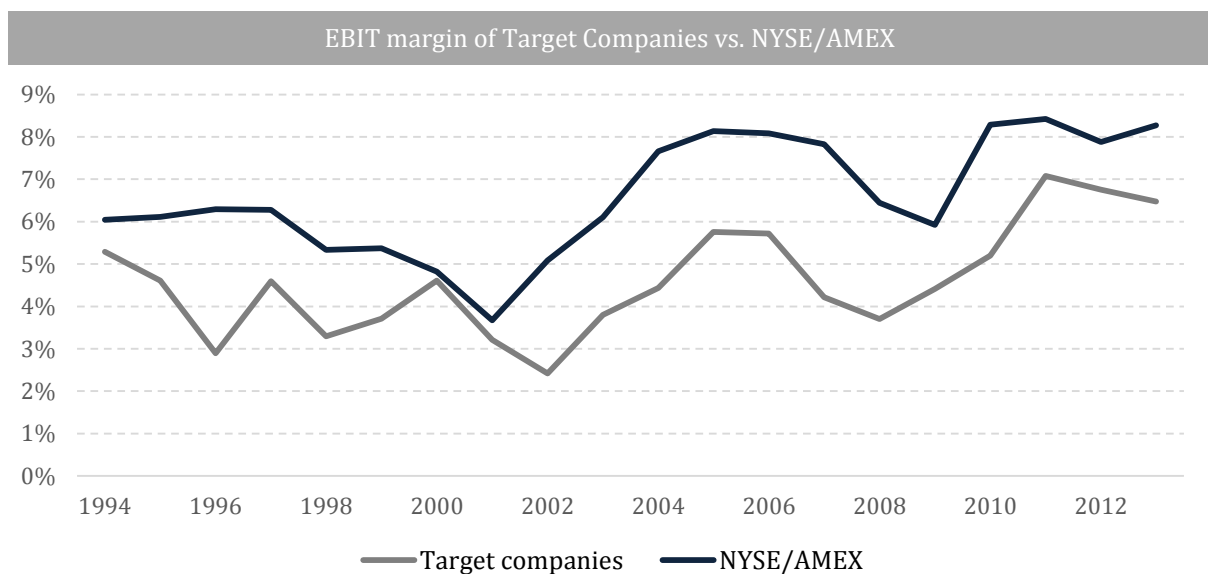


Figure 24: EBIT margin for target firms versus NYSE/AMEX

Further, we see a change in the targets' cash holdings. Looking only at cross-sectional data, we see that compared to the historical average, the most recent deals are targeting companies with more cash, expressed by the cash-to-assets ratio.

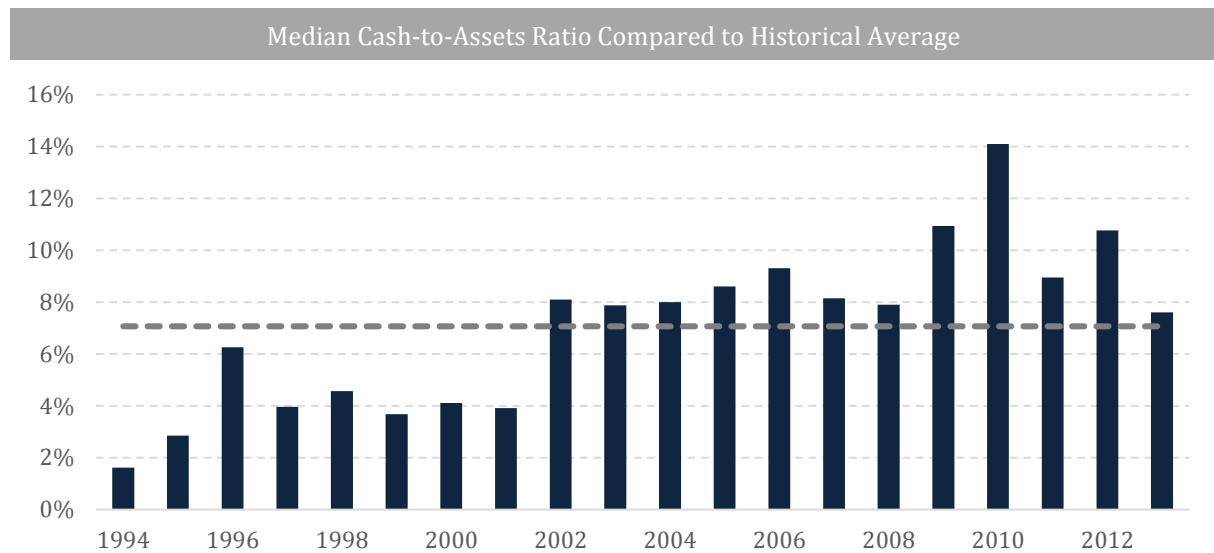


Figure 25: Cash-to-assets ratio for target firms versus historical average

Further, the increase in number of targets with higher cash-ratios cannot only be explained by companies in general accumulating more cash. We find that the companies targeted the last decade or so have held cash balances above the median of NYSE/AMEX companies, contradicting Zhu (2013) who's time trend only lasts through 2007 (see table 1 in literature review). This is largely in line with the change of investment objectives, where more activists indicate buybacks and capital structure changes to reduce the agency costs of cash (Jensen, 1986). According to Jensen (1986), companies are able to reduce agency problems between shareholders and management by reducing excess cash balances.

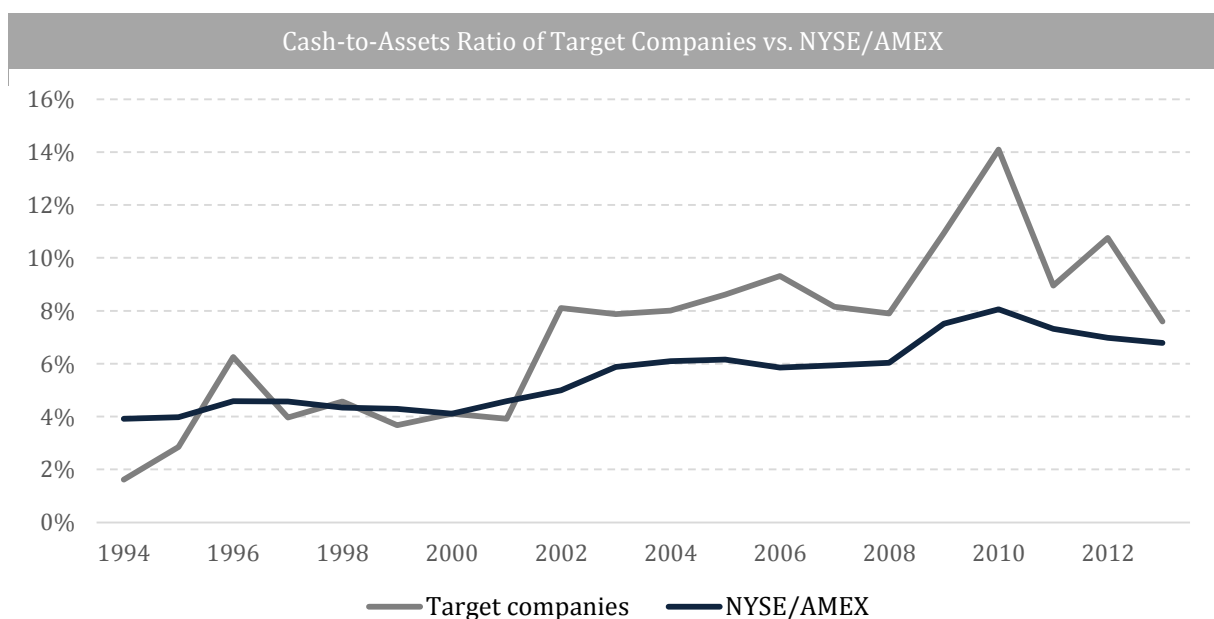


Figure 26: Cash-to-assets ratio for target firms versus NYSE/AMEX

This increase in the cash-to-assets ratio is also reflected somewhat through the debt ratios of the target companies, showing lower debt ratios than the average U.S. company and hence indicating a much lower net leverage level. With an increased focus on capital structure, it is easy to see that gearing up the debt levels of the targets should be possible. Our finding of lower leverage ratios among target firms contradict Boyson and Mooradian (2007) and Klein and Zur (2009), who find no significant differences in leverage ratios of target firms. It is, however, in line with both Brav et al. (2010) and Zhu (2013) using over twice the number of events compared to Boyson and Mooradian (2007) and Klein and Zur (2009).

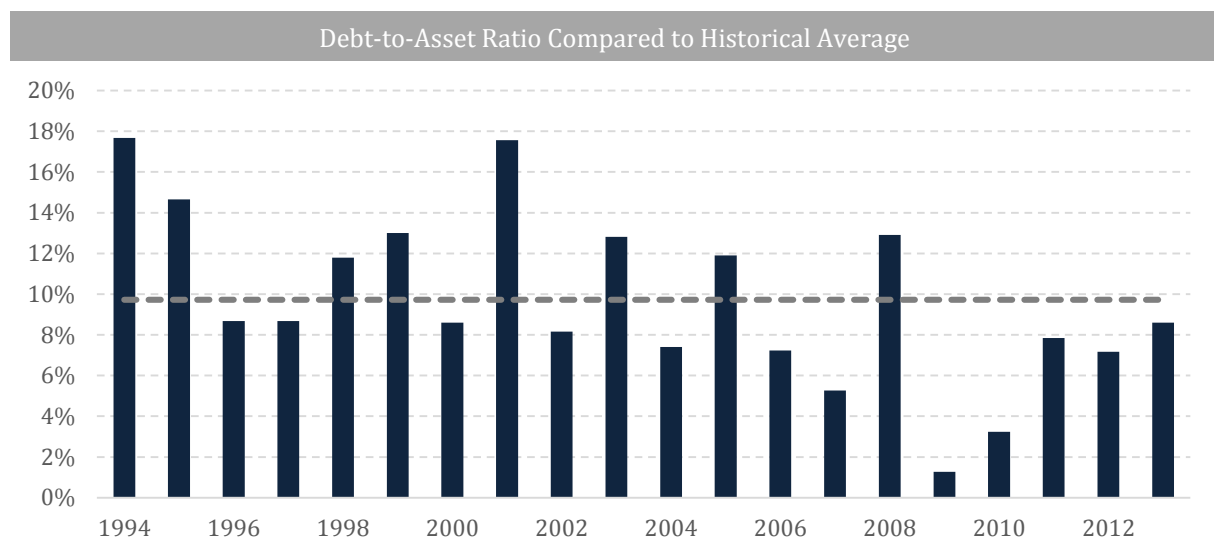


Figure 27: Debt-to-assets ratio for target firms versus historical average

Even though the activists target companies with lower debt ratios compared to the historical average, it is interesting to see that they have always been targeting companies with low leverage ratios compared to the average U.S company. The subsequent graph illustrates this.

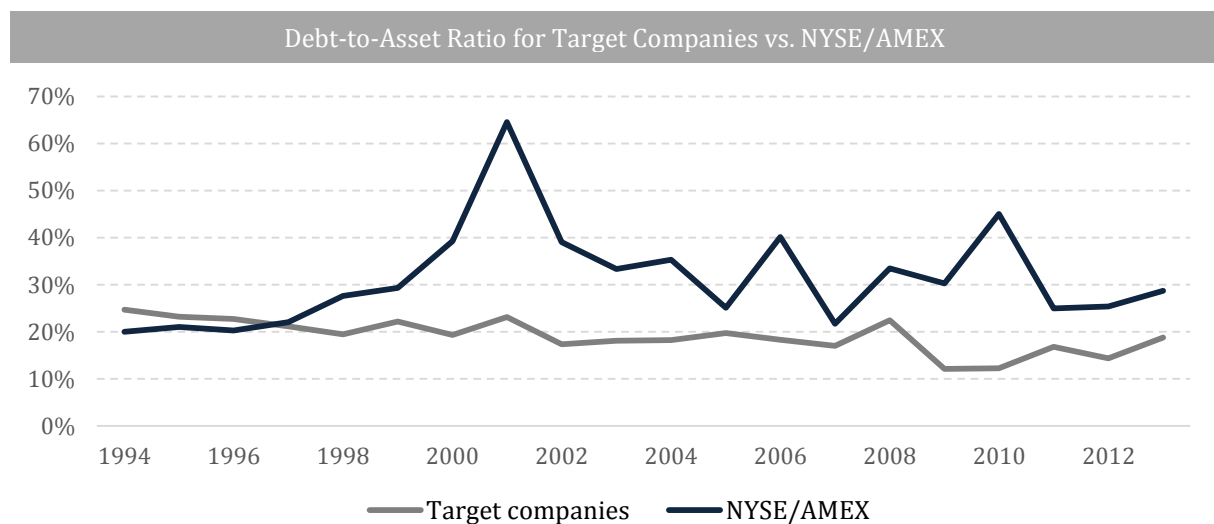
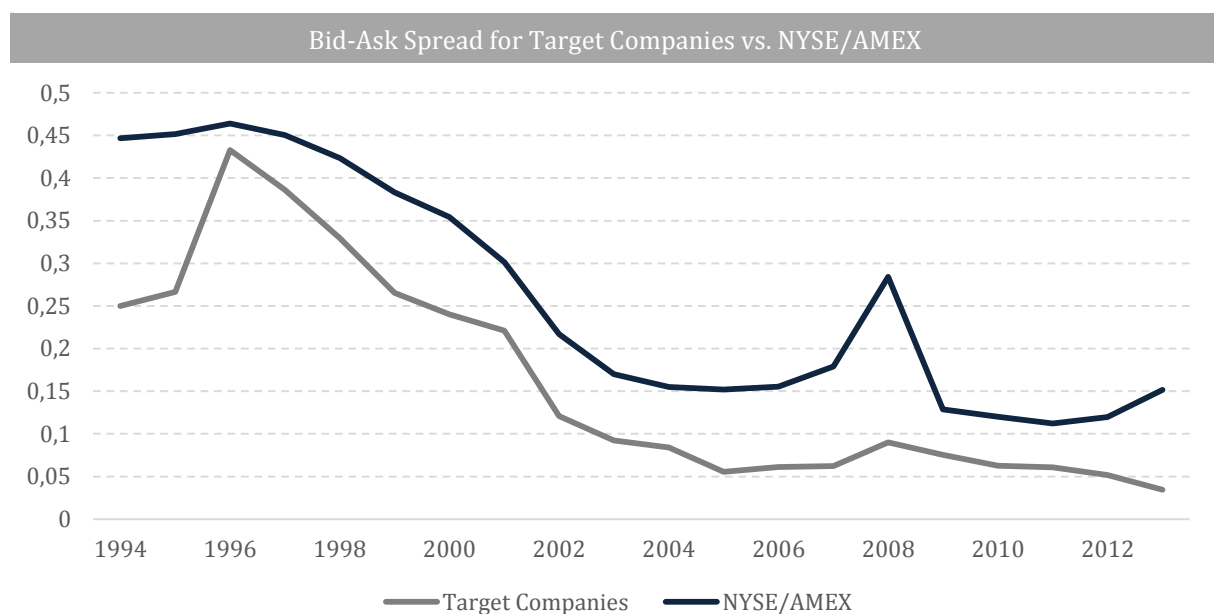


Figure 28: Debt-to-assets ratio for target firms versus NYSE/AMEX

### 7.3 Trading Data – Liquidity and Discounts

We find that the stocks of companies targeted was earlier characterized by larger bid-ask spreads, a proxy we use for illiquidity. We find that the spread has shrunk significantly. Even though it may also indicate that capital markets generally have become more efficient, we find that the active funds now target companies that are significantly (at 5% level) more liquid than the average and median NYSE/AMEX company. This may be due to several factors. First, a larger focus from investors in the funds on exit opportunities. Second, it allows the fund to easier increase its share without imposing a penalty on itself in the run-up period. Finally, it allows the fund to accumulate shares quicker, without having a share price impact.



*Figure 29: Bid-ask spread for target companies versus NYSE/AMEX (See Appendix C for boxplot diagram of Bid-Ask spread development.)*

Furthermore, a large part of the empirical literature has shown that companies targeted have low valuation metrics compared to peers, often measured by price-to-book or market-to-book ratios. We show that this has been the case since 1994, by measuring the P/B of NYSE/AMEX companies against the target companies' ratios.

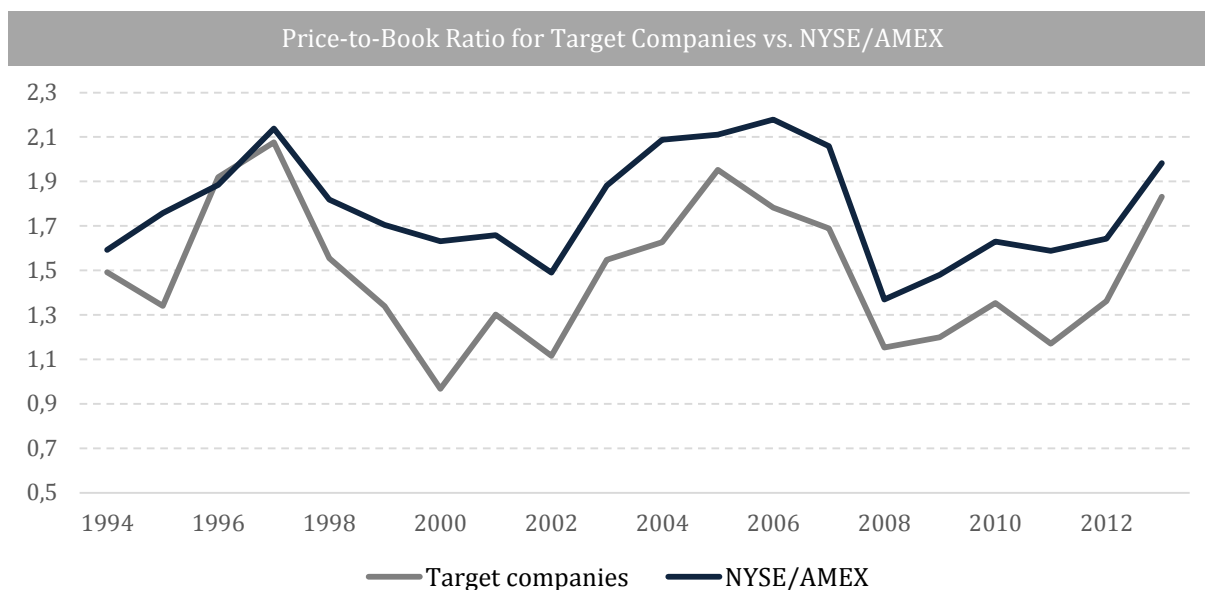


Figure 30: P/B for target firms versus NYSE/AMEX

#### 7.4 Change in Investment Objectives

Regarding hedge funds interventions, we have categorized the events into five blocks. From Brav et al.'s dataset (1994-2011), we have only an aggregated value, and no separation per deal. For deals from Greenwoods dataset merged into ours, we hand collect the purpose of those transactions to be able to aggregate numbers. We further hand collect the objectives from 2012 and 2013, with the purpose of making a more detailed regression analysis for this sample. The total value will add up to more than 100%, as the hedge fund may list intentions towards more objectives than one. However, the first category, “general undervaluation” is exclusive. The collection of objectives for 2012 and 2013 enables us to spot potential significant time trends.

