

Capital Markets and Corporate Control: Empirical Evidence from Hedge Fund Activism in Germany

Wolfgang Bessler and Julian Holler

Center for Finance and Banking
Justus-Liebig University Giessen
Giessen, Germany

Abstract:

Since the beginning of this century the German financial system has changed from an extreme universal banking system to a more financial market oriented system in various aspects. Most importantly and most visibly, the corporate governance and corporate control structure underwent substantial changes. In fact, hedge funds and other activist investors are increasingly taking advantage of a control vacuum within the ownership structure of many German firms which resulted from the reallocation of corporate control from universal banks to capital markets. In particular, many German banks have sold off their equity stakes in industrial companies and have stopped voting proxies on behalf of their clients. In addition, they reduced their involvement in supervisory boards. One interesting question is whether this capital market orientation led to an increase in shareholder value. Based on a sample of 324 events in Germany between January 2000 and June 2006, we find empirical evidence that the engagement of activist shareholders such as hedge funds increased shareholder value in the short and in the long run. Moreover, our findings suggest that this effect is more pronounced for small illiquid stocks due to higher information asymmetries. Furthermore, there is also some weak evidence that the initial valuation effects around the announcement date depend on the track record and reputation of the activist investor.

Current Version: January 15, 2008

Keywords: Corporate Governance, Hedge Funds, Event Studies

JEL Classification: G14, G30, G23

Address: Prof. Dr. Wolfgang Bessler, Center for Finance and Banking, Justus-Liebig-University Giessen, Licher Strasse 74, 35394 Giessen, Germany, Phone 0641-99 22 460, Fax 0641-99 22 460, e-mail: Wolfgang.Bessler@wirtschaft.uni-giessen.de.

1. Introduction

Traditionally, Germany was well known for its bank based financial system or universal banking system with the major banks being active in commercial and investment banking as well as in asset management and in distributing mutual funds and insurance. Moreover, financial analysts are usually bank employed and banks had substantial shareholdings in the major German corporations.¹ Most importantly, they exercised significant influence on corporate Germany by representing the majority of votes in shareholder meetings and sitting on behalf of investors on supervisory boards.² Consequently, for many decades corporate control was dominated and executed by banks. This German universal banking system and especially the bankers' influence on management have changed dramatically over the last decade. For example, in more than half of the German firms in the DAX index the foreign ownership is nowadays higher than 50% (Table 1) with Deutsche Börse having the highest foreign ownership with 84%³. Moreover, the shareholdings are widely spread with more than half of the firm having more than 90% of the shares broadly distributed ("Streubesitz"). There are only a few firms in the DAX with major shareholders such Deutsche Telekom, Deutsche Postbank, Volkswagen, Metro and BMW.⁴

One consequence of the internationalization and the highly dispersed ownership structure is that shareholders participation in the annual meeting has decreased dramatically over the last decade to below 50% on average in 2005 (Handelsblatt, September 27, 2006) with major implications for corporate governance.⁵ More recently, this trend has reversed with the average attendance of votes now being again above 50% (Table 1), but still relatively low. Hence, a single shareholder or a group of shareholders "acting in concert" may easily influence or force key decisions. Thus, there is no doubt that corporate governance in Germany has changed dramatically with some major implications for corporate control since the beginning of this century. It not only changed from a bank based to a more financial market oriented system,

¹ The sell-off of these holdings was significantly facilitated by the abolition of capital gain taxes for corporate taxpayers on January 1, 2002 (Deutsch et al. 2001).

² See Baums and von Randow (1995) for an analysis of the role of banks in the general assembly and on the board of directors of German firms in the 1990s.

³ This is quite interesting because Deutsche Börse was fully owned by the German banks before it was converted from a mutual to a stock corporation in 1999. One goal of the CEO Seifert at that time was to become a company with an international diversified ownership structure. See Book 2001.

⁴ In Deutsche Telekom, Deutsche Postbank, and Volkswagen the German government still holds a major stake subsequent to their privatizations. In addition, Porsche has acquired a 30% stake in VW and may take it over after the VW Law was ruled unconstitutional in 2007. Metro is family and founder owned as well as BMW and SAP.

⁵ The German government even discussed some measures to reverse the trend such as paying higher dividends to shareholders that participated in the annual meeting (Börsenzeitung, June 9, 2005, p. 7, "Berlin scheut vor Beschränkungen von Hedge Funds zurück").

but even more extreme to a system that to some extent is strongly influenced and controlled by hedge funds, while other institutional investors such as mutual funds appear to be more hesitant to exercise their control. Whether this is good or bad news needs some careful and detailed investigation. Consequently, we may expect that any empirical investigation of the impact of a change in corporate control and shareholder activism on firm performance may be more pronounced in Germany than in any other country.

One example highlights this change in corporate control. In spring 2005, shareholder activism by the hedge fund “The Children’s Investment Funds” (TCI) forced the German exchange operator “Deutsche Börse AG” to withdraw its second takeover bid for the “London Stock Exchange” and convinced the CEO and the Chairman of the Board to resign⁶. Under new management the Deutsche Börse AG performed well so far, distributed plenty of cash flows to shareholders through higher dividends and share buybacks. Ultimately, the stock price increased dramatically during the last three years generating an extraordinary performance for shareholders. The share price of Deutsche Börse AG relative to the DAX Performance Index for the periods 2000-2007 and 2005-2007 is shown in Exhibit 1, revealing that the outperformance begun after the hedge funds exercised some influence. In addition, the acquisition of the New York based International Securities Exchange (ISE) in 2007 drew only initial opposition from Atticus with other hedge funds supporting the deal. Other German firms such as TUI, Cewe Color, Freenet, Balda, Techem, Münchener Rück and Heidelberger Druck⁷ also have been the target of hedge funds activities with more or less financial success. Nevertheless, these events have sparked an intense debate about corporate control and corporate governance in general and about the activities of hedge funds in particular in Germany.

More recently, some of the attention has shifted to the potential influence of sovereign wealth funds from countries such as China, Russia, Dubai etc. with the German government currently discussing additional regulation.⁸ Thus, the interesting issue is whether Germany develops into a protective country with restrictions on share ownership, capital market activities and consequently corporate control or whether these measures will lead to more disclosure with regard to ownership structure and voting rights. With respect to hedge funds, politicians, unions and corporate managers argue that investors with limited stakes such as TCI should not

⁶ Börsenzeitung, May 10, 2005, p. 1, „Seifert und Breuer werfen das Handtuch“.

⁷ Börsenzeitung, December 29, 2007, p. 42, „Aktionärsaktivisten in Europa“

⁸ Börsenzeitung, December 29, 2007, p.41, Exhibit 2; Economist July 26, 2007; Annual Report of the German Council of Economic Advisors (2007)

be allowed to influence or even control major strategic and financing decisions.⁹ Based on the line of reasoning that these investors focus exclusively on short-term profits the German finance minister tried to persuade other governments to take actions but with limited success.¹⁰ However, legal reforms were initiated in Germany (Risk Limitation Act or “Risikobegrenzungs-gesetz”) which would require more disclosure and would make it more difficult for shareholders to act in concert and to exercise pressure on corporate management. Most importantly, if the draft version is passed, the purpose of the investment would need to be revealed by financial investors if their stake exceeds 10%.

The above claims against hedge funds are usually countered by the following two arguments. First, hedge funds cannot use their limited stakes to impose their will upon target companies, unless they get support from other shareholders to get the majority of votes. Second, in efficient capital markets hedge funds cannot increase shareholder value in the short-term unless their actions improve long-term prospects for the target company. One interesting question is, whether hedge funds can indeed exercise their influence with small shareholdings and whether they have on average a positive or negative impact on the firm value in the short- and in the long-run. Interestingly, empirical studies for the U.S. capital market have provided empirical evidence that hedge fund activism increases short- and long-term shareholder value (Klein and Zur 2006, Brav et al. 2006). Because, these findings cannot be transferred directly to the German capital market due to the traditionally different corporate governance system and differences in the institutional environment, it is interesting to examine empirically whether hedge funds as active investors have any impact on the performance of German companies. Thus, the purpose of this study is to provide empirical evidence of the effect that hedge funds have as active investors on the short- and long-run performance in Germany.

The rest of the paper is organized as follows. In the next section the literature is reviewed with respect to the corporate governance issues and hedge funds activities. In section 3 we provide an overview of the data and the methodology employed. In section 4 the empirical findings are reported and section 5 summarizes our findings and concludes.

⁹ With respect to sovereign wealth funds, the German corporations are not in support of regulations Börsenzeitung, December 29, 2007, p. 48, and Annual Report of the Council of Economic Advisors (2007).

¹⁰ Börsenzeitung, May 16, 2007, p. 3., “Hedgofonds-Initiative stockt”.

2. Literature Review

This section starts with a brief overview of corporate governance in Germany. In particular, it is argued that the withdrawal of banks from providing corporate governance has created a control vacuum in the control of many German firms. We then provide evidence why hedge funds have comparative advantages in exploiting this control vacuum and discuss some related problems. We close with a review of the empirical studies for the U.S. capital market that analyze the effects of capital markets and especially hedge funds on enhancing shareholder value.

2.1 Corporate Governance System in Germany

Traditionally, the corporate governance of public-listed firms in Germany was dominated by two groups of insiders (Faccio and Lang 2002, Franks and Mayer 2001, and La Porta et al. 2000 for an international comparison). On the one hand, Faccio and Lang (2002) provide evidence that the vast majority of small- and medium-sized firms used to be controlled by founders and their families. Because this group of insiders presumably enjoys significant private benefits of control, this usually created conflicts of interests with minority shareholders in particular and the capital market in general. On the other hand, the results of Faccio and Lang (2002) also indicate that a larger number of bigger firms had no controlling shareholder but instead a dispersed ownership structure. Most importantly, most of these companies were not subject to the control by capital markets. Instead, these companies were dominated by banks that were able to exercise most voting rights via the voting proxies (“Depotstimmrecht”). For example, Baums and von Randow (1995) reveal that in 1992 German banks represented 84% of all voting rights present in general shareholder meetings of German blue chip companies and held 12% of all available board seats. This created another set of agency problems, because banks also used to be the primary source of debt financing for German blue chip companies.¹¹ Furthermore, most publicly traded firms in Germany were embedded in a system of cross-holdings (Adams 1999).