Objectives	Undervaluation	Capital structure	Business Strategy	Sale	Governance
2012-2013	49.4 %	25.9 %	25.9 %	13.3 %	23.4 %
1994-2011	59.7 %	12.8 %	17.8 %	15.3 %	31.0 %
Recent - Old	-10.1 %	13.2 %	8.1 %	-1.9 %	-7.6 %

Table 3: Relative frequency of investment objectives, and its change over time

The differences in targeting “Undervaluation” and “Capital Structure” are significant, indicating a clear shift in investment objective regarding these two categories, in opposite

directions. The decline in undervaluation may simply be attributed to more specific 13Ds or more in-depth research on each deal by the separate researchers.

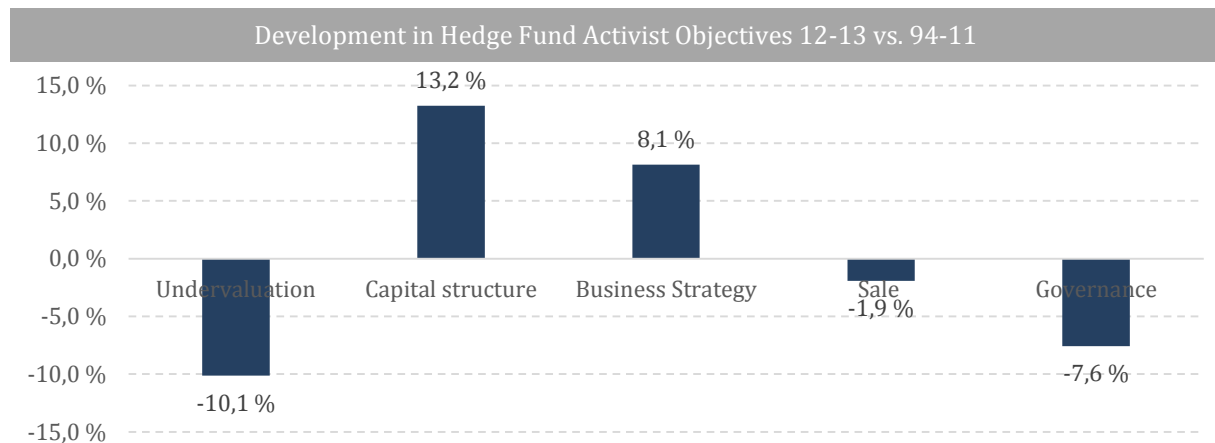


Figure 31: Changes in investment objectives for 2012-2013 versus 1994-2011

We believe the mentioned characteristics and graphs indicate the types of companies targeted by activists: poor performers with large cash balances and low debt ratios trading at discount to their peers. First, we find that activists also target larger companies than historically. They are still targeting small companies, but the spread in size is significantly increasing, yielding a larger diversity of targets. Second, the companies are underperformers compared to their peers, indicated by a substantially lower EBIT-margin. One could potentially argue that our sample is too sector specific to compare against a whole index's average and median values. However, we find that the spread of industries is large in our sample (more than 800 4-digit SIC-codes of a total of 1005 according to Siccode.com), hence we do not believe that activists are biased towards less profitable industries. Even if they were, it is still of interest to see the "typical" company invested in by the activists. Third, we find that the targets have significantly larger cash-to-assets ratio than their counterparts at NYSE/AMEX. This has also changed since the beginning of the millennium, with activists before 2002 mostly targeting companies with significantly lower amount of cash than peers. Fourth, target companies experience significantly lower debt-to-asset ratios. Cross-sectional analysis shows they have not varied much with the largest difference being 8% throughout our sample years. However, the difference to the NYSE/AMEX is economically meaningful by indicating a potential for financial engineering, in line with many funds' objectives listed as capital structure related. Fifth, we find that they have changed towards investing in more liquid stocks. Last, most target companies are undervalued (or have lower growth outlooks) compared to peers, manifested through the fact that hedge funds are targeting firms with significantly lower P/B-ratios than the average U.S. company.

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## 8 Short-Term Abnormal Returns

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The essential question for activism is whether it is able to create value for shareholders. Moreover, how the stock market perceives the effect of the activists. We investigate the effect both for a short-term and long-term horizon. The following three chapters are structured in the following manner: First, we look at short-term event windows and investigate the overall value creation as well as time trends. Subsequently we investigate the effect of business cycle downturns on abnormal returns and thereafter look at the differences between high frequency funds and low frequency funds. Second, we use calendar-time portfolio regression approach to investigate whether mimicking the activist hedge funds has traditionally been a sound investment strategy, enabling investors to capture alphas. We use long-term event windows to investigate whether the effect of value creation is sustained over a longer horizon and not just overreaction in markets. Third, we model the long-term and short-term abnormal returns as a function of target firm characteristics, hedge fund characteristics, intervention characteristics and macroeconomic conditions; using a cross-sectional regression analysis to estimate a prediction model for abnormal returns.

Our sample of activist hedge funds documents large positive abnormal returns around the announcement date. We use the analysis around short-term event windows not only to look at the overall value creation in the sample, but also to investigate periods of headwinds and tailwinds in the overall economy, and further distinguish between high frequency funds and low frequency funds.

### 8.1 Short-Term Value Creation

We adopt daily event windows of  $(-12,2)$ ,  $(-12,10)$  and  $(-15,15)$ . The event date ( $t=0$ ) is defined as the 13D filing date, formally the announcement date. The most important reason to include a significant negative time span is to include the run-up period. When crossing the 5 percent threshold, the investors have a 10-day window to file the 13D, and we find a run-up consistent with information leakage before the announcement. Figure 32 plots the CAR against the abnormal trading volume in the  $(-12,10)$  daily event window.



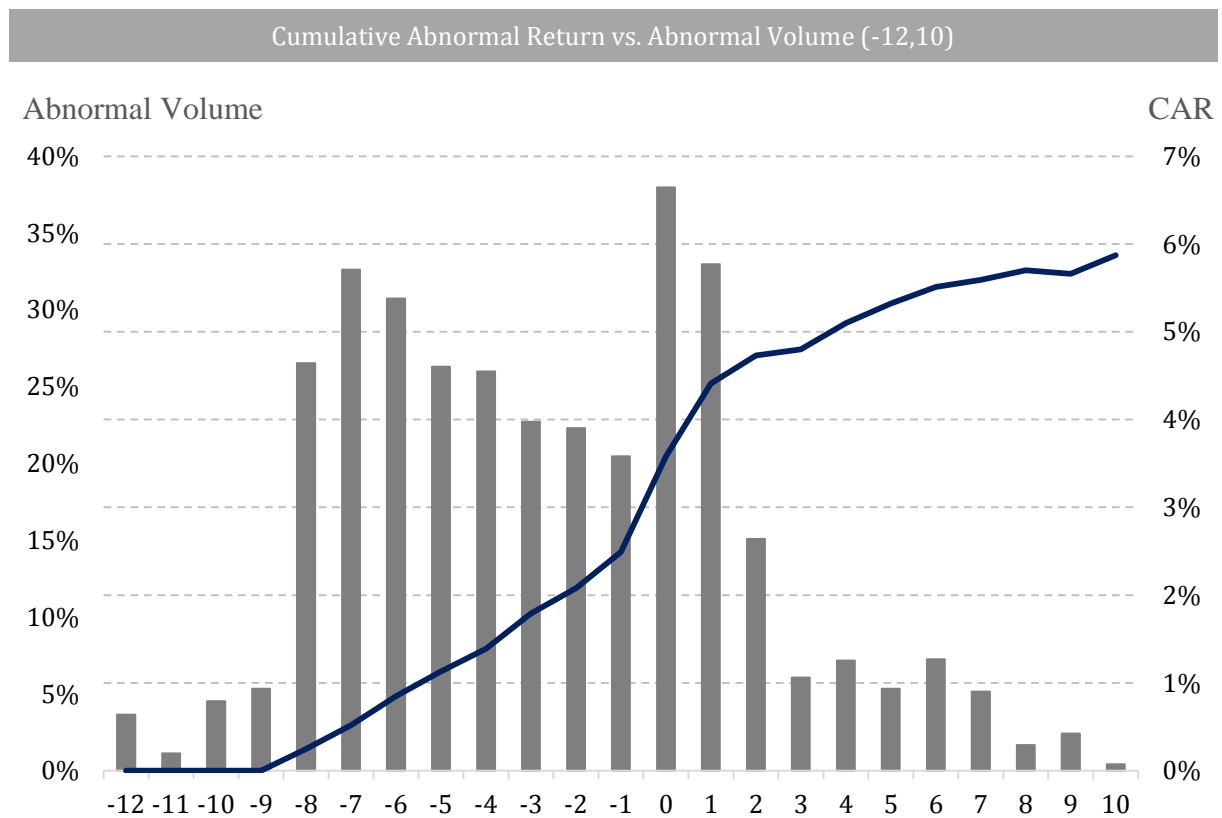


Figure 32: CAR vs. Abnormal volume, short-term

There is a run-up of about 2.5% before  $t=0$ , which we attribute to leakage in the ten day filing window after crossing the 5% threshold ( $t-10$ ). It could, naturally, also be accounted for by demand, pushing the prices upwards. However, in our sample, the average 13D is filed close to ten days after crossing the 5% threshold. We further argue that the run-up is not attributed to further accumulation of shares by the hedge fund itself, as Bebchuk et al. (2013) finds that there is no significant increase in stake after crossing the threshold ( $t-10$ ). The total CAR for the event window is 5.74%. CAR is somewhat lower (4.6%) for the  $(-12,2)$  window due to excluding significant values after  $t+2$ . We find that values in the  $(+2,+10)$  window are significant at the 1% level, which may indicate that the market uses some time to price in the event, or that other information that distorts the window comes into play. Interestingly, when looking at the event windows isolated, we find that days after  $t+10$  are insignificant and hence not distinguishable from zero. Therefore, we choose to put emphasis on the  $(-12,10)$  window. We believe that 5.74% is a valid number in our overall value creation analysis in the short-term event window. The stock prices reflect the present value of profits introduced by the activist hedge fund, adjusted for the expected probability that the fund actually succeeds in its objectives. The graph also introduces the aspect of abnormal volume, defined as “the share turnover rate over the

“normal” turnover rate measured over the  $[-100, -40]$  window preceding the event date” (Brav et al., 2010). There may be a couple of explanations to this pattern. First, we may observe wolf-pack tactics, where several hedge funds who not formally coordinate, buy into the target simultaneously. Second, “tipping” may occur, where the hedge fund exposes its intention to some investors before the public filing for reciprocation of other favors (Brav et al., 2010).

## 8.2 Time Trends and Patterns in Value Creation - Headwinds and Tailwinds

In figure 33, we break the short-term CAR into event years, to analyze potential time trends. We illustrate for both the  $(-12, +10)$  and  $(-12, +2)$  event day windows. The blue line represents the median and the bars represent the average values. Highlighted areas indicate periods of economic crisis.

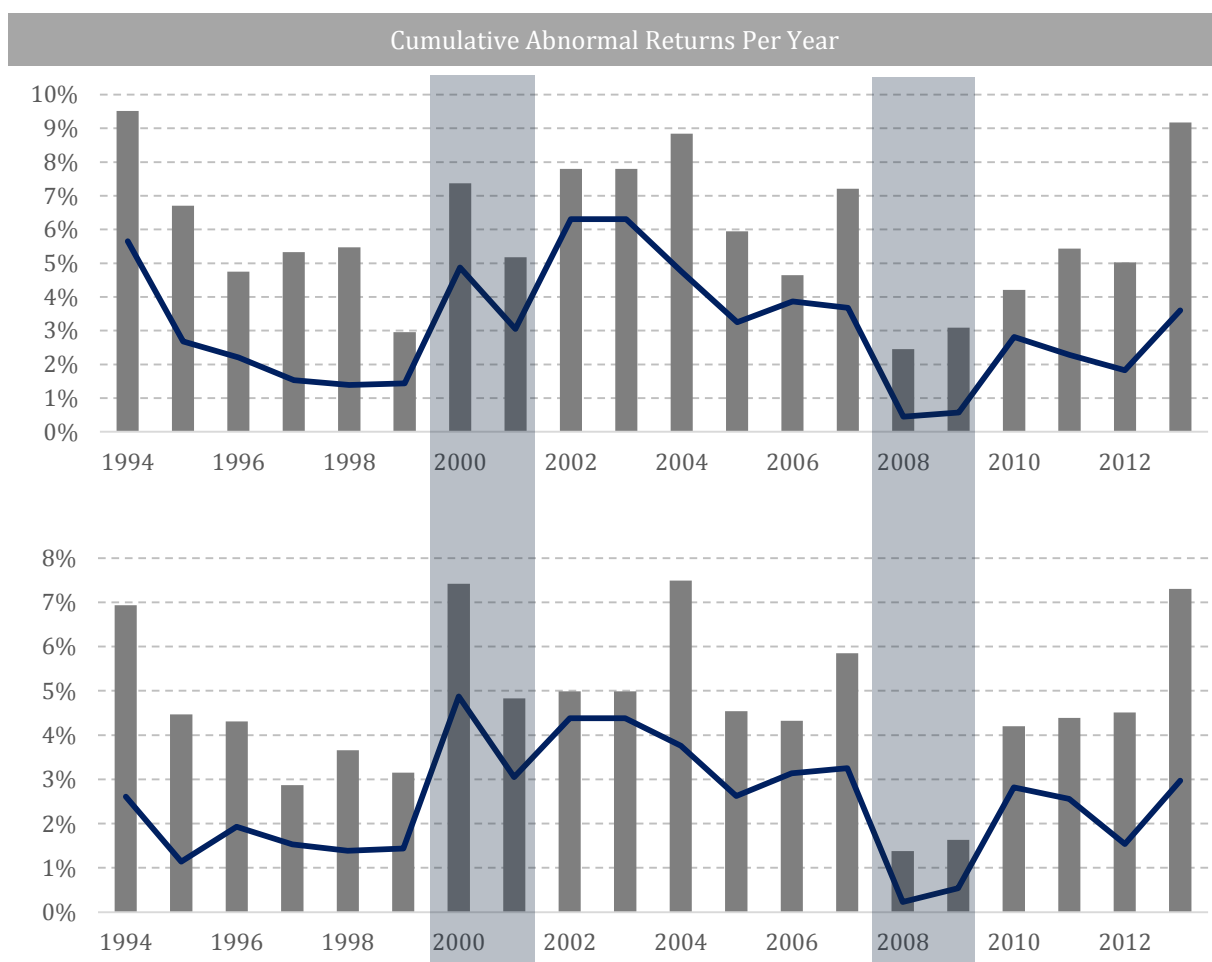


Figure 33: CAR structured by year - top  $(-12, +10)$  window, bottom  $(-12, +2)$  window

We see that in periods of crisis (less severe in the dot-com crisis, as our sample does not contain many tech-related stocks targeted during the dot-com bubble burst), both the average and the median short-term CAR experienced a significant drop. From March 2000 until October 2002

Nasdaq Composite lost 78% of its value (Bloomberg). Even though IT-related stocks experienced the largest slump, it also affected stock markets in general. In our sample, stocks with SIC-codes in the IT universe experienced the largest hits on abnormal returns. Most abnormal returns rebounded in late 2002 increasing the overall year effect. Furthermore, we find in our sample, that during the burst, not many IT stocks were targeted either. During the financial crisis, all industries experienced a significant decline in abnormal returns.

We have a somewhat different perception than Brav et al.'s review (2010), due to their shorter sample period for abnormal returns. They investigate the year effect during mid 2000, and find a decline towards 2007. They interpret this as increased competition reducing the hedge fund activists' "arbitrage" strategy. Focusing on median values, this may seem correct. However, we see that due to the limited time series investigated, they may over interpret results in a downward cycle, which subsequently seems to have been rebounding both with respect to average and median values the last years.

Furthermore, we test the difference between times of crisis and economically stable times. We do this analysis both including only stocks listed at NASDAQ and stocks with SIC codes related to IT, as well as for all stocks in the time period of the dot-com bubble. For the financial crisis, we include all events during the time period. CAR in crisis yield an average (median) value of 3.1% (4.3%). This is low, compared to the non-crisis value of 6.3% (5.1%). We find that the difference is statistically significant at the 5% level and economically meaningful.