Overall, this system accommodated a low level of transparency on capital markets and little legal protection for minority shareholders (La Porta et al. 2000), but created severe agency problems between corporate management and minority shareholders. Consequently, there was little scope for outside investors to exert significant influence on German firms. This was re-

¹¹ However, research by Gorton and Schmid (2000) shows that in the 1970’s this influence did not reduce shareholder value if the banks also held equity positions in the firms.

flected in the low level of activity on the market for corporate control in Germany (Köke 2004, Jenkinson and Ljungqvist 2001, Franks and Mayer 2001). Moreover, there was hardly any shareholder activism by mutual funds or pension funds. These institutions are subject to substantial conflicts of interests due to their affiliation with the major banking groups (Bundesbank 2001).

More recently, regulatory reforms and changes in the financing of German firms have pushed the German system closer to the Anglo-Saxon model of corporate governance. A detailed account of the forces driving this process is provided in Schmidt (2004). As a consequence, banks have reduced their involvement and lost their dominating role in corporate control. In particular, they have stopped voting proxies and have started to sell their holdings in industrial companies. As a result, attendance rates at company shareholder meetings have dropped sharply between 1998 and 2005 (Handelsblatt, September 27, 2006). According to the results of Faccio and Lang (2002), this effect should be especially pronounced for bigger firms. In sum, this process has created a control vacuum due to the diverse ownership structure of many German firms. This should allow capital market participants to take actions in order to implement a shareholder value oriented management approach which subsequently should lead to a superior performance and higher stock prices.

Furthermore, the disclosure mechanisms applicable to minority shareholders differ markedly between the U.S. and Germany. After crossing the threshold of 5% of outstanding shares, minority shareholders in the U.S. need to make a 13-D filing with the SEC which requires them to state their intentions. In contrast, according to the German §§21/26 WpHG rules, minority shareholders need to report already stakes larger than 3% to the company since the beginning of 2007 which in turn is then responsible for public disclosure to the capital market. Prior to January 2007, the relevant threshold was 5%. More importantly, the German disclosure regime contains no provision forcing minority shareholders to reveal their intentions. Combined with weak enforcement of these disclosure rules by the German Federal Financial Supervisory Agency BaFin (Bundesanstalt für Finanzdienstleistungsaufsicht)¹², the informational environment surrounding interventions by hedge funds and activist investors in Germany is quite different from that in the United States.

¹² Börsenzeitung, August 24, 2004, p. 1, Axa verstößt gegen Meldepflicht nach WpHG: The French insurance company Axa was subjected to the threat of a fine of just 200.000 EUR for violating WpHG 21/26-rules.

2.2 Hedge Funds

In the following subsection we provide evidence why hedge funds are able to fill the control vacuum left to capital markets by the departure of banks from corporate control in Germany. First, we discuss several theoretical arguments why hedge fund managers have higher incentives than other types of investors to monitor and to intervene in the governance of companies. Second, we analyze the mechanisms available to small minority shareholders like hedge funds to impose structural changes on the management of target companies.

2.2.1 Ability and Incentives to Monitor

Monitoring by capital markets is constrained by the free-rider problem if there are only small investors holding negligible stakes in companies. Hence, there arises the need for institutional investors to hold significant positions in companies. However, while mutual funds and pension funds gained in importance in the German financial system in the 1990's (Bundesbank 2001), there is little evidence that they actively put pressure on management. This can be explained by several reasons which highlight the comparative advantages of hedge funds to act as a monitor and to fill the control vacuum left by banks.

Hedge funds are in position to accumulate concentrated positions in their portfolios because they are evaluated against a total return benchmark and are not subject to regulatory limits on their portfolio holdings (Fung and Hsieh 1999) such as mutual funds. Thus, hedge funds with significant stakes in target companies can create credible threats to the target's management and large investments create strong incentives for monitoring portfolio companies (Brav et al. 2006). Mutual funds, in contrast, are evaluated against a relative performance benchmark which creates incentives to mimic the composition of the benchmark index followed by their peer group (Scharfstein and Stein 1990).

Furthermore, the compensation of hedge fund managers is directly tied to portfolio performance which in turn creates strong incentives to find good investments and monitor portfolio companies. Mutual funds and pension funds, in contrast, benefit only indirectly from superior performance. Their compensation increases only if superior performance triggers substantial inflows into their funds (Del Guercio and Tkac 2002). However, the structure of compensation arrangements for hedge fund managers contains some option-like features such as hurdle rates and high watermarks (John and John 2006). These might create conflicts with debt investors and even reduce company value under certain conditions if hedge funds force companies to significantly increase their operating and/or financial risks (Allen and Gale 2004).

Moreover, hedge funds contract lock-up periods and redemption notice periods with their investors and therefore tie up investor's capital in the hedge fund for up to two years. These contracts insure hedge funds against cash flow problems such as the risk of early withdrawals and reduce their exposure to the agency problem between fund managers and investors as analyzed by Shleifer and Vishny (1997). Effectively, this allows them to take a long-term perspective on positions which are presumably mispriced. In addition, they can participate in the restructuring of companies over extended periods of time. Taken together, these arguments suggest that hedge fund managers should be focused on maximizing shareholder value in the long run, on the one hand, and that there should exist in general only a limited number of potential conflicts of interests with other shareholders, on the other hand.

However, there are at least two issues which complicate this kind view on hedge fund investments. First, hedge funds are subject to little regulation and are allowed to use derivatives in their investment strategies, enabling them to buy and sell voting rights prior to the general shareholder meeting (Hu and Black 2007). Christoffersen et al. (2007) provide empirical evidence that allocating voting rights to those willing to pay for them should improve welfare. However, anecdotal evidence by Hu and Black (2007) suggests that at least some hedge funds abuse this "vote trading"-mechanism. In particular, a hedge fund can reap huge gains from long positions in takeover targets by purchasing voting rights in the acquiring company. An extremely interesting question with severe legal implications is, whether hedge funds are allowed to profit from an event driven stock price reaction, when creating this event is part of the only internal known hedge fund strategy. For example, a hedge fund can support or be in opposition to a specific M&A transaction knowing that can determine the outcome and consequently either buys additional shares or sells its own shares short. Furthermore, under certain conditions investments by hedge funds in publicly traded companies via "PIPE"-financings trigger short- and long-run declines in share prices. More precisely, the security design of "structured PIPEs (Private Investment in Public Equity)" ameliorates adverse selection problems for companies in financial distress, but also creates incentives for hedge funds to short sell the company's stock (Hillion and Vermaelen 2004).

Therefore, the accumulation of significant stakes by hedge funds need not be driven by their incentive to increase value and to improve corporate governance. Rather, they can also generate profits to the detriment of other shareholders. As a result, it is an empirical question whether the benefits outweigh the costs, i.e. whether hedge funds generate value on average for their own investment but also for other shareholders or whether they act to the disadvantage of other shareholders and the company.

2.2.2 Interventions by Hedge Funds

Although hedge funds accumulate concentrated stakes in target companies, these stakes are still quite small relative to the percentage of shares needed to control the general assembly of the target company. For example, in our sample the median stake represents 5.2% of outstanding voting rights. Hence, hedge funds' bargaining power in corporate governance rests upon their ability to convince other shareholders of the merits of their proposals. This, in turn, is determined by two key factors according to Tirole (2006).

On the one hand, their bargaining power relative to company management depends on their ability to communicate effectively their intentions to other shareholders (Tirole 2006). Here, the legal systems in the U.S. and in Germany offer similar mechanisms to activist investors. In the U.S., hedge funds can stage a proxy contest. More precisely, an investor can ask management to provide him with the contact details of all other shareholder in order to ask them to vote their proxies. In Germany, any shareholder owning more than 5% of shares can force the board to convene an extraordinary general shareholder meeting to discuss his proposals. Furthermore, hedge funds can communicate with other investors by using the media. In particular, some hedge funds use tactics that make their demands public by sending open letters to the company's management and board. Similarly, other funds directly use financial news services to spell out their demands. These mechanisms are closely related to findings that investors are more likely to purchase attention-grabbing stocks (Barber and Odean 2006), creating some kind of snow ball effect or momentum.

On the other hand, hedge funds' bargaining power depends on the credibility of their interventions. Hence, hedge funds can use different mechanisms to enhance the credibility of their interventions. For example, they can accumulate stakes large enough to trigger public disclosure to the capital market. Effectively, they are sending a signal to the market that they have invested in a large position in the target company enhancing the credibility of their intervention vis-à-vis other investors. However, the underlying legal framework differs markedly between the U.S. and Germany. Most importantly, investors need to state their intentions in the U.S. while there was no such requirement in Germany during our sample period. More recently the Risk Limitation Act ("Risikobegrenzungs-gesetz) has been discussed which would impose similar requirements on investors in Germany if implemented. Furthermore, the German disclosure regime offers more opportunities for insider trading for the following two reasons. First, the time lag between the date when an investor is required to make a filing and the date when this information needs to be published is significantly longer in Germany. Second,

investors report their holdings to the company in Germany which in turn discloses this information to the public. In the U.S., in contrast, investors have to report directly to the SEC which in turn publishes the information. Finally, some hedge funds have built up a reputation for increasing shareholder value. The track record of these hedge funds to act in the best interest of other shareholders increases the likelihood that other investors will actively support or at least passively tolerate their interventions.