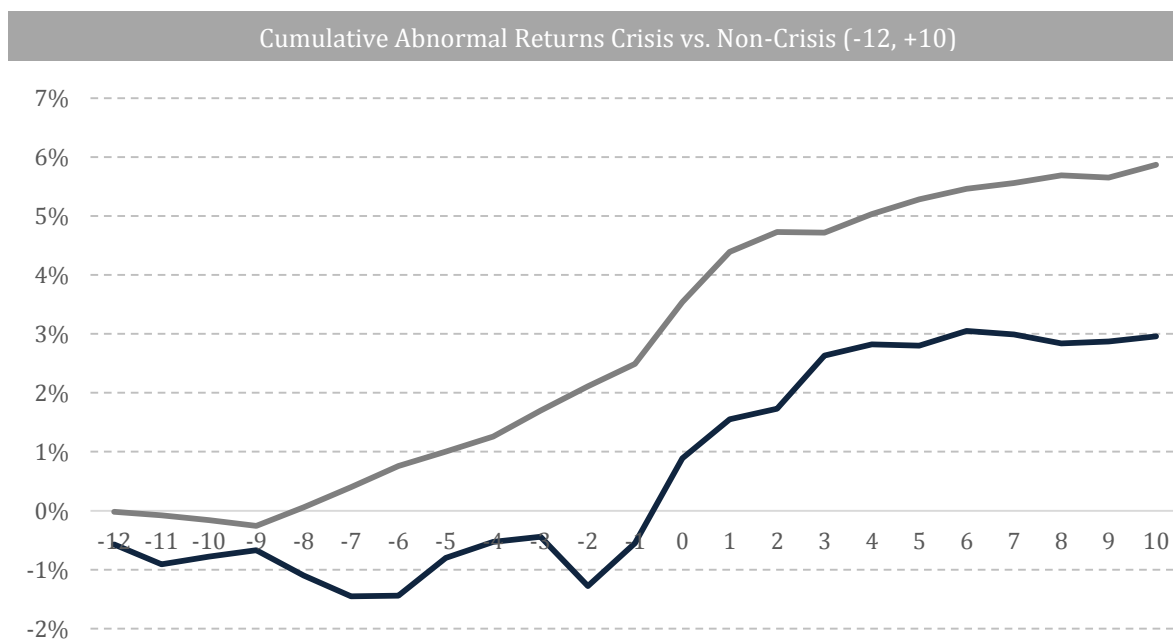


Figure 34: CAR in crisis (blue) vs. economically stable periods (grey)

There may be several reasons for why this happens. First, in times of crisis, the run-up isolated day-by-day is not statistically significantly different from 0, indicating that there is less demand pressure towards the stocks. This might imply less leakage during financial crisis, or that markets do not act on the information leaked. Hence, the total CAR will be pulled downwards. Second, M&A activities is usually more difficult to execute in times of crisis, making it hard to achieve the historically most favored objectives for activist hedge funds (Greenwood and Schor; 2009). Furthermore, companies are often reluctant to enhance leverage and reduce cash balances in times of crisis, making it harder to lever up target firms.

### 8.3 High Frequency Funds – Able to Create Additional Value?

We further investigate the effect of hedge funds' track record, where we define a high frequency fund (hereafter HFF) as a hedge fund activist who have executed more than 10 deals during the period, benchmarked against a low frequency fund (hereafter LFF) that have completed less than 5 deals. We find average (median) values for HFFs to be 5.6% (4.4%) against LFF values of 6.4% (5.5%) when looking at the time period of 1994-2013. The difference between the groups is, however, insignificant. A noteworthy bias in this method of comparing comes from the fact that the HFFs' first deals were not "high frequency"-deals, as they had not accumulated any learning effects yet, neither gained any reputation through a track record. Hence, we maximize the differences between HFFs and LFFs by looking at funds able to survive the financial crisis, and investigate whether we find any time trends. We find that HFFs have significantly (5%) higher post-crisis CAR compared to the 1994-2013 average, while LFFs post-crisis CAR has insignificantly decreased compared to the 1994-2013 average. The difference in differences is statistically significant. These results might suggest a potential learning/reputational effect. Comparing the post-crisis figures of HFFs and LFFs, we find the HFF average (median) value of 6.9% (4.4%) against LFF value of 6.0% (3.1%). However, the difference is still insignificant at the 5% level.

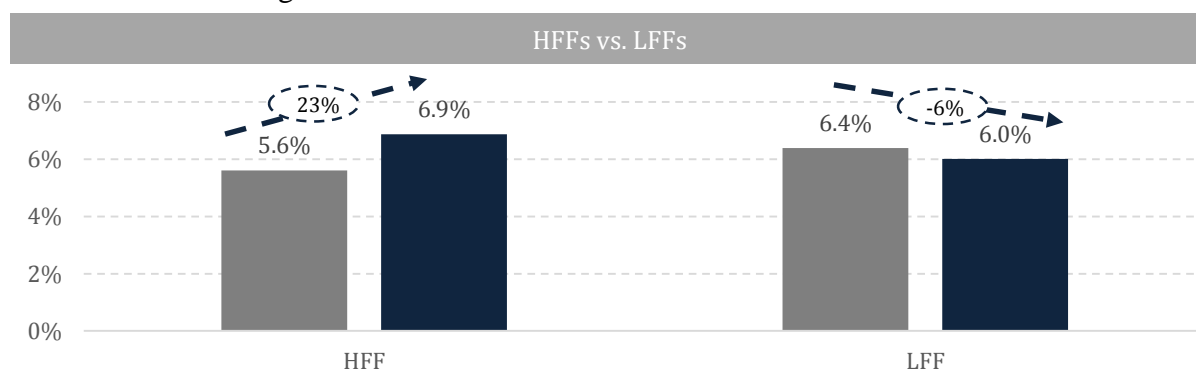


Figure 35: Average CAR for HFFs vs LFFs (grey; 1994-2013) (blue; after the crisis)

Lastly, we investigate whether there are any differences in the run-up period (-10, -1). We find that there is a large, statistically significant difference at the 5% level, which is also economically meaningful.

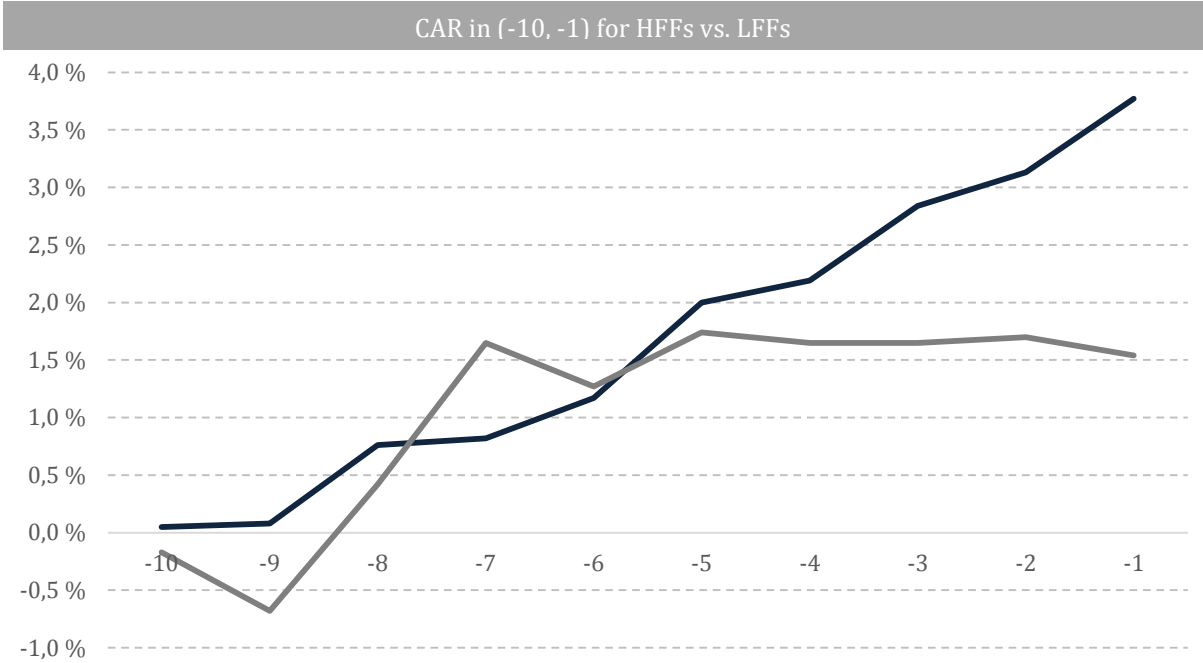


Figure 36: Run-up (-10,-1) for HFFs (blue) vs. LFFs (grey)

While the HFF run-up is significant at the 0.1% level, the LFFs' is significant at the 10% level. We believe there are some reasons as to why the run-up periods degenerate differently. One hypothesis relates to a larger accumulation of shares by HFFs compared to LFFs. However, we find that they, in fact, acquire a statistically significant lower stake than LFFs (1% level). This is also in line with Boyson and Mooradian (2011) who find that average maximum percentage of shares held by LFFs are significantly higher (at the 10% level or better) than for HFFs. Hence, we cannot attribute the difference to accumulation of shares. We may however relate the difference to reputational matters. We find research companies (such as NPEC) tracking funds investing in companies that HFFs invest in, indicating that these funds are more closely monitored and hence could be more interesting when leakage appears. Also, monitoring increases the probability of leakage. Furthermore, HFFs could be using wolf pack tactics, or leak information to other investors for later reciprocation of favors, to a greater extent than LFFs.

#### **8.4 Concluding Remarks for Short-Term Analyses**

Our findings suggest that activist hedge fund interventions in general are well perceived by the stock market, finding average cumulative abnormal returns of 5.74% in the (-12, +10) event window. The CAR is higher in economically stable times, and decreases in times of crisis. Furthermore, we find that HFFs have performed in line with LFFs, but have shown significant signs of improvement over the last years. Lastly, we find a significant difference in their run-ups. For HFFs, 57% of their total CAR is accounted for during the (-10,-1) window, while LFF CAR in the same window is not statistically significantly different from zero. For the analysis regarding the cross-sectional differences in short-term abnormal returns, we refer the reader to chapter 10.

## 9 Long-Term Abnormal Returns

Our short-term return analyses yielded results showing a significant, and positive, short-term return in the stock of the target firms in the days surrounding the announcement day [-12, 10]. To examine whether the run-up is driven by buying pressure on the particular stock, we also conducted an analysis on abnormal trading volumes. We found no reversal in abnormal returns even when the abnormal trading volume declined to figures significantly indistinguishable from zero. These results implied that the short-term abnormal return reflect the conditional value creation from activist intervention, discounted to account for the probability of that the hedge fund will succeed, rather than being caused by abnormal trading volumes.

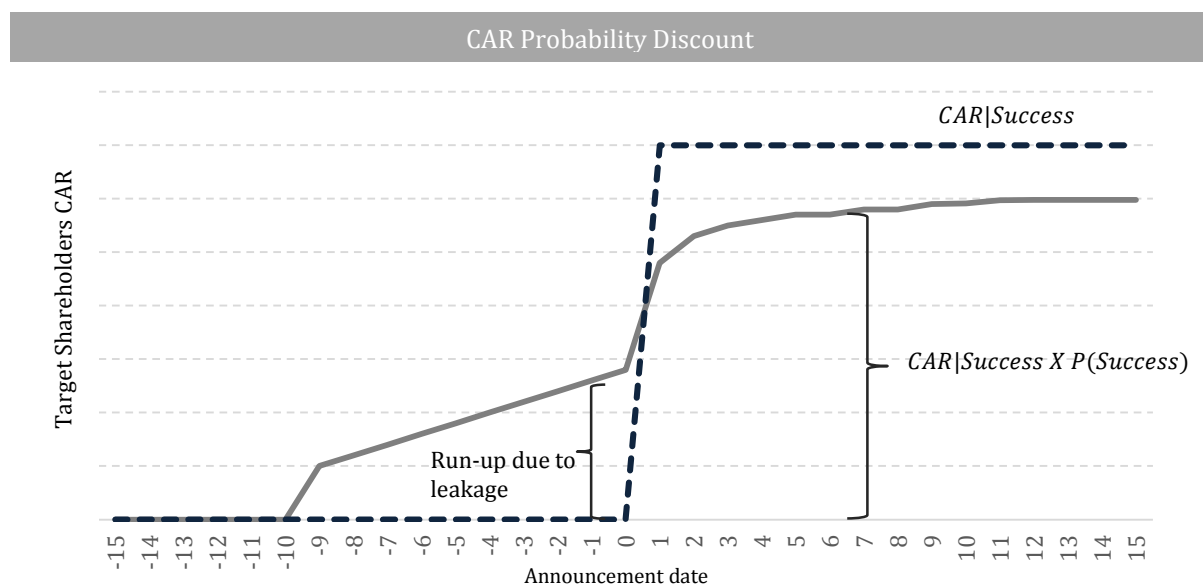


Figure 37: Probability discounted CAR; blue (grey) CAR/success (prob. discounted CAR)

### 9.1 Long-Term Calendar-Time Monthly Portfolio Regression

To more formally assess the value creation, and hence long-term returns in the target firms, we conduct a calendar-time monthly portfolio regression around the event date. This methodology is used to conduct a long-term event study and is also called the alpha approach. The basic idea of the approach is to construct a value-weighted rolling portfolio of firms for which the event of interest, namely the filing of the SC 13D by an activist hedge fund, has occurred. The approach replicates a trading strategy where the investor mimics the activist hedge funds by buying stocks in a company when a SC 13D is filed, holding the stock in the rolling portfolio for a particular amount of time before exiting completely from the position. We hold each target firm in the rolling portfolio for 12 months, from the date of the announcement, before

exiting it. We set the event period to (0, +12) months, as the average holding period is approximately 12 months (Brav et al., 2010). Further, we define the risk-adjusted abnormal return earned by this portfolio as the portion of the portfolio's realized return not explained by a risk-factor model used to predict normal returns. For each unique portfolio we estimate a regression of the portfolio returns on the Fama-French three factor model (market, size and book-to-market), which uses a three-month estimation window, not overlapping the event window. We utilize a Generalized Methods of Moments (GMM) regression, in order to account for potential biases arising from endogeneity, and achieve estimators which are consistent, asymptotically normal and efficient. From the regression, we focus on the intercept, which is the estimate for alpha, i.e. the monthly, risk-adjusted excessive returns earned by hedge fund targets.

We run several regressions, first on the whole sample of events, and then on different subsamples to unveil potential patterns. The results are reported in full in table 4. We first conduct the test for all the events in our sample, ranging in time from 1994 to 2013, to test whether activist hedge funds have systematically earned long-term, risk adjusted excessive returns, i.e. created value for target firm shareholders. The alpha for the whole sample is 0.66%, implying a positive, monthly, risk-adjusted excessive return. The results are statistically and economically significant, and indicate that activist hedge funds consistently have created long-term abnormal returns for target firm shareholders.

To unveil potential differences in value creation by activist hedge funds in times of economic crisis and times with "steady" financial markets, we execute the same test on subsamples called "crisis", in which we include companies significantly affected by the dot.com-crisis (mainly tech stocks) and events taking place during the financial crisis, and "non-crisis" where we include all remaining events. We find that 12-months abnormal returns in times of crisis are in fact higher than in non-crisis, however; the crisis alpha is only significant at a 10% level. These findings are somewhat counterintuitive, as literature states that the most profitable strategy exercised by activist hedge funds is a sale of the target companies, which should, intuitively be harder to execute in times of crisis, due to unfavorable financial markets. The findings may reflect the fact that since executing changes in target firms (relating to governance, capital structure, business strategy etc.) is harder in economic downturns, as markets are overwhelmed by distrust and generally favor status quo, only the most profitable changes are executed. While in normal times, also less profitable (but still profitable) changes are carried through. Another



possible explanation may be that market conditions have changed before the exit of the activists. Our results are statistically significant, and indicate that activist hedge funds systematically create long-term shareholder value, unaffected by the mood of the financial markets.

We also examine whether HFFs are able to create more value than LFFs. To account for the effect that the first deals of the HFFs are in fact comparable to deals done by LFFs, we include only events which have taken place in 2011-13. This is to take into consideration the fact that it takes time to accumulate both reputation and knowledge, thus the first deals done by HFFs are in fact nothing different than deals done by LFFs. Even when making this adjustment, to maximize the practical differences between HFFs and LFFs, we find that LFFs are actually earning larger long-term abnormal returns than HFFs, even though both create significant long-term abnormal returns for target firm shareholders. The difference between them is, however, not significantly distinguishable from zero. These results are somewhat in contrast to Boyson and Mooradian (2011), who find that only high-frequency activist hedge funds are able to create long-term abnormal returns. However, we emphasize that both their dataset, classification of hedge funds and time frame differ somewhat from ours. One simple reason for the apparent LFF outperformance in our sample may be the higher (-10,-1) day HFF CAR (see chapter 8.3) which does not show up in this analysis, as it considers abnormal returns in the (0,+12) month window. Another possible explanation may be a systematic investment “tilting” towards particular years. To investigate this, we compare the relative frequency of deals done by HFFs and LFFs for each of the years in our sample, to see whether some of the sub-samples systematically “tilt” their investments towards years more profitable than others.

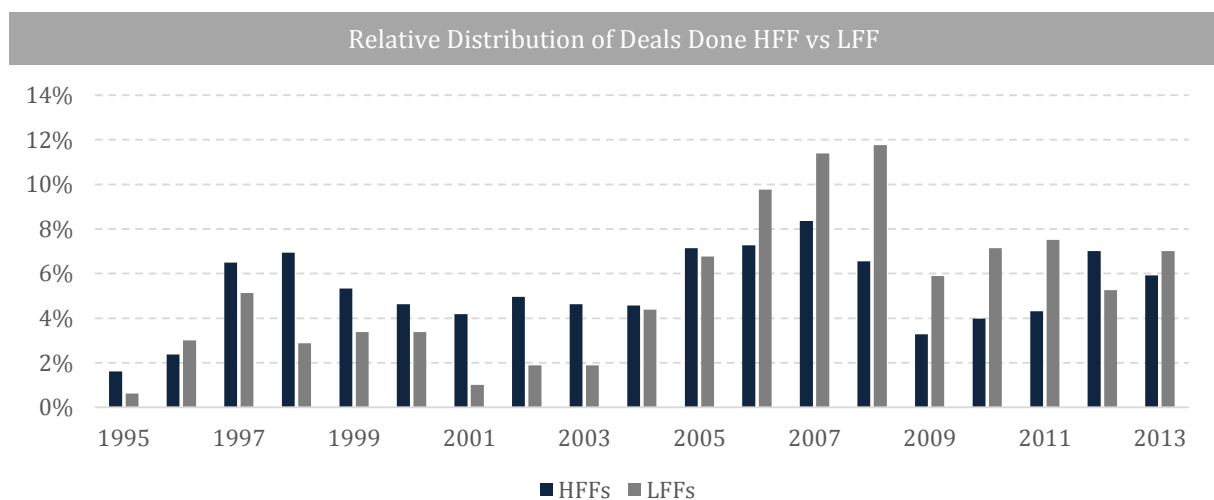


Figure 38: Relative distribution of HFF and LFF deals done by year.