In some cases, however, hedge funds have tried and succeeded in imposing change on target companies without the need to secure the support of other shareholders (for example, TCI, Atticus, LonePine). By “acting in concert” several hedge funds join forces to form an implicit alliance that gives them a sufficiently large number of voting rights. At the same time they circumvent the need to make a mandatory takeover bid for the company according to §30 WpÜG, because they formally act as independent investors. In these cases, evidently, the interests of hedge funds and other shareholders diverge because other minority shareholders are deprived of the opportunity to tender their shares to the hedge funds. Consequently, this mechanism is illegal according § 22 WpHG, but may be difficult to enforce.

2.3 Empirical Evidence for Hedge Funds’ Activism and Corporate Control

A large body of research documents that firm value is related to the ownership structure and corporate governance of firms. Drobetz et al. (2004, 2006), for example, find evidence for the German capital market that good corporate governance is significantly related to higher valuations. Within this literature, special interest is paid to the role of blockholders. For example, Wruck (1989) provides evidence that private placements of blocks of equity to institutional investors lead to superior company performance and attributes this effect to monitoring of company management by these large shareholders. Hertz et al. (2002) confirm this finding for short-run returns in a latter period. However, they document lower risk-adjusted returns subsequent to the placement of equity blocks. Hence, the question arises whether these results persist when hedge funds accumulate blocks of shares in the open market.

Research for the U.S. documents that monitoring by hedge funds and their interventions in corporate governance increase shareholder value in general. Using a sample of 403 U.S. events between 2003 and 2005, Klein and Zur (2006) provide empirical evidence for short- and long-term increases in share prices after the publication of 13D-Filings. In their sample this effect is due to changes in the target’s financial policy such as dividend policy and leverage. Furthermore, in the 13D-Filings the majority of hedge funds state major changes to the

company's current strategy and governance as their goals. Interestingly, they document only a short run-up period prior to the announcement date of approximately 5 days. With a sample of 888 U.S. events between 2004 and 2005, Brav et al. (2006) confirm the major findings of Klein and Zur (2006) and also document significant increases in shareholder value subsequent to 13D-filings. In contrast to Klein and Zur (2006), however, they find that this effect is driven by changes to the target's operating strategy. Interestingly, they report a longer run-up period of approximately 25 trading days. Because both studies are using a similar sample selection procedure it is not clear what is driving the differences in run-up periods and what are the drivers for the differences in magnitude in the outperformance between both studies. Finally, Ryan (2006) also investigates the impact of hedge fund interventions in the U.S. capital market using a sample of 40 events between 2001 and 2005. Interestingly, he also provides evidence for longer run-up periods prior to the announcement date.

There are other types of investors who also have strong incentives to monitor the management of target companies. In particular, the compensation of venture capital firms and private equity firms is also strongly tied to investment performance. Furthermore, they also contract for longer lock-up periods with their investors. Thus, Dai (2007) analyzes whether valuation effects differ between investments in PIPE's by hedge funds and venture capital funds. He finds that companies perform better in the short- and long-run following PIPE-investments by venture capital firms. However, he also provides evidence that this result is due to the certification effect and is not due to monitoring.

3. Data and Methodology

3.1 Data Selection

The data collection was conducted in three steps. In the first step, for all companies listed in the CDAX the Lexis-Nexis-Database was screened with respect to all news articles which contained the company name and the term "hedge fund" within a distance of 50 words. In the second step, the resulting output files were manually searched for all news items in which a stake in a company was publicly disclosed or the hedge fund made other disclosures with respect to the company (e.g. open letter, request for extraordinary meeting, etc.) In the last step, these events were matched with a database of filings according to §21 WpHG supplied by AFU (Agentur für Unternehmensdaten). This allowed us to retrieve the acquired percentage stakes for most events.

From our sample we exclude those events in which more than 30% of outstanding shares were acquired. In this case, the investor has to make a mandatory bid in Germany according to § 30 WpÜG. Such behavior might indicate that the hedge fund is acting like a private equity investor and wants to assume full control. We also exclude those events in which a merger pending. In these cases, the stake might be part of a merger arbitrage strategy which is usually not motivated by corporate governance concerns. Furthermore, we also exclude debt-equity swaps because the interests of hedge funds and other investors might diverge during debt-equity swaps and other debt restructurings. Finally, we also eliminate all events from the sample where the target company has been trading on the stock market for less than 140 trading days. Besides allowing us to estimate the parameters of the market model for each company, this removes any confounding events associated with Initial Public Offerings (IPOs) such as price support by the underwriter, expiration of lock-up-periods, etc.

[Insert Table 2 here]

This approach yields a final sample of 324 events which we split into three categories in order to capture different strategies by activist investors. The three approaches are called “stake-building”, “intervention”, and “PIPE” (private investment in public equity). An event is assigned to the category “stake-building” if the first news item about the intervention only contains the information that the investor has acquired a stake in the company. In most cases this corresponds to the publication of a § 21 WpHG filing. An event is classified as an “intervention” if we only find information that the investor publicly put pressure on the company. For example, in November 2006 Laxey Partners issued public statements criticizing the lack of value creation by Deutsche Telekom. Lastly, if we find information that the investor provided fresh capital in the form of new stocks, convertible securities, etc. we assign the event to the category “PIPE” (private investment in public equity).

Moreover, we split the dataset into several subsample which are employed to analyze the short- and long-term performance of target companies.

[Insert Table 3 here]

3.2. Methodology

We analyze the impact of interventions of hedge funds on German target companies by employing the standard event-study-methodology as well as long-run performance measures. For robustness checks we also run cross sectional regressions.

In order to determine the short-run valuation effects, we calculate cumulative abnormal returns (CAR):

$$CAR_t = \sum_{\tau=1}^t dAR_{\tau} \quad (1)$$

$$\text{with } AR_{i,t} = R_{i,t} - (\alpha + \beta \cdot R_{M,t}) \quad (2)$$

where dAR_{τ} is the average abnormal return of an equally-weighted portfolio. Abnormal returns are calculated using a market model regression. Following Schwert (1996), we set $\alpha = 0$ in order to ensure that our estimate of abnormal returns during the analyzed period is not contaminated by abnormal returns during the estimation period. The estimation of market model parameters is based on the 60 daily return observations between $t = -140$ and $t = -81$. This choice for our estimation window ensures that the parameter estimates are not distorted by the run-up prior to the event which we had identified in simple market-adjusted abnormal returns. For all companies, the CDAX is used as a proxy for the market return.

In order to gain further insights into the market's reaction and trading activity to hedge fund announcements in the short-run, we also analyze the abnormal trading volume ($AV_{i,t}$) using the approach suggested by Brav and Gompers (2003):

$$AV_{i,t} = \frac{V_{i,t}}{\frac{1}{60} \sum_{\tau=-81}^{\tau=-140} V_{i,\tau}} - 1 \quad (3)$$

where $V_{i,t}$ is the daily trading volume for stock i at time t and the denominator is the average trading volume over the 60 day period from -140 until -81 days before the event date. Thus,

the ratio $AV_{i,t}$ relates daily trading volume to its time-series average during the time period from 140 trading days before to 81 trading days before the event date.

Our analysis of the long-run valuation effects is based on buy-and-hold abnormal returns (BHAR) which are calculated on a monthly basis:

$$BHAR = \frac{1}{N} \sum_{i=1}^N \left[\left(\prod_{t=1}^T (1 + R_{i,t}) \right) - \left(\prod_{t=1}^T (1 + R_{M,t}) \right) \right] \quad (4)$$

This performance measure compares the average performance of a buy-and-hold investment in a portfolio consisting of all target stocks to the buy-and-hold investment in the market index which is approximated by the CDAX for various time intervals.

In addition we also run cross sectional regressions in order to investigate the factors (variables) that determine the short- and long-term valuation effects. More precisely, we regress cumulative abnormal returns (CAR) during the event window (-3,+3) and buy-and-hold abnormal returns (BHAR) for a holding period of one year on target company's relative market-to-book ratios, relative size, liquidity measures, and changes in several accounting measures.

4. Empirical Results

4.1 Descriptive Statistics of Target Companies

For the final sample containing all 232 events up to the end of 2006 we collect information on the characteristics of target companies from the Datastream/Worldscope database:

[Insert Table 4 here]

The magnitude of potential agency problems prior to the event is measured by information on the financial structure and the ownership structure of target companies. Due to the difficulty of finding a sufficient number of benchmark companies from the same industry and of the same size, we do not report industry-adjusted results for the “total debt to total capital”-ratio, working capital relative to total capital, payout-ratio and cash holdings. Instead we will focus on relative changes of these variables subsequent to the event date in our regression analysis (see below). However, the high level of insider ownership measured as the percentage of

closely held shares from Datastream at the end of the fiscal year preceding the interventions provides clear evidence for potential conflicts of interests between minority shareholders and insiders for the companies in our sample.

It is often argued that hedge funds seek exposure to undervalued companies. To check this hypothesis in our sample we calculate the relative market-to-book-ratio for each target company which is defined as the company's market-to-book-ratio minus the average market-to-book-ratio for all CDAX-firms. Overall, we find that investments by hedge funds are not restricted to value stocks in our sample. In particular, the mean relative market-to-book-ratio in the largest category "stake building" is not significantly different from zero. This may be related to hedge funds taking large positions in growth stocks in order to take directional bets on the market. However, for companies in the category "intervention" we find clear evidence that hedge funds indeed target undervalued companies. In contrast, in the category "PIPE" we find evidence that fresh capital is primarily directed towards growth companies that presumably face significant financial constraints (Hall 2002).

However, it seems that hedge funds are trying to exploit inefficiencies in the market for small cap stocks in Germany because our sample is significantly biased towards small cap stocks. In particular, relative size measured as the difference in log market capitalization of the target company and the log of the average market capitalization for all CDAX stocks is highly negative. An exception is the category "intervention" where most companies are larger than the average CDAX company. This empirical finding suggests that hedge funds are using different approaches to implement their strategies depending on the size of the company.

The return on equity and the return on total assets indicate that target companies are barely profitable in the fiscal year preceding the event date. Furthermore, negative values for the change in earnings per share provide evidence for negative momentum in profitability. Thus, the profitability of target companies has been deteriorating for at least one fiscal year.

Furthermore, we compute several measures to capture the liquidity of target company's shares and the level of information asymmetry surrounding these companies. Average market capitalizations for the three categories indicate substantial differences. In particular, hedge funds are more likely to make "interventions" to target larger companies whose stock should be more liquid and which should be subject to less information asymmetry. This result is supported by differences in average R^2 between the three categories. Following Bhagat et al. (1985) and Blackwell et al. (1990) we interpret a high level of residual volatility as evidence for a high level of information asymmetry. Thus, low average R^2 from a market model regres-

sion of daily stock returns on the CDAX for the period from 140 days before until 81 days before the event date suggest more severe adverse selection problems for target companies in the categories “stake-building” and “PIPE”. Lastly, we compute turnover as the mean dollar volume to market capitalization over the time period from 140 days before until 81 days before the event date in order to address differences in market liquidity between target companies. Again, we find evidence that interventions are more likely in the case of large companies trading in a more liquid market with lower levels of information asymmetry.

Another aspect that may have an impact on valuation effects and may be related to market efficiency is the coverage and the reactions, i.e. change in recommendations, by financial analysts. Our findings (not reported here) indicate that most target companies carry “hold”- or lower recommendations prior to the event date. Also, a significant number of target companies are not covered by stock analysts underscoring the high degree of asymmetric information surrounding many target companies.

4.2. Changes in Company Characteristics around the Event Date

Empirical studies for the U.S. capital market have the advantage that the stated objectives of activist shareholders are public knowledge and can be retrieved from 13D-filings. Thus, these studies can distinguish ex-post between successful and failed attacks and can check whether the market correctly anticipated the outcome on the event date. Since filings according to §§21/26 WpHG do not provide this information, we resort to an indirect approach. In particular, we check for significant changes in company characteristics around the event date and test whether ex-post value-increasing changes were correctly anticipated by the market on the event date. In particular, we assume that an increase in pay-outs to investors should reduce agency problems and therefore lead to an increase in shareholder value. Since accounting variables do not provide very timely information on changes of the financial structure we also analyze changes in the systematic risk of target companies. This is motivated by the contributions by Hamada (1972) who showed that the beta of a company’s stock is positively related to its leverage.

At the same time, hedge funds could accumulate blocks of shares in expectation of increases in future profitability. In this case, they act more like a “passive monitor” (see Tirole 2006 for a distinction between active and passive monitoring). Hence, they could trigger a certification effect and cause an increase in share prices at the announcement date, if other investors raise their expectations about future profitability. Thus, if the market correctly interprets the accu-

mulation of a large block of shares by a knowledgeable investors as a credible signal for increases in future profitability, then the share price of target companies should increase on the event date.

Lastly, increases in liquidity and reductions in asymmetric information also increase shareholder value and therefore should lead to a positive reaction if correctly anticipated by the market.

[Insert Table 5 here]

Table 5 provides means and standard deviations for changes in the relevant variables. Changes in accounting variables are calculated as the difference between their values at the beginning and at the end of the fiscal year in which the event took place. Changes in R^2 , beta, and turnover are calculated by taking the difference between the values estimated for the time periods (-140, -81) and (+81, +140).

For all variables the standard deviations are large relative to their means in all three categories. In contrast to common intuition, companies in the category “stake building” seem to be significantly decreasing their financial leverage in the relevant fiscal year. Furthermore, companies in the category “intervention” increase their level of systematic risk significantly around the event date which provides some support for the often advanced hypothesis that hedge funds strive to increase the leverage of target companies.

4.3 Short-term Valuation Effects

4.3.1 Abnormal Returns

To determine whether the presence of activist investors leads to increases in shareholder value in the short run we report cumulative abnormal returns for the whole sample of 324 events in figure 3:

[Insert figure 3 about here]

The results indicate that the bulk of the valuation adjustment takes place before and around the event date. In particular, abnormal returns subsequent to the event window are not significantly different from zero.

[Insert table 6 about here]

Moreover, there is a substantial run-up period prior to the event date of around 45 trading days on average. While this is consistent with the results reported by Ryan for a rather small sample, this finding is in sharp contrast to the contributions of Brav et al. (2006) and Klein and Zur (2006) who report significantly shorter run-up periods. There are a number of suitable explanations for these extended run-up periods. Because our sample is biased towards small firms, this effect could be driven by limited liquidity of the shares of target companies. Furthermore, there could be rumours about a pending attack which the market incorporates into the share price prior to the publication (Bhagat and Jefferis 1991). In fact, anecdotal evidence suggests that traders circulate target lists and that companies are sometimes “in play” long before an activist investors reveals his identity. Moreover, longer run-up periods in Germany could also be due to insider trading which is facilitated by a disclosure regime which is less strict and not as effectively enforced as the U.S. system. Lastly, the run-up period could also be due to confounding events prior to the event date, e.g. if hedge funds trade on the drift in stock prices subsequent to dividend increases, stock repurchases etc.

Furthermore, abnormal trading volume increases approximately in line with cumulative abnormal returns:

[Insert figure 4 about here]

However, the measure proposed by Brav and Gompers (2003) is positively biased in our sample because the distribution of the time series of trading volume exhibit very high skewness for some companies in our sample.

4.3.2 Cross sectional regressions

In order to gain further insights into the determinants of this run-up effect, we regress the “run-up”-return for the interval (-45,-3) on the relative size of the company, on the relative market-to-book-ratio and the ratio of dollar volume to market capitalization. In particular, this specification allows us to test whether the run-up is driven by low liquidity in small company stocks. Moreover, we include the “announcement”-return (-3,+3) into our regression. Similar to Schwert (1996), this allows inferring whether “run-up”- and “announcement”-returns are substitutes:

$$CAR_{i,(-45,-3)} = \beta_0 + \beta_1 \cdot CAR_{i,(-3,3)} + \beta_2 \cdot Size + \beta_3 \cdot MtB + \beta_4 \cdot Turnover \quad (5)$$

The results are reported in table 7 and indicate that the run-up effect is not driven by limited liquidity in the stocks of small companies.

[Insert table 7 about here]

However, we find empirical evidence that “run-up”- and “announcement”-returns act as substitutes because the coefficient on the “announcement”-return is significantly negative. This implies that the total amount of shareholder wealth created is similar for events that have a high “run-up”-return and for events that have a low “run-up”-return. But “announcement”-returns seem to dominate because the coefficient is smaller than 1 in absolute value. Furthermore, the run-up seems to be significantly larger for value firms. However, the explanatory power of this regression is only limited since the R^2 is only 4.32%.

Often, shareholder activists face significant obstacles when they try to impose changes on target companies. For instance, the CEO of TUI AG has repeatedly succeeded in fending off hostile campaigns by securing the support of other strategic shareholders. Thus, high initial returns could be followed by a reversion in the short-term when investors have to lower their expectations again. However, preliminary evidence indicates that there is no overreaction by the capital market at the announcement date. More precisely, for all events with announcement period returns (-3,+3) larger than 10%, there is no reversion in share prices over the following 100 trading days. (Results are available upon request).

4.4. Long-term Valuation Effects

4.4.1 BHAR

The analysis of short-term valuation effects suggests that the largest share of the price adjustments takes place before and during the event window. Moreover, the cumulative abnormal returns are not significantly different from zero subsequent to the event window suggesting a large variation in returns after the announcement. Thus, in order to analyze whether the increases in shareholder value before and during the event window are persistent, we investigate buy-and-hold abnormal returns for longer periods.

[Insert figure 5.d here]

Figure 5.d contains buy-and-hold abnormal returns for all subsamples and shows that there are substantial increases in shareholder value for all holding periods. These results are statistically significant at the 1%-level using skewness-adjusted t-tests (Barber et al. 1999).

[Insert table 8 here]

Interestingly, the results reveal that buy-and-hold abnormal returns (BHAR) were higher during the early periods of our sample. In particular, buy-and-hold abnormal returns for a one year holding period are larger for the subsamples containing all events up to 2004 and 2005, respectively, than for the subsample containing all events up to 2006. Another interesting result emerges by investigating the target companies that are in the lowest decile of the distribution of buy-and-hold abnormal returns after 240 trading days. In particular, buy-and-hold abnormal returns for some of these companies are characterized by significant ups and downs over the course of the year, indicating substantial uncertainty and major shifts in expectations by market participants. However, with increasing holding period the problem of cross-correlation in abnormal returns increases because the proportion of overlapping events increases. Thus, our estimates for standard deviations might be understated leading to an artificial increase in t-values (Kothari and Warner 2007).

4.4 Cross-Sectional Regressions – Determinants of Short- and Long-term Returns

To gain further insights into the determinants of the short- and long-run performance of target companies subsequent to the event we run some cross section regressions. We hypothesize that the announcement effect should be larger for value firms since these companies are presumably undervalued and therefore should gain more from an active shareholder monitoring management. Moreover, we suppose that the announcement effect should be larger for small companies. The reasoning is that in the presence of larger information asymmetries the engagement of an active shareholder might constitute a favorable signal. Lastly, we test whether the announcement effect is larger if an investor with a high reputation is involved. In particular, we measure reputation by taking the log of the number of citations of the investor up to 5 days prior to the event date. Our results are reported in table 9:

[Insert Table 9 here]

While relative size measuring the market cap of the target relative to average market cap for all CDAX companies does not enter significantly in any of our regressions, there is still some evidence that the announcement effect is stronger for small companies which usually exhibit lower trading volumes. More precisely, a decrease in turnover leads to a significant increase in the abnormal returns during the announcement period. Especially, this effect remains highly significant in the full model IX. Furthermore, there is some weak evidence that the announcement effect is stronger when the log of citations in the Genios database increases. This can be interpreted as evidence supporting our hypothesis that with increasing reputation other investors will be more likely to increase their valuations of target firms. Moreover, for a couple of very well-known activist, announcements effects are quite larger than these results suggest. This implies that our measure for reputation is only a crude approximation of an investor's reputation among other market participants. However, the data does not support the hypothesis that announcement effects should be larger for value stocks. The coefficient on the relative market-to-book for target companies relative to the average market-to-book for all CDAX stocks is not significantly different from zero. Nevertheless, the coefficient on EPS growth in the fiscal year preceding the event is significantly negative. This is surprising since low earnings growth is often associated with value companies. Furthermore, the coefficient on

EPS in the period in which the event took place is significantly positive. Thus, the acquisition of a large block of shares might convey a positive signal about future earnings growth to the market. Moreover, we also regress cumulative abnormal returns during the event window (-3,+3) on a full set of time dummies where 2006 is the reference year. This allows us to infer whether the initial valuation effect in the short run depends on the state of the economy and on overall market conditions. This analysis reveals that valuation effects were more pronounced towards the end of the last down market in 2002 and during the recovery of stock market in 2004 and 2005. Finally, all the other variables presented in table 4 possess no explanatory power on a univariate basis.