An interesting observation from this analysis is the high relative frequency of deals done by LFFs in 2007 and 2008, relative to HFFs. As our analysis on crisis versus non-crisis indicated higher alphas in times of crisis, this “tilt” from LFFs towards the years of crisis (2007 and 2008) may, at least to some extent, explain the apparent (but not statistically significant) outperformance by LFFs. If we conclude that the HFF and LFF alpha are statistically inseparable, the low-frequency hedge funds’ tilt towards “more profitable” years, might explain why the LFFs are keeping track with the HFFs. Hence, Boyson and Mooradian’s (2008) opposite results could be due to the fact that they do not include the LFFs’ most profitable period, namely 2008.

The results, overall, point in the same direction; activist hedge funds are able to create long-term, risk-adjusted excessive returns for target firm shareholders. The results are both statistically and economically significant. The findings are consistent with the results from our short-term analyses which indicated that the short-term price run-up in target firms is due to a probability-weighted incorporation of the potential value-creation from activist intervention, rather than from abnormal trading volumes. In addition, the results may give us the reasons for why activist hedge funds have survived for more than 20 years and 2 economic crises. First, they are able to create long-term abnormal returns unconditional of the market segment. Second, they are still creating long-term abnormal returns (looking at the sub-samples from 2011-13), thus they are still exceeding their expectations regarding returns. Our conclusion is in line with Brav et al. (2010), namely that the statistical evidence clearly refutes the market-overreaction hypothesis and supports the hypothesis that hedge fund activism creates value for shareholders.

Fama-French Calendar-Time Portfolio Regression, Value Weighted Index  
[0, +12]

Events included (year)	Monthly Alpha (%)		Beta		SMB		HML		adj R <sup>2</sup>
	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat	Estimate	t-stat	
All Events (1994-2013)	0,660***	2,53	0,964***	13,18	0,664***	6,52	0,376***	3,46	70,16 %
Non-Crisis	0,720***	2,52	0,905***	11,59	0,641***	6,01	0,298**	2,24	67,37 %
Crisis	1,950*	1,37	1,081***	5,40	0,764**	1,85	0,427*	1,48	48,38 %
Specialists (2011-13)	0,762***	2,55	0,694***	4,84	1,234***	3,67	0,017	0,09	78,70 %
Non-Specialists (2011-13)	1,204**	2,17	0,588***	3,53	0,515*	1,44	0,072	0,16	51,04 %

The estimates and t-statistics are from equal-weighted calendar-time portfolio regressions using a [0, +12] event window. The Beta is the factor loading on the market excess return, while SMB and HML are the estimates of factor loading on the Fama-French size and book-to-market factors. The Alpha is the estimated intercept from the regression, and show the monthly, risk-adjusted excessive returns earned by the rolling target-firm portfolios. \*, \*\*, and \*\*\* indicate statistical significance at 10, 5 and 1% respectively.

Table 4: Calendar-time portfolio regression

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## 10 Explaining the Cross-Sectional Differences in Abnormal Returns

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We have examined and suggested that activist hedge funds are able to create significant positive abnormal returns both in the short- and long-run, and hence act as value enhancers for target firm shareholders, also at a risk-adjusted level. We now put the cross-sectional differences in long-term abnormal returns (LTARs) and short-term abnormal returns (STARs) under the scrutiny. The LTARs are still defined as the abnormal returns in the monthly (0, +12) window, while STARs are defined as the abnormal returns in the daily (-12, +10) window. This chapter tries to reveal potential factors explaining the in-sample variation in LTARs and STARs. Basically, we are testing for a relationship between LTARs/STARs in activist hedge fund targets and characteristics regarding accounting and stock-price data (Target Firm Characteristics), the hedge fund track-record (Hedge fund Characteristics), the stated objective, tactic and initial stake of the intervention (Intervention Characteristics) as well as year-specific dummy-variables (Macroeconomic Characteristics) (see figure 14 in chapter 5.3). In addition, we include the LTARs as an explanatory variable to explain the STARs. This is to see whether the market correctly anticipates and price in the gains from activist intervention already in the days around announcement. The chapter is organized by first examining the cross sectional differences in LTARs, before considering the STARs. As mentioned, we have intervention characteristics specified per deal only for 2012 and 2013, hence, an inevitably large number of observations is dropped when we include these in some of the regressions.

### 10.1 Cross-Sectional Differences in LTARs

We conduct six unique OLS-regressions, of which in all the dependent variable is long-term abnormal return in the activist hedge fund target firm. We follow a stepwise regression model proposed by Walpole et al. (2000). The LTARs are again computed from the realized 12-month return reduced with a “normal return” yielded by the Carhart four-factor model (FF three-factor model in addition to a momentum factor). Each LTAR is matched with the corresponding target firm characteristics, hedge fund characteristics, intervention characteristics and year specific variable. In addition, we conduct two unique logit regressions, where the dependent variable is a dummy variable equaling 1 if the corresponding LTAR is positive (the results of the logit regressions are given in Appendix G). Before examining the regressions and yielded results, we find a shallow discussion of the independent variables included necessary.

### 10.1.1 Regressors

#### *Target firm characteristics*

We collect accounting data (from Compustat) and stock-price data (from CRSP) on the targets in the sample on the last available date in the fiscal year prior to the deal year (maximum one year lag), as we want the target firm characteristics to be unaffected by the activist event.

“*Cash-to-Assets*” is calculated as cash and equivalents (incl. short-term investments) divided by the total assets of the target firm. “*Debt-to-Assets*” is the total debt divided by the total assets in the target firm. “*EBIT-margin*” is the target firm earnings before interest and taxes, divided by the total revenues. “*P/B*” is the price-to-book ratio, found by dividing the price per share on the equity book value per share. “*Mcap*” is the market capitalization of the target firm, calculated by multiplying the share price by the total shares outstanding. “*Bidask*” is the bid-ask spread of the target firm stock. As we consider the bid-ask spread as proxy for illiquidity, we expect the coefficient to be negative.

#### *Hedge fund characteristics*

“*HighF*” (“*MediumF*”) is a dummy variable equal to one if the particular deal is made by a hedge fund classified as a high-frequency (medium-frequency) hedge fund, i.e. having more than 10 (between 5 and 10) deals on its track-record. We leave the low-frequency hedge funds (with less than 5 deals on their track record) out of the regression as a reference group. Note that a hedge fund cannot change type over time, thus a hedge fund with ten deals on its track record will be classified as high-frequency on all deals.

#### *Intervention characteristics*

“*Capstruc*”, “*Strategy*”, “*Sale*” and “*Gover*” are all dummy variables equaling one if the stated objective in the SC 13D is targeting the capital structure, business strategy, a sale of the company and corporate government issues respectively. Events where the stated objective is to just profit from general stock price appreciation (undervaluation) are left out of the regressions as a reference group. We classify the objectives in the same way as Brav et al. (2010), operating with four distinct categories, in addition to the more general “*undervaluation*”-category. Objectives targeting payout and leverage policy are lumped into the capital structure-category. The business strategy-category includes events where the activist hedge funds target operational efficiency, restructurings, M&A activity and growth strategies. The “*sale*” category are the

events where the activists are attempting to force a sale of the target company or acquire it themselves. The last category, contains events where the corporate governance is targeted (change board composition, remove takeover defenses etc.). “*Friendly*” is a dummy variable equal to one if the stated tactic is of a friendly nature. These are events where the stated method of executing activism involves mainly communication and cooperation with the board and management of the target firm. The opposite events are events classified as hostile, and include events where the activist investors aim to use public criticism, proxy threats, proxy fights and suits. “*Stake*” is the initial stake taken by the activist hedge funds in the target company, as reported in the SC 13D.

One point worth emphasizing regarding the intervention characteristics is that our objective and tactic variables are on an ex-ante basis, meaning that these are the initial stated objectives of the hedge funds. I.e. we have no guarantee that a company that was originally targeted with the purpose of an outright sale, was actually sold. This, in turn, means that our results are not directly comparable to studies looking at ex-post objectives (see e.g. Greenwood & Schor, 2009), i.e. companies that were actually sold. This report, however, is aiming to uncover characteristics which can contribute to “predict” the long-term abnormal value creation in the target firms, thus the ex-ante objectives/tactics fits our study to a much larger extent.

### 10.1.2 Econometric Pitfalls

In the process of executing OLS-regressions, there are some pitfalls to be aware of and potentially avoid when trying to obtain unbiased and efficient estimators. Due to the characteristics of our dataset, we particularly check for heteroscedasticity and multicollinearity.

#### *Heteroscedasticity*

We formally test our sample for heteroscedasticity by conducting a White test (White, 1980) looking for general evidence of an association between the variance of the disturbance term and the regressors. The test indicate weak evidence of heteroscedasticity in our sample, thus we utilize heteroscedasticity-robust standard errors in all of our regressions, leaving us with unbiased standard errors and asymptotically valid t-tests. In addition, we take the natural logarithm of the market capitalization ( $\ln(mcap)$ ) and price-to-book ratio ( $\ln pb$ ) to avoid further problems with heteroscedasticity in model 2(7) through 6(12). The same transformation cannot be applied to the debt-to-asset ratio, the cash-to-asset ratio nor the EBIT-margin as they can take values negative and equal to 0.

### *Multicollinearity*

To formally detect the potential multicollinearity we examine the Variance Inflation Factor (VIF) and Tolerance of each of the regressors. The results are reported in the table below.

Variable	VIF	Tolerance
Ln(mcap)	1.47	0.682280
HighF	1.43	0.697363
MediumF	1.43	0.698157
Lnpb	1.39	0.719865
Cash-to-Assets	1.28	0.782137
Debt-to-Assets	1.24	0.807919
Bidask	1.11	0.897861
Ebit-margin	1.02	0.980254
Mean VIF	1.30	

*Table 5: Summary report multicollinearity check.*

The check yields a mean (max) VIF of 1.30 (1.47) and a mean (min) tolerance of 0.78 (0.68), indicating weak multicollinearity (no sign of multicollinearity would yield both VIF and Tolerance equal to one). However; our results are far from the cut-off considered problematic of VIF (tolerance) equal to 5-10 (0.2-0.1) according to O'Brien (2007), thus we do not see any problems in carrying through regressions with the tested variables.

#### *10.1.3 Regression Results*

*Model 1* is conducted without the log-transformation of market capitalization and price-to-book ratio. Due to the aforementioned biases introduced by heteroscedasticity, this model will not be discussed in further detail. *Model 2 through 4* are conducted on the whole sample duration (1994-2013), thus the difference lies in the control variables included. *Model 2* include only target firm characteristic, while *Model 3* is also including year dummies with deals done in year 2013 as reference group. *Model 4* add hedge fund characteristic (track record), with low-frequency (less than 5 deals) hedge funds as reference group. *Model 5* and *6* include events from 2012-2013, as this is the period of which intervention characteristics on an individual level are available. *Model 5* includes target firm characteristics in addition to objective dummies, with objectives targeting general undervaluation left out as a reference group. *Model 6* also control for hedge fund characteristics, whether the tactic is friendly of nature, the initial stake and a year dummy for 2012. The regression results are reported in full in table 6. In the

following result interpretation, we will focus on the key findings in model 2 through 6, emphasizing the statistically robust results.

#### *Cash-to-Assets ratio (CtA)*

The Cash-to-Assets coefficient is statistically and economically significant and positive in all models. More cash, all else equal, implies more agency costs to mitigate and hence a higher potential for unlocking value (Jensen, 1986). What might be more surprising is the size of the coefficient, particularly in model 5 and 6. The overall positive coefficient, as well as its increase over time, might explain why activists generally target “cash cows”, and also why they seem to shift focus to companies with even heavier cash balances over time.

#### *Price-to-Book ratio (Lnpb)*

The coefficient of the “Lnpb” variable is significant and negative in models 2 through 6. As we use the price-to-book ratio as a proxy for over/undervaluation, interpreting the negative sign is straightforward; the more a company appears overvalued, the less is the predicted LTARs. The effect is significant and stable over time, looking at model 5 and 6. While the sign of the coefficient was expected, we find its significance a bit surprising, as the Fama-French framework explicitly accounts for the price-to-book ratio in the estimation of normal returns through the HML factor. Its significance when considering abnormal returns indicate that the value-companies (low PB) outperformance of growth-companies (high PB) is even greater in our sample than what the Fama-French framework accounts for in the normal returns. A possible explanation may be that the price-book ratio is working as a proxy for factors affecting the possibilities to create long-term value in the target companies. Hence a low P/B-ratio might be a manifestation of other non-identified factors contributing to encourage activist value creation. In addition, The HML-factor is in fact only incorporating the value vs. growth firm aspect, while the included P/B-ratio may capture features beyond that.

#### *Bid-Ask Spread (Bidask)*

The “Bidask”-coefficient is statistically significant at 1% level and negative in all models where included (model 4 through 6). As we use the bid-ask-spread as a proxy for illiquidity, this is an intuitive result. Higher illiquidity, all else equal, might reduce exit possibilities and, inter alia, complicate a sale of the company, which according to Greenwood and Schor (2009) is the cases which create the highest abnormal returns. The results are in opposition to the liquidity premium theory, stating that illiquid assets should be accompanied with higher returns. What

is also interesting is the increase in economic significance of the coefficient when looking at only 2012-2013 (model 5 and 6). This supports our theory that targeting liquid stocks has become an issue of more importance over the years due to increased monitoring of activist hedge funds (and hence trading leakage), calling for more liquid stocks to faster and “stealthier” accumulating stocks, without being an “elephant in the jewelry store”, causing severe run-ups before having accumulated their stake.

#### *High-Frequency Hedge Funds (HighF)*

The coefficient on “HighF” is significant and positive when considering the whole period (Model 4). The coefficient suggests that HFFs outperform LFFs on average. A possible explanation might be that the HFFs possess skill, knowledge or experience making them superior to LFFs. Looking at model 5 and 6 (considering only 2012-13), the coefficient is insignificant.

#### *Friendly tactics (Friendly)*

The coefficient in front of “friendly” is significant and negative in Model 6, indicating that “hostile” tactics are predicted to earn higher LTARs than friendly ones. The results are somewhat counterintuitive, as we have earlier described the costs of activism, which is significantly higher when considering “hostile” tactics than “friendly” ones. One explanation may, however, be that “hostile” tactics (including public criticism, proxy threats and proxy fights) work in a more disciplining and credible manner on the board and management, possibly resolving agency problems to a larger extent than “friendly” tactics. Another possible explanation may be that a hedge fund would only carry through a hostile investment tactic if the expected gains are really high. We emphasize again, however, that these are ex-ante tactics from the statements in the SC 13D, thus we have no guarantee that the activist stating a friendly tactic did in fact carry that through, and vice versa.

#### *Market Capitalization (ln(mcap))*

In all models but model 4, the coefficient is insignificant, and thus will not be discussed comprehensively. This was initially expected as market capitalization is explicitly accounted for in the Fama-French normal return estimation through the SMB factor. The “ln(mcap)” coefficient is significant at 5%-level and negative in Model 4, when considering 1994-2013, controlling for year-specific effects and hedge fund characteristics.



## Effects on Long-Term Abnormal Returns

		(94-13) Model 1	(94-13) Model 2	(94-13) Model 3	(94-13) Model 4	(12-13) Model 5	(12-13) Model 6
Target firm characteristics	Cash-to-Assets	0.360*** (0.107)	0.492*** (0.106)	0.491*** (0.109)	0.454*** (0.137)	1.039*** (0.279)	0.916*** (0.324)
	EBIT-margin	0.000559 (0.00151)	-0.000191 (0.00147)	0.000461 (0.00153)	-0.000199 (0.00178)	0.0825 (0.130)	0.0988 (0.137)
	Debt-to-Assets	-0.0810 (0.0900)	0.0263 (0.0888)	-0.000451 (0.0875)	-0.0242 (0.105)	0.271 (0.176)	0.301* (0.180)
	PB	-0.0118** (0.00597)					
	Mcap	-0.0000012*** (0.00000021)					
	Ln(PB)		-0.147*** (0.0238)	-0.151*** (0.0250)	-0.156*** (0.0294)	-0.143*** (0.0491)	-0.153*** (0.0476)
	Ln(Mcap)		-0.0155* (0.00870)	-0.0105 (0.00950)	-0.0221** (0.0111)	-0.0244 (0.0162)	-0.0242 (0.0170)
	Bidask				-0.311*** (0.0844)	-0.521*** (0.117)	-0.622*** (0.166)
Hedge fund characteristics	HighF				0.118*** (0.0410)		-0.0359 (0.0657)
	MediumF				0.0618 (0.0507)		-0.0261 (0.0819)
Intervention characteristics	Capstruc					-0.0565 (0.0726)	-0.0857 (0.0797)
	Strategy					0.0594 (0.0819)	0.0386 (0.0913)
	Sale					0.0561 (0.0991)	-0.0199 (0.0917)
	Gover					0.0990 (0.0749)	0.0447 (0.0732)
	Friendly						-0.174** (0.0732)
	Stake						0.982 (1.091)
	Constant	0.244*** (0.0270)	0.336*** (0.0502)	0.207*** (0.0687)	0.240*** (0.0802)	0.201* (0.117)	0.265* (0.151)
	Year dummies	Included	Included	Included	Included	Included	Included
	Heterosk.rbst stderrors	Yes	Yes	Yes	Yes	Yes	Yes
	VIF & Tolerance check for multicollinearity	Ok	Ok	Ok	Ok	Ok	Ok
R-squared	0.024	0.067	0.099	0.131	0.279	0.340	
Observations	1102	1102	1102	761	127	127	

Table 6: Effects on LTAR regression output.