Model VIII combines all variables that are significant on an individual basis and reveals that most coefficients are stable and continue to be significant. However, the coefficient on our reputation-proxy increases and becomes significant at the 10%-level. Model IX also contains the full set of time dummies in order to control for the state of the economy. Interestingly, only events during the initial recovery of the stock market in 2004 seem to generate significantly higher announcement returns.

Extending the analysis to regressions of buy-and-hold abnormal returns over a holding period of one year reveals that most of these results do not persist:

[Insert Table 10 here]

The coefficients on EPS growth in the preceding fiscal year and on our reputation-proxy are no longer significant. However, the major conclusion from the analysis of short-term valuation effects persists. Namely, small target companies that are subject to substantial information asymmetries continue to outperform over a holding period of one year subsequent to the event date. This can be inferred from the negative coefficient on relative size which is significant in model II as well as from the negative coefficient on turnover which is significant in models IV and IX. However, there seems to be some interaction with the time period of the event because turnover loses its explanatory power in model X. Surprisingly, the coefficients in the univariate regressions of the buy-and-hold abnormal returns (BHAR) over a one year holding period on the change in cash holdings and on the change in working capital are significant and positive. This runs counter to the common intuition that shareholder value is increased if companies reduce excess cash reserves. Thus, this effect warrants further investigation. Finally, we also include a full set of time dummies with 2006 as the benchmark year in

order to test whether long-run valuation effects depend on overall market conditions. Again, we find that events which took place at the end of the last down market and at the beginning of the most recent up market exhibit superior abnormal returns. Interestingly, the coefficient on turnover ceases to be significant in model X which controls for time.

Finally, results not reported here reveal another interesting aspect with regard to our small subsample of 13 PIPE-investments until the end of 2006. Since these transactions amount to capital increases like seasoned equity offerings, they should be associated with negative abnormal returns during the event window and negative abnormal returns in the long run. However, both short-run and long-run abnormal returns are not significantly different from zero for this subsample. While this indicates that private placement of equity does not lead to share price reactions such as regular SEOs, Wruck (1989) and Hertz et al. (2002) find positive abnormal returns during the announcement period. Unfortunately, the size of this subsample is too small to investigate this issue further.

4.5 Limitations

Our results are subject to two limitations. On the one hand, it is not clear whether the date on which the newspapers, news wires and press agencies covered by Lexis Nexis provide us with the correct event date. In particular, the long run-up prior to our event date might suggest that we did not find the correct date since traders retrieved this information prior to the publication in the press from other sources. For example, there is anecdotal evidence that lists with potential targets are circulating. Thus, inclusion of one of those lists might push up the share price long before any official publication is made. On the other hand, our identification of relevant events is dependent on the way they are presented in the press. More precisely, we cannot distinguish between acquisitions of shares and interventions by hedge funds, private equity funds and other activist investors like the study by Klein and Zur (2006), for example. However, we are convinced that this is only a minor concern. There is substantial evidence that the investment strategies of hedge funds and private equity funds converge and that they are trying to exploit the same inefficiencies (Gaughan 2007, Chapter 8). Moreover, other types of private investors also do put significant pressure on company management (Becht et al. 2007). Thus, there are no convincing arguments for making a clear distinction between these and other types of investors.

5. Summary and Conclusions

Recent changes in the German financial system and especially in corporate governance have led to a reallocation of corporate control from universal banks to the capital market. This shift offered some opportunities for shareholder activists and in particular for hedge funds. Unlike other capital market participants such as mutual funds and pension funds, hedge funds are able to fill the control vacuum created by the withdrawal of banks mainly because they are not subject to the same free-rider and incentive problems. One interesting question is whether this capital market orientation resulted in an increase in shareholder value. Recent evidence for the U.S. capital markets suggests that this process resulted in rising share prices for these target firms (Klein and Zur 2006, Brav et al. 2006, Ryan 2006). Whether this finding also holds for Germany is at the center of this study. Based on a sample of 324 events in Germany between January 2000 and June 2006, we find empirical evidence that the engagement of activist shareholders such as hedge funds increased shareholder value in the short and in the long run. Furthermore, we find evidence that this effect is stronger for companies that are subject to more information asymmetries prior to the event. Moreover, there are also some indications that the identity of the investor matters in the short run. In particular, announcement period returns are significantly higher for some well-known activist investors.

Despite this evidence, there remain a number of important research questions open which we are addressing in our research in progress. First, measuring abnormal returns over longer horizons using buy-and-hold abnormal returns does not capture potential loadings on other risk factors. Therefore, we are currently extending our analysis of long run performance using the Fama-French and momentum factors. This is important because our dataset suggests that hedge funds are predominantly taking positions in small-cap stocks. Second, measuring factor exposures with common asset pricing models is based on the assumption of rational expectations. Moreover, these approaches also implicitly assume that the company's risk exposures are exogenous from the point of view of the investor. However, from the perspective of an activist investor who holds a significant position in the company's shares, these exposures might be endogenous. The resulting changes in factor exposures would not be revealed from time-series regressions over extended time-periods with the conventional approach. Thus, we are currently expanding our research in order to account for these shifts. In fact, we are estimating realized betas (Andersen et al. 2004) in order to find out whether there is a reassessment of the company's systematic risk by capital markets around the event date. Third, our current results do not reveal whether significant changes to the business fundamentals or of the financing strategies of the target company are driving their superior performance.

References

- Allen, Franklin, and Douglas Gale (2003), Asset Price Bubbles and Stock Market Interlinkages, in: Hunter, William C., George G. Kaufman, Michael Pomerleano (Eds.) *Asset Price Bubbles – The Implications of Monetary, Regulatory and International Policies*, MIT Press, Cambridge, 323 - 336.
- Andersen, Torben G., Tim Bollerslev, Francis X. Diebold, Jin Wu (2004), Realized Beta: Persistence and Predictability, Working Paper, University of Pennsylvania.
- Adams, Michael (1999), Cross Holdings in Germany, *Journal of Institutional and Theoretical Economics* 155, 1, 80 – 109.
- Baums, Theodor, and Philipp von Randow (1995), Der Markt für Stimmrechtsvertreter, *Die Aktiengesellschaft* 40, 97 - 112.
- Barber, Brad M., John D. Lyon and Chih-Ling Tsai (1999), Improved Methods for Tests of Long-Run Abnormal Stock Returns, *Journal of Finance* 54, 1, 165 – 201.
- Barber, Brad M., and Terrance Odean (2006), All that Glitters: The Effect of Attention and News on the Buying Behavior of Individual and Institutional Investors, Working Paper, University of California.
- Becht, Marco, Julian R. Franks, Colin Mayer, and Stefano Rossi (2007), Returns to Shareholder Activism – Evidence from a Clinical Study of the Hermes U.K. Focus Fund, Working Paper, ECGI.
- Bhagat, Sanjai, M. Wayne Marr, and G. Rodney Thompson (1985), The Rule 415 Experiment: Equity Markets, *Journal of Finance* 40, 5, 1385 - 1401.
- Bhagat, Sanjai, and Richard H. Jefferis (1991), Voting Power and the Proxy Process, *Journal of Financial Economics* 30, 193 – 225.
- Blackwell, David W., M. Wayne Marr, and Michael F. Spivey (1990), Shelf Registration and the Reduced Due Diligence Argument: Implications of the Underwriter Certification and the Implicit Insurance Hypotheses, *Journal of Financial and Quantitative Analysis* 25, 2, 245 – 259.
- Book, Thomas (2001), *Elektronischer Börsenhandel und globale Märkte: Eine ökonomische Analyse der Veränderungen an Terminbörsen*, Deutscher Universitätsverlag, Wiesbaden.
- Brav, Alon, and Paul A. Gompers (2003), The Role of Lockups in Initial Public Offerings, *Review of Financial Studies*, 16, 1, 1 - 29.
- Brav, Alon, Wai Jiang, Randall S. Thomas, and Frank Partnoy (2006), Hedge Fund Activism, Corporate Governance, and Firm Performance, Working Paper, ECGI.
- Bundesbank (2001), Rolle und Verhalten deutscher Fondsmanager auf dem Aktienmarkt, *Monatsbericht* April, 45 - 61.
- Christoffersen, Susan E.K., Christopher Geczy, David K. Musto, and Adam V. Reed (2007), Vote Trading and Information Aggregation, *Journal of Finance* 62, 6, 2897 - 2929.
- Council of Economic Advisors (2007), *Beschränkungen des Beteiligungserwerbs durch ausländische Investoren?* Annual Report, Chapter 6.
- Dai, Na (2007), Does Investor Identity Matter? An Empirical Examination of Investments by Venture Capital Funds and Hedge Funds in PIPEs, *Journal of Corporate Finance* 13, 538 - 563.

- Del Guercio, Diane, and Paula A. Tkac (2002), The Determinants of the Flow of Funds of Managed Portfolios: Mutual Funds vs. Pension Funds, *Journal of Financial and Quantitative Analysis* 37, 4, 523 – 557.
- Deutsch, Klaus G., Frank Nassauer, and Jörn Quitzau (2001), Farewell to “Germany Inc.”?, Research Report, Deutsche Bank Research.
- Drobetz, Wolfgang, Andreas Schillhofer, and Heinz Zimmermann (2004), Corporate Governance and Expected Stock Returns: Evidence from Germany, *European Financial Management* 10, 2, 267 – 293.
- Drobetz, Wolfgang, Roland Rott, and Andreas Schillhofer (2006), Corporate Governance and Firm Valuation in Germany – Evidence from Panel Data, Working Paper, University of Hamburg.
- Faccio, Mara, and Larry H.P. Lang (2002), The Ultimate Ownership of Western European Corporations, *Journal of Financial Economics* 65, 365 - 395.
- Franks, Julian, and Colin Mayer (2001), Ownership and Control of German Corporations, *Review of Financial Studies* 14, 4, 943 - 977.
- Fung, William, and David A. Hsieh (1999), A Primer on Hedge Funds, *Journal of Empirical Finance* 6, 3, 309 - 331.
- Gaughan, Patrick A. (2007), *Mergers, Acquisitions, and Corporate Restructurings*, 4th ed., John Wiley & Sons, Hoboken.
- Gorton, Gary, and Frank A. Schmid (2000), Universal Banking and the Performance of German Firms, *Journal of Financial Economics* 58, 29 – 80.
- Griffin, John M., and Jin Xu (2007), How Smart are the Smart Guys? A Unique View from Hedge Fund Stock Holdings, Working Paper, University of Texas.
- Hall, Brownyn H. (2002), The Financing of R&D, *Oxford Review of Economic Policy* 18, 1, 18 – 35.
- Hillion, Pierre, and Theo Vermaelen (2004), Death Spiral Convertibles, *Journal of Financial Economics* 71, 381 - 415.
- Hamada, Robert S. (1972), The Effect of the Firm’s Capital Structure on the Systematic Risk of Common Stocks, *Journal of Finance* 27, 2, 435 - 452.
- Hertzel, Michael, Michael Lemmon, James S. Linck, and Lynn Rees (2002), Long-Run Performance following Private Placements of Equity, *Journal of Finance* 59, 2595 – 2617.
- Hu, Henry T.C., and Bernard Black (2007), Hedge Funds, Insiders, and the Decoupling of Economic and Voting Ownership: Empty Voting and Hidden (Morphable) Ownership, *Journal of Corporate Finance* 13, 2-3, 343 - 367.
- Jenkinson, Tim, and Alexander Ljungqvist (2001), The Role of Hostile Stakes in German Corporate Governance, *Journal of Corporate Finance* 7, 4, 397 - 446.
- John, Kose, and Teresa A. John (2006), Managerial Incentives, Derivatives and Stability, *Journal of Financial Stability* 2, 1, 71 - 94.
- Klein, April, and Emanuel Zur (2006), Entrepreneurial Shareholder Activism: Hedge Funds and Other Private Investors, Working Paper, ECGI.
- Köke, Jens (2002), The Market for Corporate Control in a bank-based economy: A Governance Device? *Journal of Corporate Finance* 10, 1, 53 - 80.

Kothari, S.P., and Jerold B. Warner (2007), *Econometrics of Event Studies*, in: B. Espen Eckbo (Eds.), *Handbook of Corporate Finance: Empirical Corporate Finance*, Elsevier, Amsterdam, 4 - 36.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny (2000), *Investor Protection and Corporate Governance*, *Journal of Financial Economics* 58, 1-2, 3 - 27.

La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny (2002), *Investor Protection and Corporate Valuation*, *Journal of Finance* 57, 1147 – 1170.

Ryan, Joe (2006), *Examining Market Reaction to Activist Investor Campaigns by Hedge Funds*, Working Paper, NYU Stern.

Scharfstein, David S., and Jeremy C. Stein (1990), *Herd Behavior and Investment*, *American Economic Review* 80, 3, 465 - 479.

Schmidt, Reinhard H. (2004), *Corporate Governance in Germany: An Economic Perspective*, in: Krahn, Jan P. and Reinhard H. Schmidt (Hrsg.), *The German Financial System*, Oxford University Press, Oxford, 387 - 424.

Shleifer, Andrei, and Robert W. Vishny (1997), *The Limits of Arbitrage*, *Journal of Finance* 52, 1, 35 - 55.

Tirole, Jean (2006), *The Theory of Corporate Finance*, Princeton University Press, Princeton.

Wruck, Karen H. (1989), *Equity Ownership Concentration and Firm Value – Evidence from Private Equity Financings*, *Journal of Financial Economics* 23, 3 – 28.

Table 1: Ownership Structure of DAX 30 Companies in 2007

	Free-Float	Attendance Rate	Foreign Ownership
Adidas	100%	44,1%	82%
Allianz	100%	42,5%	59%
BASF	100%	48,4%	50%
Bayer	100%	56,9%	78%
BMW	53%	77,8%	37%
Commerzbank	91%	43,8%	63%
Continental	100%	47,3%	87%
Daimler	93%	39,2%	56%
Deutsche Bank	95%	42,5%	46%
Deutsche Börse	100%	53%	84%
Deutsche Post	70%	67,1%	55%
Deutsche Postbank	50%	71,4%	39%
Deutsche Telekom	64%	57,6%	51%
Eon	95%	54,2%	55%
Fresenius Medical	64%	73,8%	52%
Henkel Vz.	100%	66,9%	n.a.
Hypo Real Estate	100%	54,5%	>50%
Infineon	100%	52,9%	n.a.
Linde	77%	66,6%	35%
Lufthansa	100%	54,1%	37%
MAN	70%	63,5%	42%
Merck	100%	58,8%	24%
Metro	32%	73,3%	25%
Münchener Rück	100%	56,9%	78%
Thyssenkrupp	75%	57,6%	30%
RWE	89%	64,5%	49%
SAP	72%	57,6%	39%
Siemens	94%	41%	54%
Tui	80%	47,1%	29%
Volkswagen	49%	60,4%	24%
Average	84%	56,1%	>50%

The table reports free-floats, attendance rates to company's shareholder annual meeting and foreign ownership data for DAX 30 companies in 2007. Source: Börsenzeitung, 29.12.2007, p. 42.

Table 4: Descriptive characteristics of target companies

	Stake-Building	Interventions	PIPE's	Whole Sample
Total Debt to Total Capital t_{-1}	0,5488 (0,8209)	0,5770 (0,2295)	0,4755 (0,3916)	0,5469 (0,7654)
Working Capital t_{-1}	-0,1291 (2,2797)	0,2359 (0,3622)	0,3335 (0,4636)	-0,0714 (2,1197)
Payout Ratio t_{-1}	0,1877 (0,2613)	0,3749 (0,2051)	0,00 (0,00)	0,1917 (0,2584)
Cash Holdings t_{-1}	0,1656 (0,1850)	0,0911 (0,0859)	0,2215 (0,2172)	0,1632 (0,1824)
Inside Ownership	0,2643 (0,2578)	0,3524 (0,2973)	0,2446 (0,2377)	0,2703 (0,2601)
Excess Market to Book (Value vs. Growth)	0,0272 (3,9213)	-0,7122 (1,1142)	8,5606 (20,7747)	0,4778 (6,4538)
Relative Size	-1,2763 (1,9799)	1,6776 (1,2281)	-2,7337 (1,8734)	-1,1046 (2,1203)
Return on Equity t_{-1}	-0,0814 (0,7276)	0,0353 (0,2497)	-1,5399 (3,7418)	-0,1592 (1,1371)
Return on Assets t_{-1}	0,0094 (0,2882)	0,0269 (0,0577)	-0,2113 (0,2887)	-0,0018 (0,2804)
Δ EPS t_{-1}	-1,5127 (15,5120)	0,1867 (2,2395)	-1,3389 (15,3377)	-1,3599 (14,8179)
Market Cap	2,143 bn. EUR (5,899 bn.)	14,441 bn. EUR (17,214 bn.)	0,348 bn. EUR (0,643 bn.)	2,983 bn. EUR (8,0066 bn.)
R ²	0,1335 (0,1503)	0,2637 (0,1561)	0,0835 (0,0856)	0,1414 (0,1524)
Turnover	0,0031 (0,0032)	0,0041 (0,0031)	0,0029 (0,0031)	0,0032 (0,0032)

The table characterizes target companies along several dimensions. Total debt to total capital, working capital, payout ratio, and cash holdings are obtained from Datastream and reflect the information on the company's financing policies as of the last balance sheet prior to the event. Return on Equity, Return on Assets and Δ EPS are also obtained from Datastream and characterize the company's operating profitability prior to the intervention. Excess Market to Book is derived as the difference between the company's market-to-book and the average market-to-book for all CDAX stocks. Relative size is calculated as the difference in logs between the market cap of the target and the average market cap for all CDAX stocks. Market Capitalization is calculated as the number of shares outstanding multiplied by the share price 80 trading days prior to the event. The market to book ratio is also taken 80 trading days prior to the event. R² and β are obtained from market model regressions for the time period from $t = (-140, -81)$ where the CDAX is used as a proxy for the market return. The values in parentheses are standard deviations.