The panel reports the effects on long-term (12 months) abnormal returns in hedge fund target firms from different target firm characteristics, hedge fund characteristics, intervention characteristics and year dummies. 6 unique regressions are conducted (Model 1 through 6) with 12 month abnormal returns in activist hf targets from announcement date being the dependent variable in all of them; however differing in independent variables included. Accounting and share price data is gathered from the last available report from the fiscal year prior to announcement "Debt-to-Assets" is the total debt to total assets, "Ebit-margin" is the EBIT to total revenues, "Cash-to-Assets" is defined as total cash and short-term investments to total assets. "P/B" is the share price to equity book value per share, while "LnPB" is its natural logarithm. "Mcap" is a firm's market cap, calculated as total shares outstanding times the share price. "Ln(mcap)" is its natural logarithm. "Bidask" is the bid-ask spread of the stock. "HighF" ("MediumF") is a dummy equal to one if the deal is done by a high-frequency (medium-frequency) activist hedge fund with over 10 (between 5 and 10) deals on its track record. Low-frequency hedge funds, with less than 5 deals, are left as a reference group. "Capstruc", "Strategy", "Sale" and "Gover" are dummies equal to one if the objective of the deal was to target either the Capital structure, the business strategy, to sell the company or the corporate governance. Deals where the general objective was to gain from stock-price appreciation are left out as a reference group. "Friendly" is a dummy equal to one if the activist tactic in the particular deal is considered friendly. "Stake" is the initial stake accumulated when the hedge fund file the SC 13D. Year dummies are equal to one if the deal happened in the corresponding year. Emphasize on the fact that variables regarding objectives, tactic and stake are only available on deals from 2012-2013, inevitably reducing our number of observations in model 5 and 6. Standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at 10, 5 and 1% levels.

#### 10.1.4 *Remarks and Limitations*

##### *Objective dummies*

As read from the results, the dummy variables accounting for the stated objective of the intervention are not significant in any model. One might have suspected that this was due to a high correlation between the objectives and the other target firm characteristics, however, we have inspected this issue, and it turns out not to be the case. At first glance, these insignificant results may seem a bit counterintuitive, as several research papers have emphasized the predictive power of the activist objectives. Greenwood and Schor (2009), e.g., show that the abnormal returns are on average significantly higher in the cases where the target is ultimately sold. Again, however, we stress two important differences between the Greenwood and Schor (2009) study and ours. First, Greenwood and Schor look mainly at short-term abnormal returns, rather than long-term, as done in this report. One could immediately think of the possibility that stated objectives have determining power on short-term returns, as we have concluded that the short-term abnormal return is driven by a probability weighted incorporation of the benefit associated with activist intervention. Thus, different objectives might lead to different expectations and hence different returns in the short-run. In the long-term, however; the returns will adjust to reflect actions actually undertaken. Second, as mentioned, our objectives are ex-ante, while Greenwood and Schor use ex-post objective. For example, while they look at companies where the governance was actually targeted, we look at companies where the intention is to target the governance. The overall conclusion is that our results on long-term returns are by no means contradicting the results of Greenwood and Schor on short-term returns.

##### *Omitted regressors*

In addition to the included regressors, the inclusion of variables acting as proxies for the following characteristics could potentially increase the strength of the conducted analyses:

1. *Business diversification* (the Herfindahl Index looking at sales across business units), as we wanted to see whether the LTAR could be higher in companies where the business diversification is high, i.e. investigating potential patterns regarding activism and conglomerate discounts (Thorburn and Eckbo, 2013).

2. *Ratio of institutional ownership*, as we want to uncover patterns of whether high or low institutional ownership might have an effect on LTARs, as literature is a bit unclear at this point. While Brav et al. (2010) argue that institutional shareholders is an advantage for activist,

Cheffins and Amroun (2012) argue that it might be unfavorable for activist hedge funds with large institutional investors present.

3. *A quantification of corporate governance* (GINDEX, the number of takeover defenses), to uncover potential relationships between the number of takeover defenses and returns, with the hypothesis that the more takeover defenses present, the more potential value is available to unlock.

4. *The executive compensation* in the particular target companies, to see whether the long-term abnormal returns can increase in companies with high executive compensations as a consequence of wealth expropriation, as suggested by Brav et al. (2008).

However, the first three have not been available to the authors due to database limitations, while the last one is only available for a limited number, bringing our effective observations down below our minimum cut-off. We do not consider any significant correlation between the four omitted variables and our included regressors, thus, we consider the potential omitted variable bias to be ignorable.

## 10.2 Cross-Sectional Differences in STARs

Having examined the cross-sectional differences in LTARs and its drivers, we next try to explain the cross-sectional differences in STARs. The lion's share of the regressors are identical as in the LTAR-analyses, thus we refer the reader to chapter 10.1.1 for an in-depth description of them. The econometric pitfalls, in addition to the remarks and limitations from the LTAR-analyses are also applicable for this analysis. For this, we refer the reader to chapter 10.1.2 and 10.1.4 respectively. In the following section, we will settle with a discussion of the regressors unique for this analysis, as well as the regression results.

### 10.2.1 Unique regressors

“*Crisis*” is a dummy variable equal to one if the particular event was announced in times of economic crisis, i.e. during the dot-com crisis or the financial crisis.

“*LTAR*” is the long-term abnormal return, which was the dependent variable in the regressions conducted in chapter 10.1. We include it as a regressor to see whether the market correctly anticipates the long-term gain from activist intervention already in the days surrounding

announcement. As the LTAR is, by construction, not available until twelve months after announcement, including it as a regressor is somewhat inconsistent as all the other regressors are ex-ante figures. Nevertheless, due to our curiosity on the topic of efficient markets, we include it in some of our specifications.

### 10.2.2 Regression Results

*Model 7* includes all the target firm characteristics (logarithm of market capitalization and price-to-book ratio), except for the bid-ask spread as regressors. In addition, it includes the LTAR, and the crisis-dummy. In *Model 8*, we include the bid-ask spread, as well as the hedge fund characteristics, however, leave the LTAR and crisis-dummy out. *Model 9* adds the crisis-dummy to *Model 8*, while *Model 10* also adds the LTAR. The difference between *Model 7* and *Model 10* is the inclusion of bid-ask spread, reducing the number observations somewhat. While *Model 7* through *10* are run on the whole sample duration (1994-2013), *Model 11* and *Model 12* are run only on the time period of 2012-2013. This is, again, due to the inclusion of the intervention characteristics, which are only available on a single event level for this period. This leads to an inevitable drop in the number of observations. In *Model 12*, we also include the LTAR. The crisis-dummy is of natural reasons excluded in both *Model 11* and *12*. The following interpretation will focus on the key findings in model 7 through 12.

#### *Long-term abnormal returns (LTARs)*

The LTAR-coefficient is statistically and economically significant, and positive in all specifications where included. This might imply that stock markets anticipate the long-term gains from activist intervention, already in the short-term. Interestingly, the coefficient is remarkably larger in the models run on the 2012-2013 subsample. This might suggest that markets have become more efficient, more correctly reflecting the expected gains. However, due to the relatively small number of observations, we do not put too much emphasis on this increase in coefficient size. We also stress the fact that the inclusion of this regressor introduces a mix of ex-ante and ex-post regressors, somewhat confusing the interpretation of the coefficient. For now, we settle with the results that the LTARs significantly contribute to explain the STAR, suggesting that stock markets somewhat reflect the expected long-term gains already in the (-12, +10) window.

*Crisis*

The crisis coefficient is significant and negative in all models where included. This suggests lower STARs in times of economic crisis, than in times with economic stability. The results support our findings from the previous STAR-analyses, indicating lower STARs in times of economic crisis. For a discussion on the potential reasons for this pattern, we refer the reader to chapter 8.2.

*Intervention characteristics*

The objective dummies are again insignificant in all specifications. While this may seem to contradict earlier research (e.g. Greenwood and Schor, 2009) we again stress the fact that these are ex-ante observations. In addition, the relatively small number of observations with explicitly stated objectives and the fairly narrow categories may complicate the possibility to obtain significant results.

		Effects on Short-Term Abnormal Returns					
		(94-13)	(94-13)	(94-13)	(94-13)	(12-13)	(12-13)
		Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Target firm characteristics	Cash-to-Assets	0.0514 (0.0550)	0.0797 (0.0733)	0.0692 (0.0703)	0.0264 (0.0691)	-0.0166 (0.113)	-0.212 (0.135)
	EBIT-margin	0.000198 (0.00067)	-0.000366 (0.000956)	-0.000238 (0.000952)	-0.000135 (0.000856)	0.0287 (0.0864)	0.00943 (0.0731)
	Debt-to-Assets	0.0572 (0.0480)	0.0209 (0.0677)	0.0141 (0.0674)	0.0165 (0.0655)	-0.0904 (0.113)	-0.157 (0.105)
	Ln(PB)	0.00383 (0.01000)	-0.0181 (0.0121)	-0.0157 (0.0114)	-0.00260 (0.0114)	-0.0527** (0.0249)	-0.0205 (0.0228)
	Ln(Mcap)	-0.00331 (0.00352)	-0.00547 (0.00449)	-0.00551 (0.00401)	-0.00296 (0.00383)	-0.000338 (0.0109)	0.00416 (0.00926)
	Bidask		-0.000835 (0.0309)	-0.0156 (0.0265)	0.00640 (0.0258)	-0.0781 (0.136)	0.0473 (0.106)
Hedge fund characteristics	HighF		0.00115 (0.0151)	-0.00488 (0.0149)	-0.0151 (0.0143)	-0.00219 (0.0394)	0.00628 (0.0376)
	MediumF		0.000428 (0.0191)	-0.00351 (0.0194)	-0.00925 (0.0188)	-0.0234 (0.0421)	-0.0173 (0.0387)
Intervention characteristics	Capstruc					-0.0442 (0.0364)	-0.0233 (0.0334)
	Strategy					0.0337 (0.0487)	0.0223 (0.0467)
	Sale					-0.0527 (0.0518)	-0.0509 (0.0491)
	Gover					0.00393 (0.0373)	-0.00163 (0.0342)
	Friendly					-0.0374 (0.0593)	0.000504 (0.0475)
	Stake					1.092 (0.744)	0.924 (0.599)
Other	LTAR	0.101*** (0.0163)			0.0907*** (0.0185)		0.209*** (0.0717)
	Crisis	-0.0422** (0.0214)		-0.0447* (0.0270)	-0.0636** (0.0276)		
	Constant	0.0539** (0.0222)	0.113** (0.0463)	0.106*** (0.0311)	0.0742** (0.0303)	0.0857 (0.102)	0.0301 (0.0841)
	Year dummies	Included	Included	Included	Included	Included	Included
	Heterosk.rbst stdeerrors	Yes	Yes	Yes	Yes	Yes	Yes
	VIF & Tolerance check for multicollinearity	Ok	Ok	Ok	Ok	Ok	Ok
R-squared	0.076	0.034	0.017	0.074	0.136	0.259	
Observations	1072	746	746	746	127	127	

Table 7 : Effects on Short-Term Abnormal Returns

The panel reports the effects on short-term (-12, +10) abnormal returns in hedge fund target firms from different target firm characteristics, hedge fund characteristics, intervention characteristics, year dummies and LTARs. 6 unique regressions are conducted (Model 7 through 12) with STARs in activist hf targets being the dependent variable in all of them, however differing in independent variables included. Accounting and share price data is gathered from the last available report from the fiscal year prior to announcement. See Table 6 for variable description not mentioned here. Year dummies are equal to one if the deal happened in the corresponding year. "Crisis" is a dummy equal to one if the event took place in a period of economic crisis. Where "crisis" is included, no other year dummies are included. LTAR is the long-term abnormal returns. Standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at 10, 5 and 1% levels.

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## 11 Conclusion

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*“What turns me on, is the excitement of it all. I really believe in what I’m doing. Don’t get me wrong. I like to win. But I love to rock boats that should be rocked. Sometimes I wonder why I keep doing it. I’ve got enough goddamn money”* Carl Icahn to Fortune, March 1985.

Hedge fund activists have been rocking boats for a long time. Through a comprehensive event study, we show that they have been able to create significant abnormal returns both in the short-term and long-term. The funds’ approach to uncover value in target companies, consistently targeting underperformers with low valuations, shows a high degree of competency to pick companies in need of restructurings. Furthermore, we show that their stock picking extends beyond this, by creating long-term abnormal returns, even in business cycle downturns.

Further, we show that there has been a development in characteristics of target firms. We find that they target cash-rich companies with low valuations and debt ratios, with poor performance and high liquidity in the stock compared to NYSE/AMEX companies. Further, we illustrate a larger spread in market capitalization of targets, as well as increasing cash levels in the firms compared to earlier decades.

After conducting several analyses and statistical tests, we show that the short-term wealth effects associated with activist hedge fund intervention are seemingly positive, abnormal and significant. This applies both in economically stable times as, well as in times of crisis; however, the short-term CARs in crisis are lower. Furthermore, high frequency funds and low frequency funds generate indistinguishable abnormal returns in the short run. Over the longer haul, we find that the activist hedge funds’ overall ability to create alpha is consistent, both in downturns as well as in economically stable periods.

We find that cross-sectional analyses on short-term and long-term CARs yield several significant relationships. First, low valuation, large amounts of cash, high trading liquidity and a hostile investment tactic seem to be valid predictors for an increased long-term CAR. Second, economic downturns appear to significantly predict lower short-term CARs. Moreover, the long-term CAR is a significant predictor of short-term CAR, indicating that capital markets efficiently reflects the long-term gains from activist intervention, discounted for the probability of failure.

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## **Appendix A: Enhanced Literature Review**

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This chapter constitutes other topics within the activist hedge fund literature and related themes, not directly covered in the thesis, but which the reader may find interesting, and/or fulfilling.

### **Potential Wealth Expropriation in Activist Hedge Fund Literature**

The empirical discoveries of activist hedge funds delivering positive abnormal returns to target firms' shareholders in the short- medium and long-term have also been a natural starting point for discussions and research on the fundamental sources of these returns. Most widespread is the conviction that the positive observed abnormal returns to shareholders are attributable to hedge funds'/hedge fund managers' skills to create value through actions and engagement, and/or simply pick undervalued stocks. However, some research papers have taken it a step further, investigating whether the positive abnormal returns to shareholders are, in fact, due to hedge fund activists unlocking value, or whether it can be fully or partially attributed to an expropriation of wealth from other stakeholders (primarily executives and creditors) to shareholders.

Brav et al. (2008) found no significant evidence of value expropriation from creditors even in their cleanest tests, where the target firm was unlevered. In fact, in the absence of creditors, they found somewhat higher short-term returns for target shareholders. They concluded value expropriation of bondholders was an unlikely source of shareholder gains. Nevertheless, they also examine the possibility that some of the shareholder gain may be traceable to losses for executives. They find that target firms experience a significantly higher CEO turnover rate and increased executive pay-for-performance after activist intervention, as well as a curtailment of executive compensation in the ballpark of \$1 million p.a. Their back-of-an-envelope calculation yields that if the executives combined pay is cut by \$5 million annually for five years, using an appropriate discount rate, this would be equivalent to an income stream in the magnitude of \$20 million, which is a significant portion of the market cap of the average target firm (\$706 million).

Supporting the findings of Brav, that the sources of shareholders' gains are not explained by expropriation of wealth from creditors is the research paper of Aslan and Maraachlian (2009), who finds that bondholders, as well as shareholders, earn positive abnormal returns around announcement of activist interventions by hedge funds. When looking at a longer term, however



they find target bonds significantly underperform their benchmark from the event year by 3-5% per year. They conclude that expropriation of wealth is not a significant source of stockholder gains, reasoning that combined positive short-term and negative long-term effects on creditors' wealth net out each other. However; their results also reckon that target firm creditworthiness is more often downgraded than upgraded one year after activist announcement. Similar results on credit ratings are found in Byrd, Hambly and Watson (2007), Li and Xu (2010), Klein and Zur (2011) and Burkart and Dasgupta (2014), who all find a disproportionately large number of rating downgrades for target firm's bonds.

On the other hand, there is also empirical evidence of significant value expropriation of creditors' wealth to the shareholders' benefit. Li and Xu (2010) examine the impact of hedge fund activism on the target firm's bank loan contracts. They show that hedge fund activism has a substantial impact on a target firm's bank loan contracts through channels like higher spreads, stricter covenants and collateral restrictions and shorter loan maturities (due to increase in leverage ratios and payout ratios, as well as decreases in cash on hand). They conclude that the target firm shareholder gains might be, to unknown extent, explained by a wealth expropriation effect leaving the creditors as the losing part, particularly when the activist hedge fund targets the capital structure of the target firm.

Furthermore, Klein and Zur (2011) look at the impact of activist hedge funds on the existing public market bondholders. Their results conclude that the expropriation effect is definite; while shareholders gain, creditors earn a significant negative excess returns both around the initial SC 13D filing date, and in the subsequent twelve months. This effect can again be traced back to the increase in leverage- and payout ratios, as well as a decrease in assets and cash-on-hand. They conclude that on average (and in 83% of the incidents) the hedge fund manager's actions harm bondholders' wealth.