Table 5: Changes in Company Characteristics surrounding the Event

	Stake-Building	Interventions	PIPE's	Whole Sample
Δ Total Debt to Total Capital	-0,1176 (0,7843)	-0,0181 (0,0752)	-0,0546 (0,4677)	-0,1057 (0,7355)
Δ Working Capital	0,1812 (2,3642)	-0,0109 (0,0964)	-0,1637 (0,5338)	0,1446 (2,1947)
Δ Cash Holdings	-0,0080 (0,1114)	-0,0139 (0,0661)	-0,0035 (0,2102)	-0,0083 (0,1172)
Δ Return on Equity	0,0243 (0,8861)	0,0390 (0,1355)	0,8154 (3,5109)	0,0704 (1,1849)
Δ Return on Assets	0,0399 (0,4519)	0,0083 (0,0443)	0,0566 (0,2843)	0,0382 (0,4241)
Δ EPS	0,0815 (4,3237)	0,3535 (1,3973)	0,6131 (3,6543)	0,1352 (4,1057)
ΔR^2	0,011 (0,1231)	-0,0003 (0,2035)	0,0442 (0,1753)	0,0121 (0,1343)
$\Delta \beta$	0,0704 (1,0708)	0,2642 (0,4524)	0,1989 (1,0788)	0,0940 (1,0333)
Δ Turnover	0,0001 (0,0031)	0,0017 (0,0027)	0,0000 (0,0041)	0,0003 (0,0032)

The table describes mean changes in several variables around the event date. The values in parentheses are standard deviations. For the accounting variables the change is calculated as the difference between the variable at the end of the previous fiscal year and the end of fiscal year in which the event took place. ΔR^2 and $\Delta \beta$ are obtained from market model regressions for the time periods (-140, -81) and (+81, +140).

Table 6: Cumulative Abnormal Returns – Test Statistics – Whole Sample (n=324)

Interval	CAR
Panel A: Intervals around the event	
(-80,+80)	10,3591%***
(-45,+45)	7,9692%***
(-15,+15)	3,4991%***
(-5,+5)	2,5935%**
(-3,+3)	1,4836%***
(-1,+1)	1,0047%***
Panel B: Intervals before and after the event	
(-80,-3)	5,7281%***
(-80,-45)	0,4958%
(-45,-30)	1,2055%**
(-30,-15)	1,6218%***
(-15,-3)	2,3283%***
(+3,+80)	3,5619%**
(+3,+15)	0,0250%
(+15,+30)	1,6142%***
(+30,+45)	0,0286%
(+45,+80)	1,8941%*

The table report mean cumulative abnormal returns for the entire sample of n=336 events. The intervals describe the number of trading days around the event date. The values in parentheses indicate standard deviations. * (**/***) implies that the mean significantly different from zero at the 10% (5%/1%)-level.

Table 7: Determinants of the Run-Up

Variable	Coefficient	t-values
Constant	0,0661***	2,7226
Announcement Effect	-0,3594**	-2,0110
Relative Size	-0,03594	-1,0082
Relative MtB	-0,0041**	-1,9103
Turnover	-4,3224	-0,9338
n = 232		R ² = 0,0432

The table summarizes the output from a regression of returns during the run-up period (-45,-3) on the return during the announcement period (-3,+3), relative size of the target, excess market-to-book of the target over the CDAX average and on its dollar trading volume relative to its market capitalization. Included in the regression are all events up to the end of 2006. * (**/***) implies that the mean significantly different from zero at the 10% (5%/1%)-level.

Table 8: Buy-and-Hold Abnormal Returns – Test Statistics

Interval	BHAR
Panel A: BHAR (one year period, n = 232)	
(-40,+120)	14,41% ^{***}
(-40,+240)	19,93% ^{***}
Panel B: BHAR (two year period, n = 158)	
(-40,+120)	19,68% ^{***}
(-40,+240)	30,59% ^{***}
(-40,+360)	31,27% ^{***}
(-40,+480)	44,44% ^{b***}
Panel C: BHAR (three year period, n = 108)	
(-40,+120)	19,91% ^{***}
(-40,+240)	31,25% ^{***}
(-40,+360)	29,66% ^{***}
(-40,+480)	39,16% ^{***}
(-40,+600)	47,10% ^{***}
(-40,+720)	54,82% ^{***}

The table report buy-and-hold abnormal returns for the reduced sample of n=232 events. The intervals describe the number of trading days around the event date. The values in parentheses indicate standard deviations. * (**/***) implies that the mean significantly different from zero at the 10% (5%/1%)-level using skewness-adjusted t-statistics (Barber et al. 1999).

Table 9: Cross-Sectional Regressions – CAR Announcement Effect (-3,+3)

	Model I	Model II	Model III	Model IV	Model V	Model VI	Model VII	Model VIII	Model IX
constant	0,0129 [*] (2,2814)	0,0098 (1,5940)	0,0039 (0,4426)	0,0316 ^{***} (4,2041)	0,0134 ^{**} (2,4672)	0,0128 [*] (2,2889)	-0,0061 (-0,6392)	0,0172 [*] (1,6921)	0,0039 (0,2388)
Relative Market to Book	-0,0006 (-0,6482)								-0,0005 (-0,5695)
Relative Size		-0,0037 (-1,4249)							0,0007 (0,2258)
Reputation			0,0030 (1,4607)					0,0092 [*] (1,8987)	0,0072 (1,3472)
Turnover				-5,5183 ^{***} (-3,3587)				-5,8990 ^{***} (-3,5318)	-5,8807 ^{***} (-3,0078)
ΔEPS_{t-1}					-0,0007 ^{**} (-1,9305)			-0,0009 ^{**} (-2,4262)	-0,0009 ^{**} (-2,1833)
ΔEPS_t						0,00283 ^{**} (2,0701)		0,0027 ^{**} (1,9962)	0,003 ^{**} (2,1819)
Dummy (2000)							0,0142 (-0,4380)		-0,0149 (-0,3466)
Dummy (2001)							0,0207 (0,6794)		0,0064 (0,1815)
Dummy (2002)							0,0398 ^{**} (2,0711)		0,0267 (1,2871)
Dummy (2003)							0,0329 (1,5979)		0,0149 (0,6810)
Dummy (2004)							0,0311 ^{**} (2,0657)		0,0383 ^{**} (2,3392)
Dummy (2005)							0,0252 [*] (1,6839)		0,0157 (0,5977)
R ²	0,0019	0,0090	0,0091	0,0482	0,0164	0,0197	0,0322	0,1031	0,1409

The table report results for our cross-sectional regressions where cumulative abnormal returns during the event window (-3,+3) are the dependent variables. The independent variables are defined the same way as in table 3. Reputation is measured as the log of the number of citations of the investor in the Genios database of German business newspapers up to 5 days prior to the event date. The dummy variables are constructed with 2006 as the benchmark year. The sample size is $n = 232$ and values in parentheses indicate t-values. * (**/***)) implies that the mean significantly different from zero at the 10% (5%/1%)-level.

Table 10: Cross-Sectional Regressions – Buy-and-Hold Abnormal Returns – One Year

	Model I	Model II	Model III	Model IV	Model V	Model VI	Model VII	Model VIII	Model IX	Model X
constant	0,1982 ^{***} (3,6669)	0,1391 ^{**} (2,4109)	0,2384 ^{***} (2,8001)	0,3346 ^{***} (4,6927)	0,1929 ^{**} (3,7227)	0,2171 ^{***} (4,0744)	0,1918 ^{***} (3,7091)	-0,0283 (-0,3167)	0,2842 ^{***} (3,233)	0,0753 (0,4802)
Relative Market to Book	-0,0093 (-1,1157)									-0,0162 ^{**} (-1,8686)
Relative Size		-0,0560 ^{**} (-2,3179)							-0,0339 (-1,2929)	-0,0519 [*] (-1,7975)
Reputation			-0,0268 (-0,5806)							0,0106 (0,2082)
Turnover				- 41,7828 ^{***} (-2,6782)					-34,5660 ^{**} (-2,0173)	-22,9708 (-1,2294)
Δ EPS _{t-1}					0,0030 (0,8496)					0,0077 ^{**} (1,9764)
Δ Cash						1,1504 ^{**} (2,5302)			1,0703 ^{**} (2,3003)	1,0377 ^{**} (2,1610)
Δ Working Capital							0,0513 ^{**} (2,1765)		0,0408 [*] (1,7677)	0,0378 (1,5930)
Dummy (2000)								0,4614 (1,5168)		0,0789 (0,1929)
Dummy (2001)								0,1881 (0,6569)		0,1661 (0,4971)
Dummy (2002)								0,1248 (0,6908)		-0,0101 (-0,0510)
Dummy (2003)								0,8198 ^{***} (4,2289)		0,6260 ^{***} (2,9924)
Dummy (2004)								0,2589 [*] (1,8273)		0,1872 (1,1991)
Dummy (2005)								0,3199 ^{**} (2,2716)		0,2389 (1,5678)
R ²	0,0058	0,0235	0,0015	0,0312	0,0032	0,0292	0,0202	0,0825	0,0817	0,1559

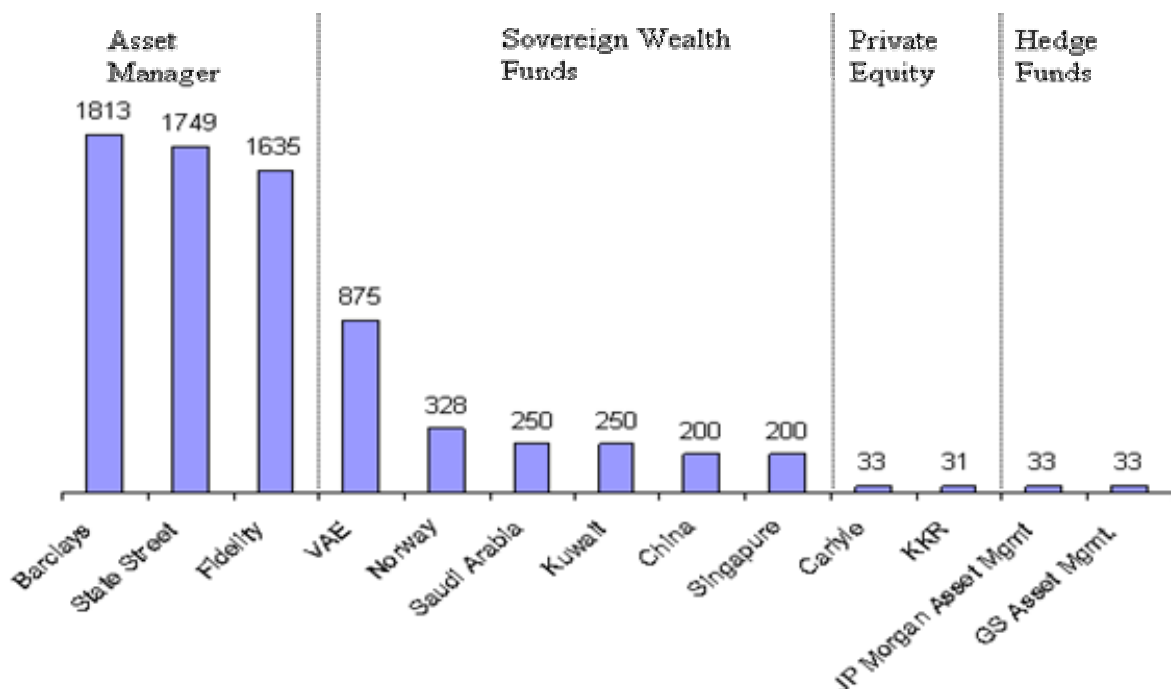
The table report results for our cross-sectional regressions where buy-and-hold abnormal returns for the interval (-40,+240) are the dependent variables. The independent variables are defined the same way as in table 3. Reputation is measured as the log of the number of citations of the investor in the Genios database of German business newspapers up to 5 days prior to the event date. The dummy variables are constructed with 2006 as the benchmark year. The sample size is n = 232 and values in parentheses indicate t-values. * (**/***) implies that the mean significantly different from zero at the 10% (5%/1%)-level.