### **Operational Performance and Improvements**

Activists have for some while been characterized as shortsighted financial engineers, so a natural research area is the operational performance of the target firm, where there has not yet been conclusive evidence. Boyson and Mooradian (2007) find that companies experience increases in ROA, cash flow, payout and Tobin's Q, but a decrease in cash holdings, in line with Clifford (2008). Brav et al. (2010) exhibits improvement in valuation ratios (Tobin's Q) but a close to 0 difference in ROA compared to pre level profitability (t-1y and t+2y). However,

Klein and Zur (2006), using only 2 years of data (155 events from 2003-2005) find no significant improvement in accounting performance 1 year after the intervention, but merely that EPS, ROA and ROE decline. They find increased debt levels, reduction of cash and attribute returns to the perceived benefits of reducing the agency costs of cash. However, when Bebchuk, Brav and Jiang(2013) analyze a longer time span, 5 years after the event date with over 2000 events from 1994-2007, they find improvement in operating profitability (ROA) compared to the year of the intervention. They find no evidence of decline in operating performance post-intervention analyzing a longer-time period. These findings are consistent with Zhu (2013), using the same dataset. Boyson and Mooradian (2011) compare operating performance with both control groups and each other with respect to frequency (number of deals). They find an improvement only for targets of high frequency activists (at least 10 deals). Further, Clifford (2008) investigates 788 activist engagements and compare them with passive investments in the same time period (1998-2005), finding larger improvements in ROA following the acquisition for activist targets compared to passivists targets, and attribute the increases to spinoffs of underperforming assets. In a paper by Brav et al. (2013), the authors find an increased productivity of plants: 3 years prior to intervention targets experience higher productivity than control plants (similar size, age and industry) in a given year. The productivity is found to deteriorate to the level of control plants during intervention, but found to rebound to higher level than observed pre-activism within 3 years of post-intervention, suggesting real improvements not merely financial engineering skills. Long-term improvements are also found with hostile and leverage enhancing deals (Bebchuk, Brav and Jiang 2013).

### **Corporate Governance**

What is so far written on governance within hedge fund activism is diverse, but often heading in the same direction; Hedge funds are better positioned to engage in activism than institutional investors due to different incentives and organizational structure than i.e. mutual funds (Brav et al. 2008). Without the restrictions imposed on mutual funds, pension funds etc. hedge funds avoid the Investment Company Act of 1940 (Partnoy and Thomas, 2006), yielding the opportunity to operate outside securities regulation and registration requirements through imposing constraints on investor types in the hedge funds (Brav et al. 2008). The compensation policy, where a large portion of the fund managers salary is performance based, and the exemption from regulations allowing hedge funds to use the derivatives markets make hedge funds more suited to mitigate the free-rider problem related to monitoring than mutual- and pension funds. However, due to accumulation of small stakes, activists must rely on persuasion

and internal governance mechanisms to take action and implement proposed changes (Cohn and Rajan, 2012). Even though several papers focus solely on theoretical models, some empirical research has been done, indicating: CEO compensation is reduced in target firms (Brav et al. (2008), employees increase productivity while wages stagnate (Brav, Jiang and Kim (2013). Further, models are proposed to answer the effect empty voting has on corporate governance (Brav and Mathews (2011), showing a possible efficiency improvement if certain conditions are met. The theoretical model from Cohn and Rajan (2012) outlines the optimal corporate governance in the presence of an activist investor, seeking to minimize the conflicts between managers, investors and boards. We outline the most important papers related to corporate governance and Hedge fund activism in detail in the subsequent chapter.

### *Regulations and Organizational Setup:*

There are important differences between the legal features of a hedge fund and pension or mutual fund. Legal scholars argue this is one of the important reasons why hedge funds are uniquely positioned to engage in activist campaigns (Clifford, 2008; Bratton, 2006; Briggs, 2006; Kahan and Rock, 2006; Partnoy and Thomas, 2006). Lack of regulation, distinctive organizational structures and greater financial incentives all play a part. We will later deep dive into the legislative perspective, but we feel it is time to understand the mechanisms of the hedge funds, understanding its role as both a corporate monitor and its unique position to strengthen corporate governance in target firms. Clifford (2008) argues that since hedge funds are not subject to ERISA, nor required to maintain diversified portfolios or subject to liquidity constraints similar to mutual funds, hedge funds have greater flexibility. Further, they are not bound by regulation to not use leverage or derivative instruments, which they often use to increase effective ownership in target firms (Hu and Black, 2006). Managers of the hedge funds often also receive incentive fees equal to 20% of annualized returns, yielding significant financial incentives and larger marginal compensation for increased effort compared to pension and mutual fund managers (Clifford, 2008). Moreover, activist hedge funds have advantages compared to corporate raiders due to smaller stakes accumulated, often benefiting from cooperation with management and receiving greater support from other shareholders. Brav et al. (2006) calls this a hybrid internal-external role, suggesting a potentially value enhancing position by reducing the agency costs associated with separation of ownership and control. Clifford (2008) also argues that hedge funds possess another tool important increasing

negotiation power; the threat to buy the firm. If the market for partial corporate control is not disciplinary enough, the market for complete control lies at the fund's disposal.

*Stakeholders and compensation policies:*

Related to stakeholders and compensation policies, Brav et al. (2008) show that Hedge fund activism differs fundamentally from other activist engagement efforts by institutional investors, which in several papers have been found improbable to increase shareholder value (Black, 1998; Karpoff, 2001; Romeno, 2001; Gilland and Starks, 2007). Brav et al. (2008), as mentioned, find a redistribution of wealth from CEOs to shareholders through declining payments to CEOs. During the event year, CEOs at target firms earn on average \$914000 more than peer companies, while they one year after are not distinguishable from the peer group. Moreover, they find an increase in pay-for-performance programmes during the event year and the year after. The change in payment is accompanied by an increase in the CEO turnover rate, and in total they find that on average \$20m may be switched to shareholders in present value terms. They finally argue their finding is in conjunction with the hypothesis of “stock picking vs. causality”, where there is unlikely that such changes would've occurred without the interference of the hedge fund. Other stakeholders, such as employees have also been in the empirical researchers' spotlight, Brav, Jiang and Kim (2013) provide research on how hedge fund activism affects employees. They find increased productivity at plants within 3 years of post-intervention compared to pre-activism. Further, employees at targeted firms seem to be at a disadvantage: they increase productivity while wages seem to stagnate. The increase in labor productivity is found significant only in industries highly unionized – suggesting stricter monitoring of workers (Pagano and Volpin (2005)).

*Increasing the geographical span: research outside the U.S*

While most of the research on activist hedge funds and their target firms examine the US market, there are some studies addressing this phenomenon in other markets. Becht et al. (2007) did a clinical study on the Hermes U.K Focus Fund, a UK based activist pension fund. They found that the fund substantially outperformed the benchmark, and traced the abnormal returns to engagements rather than to stock picking. Further, Becht, Franks and Grant (2010) examined the hedge fund activism in Europe, and found significant abnormal shareholder returns around the date of the activist stake disclosure. Their findings were robust for several European

jurisdictions, and also concluded that local jurisdiction did not explain the differences in return across countries. There has also been increased activity in Japan, where Hamao, Katsuna and Matos (2010) have studied ten years of investor activism in Japan. Their story is the same as many of their European and American peers; positive abnormal returns to target firm shareholders around announcement day, with ambiguous long term returns. The latest addition to the collection of research on hedge fund activism outside the US, to our knowledge, is Mietner and Schweizer (2013), who looks at activism in hedge funds versus activism in Private Equity Funds. Their findings are that the announcement of an activist hedge fund or a private equity fund acquiring at least 5% of a company's voting rights triggers a significantly positive abnormal return. However; the long term buy-and-hold-abnormal-returns are negative for both samples.

#### *Specialized Topics Within Hedge Fund Activism:*

Countless research papers have also been devoted to other aspects of hedge fund activism, and the spread of topics covered is significant. We will give a brief description of the papers which have come to the authors' knowledge, in a chronologic order.

Gillan and Starks (1998) got the show on the road, collecting data form a survey on shareholder activism, sketching the origins and evolution of shareholder activism, defining what it was and why it occurred. On the brink of a decade later Gillan and Starks (2007) outlined the history and an updated evolution of shareholder activism in the U.S tracing it back to the SEC's adoption of Rule 14a-8 in 1943) up until the paper was written, also touching topics like the activists' motives for active participation and returns to shareholder activism, finding that the major motivation for any shareholder to become active is the potential to enhance the value of their investment through monitoring. However; due to free-rider problems regarding monitoring, only large shareholders will obtain returns on their investments that offsets the associated monitoring costs. Their conclusion on returns to shareholder activism are in line with the research done on hedge fund activism; short-term positive abnormal returns, little to none evidence of improvement in long-term stock performance.

Brav et al. (2010), except from findings concerning returns, value expropriation and governance, looked closer at the returns to the activist hedge fund investors and found that activist hedge funds on average outperformed a full sample of self-reported hedge funds. The

results were also significant when comparing to a subset of equity oriented funds, their results was in line with Boyson and Mooradian (2010) who found that activist hedge funds provided strong returns for their own investors. Furthermore, Edmans, Fang and Zur (2011) looked at the effect of liquidity on corporate governance finding that liquidity, all in all, increases the likelihood of a block acquisition (>5% stake) through a positive effect on governance.

Cheng (2012) explored the relationship between hedge fund activism and accounting conservatism, and found that hedge fund activists elicit increases in accounting conservatism, suggesting that target firms improve both governance and financial reporting quality. Gantchev and Jotikasthira (2012) aimed to answer the question: Does institutional exist facilitate emergence of value-enhancing activists? All their results suggested activist hedge funds accumulate their shares when other institutional investors sell theirs.

Cheffins and Armour (2012) defined “the market for corporate control”, and developed a model for activism, weighting the costs of activism (financing, monitoring, transaction costs) up against the benefits (publicly shared or private). They further defined the supply- and demand side of the market for corporate influence, and used it to talk about past trends and development (both pre- and mid financial crisis) and likely future trends of hedge fund activism. In addition, Bebchuk, Brav and Jiang (2013) addressed hedge fund activism during the financial crisis, finding no evidence that activist hedge funds’ target firms were more adversely affected than comparable firms.

Brav et al (2013) examined whether the positive returns associated with hedge fund activism was mainly due to stock picking, by studying cases where the activists changed filings from 13G to 13D (from passive to active). Their results suggested that the improved performance in target firms would not have occurred if the hedge fund was a passive investor. Katz and Owen (2013) considered activism’s impact on diversified investors and the market as a whole, proposing that some conditions exist, where activism would not necessarily increase the total value of the market, i.e. that activists may profit at the expense of others.

Bebchuk, Brav and Jiang(2013) focuses on the pre-disclosure accumulation of shares by activist investors, which is possible because of the ten-day window allowed from crossing 5% ownership until an SC 13D must be filed. However, they argue that activist hedge funds in fact

do not exploit this ten day window to “secretly” accumulate shares, nor do they in many cases have the possibility because of low threshold poison pills.

Gantchev, Gredil and Jotikasthira (2013) look at the spillover effects of hedge fund activism, finding that the threat of being targeted has a disciplining effect on peer firms, increasing their returns and lowering their ex-post probability of becoming targets themselves. Somewhat similar concerns are addressed by Aslan and Kumar (2014) who looks at spillover effects of hedge fund activism on the product market competitors, customers and suppliers of target firms. However, their findings indicate a negative abnormal return of target firm peers’ stocks around announcement of activism.

Burkart and Dasgupta (2014) assessed whether hedge fund activism is a pro-cyclical phenomenon with respect to macroeconomic conditions. Their conclusion, that hedge fund activism is indeed pro-cyclical, is supported both by the peaks of SC 13D filings in bull markets, and by findings regarding increased leverage- and payout ratios ex-post.

Finally, Collin-Dufrense and Fos (2014) examined whether prices can reveal the presence of informed trading, inspecting SC 13D filings with information on trades. Their evidence suggested that measures of adverse selection and illiquidity were lower when SC 13D filers accumulated shares, concluding trades by SC 13D filers contain valuable information

*Agency costs, Free-Rider Problems and Management Entrenchment:*

In the line of M&A activity, some researchers have proposed that activist funds improve corporate governance due to the potential monitoring effect the funds may stimulate. Briggs (2007) shed some light over how the funds have acquired a real power in the field of corporate governance: the combination of “wolf pack” tactics and the increasing influence of activist proxy advisory firms. They argue that corporate governance has “unquestionably” been improved if the wolf pack and (threats of) proxy fights for corporate control causes management to reexamine their business and review basic strategy accordingly, acting as a monitoring mechanism itself. Further, Gantchev, Gredil and Jotikasthira (2013) investigates the effect targeted firms have on peers. The authors outline empirical evidence yielding higher probability for a firm targeted in a specific industry if heightened rate of activism in the industry has previously occurred. They find that the threat of being targeted has a disciplining effect on peer

firms, reducing agency costs and improves performance alongside actual targets, which leads to abnormal returns, and lower the ex-post probability of being targeted. Furthermore, they suggest this may be due to the presence of a partial feedback effect. Overall, they conclude shareholder activism may act as a monitoring mechanism, reaching beyond targeted firms, in line with Burkart and Dasgupta (2014): “activist blockholders play a key role in limiting the governance problem that affects publicly traded corporations with dispersed owners who have limited incentive to monitor managers”. A theoretical model is proposed by Burkart and Dasgupta (2014), who study blockholder activism by funds that compete for investor flow. Their model finds that activists are able to increase value of target firms through monitoring; reasoning that competition for investor flow strengthens their incentives to enhance returns generated by the monitoring. Further, several empirical studies (Clifford, 2008; Klein and Zur, 2009; Brav, Jiang and Kim 2010) find increases in leverage and payout ratios following activist investments. In line with theoretical literature on agency costs (Grossman and Hart, 1982; Easterbrook, 1984; Jensen, 1986; and Myers, 2007), this should reduce value-destroying activities and lower agency costs, all else equal.

However, agency costs may also come as a consequence of activist investing. Cohn and Rajan (2012) investigates the optimal corporate governance in the presence of an activist investor and propose a theoretical model in the case where the board is dragged between an activist investor and a manager facing reputational concerns. Disputes between the management and activist derive as a consequence of managers needing to reverse strategic decisions made historically. Management may therefore oppose value-enhancing changes. The argument is supported by Boot (1992) whom argues that a manager will not divest often enough due to reputational concerns regarding reversing prior investment decisions. However, Admati and Pfleiderer (2009) suggest that the threat of a hostile takeover can mitigate the agency costs and encourage divestitures. These agency costs are analyzed, and Cohn and Rajan (2012) conclude that internal governance and external governance (provided by activists) are natural complements unless the external governance is weak.

Agency costs could also decrease as a result of activism; shareholder activism can play an important role in pressuring firms to adopt de-staggered boards. Studies provide empirical evidence yielding lower firm value for companies with staggered boards than those without (Bebchuk and Cohen, 2004). An explanation suggested is the value lost from not allowing a potential value-enhancing takeover to occur due to management entrenchment. Kahan and Rock (2007) argues hedge funds are more active and better suited to mitigate the free-rider problem of monitoring than institutional activist. They suggest, in line of Brav et al. (2008) that the



organizational structure, incentives and regulatory predicaments hedge funds may avoid compared to mutual and pension funds are the main reasons. Kahan and Rock (2007) conclude that no regulatory intervention is warranted on activist hedge funds because it is unclear to what extent hedge fund activism is driven by excessive short termism; hedge funds usually need the support of other, less short-term oriented constituents to affect corporate policy, and to the extent short-termism generates a problem, adaptive devices adopted by corporations are a better way to address it than regulation. Further, Bratton (2007) argues that even though activism leads to fiduciary duties towards the entity when board seats are acquired, the activists' independence and financial incentives imply a more critical stance toward management than other outside directors. The author concludes that activists are "more distanced from management and arguably better positioned to approach corporate governance's theoretical ideal of a vigorous outside monitor", similar to Brav et al. (2006). Clifford (2008) argues in line with Bratton (2007) and Brav et al. (2006): The organizational and compensation policy characteristics of a hedge fund, including its ability to look-up capital, appears to increase its incentives and relative bargaining power with the management or board, contributing to mitigate the free rider problem. Empirical research has also been done in the field, Boyson and Mooradian (2007) find that activists pursuing aggressive and well-defined objectives act as agents of corporate change. Further, Bratton (2007) target firms in the period of 02-06, and finds that two results coexist but in tension: "On the one hand, the activists' record of governance success is impressive enough to support the proposition that they have shifted the balance of corporate power in the direction of outside shareholders and their financial agendas, perhaps heralding a modification of the prevailing description of a separation of ownership and control. On the other hand, the stock portfolio comparisons, taken together with the changing financial and performance characteristics of the targets, cast doubt onto the existence of financial incentives sufficient to support a significant alteration of the governance equilibrium, suggesting that the success in targeting governance may be a negative net present value game.

Brav and Mathews (2011) investigates the issue of empty voting and the efficiency of corporate governance (empty voting, relating to the issue of accumulating voting power in excess of economic share ownership, to manipulate vote outcomes and generate positive returns). Despite not being directly linked to activist hedge funds, it provides an important insight into empty voting in many cases used by Hedge funds. In the field of empty voting, researchers are not harmonizing: Hu and Black (2006, 2007) proposes an enhanced regulatory framework, illustrating with several cases where Hedge funds have taken short position in stocks while at the same time borrowed shares to vote down on buyout proposals. Christoffersen et al. (2007)

however, argues that “vote trading” may increase the corporate governance efficiency because information about proposals may be costly to acquire and fully understand for uninformed shareholders. However – this requires some sort of mutual agreement on future interests of the company from the Hedge fund and uninformed shareholder. Brav and Mathews (2011) propose a theoretical model, showing that the cost of voting against firm value enhancing initiatives can be offset by a larger probability that the trader will vote to maximize firm value.

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## Appendix B: Sample Selection Criteria for Selected Studies

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We have summarized some of the articles analyzed to give the reader an understanding of common selection criteria, emphasizing both time trends and how different researchers have collected their samples. This is by no means all articles reviewed, but a large part of the ones most closely related to our thesis, in that order.

Author	Selection criteria, focusing on number of activist events	Research topic	Journal	Events*	Time Span
Bebchuk et al. (2013)	<ol style="list-style-type: none"> <li>1. All investors who filed 13D in the period</li> <li>2. Localized Hedge Funds among them through various sources</li> </ol>	Pre-disclosure accumulation by activists	Journal of Corporation Law	2040	1994-2007
Brav et al. (2008)	<ol style="list-style-type: none"> <li>1. All investors who filed 13D in the period</li> <li>2. Localized Hedge Funds among them</li> </ol>	Abnormal returns, firm performance and wealth expropriation	Journal of Finance	1032	2001-2006
Clifford (2008)	<ol style="list-style-type: none"> <li>1. Collect dataset of hedge funds</li> <li>2. Find 13D's filed by these funds</li> </ol>	Abnormal returns - active blocks vs. passive blocks for hedge funds	Journal of Corporate Finance	788 activist blocks  1114 passivist blocks	1998-2005
Klein & Zur (2009)	<ol style="list-style-type: none"> <li>1. Collect all 13D's in period</li> <li>2. Localize hedge funds, and restrict all events with general agenda</li> <li>3. Use websites, newspapers and CISDM hedge fund database</li> </ol>	Abnormal returns for hedge fund activists with an explicit agenda, comparing against other activists	Journal of Finance	151	2003-2005
Klein & Zur (2011)	<ol style="list-style-type: none"> <li>1. Find all filings between 1994-2006</li> <li>2. Find 625 hedge fund events, with only 193 yielding sufficient information</li> </ol>	Wealth expropriation - impact on bondholders	Working Paper	193	1994-2006

Greenwood & Schor (2009)	<ol style="list-style-type: none"> <li>1. Merge all 13D's and DFAN14A</li> <li>2. Cross reference 13D's against 13Fs</li> </ol>	Abnormal returns - researching objectives and success	Journal of Financial Economics	784 hedge fund events  196 non-hedge fund events	1993-2006
Stokman (2007)	<ol style="list-style-type: none"> <li>1. Found hedge fund activists</li> <li>2. Collected these activists' 13Ds</li> </ol>	Abnormal returns - for both Europe and U.S.	Working Paper	90 in the U.S.  188 in total	2000-2007
Brav et al. (2010)	<ol style="list-style-type: none"> <li>1. Use dataset from Brav et al. (2008)</li> <li>2. Hand-collect for 2007 following same steps as the previous article</li> </ol>	Review of hedge fund activism	Foundations and Trends in Finance	1059	2001-2007
Boyson & Mooradian (2007 & 2010)	<ol style="list-style-type: none"> <li>1. Obtain sample of hedge funds</li> <li>2. Identify activists with fund size of min 10m USD</li> <li>3. Collect all 13D's for these funds</li> </ol>	Abnormal returns, emphasizing objectives	Review of Derivatives Research	397	1994-2005
Boyson & Mooradian (2011)	<ol style="list-style-type: none"> <li>1. Find Hedge funds from Lipper TASS</li> <li>2. Includes only well-established funds</li> <li>3. Collect target firms</li> </ol>	Abnormal returns for high frequency funds and low frequency funds	Working Paper	272	1994-2005
Gantchev et al. (2013)	<ol style="list-style-type: none"> <li>1. Start with a list of 13D's from Dow Jones Newswires</li> <li>2. Find hedge funds through various sources</li> <li>3. Download all 13D for the final list of hedge funds</li> </ol>	Spillover effects of hedge fund activism	Working Paper	1281	2000-2011

Gantchev & Jotikasthira (2012)	<ol style="list-style-type: none"> <li>1. Start with a list of 13D's from Dow Jones Newswires</li> <li>2. Find hedge funds through various sources</li> <li>3. Download all 13D for the final list of hedge funds</li> </ol>	Whether institutional exits facilitate the emergence of activists	Working Paper	1191	2000-2007
Gantchev (2012)	<ol style="list-style-type: none"> <li>1. Start with a list of 13D's from Dow Jones Newswires</li> <li>2. Find hedge funds through various sources</li> <li>3. Download all 13D for the final list of hedge funds</li> </ol>	Net returns - monitoring costs and abnormal returns	Journal of Financial Economics	1164	2000-2007
Aslan & Kumar (2014)	<ol style="list-style-type: none"> <li>1. Hand-collect list of activist hedge funds</li> <li>2. Subsequently use this list to find 13Ds</li> </ol>	Product market effects of hedge fund activism	Working Paper	1610	1996-2008
Hamao et al. (2010)	<ol style="list-style-type: none"> <li>1. Hand-collect block-shareholding filings from various sources</li> <li>2. Identify which investors constitute activist investors</li> <li>3. Collect additional information if necessary</li> </ol>	Activism in Japan	Working Paper	916	1998-2009
Becht et al. (2007)	<ol style="list-style-type: none"> <li>1. Data from Hermes</li> <li>2. External data from Datastream and LSPD</li> </ol>	Clinical study of returns to Hermes U.K. Focus Fund	Working Paper	41	1998-2004
Becht et al. (2010)	<ol style="list-style-type: none"> <li>1. Use a fund and a public database</li> </ol>	Hedge fund activism in Europe		362	2000-2008
Zhu (2013)	<ol style="list-style-type: none"> <li>1. Utilizes Brav et al. (2008)'s dataset</li> </ol>	Effectiveness of hedge fund activism in preventing corporate policy deviations	Working Paper	1264	1994-2007

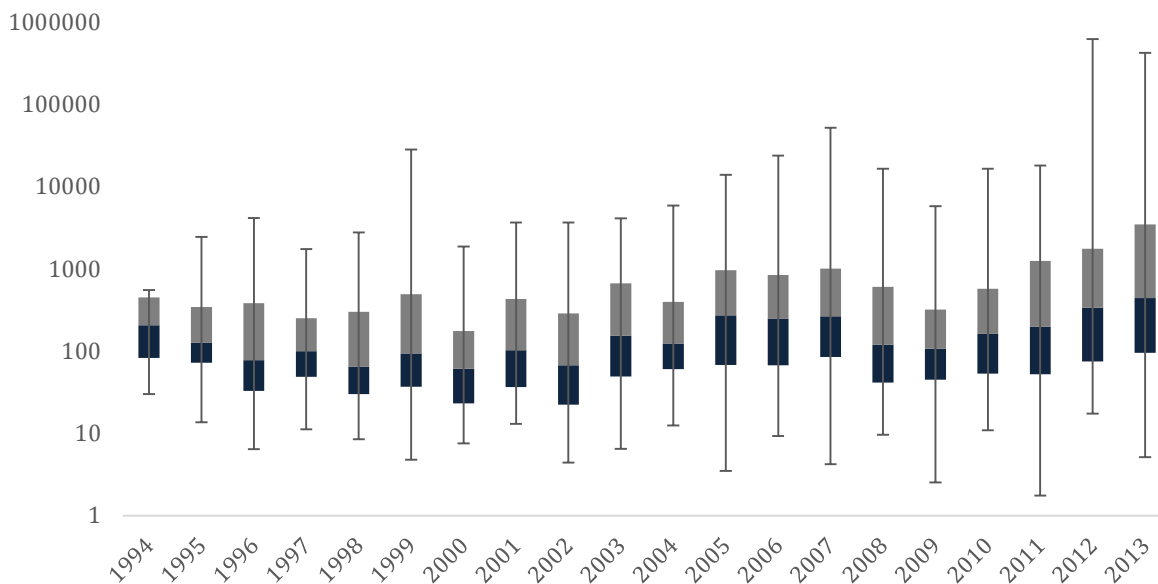
Edmans et al. (2012)	<ol style="list-style-type: none"> <li>1. Use Factiva search to localize hedge funds</li> <li>2. Employ the list of hedge funds to collect needed filings</li> </ol>	The effect of liquidity on governance	Review of Financial Studies	709	1995-2010
Sunder et al. (2011)	<ol style="list-style-type: none"> <li>1. Use list of hedge funds provided by Brav et al. (2008)</li> <li>2. Collect their 13Ds</li> </ol>	Debt holder responses to activism	Review of Financial Studies	1649	1995-2008

\* When stated to collect or find 13D's, it is done through SEC's Edgar database

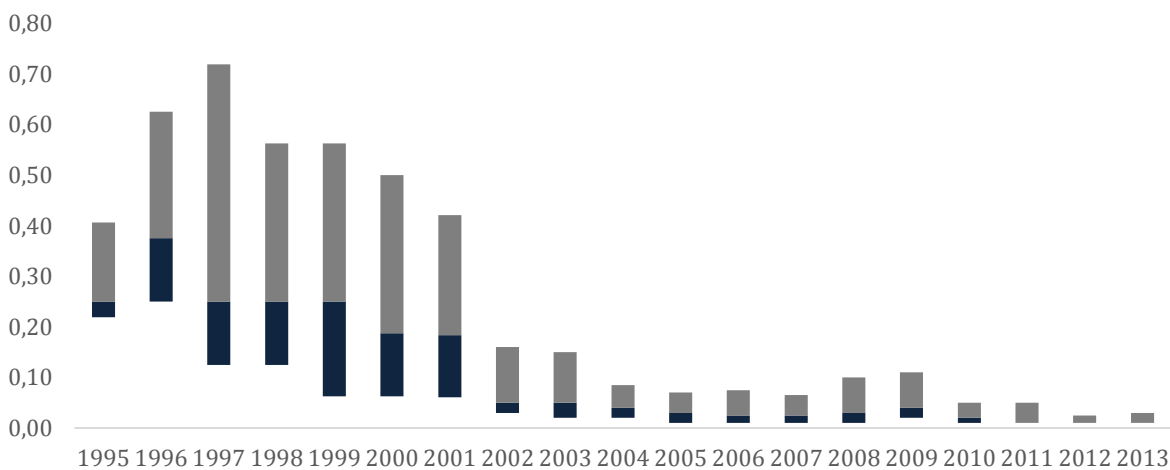
\*\* Unique target firms in cases where total events not listed

**Appendix C: Box-Plot Diagrams**

Logarithmic development in market capitalization (mUSD)



Logarithmic development in bid-ask spread (including only 25<sup>th</sup>, 50<sup>th</sup> and 75<sup>th</sup> percentiles)



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## **Appendix D: Early Evolution of Shareholder Activism**

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### **Early 1900s – Smouldering Activism**

Shareholder activism in the U.S. is, in fact, an over 100-year old story, despite its presence in headlines being a quite new phenomenon. Gillan and Starks (1998; 2007) write that American insurance companies, mutual funds and banks were kicking it off already in the early 1900s, being active participants in U.S corporate governance through board members.

However, in the decades to come, laws were passed inhibiting the financial institutions' ability to have concentrated power and thus an active role in corporate governance. Among them was the first Glass-Steagall Act from 1932, prohibiting U.S banks from owning equity directly. In addition, regulatory reforms succeeding the stock market crash in 1929 made it costlier for financial investors to actively engage the governance of firms. The result was a broadening of the gap between ownership and control, not to be constricted until 50 years later during the corporate raiders and LBO boom in the 1980s (Gillan & Starks, 2007). Other legislative changes with impact was the Securities Exchange Act from 1934; which established the Securities and Exchange Commission (SEC), and the Investment Company Act of 1940, defining the responsibilities and limitations placed on open-end mutual funds and closed-end funds that offer investment products to the public.

Some also argue that shareholder activism can be traced back to 1932, when Lewis Gilbert, a young owner of 10 shares, attended his first annual meeting of New York City's Consolidated Gas Co. He was alarmed by the lack of communication between the company's management and owners (Talner, 1983 cited in Gillan & Starks, 1998), and consequently started attending annual meetings to ask questions to corporate management. Nevertheless; the shareholder activists in the 1930s and early 1940s were rarely effective, as they had a hard time garnering enough support to effect any significant change. The lion's share of shareholders would divest their shares rather than engage in any form of activism in order to express their dissatisfaction with the company's governance or activities. This was called "the Wall Street Walk" (Huynh, 2010)

### **1940s-1970s – The Origins of the Current Activism Wave**



In 1942-1943 SEC introduced a rule (which is the predecessor of today's rule 14a-8 of the Securities Exchange Act of 1934) allowing for shareholder proposals for inclusion of corporate ballots. This was the starting shot for a slow, but secure, change in both identity and focus of shareholder activists. As a consequence of the rule, Lewis Gilbert (and his brothers) started utilizing proxy processes to pursue issues related to corporate governance. According to the American Society of Corporate Secretaries (ASCS), 92 stockholder proponents submitted 607 shareholder proposals in the first ten years after the implementation of the 14a-8 Rule (Gillan & Starks 1998; 2007; Talner, 1983). The shareholder activism from 1942 through the end of the 1970s was mainly dominated by individual investors. "Proxyteers" such as Louis Wolfson and Robert Young became widely notorious in the 1950s after launching several proxy battles contesting board control in major U.S. public companies (Karr, 1956; Cheffins & Armour, 2012). In addition, in 1948, James Peck, a member of the Congress for Racial Equality, purchased one share of Greyhound stock to raise the issue of integrating bus seating in the South to the management at the annual corporate meeting. This may, albeit with limited success, have been the start of a new branch of activism; the social one. Social activists started utilizing the proxy process, illustrated by when a shareholder group sought restrictions on Dow Chemical Company's sale of napalm.

Towards the end of the 70s, shareholder activism became more effective, mainly attributed to early signs of the institutional investors' rise and the Employee Retirement Income Security Act of 1974 (Huynh, 2010).

### **The 1980s – The “Deal Decade”**

The 1980s is still known as the “Deal Decade”, predominantly due to a wave of LBOs, corporate raiders and hostile takeovers, where investors bought large number of shares to gain significant voting rights and unlocked value by engineering and utilizing both aggressive and innovative financial techniques to force through massive takeover bids. While these raiders were generally in the market for corporate control, trying to discipline boards and managements, a significant portion of them also resembled today's offensive hedge fund activists. For example, Charles Bludhorn, chairman of the conglomerate Gulf & Western (G&W), pursued undervalued companies to buy, using G&W as an investment medium. In 1981, G&W owned a stake in excess of 20% in 5 companies, and a stake exceeding 5% in “nearly a dozen more” (Cheffins & Armour, 2012). Other corporate raiders followed similar patterns by accumulating significant

minority stakes in public companies, using other public companies as investment platforms. The utilization of public companies as investment mediums, rather than investment funds, was influenced by a safe harbor in the Investment Company Act of 1940 which restricted investment funds from carrying out the kind of offensive activism present during the deal decade. However, publicly traded companies which had business on their own, and had no more than 40% of their assets invested in stocks of other companies, were exempt from this legislation (Cheffins & Armour, 2012)

At the same time, the 1980s saw a radical increase in the involvement of institutional investors, political groups and “gadfly” investors; investors who advocated for change through the use of shareholder proposals and attendance at shareholder meetings, stridently grilling the management. The individual activists from the 70s relapsed while the large institutional pension funds, mutual funds, “gadfly investors” and corporate raiders were there to play (Kahan & Rock, 2007).

The current form for institutional activism, however, is by many said to be descended from Jesse Unruh, the seminal California state treasurer. In 1985, he formed the Council of Institutional Investors as a response to the greenmailing of Texaco by the Bass Brothers. At the time, Unruh was the director of two of the largest funds in the U.S.; the California Public Employees Retirement System (CalPEERS) and the California State Teachers Retirement System (CalSTRS). He founded the council as he discovered that Texaco, in which the funds under his management were heavily invested, paid a \$137 million premium to Bass Brothers to avoid a takeover, while the premium was not offered to other investors. The Council of Institutional Investors was established to lobby for shareholder rights, and became a focal point for institutional shareholder activists (Monks & Minow, 1995; Gillan & Starks, 1998). In addition, the Institutional Shareholder Services (ISS), a proxy advisory firm, was founded in 1985 to advise clients in proxy contest (Briggs, 2007). ISS has later had clients like Carl Icahn in his proxy contest against the drug maker Forest Laboratories in 2012.

The late 1980s may also be considered the starting point for several of today’s most prominent activist hedge funds as a handful of activists started to operate via private investment funds. Steel Partners was founded by Warren Lichtenstein in order to buy 9% of Kinark, a minor Oklahoma steel galvanizing company considered undervalued. In 1993, Steel Partners II was launched as a hedge fund with mandate to invest in undervalued firms and, if necessary, engage

actively to increase shareholder returns. Steel Partners later turned out to be one of the most prominent activist hedge funds during the 2000s, and is still a going concern.

Another high-profile investor rising out of the world of LBOs in the 1980s was Carl Icahn. He was a well-known corporate raider in the 80s, and has been one of the most influential hedge fund activists up to present. However, Carl Icahn was not part of the pioneer hedge fund cohort (Cheffins & Armour, 2012). Carl Icahn hunted alone through a New York based brokerage firm, and made his first dip into activism with a nearly 10% stake in Tappan Co., a household application manufacturer, in 1978. By the mid-1980s, Icahn's acquisitions were made through a conglomerate of partnerships, ultimately backed by Icahn and 40 "silent partners". Nonetheless; his label as a "lone wolf" held true as Icahn's take accounted for approximately 80% of net profits. Mr. Icahn has since his first stake in Tappan Co. unquestionably been among the most noticeable activists, well-known for his positions in underperforming companies and his unconditional and relentless pushes for change, well-illustrated by his confrontations with Texaco in the 80s and RJR Nabisco in the 90s.

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**Appendix E: Section 13**

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This is supposed to give the reader a more thorough understanding of the filing system, and act as a continued paragraph to 6.1.1

There is important information needed to be disclosed when the intention is to exercise control (proxy fight, acquire board seats etc.). Lawsuits may occur if one tries to exercise control in other ways than stated in section 4: If an investor violates the section, such as filing false information, one can receive civil lawsuits initiated by either management or other shareholders who sold their shares without knowing the consequence of the actions. Furthermore, SEC can impose both criminal and civil penalties, such as prohibiting the block holder from voting, or impose criminal sanctions (Edman, Fang & Zur, 2011).

There is also an extension to the 13D, a 13D/A, an amendment. This must be filed within ten days if a material change to any of the items in the original 13D occurs (such as item 4), or a change in ownership exceeding 1% (accumulating shares) or similar happens. However, since we are most interested in the initial filing, we place small emphasis on these filings. Furthermore, 13Ds' counterpart is the 13Gs. The most important difference between a 13D and 13G filing is the intention of the investor. 13G filings refer to non-active investors, and contain more lax deadlines and less strict rules when increasing ownership. In addition, a passive investor only has the option to file a 13G, and is by definition not obligated (Edman, Fang & Zur, 2011). The non-active aspect is defined as when the investor "can certify that they did not purchase or do not hold the securities for the purpose of changing or influencing control over the issuer" (SEC). The issue of control is harder to define, but has been noted by Charles Penner in Schulte, Roth & Sabel LLP's Activist Investing Developments newsletter as "when an investor intends to obtain outright control over a company or to assist others in doing so, such as planning an offer to purchase the company or an attempt to gain majority control of a company's board. However, other seemingly more benign activities, including the type of "shareholder activism" practiced by many large investors today, may also be deemed to demonstrate an intent to change or influence the control of a company." Hence, filing a 13G reduces the likelihood and opportunity to engage in activism (Edman, Fang & Zur, 2011), and we subsequently choose to focus on 13Ds in line with previous research on activism (Brav et al; 2008, Klein & Zur; 2011, Greenwood & Schor; 2009, Bebchuk et al; 2013)

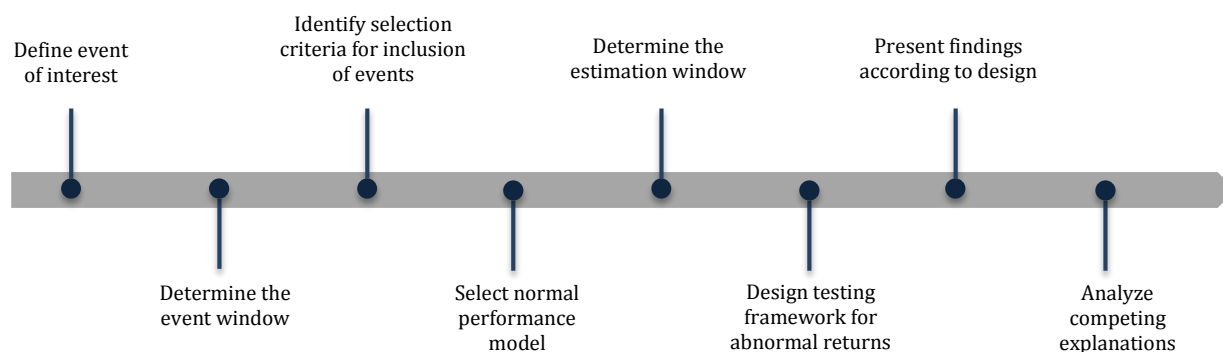
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## Appendix F: Comprehensive Methodology

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### *The Event Study Outlined*

Event studies follow a long line of empirical literature on analysis of value creation around corporate events (Lo & MacKinlay; 1997, and Fama Fisher, Jensen & Roll; 1969). Eckbo (2007) defines event studies as examining the behavior of a firm's stock prices around corporate events. In alignment with their approach, we consider the seven major steps in building an event study. Furthermore, we add an eight step following the analysis of value creation in M&A by Haugen and Ulseth (2009); the need for analyzing possible competing explanations. We utilize the event study framework both when addressing the short-term and long-term return characteristics of hedge fund activist intervention.

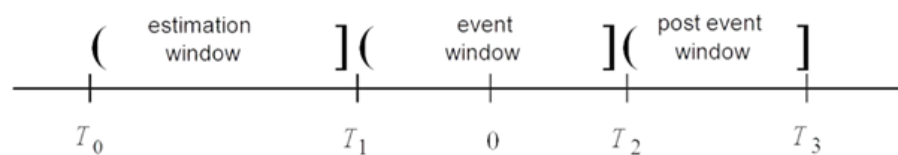


*Figure A: Eight steps involved in properly performing an event study*

The first step of an event study is obviously to define and classify the event of interest, which, in our case, are hedge fund activist involvement in U.S. public companies from 1994 to 2013. In the lion's share of our events, we consider the SC 13D-filing date as the event date, while in the cases where the hedge funds accumulate stakes below the five percent mark (i.e. not triggering the obligation to file) the event date is set to the first date on which the activist stake is publicly known.

Further, we determine the event window. The event window must, preferably hold some basic properties. First, it must obviously surround the event date. Second, we want it to be wide enough to cover all of the event's measurable effects, nevertheless; narrow enough to minimize the noise introduced by widening the window, namely effects unrelated to the event taking place in the event window (see chapter 5.3). Due to problems with exactly measuring when the

information reaches the market, standard practice is to expand the event window both before ( $T_1$ ) and after ( $T_2$ ) the addressed event. The estimation window should be prior to, and not overlapping with the event window, and is used to determine the parameters of the normal performance model (in our case the Fama-French and momentum parameters) to which the realized performance data will be compared. Overlapping event and estimation windows would lead to an estimation of normal return parameters affected by the event, and as the normal return is by construction the expected return in absence of the event, this is, needless to say, undesirable. If the study also considers the subsequent performance of the company, a post-event window is employed to measure performance in the period immediately following the event (Haugen & Ulseth, 2009)



*Figure B: sequencing of estimation window, event window and post event window.*

The subsequent step is to determine the selection criteria by which events are included. We refer the reader to the data chapter for a discussion on this topic.

Further, to be able to single out the effects of the highlighted events, the realized performance characteristics must be compared to a normal return, i.e. the expected return in absence of the event according to a selected pricing model. The parameters needed to estimate the normal returns are, as mentioned, calculated in the estimation window which has to be determined. The estimation window should run well in advance of the event itself in order to calibrate the selected performance model (MacKinlay, 1997).

Next, the formulation of the null-hypotheses introduces the statistical testing of the results of study. Depending on the size of the sample, statistical inferences about the return effects of the event can be made from statistical testing of such hypotheses. As small samples may not fulfill the statistical properties needed to confidently make econometric inferences, we design our study to preserve a large sample. Significant deviations from the null-hypothesis lead to its rejection, and suggests that the alternate hypothesis may be true. An example would be a null-hypothesis stating that the announcement of hedge fund activism intervention is not

accompanied by a run-up in the target firm stock. A deviation from this of statistical significance would suggest that the announcement of hedge fund activism is accompanied with an abnormal run in the target firm stock, positive or negative, based on the sign of the deviation.

### *Hypothesis Testing and Econometrics*

Since the true outcome of the relationship between the effect and outcome is not available, we rely on statistical techniques to obtain estimates allowing us to make inferences about the given effects and outcomes. We next devote time to methodological issues and potential approaches to ensure valid results. First, we use standard regression analysis to determine the significance of different factors, following a long line of empirical literature (e.g. Brav et al. 2010; Greenwood and Schor 2009). Second, we propose utilizing subsamples by analyzing median and average values. The subsample analysis is characterized by a subset of the total samples that share one or several characteristics. Testing potential differences in these subsamples will help us indirectly determine important factors characterizing the phenomena activist hedge funds.

### *Regression Analysis and its Pitfalls*

In general, one uses regression techniques to be able to describe and evaluate the potential relationship between a dependent variable, the regressand, and one or several explanatory variables, the regressor(s) (Woolridge; 2002). Academics (Walpole et al; 2002) argue regression suitable for (1) obtaining estimates regarding individual coefficients, (2) screen variables to determine which ones yield significant effect on the regressand, or (3) arrive at the most effective predictive equation. For our thesis' purpose, we are primarily interested in the potential variables screened to determine if coefficients yield estimates supporting our theories and hypothesis. Furthermore, we employ it to predict abnormal returns in various ways. We denote the regressand as  $y$  and the regressors as  $x_1, x_2, \dots, x_k$ . The standardized equation takes the form:

$$y = a + b_1 * x_1 + b_2 * x_2 + \dots + b_k * x_k + u \quad (7)$$

The model in (7) is representation of the observed relationship seen in (8)

$$y = a + B_1 * x_1 + B_2 * x_2 + \dots + B_k * x_k \quad (8)$$

The  $u$  term represents the disturbance term included to capture effects in the model unexplained by the linear regression.

Coefficients in (1) are estimated by using optimization procedures dependent on the sample size. We have chosen to use three different regression tools used when suited, (i) the standard Ordinary Least Squares (OLS), (ii) the Generalized Method of Moments (GMM), and (iii) Logit Regression. Where in (iii) we look at the marginal increase in predicted probability of obtaining positive long-term abnormal returns as one increase the corresponding regressor by one unit, conditional on the fact that we are looking at a company with average values at all independent variables, yielding a  $\frac{dy}{dx}$  marginal relationship.

We show the functional relationship for OLS, minimizing the sum of squared distances between observed and predicted values. When using several regressors, we obtain a multiple regression, where the OLS estimates are obtained in the following manner:

$$\begin{bmatrix} a \\ B_1 \\ B_2 \\ \cdot \\ \cdot \\ \cdot \\ B_n \end{bmatrix} = (\underline{X}^T * \underline{X})^{-1} * \underline{X}^T * \underline{Y} \quad (9)$$

Where  $\underline{X}$  is a  $(t) * (n+1)$  matrix including all  $(t)$  observations of  $(n)$  regressors in its columns, also containing a column describing the constant (Haugen & Ulset; 2009). Furthermore  $\underline{Y}$  is a  $(t) * (1)$  matrix containing all observations of the regressand.

We refer the reader interested in the goodness of fit estimate ( $R^2$ ) and joint statistical significance (F-test) to Wooldridge (2002) or Dougherty (2011).

We believe a multiple regression model will be critical in explaining the variability in the abnormal returns, the regressand. Hence, we need to decide which regressors should be included in the process. Walpole et al. (2002) suggest a stepwise regression method when independent variables become significant in numbers. The reasoning behind this is to ensure introducing only variables with explanatory power, testing them each step on the way whether they are significant by employing the test for joint significance (F-test) and subsequently the t-test. One



believes the model should be complete once the goodness of fit estimate does not increase beyond a predetermined threshold.

We also check our sample for *multicollinearity*, which is when two or more regressors are highly correlated, complicating the ceteris paribus interpretation of the regressions. In addition, multicollinearity might increase the standard errors, hence reduce the t-values, complicating statistical inference even though the OLS estimates are still the Best Linear Unbiased Estimators (BLUE). To formally detect the potential multicollinearity we examine the Variance Inflation Factor (VIF) and Tolerance (T) of each of the regressors.

$$VIF_{x_i} = \frac{1}{1-R^2_{x_i}} \quad (10)$$

$$T_{x_i} = \frac{1}{VIF_{x_i}} \quad (11)$$

Where  $R^2_{x_i}$  is the  $R^2$  from the regression of  $x_i$  on the other covariates.

Further, because of the substantial variation in the values of the different variables, the results might suffer from *heteroscedasticity*. Heteroscedasticity is basically when the variance of the disturbance terms are inconstant, i.e.:

$$\sigma^2_{u_i} \neq \sigma^2_{u_j} \quad (12)$$

where both i and j are in-sample observations. Heteroscedasticity does not necessarily mean that the disturbance term will have a particularly large value for particular values of the independent variables, however; it increases the probability of erratic disturbance terms. Heteroscedasticity will not cause biased coefficients, nonetheless, OLS-estimators will no longer be BLUE and their variances will not be the lowest of the unbiased estimators (White, 1980). We formally test whether the disturbances are homoscedastic by conducting a White Test.

### *Subsample Analysis*

This analysis is a powerful tool helping us determine whether two subsamples' corresponding populations have equal or unequal means. In our case, we are able to divide the total sample into different economic cycles, frequency of activist funds and more.

The significance of the averaged CARs can then be tested against a null-hypothesis that  $\overline{CAR} = 0$  by using standard t-testing where a t-value is compared to a critical value corresponding to a particular significance level, to check whether one can reject the null-hypothesis or not.

$$t = \frac{\overline{CAR}}{\frac{\sigma}{\sqrt{N}}} \quad (13)$$

In some of our analyses, we are also interested in potential differences in  $\overline{CAR}$ s between subsamples, i.e testing the null-hypothesis that the difference in CAR between two sub-samples is statistically indistinguishable from zero. This can be tested statistically by executing a t-test for testing differences in means, generating a t-value, again comparing it to a critical value corresponding to a desired significance level.

$$t = \frac{\overline{CAR}_1 - \overline{CAR}_2}{\sqrt{\frac{VAR_1}{n_1} + \frac{VAR_2}{n_2}}} \quad (14)$$

In both tests we reject the null-hypothesis if

$$|t| > t_{critical} \quad (15)$$

One of the assumptions of the t-test is that the two samples are normally distributed. If they are not, one can assume either that with increasing sample size they will be (Central Limit Theorem), or use a non-parametric test procedure. The latter sidestep the assumption of normally distributed data. However, the downside of these tests lies in the less efficient estimates computed. Detecting the non-normality in data can be ensured by Shapiro-Wilk/Francia tests.

We employ both one-sample and two-sample Wilcoxon test, we show the theoretical relationship in the following. The first is called the Wilcoxon signed-rank test, making inferences about a population median. One subtracts the hypothesized median from each observation and thereby assign a rank to the differences (Woolridge; 2002). The null-hypothesis is that the median equals the hypothesized median. Thereafter, one sums up the ranks of negative and positive observations to test the lowest of the sums against the critical value, rejecting the null-hypothesis if the value is equal or less than the critical value.

With the Wilcoxon rank-sum test (two samples) one uses the same approach as the Wilcoxon signed-rank test, and one calculates the test statistic with the following formula:

$$u_{1,2} = w_{1,2} - \frac{n_{1,2} * (n_{1,2} + 1)}{2} \quad (16)$$

where  $w_1$  and  $w_2$  are the smallest ranked – sums for both observations.

Subsequently, the minimum of  $u_{1,2}$  is compared to the critical value, where the null-hypothesis is rejected if the statistic is equal or less than the critical value, following the signed-rank test. We employ both tests in line with Walpole et al. (2002) to take advantage of their strengths.

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**Appendix G: Logit Regressions on Cross-Sectional Differences in LTAR**


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We also conduct two logit regressions, where the dependent variable is a dummy variable equal to one if the corresponding LTAR is positive, and zero if negative. The two regressions, model 7 and model 8 are equal, in terms of regressors, as model 4 and model 6 respectively. The results are reported as a whole in the end of this chapter. A logit regression is used, basically, to model dichotomous outcome variables by modelling the log odds of the outcome (positive LTAR) as a linear combination of the regressors. In other words, our logit models aims to estimate the probability for achieve positive LTARs for given values of the included regressors. In general, the logistic regression function can be written as,

$$P = \frac{e^{\alpha + \beta_1 x_1 + \dots + \beta_n x_n}}{1 + e^{\alpha + \beta_1 x_1 + \dots + \beta_n x_n}}$$

where P is the probability of 1, “e” is base of the natural logarithm and the alphas and betas are the parameters, as in a normal linear model. The results of the regressions are largely similar to those obtained in the linear regressions. The probability for positive LTARs is increasing in the Cash-to-Asset ratio (Model 7 and 8), while a decreasing function of the price-to-book ratio (Model 7 and 8) and the bid-ask-spread (Model 7 and 8). In addition, in model 8, the logit regression predicts the probability for positive LTARs to be lower for interventions stating friendly tactics than hostile. Lastly, in Model 8, objectives targeting capital structure is predicted to have a lower probability to obtain positive LTARs than objectives targeting general undervaluation.

The coefficients can be interpreted as the marginal increase in predicted probability of obtaining positive LTARs as one increase the corresponding regressor by one unit, conditional on the fact that we are looking at a company with average values at all independent variables. Thus, in model 7, when considering the average company, an increase in the Cash-to-Asset ratio of 1 (equaling 100 percentage points) would be predicted to increase the probability of obtaining positive LTARs by 28.2 percentage points. More practical, an increase in the Cash-to-Asset ratio of 1 percentage point would be predicted to increase the probability of obtaining a positive LTAR by 0.282 percentage points.

One point is, however, important to stress. While being a strong analytical tool, yielding us an important sanity check regarding our previous linear regressions (model 1-6), we do not emphasize the logit regressions too heavily. The reason is the dichotomization of the dependent variable (the long-term abnormal returns). Forcing it into a two-category system removes the lion's share of the variation in LTARs which we are in fact trying to analyze, leaving us unable to identify potentially important differences in cases earning extremely high positive (negative) LTARs and extremely low positive (negative) LTARs.

		(94-13) Model 13	(12-13) Model 14
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Target firm characteristics	Cash-to-Assets	1.312** (0.657)	6.811** (2.917)
	Ebit-margin	0.00814 (0.0125)	1.231 (1.573)
	Debt-to-Assets	-0.154 (0.510)	2.355 (1.626)
	Lnpb	-0.625*** (0.147)	-1.087*** (0.409)
	Ln(mca)p	-0.0112 (0.0589)	-0.234 (0.157)
	Bidask	-1.216*** (0.462)	-5.843*** (2.225)
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Hedge fund characteristics	HighF	0.381* (0.199)	-0.353 (0.568)
	MediumF	-0.129 (0.231)	-0.374 (0.686)
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Intervention characteristics	Capstruc		-1.774*** (0.680)
	Strategy		-0.0595 (0.751)
	Sale		-0.981 (0.741)
	Gover		0.325 (0.744)
	Friendly		-2.096*** (0.717)
	Stake		-1.143 (7.425)
	Constant	1.114** (0.480)	4.358*** (1.581)
	Year dummies	Included	Included
<hr/>			
	Pseudo R-sqrd	0.0581	0.2181
	Observations	760	127

The panel reports the predicted marginal increase in probability of obtaining a positive abnormal return given single unit changes in the regressors, for a company where all regressors are set to its mean. Model 7's (Model 8's) regressors correspond to Model 4's (Model 6's). Standard errors are reported in parentheses.

\*, \*\* and \*\*\* indicate statistical significance at 10, 5 and 1% levels.