Figure 1: Performance of Deutsche Börse AG (2005 – 2007)



The chart depicts the stock market performance of Deutsche Börse AG subsequent to the intervention by the hedge funds The Children's Investment Fund and Atticus on January 15th, 2005 and January 17th, 2005. The grey line reflects the benchmark which is the DAX Performance Index. In the course of their interventions, these hedge funds forced the CEO and the chairman of the board to resign and to withdraw their takeover bid for the London Stock Exchange.

Figure 2: Asset Managers, Sovereign Wealth Funds, Private Equity and Hedgefunds



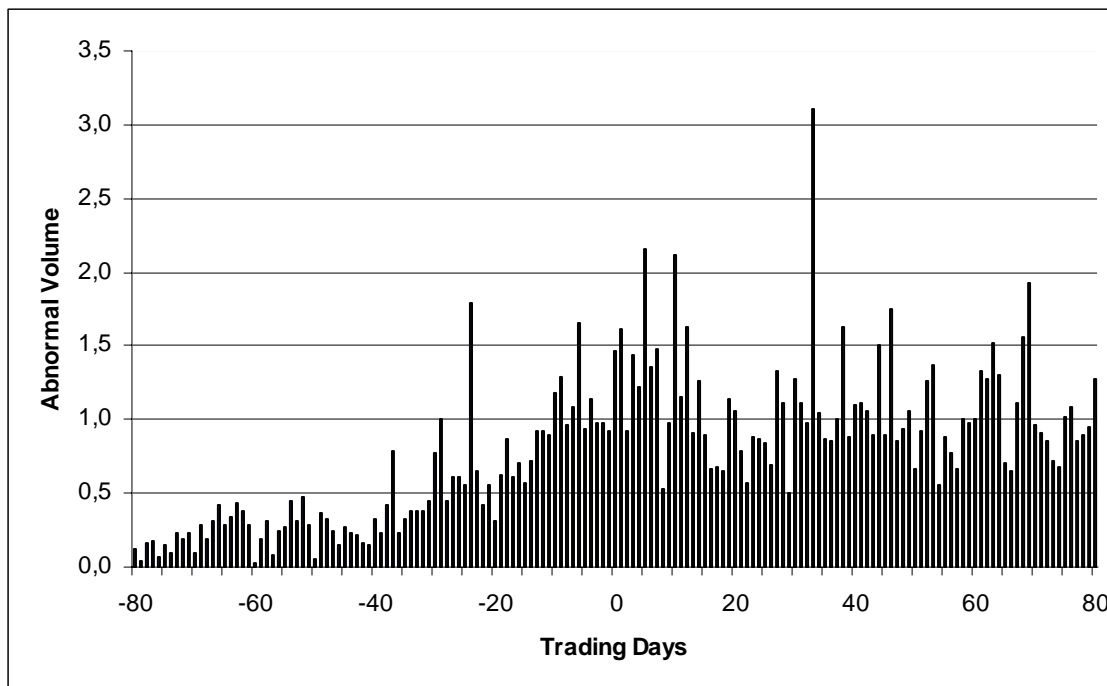
Source: Börsenzeitung, 29.12.2007, p. 42.

Figure 3: Cumulative Abnormal Returns for the whole sample (n=324)



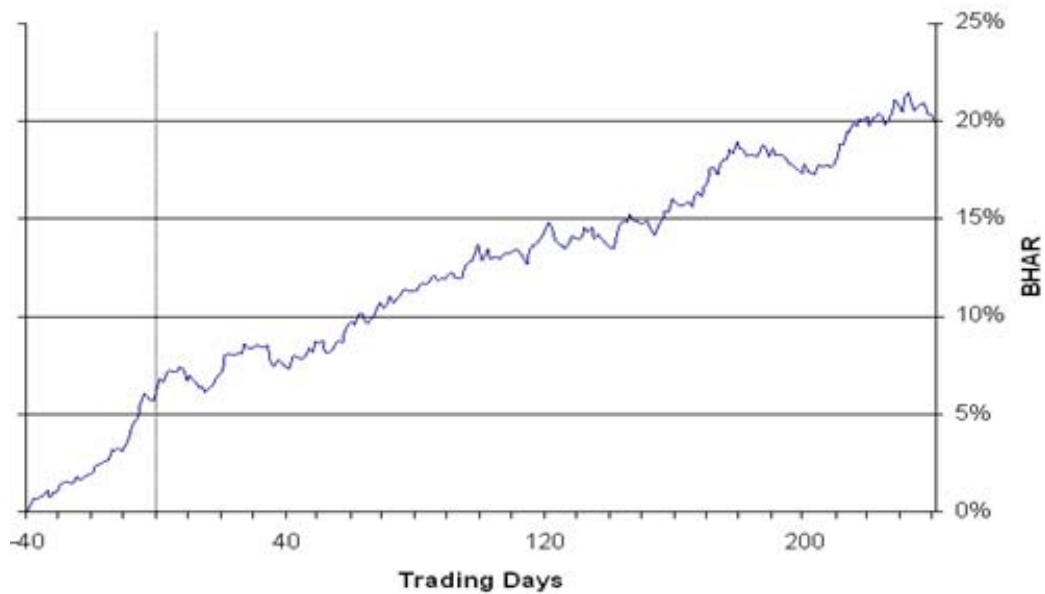
The figure reports cumulative abnormal returns for the whole sample of 324 events. Abnormal returns are derived from a market model regression for each event where the CDAX was used as a market proxy.

Figure 4: Abnormal Volume for the whole sample (n=324)



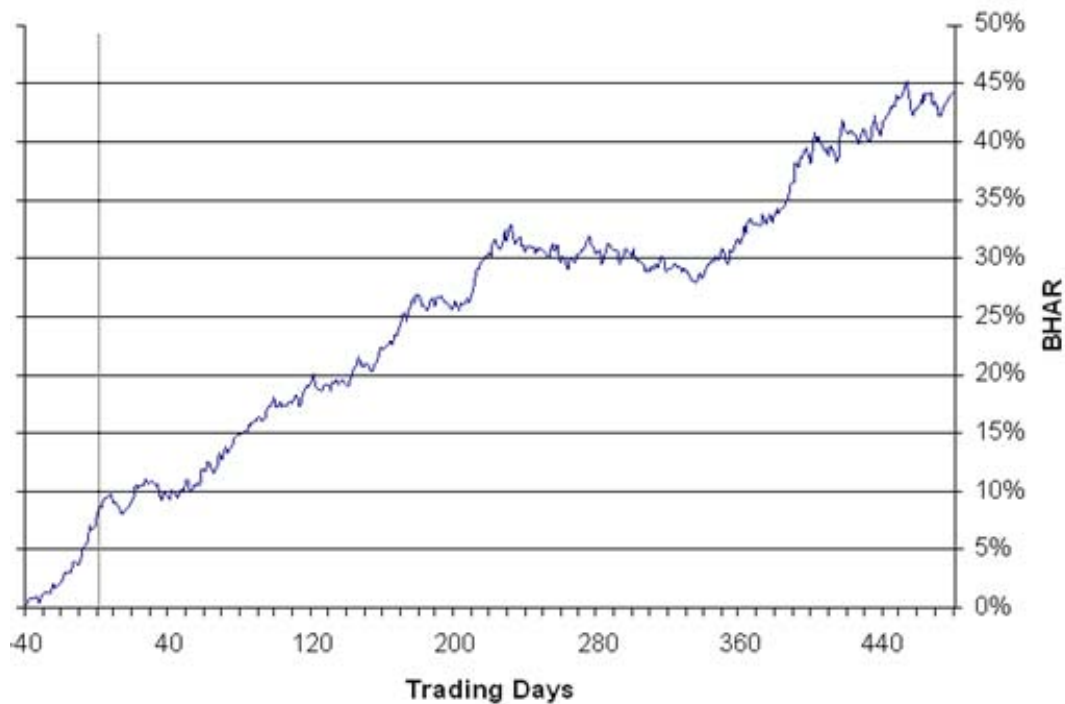
The figure reports abnormal trading volume for the whole sample of 324 events. Abnormal volume is calculated following the approach by Brav and Gompers (2003).

Figure 5.a: Buy-and-Hold Abnormal Returns for all events up to 2006 (n=232)



The figure reports buy-and-hold abnormal returns for all events that occurred prior to December 31st, 2006. The CDAX was used as proxy for the market return.

Figure 5.b: Buy-and-Hold Abnormal Returns for all events up to 2005 (n=158)



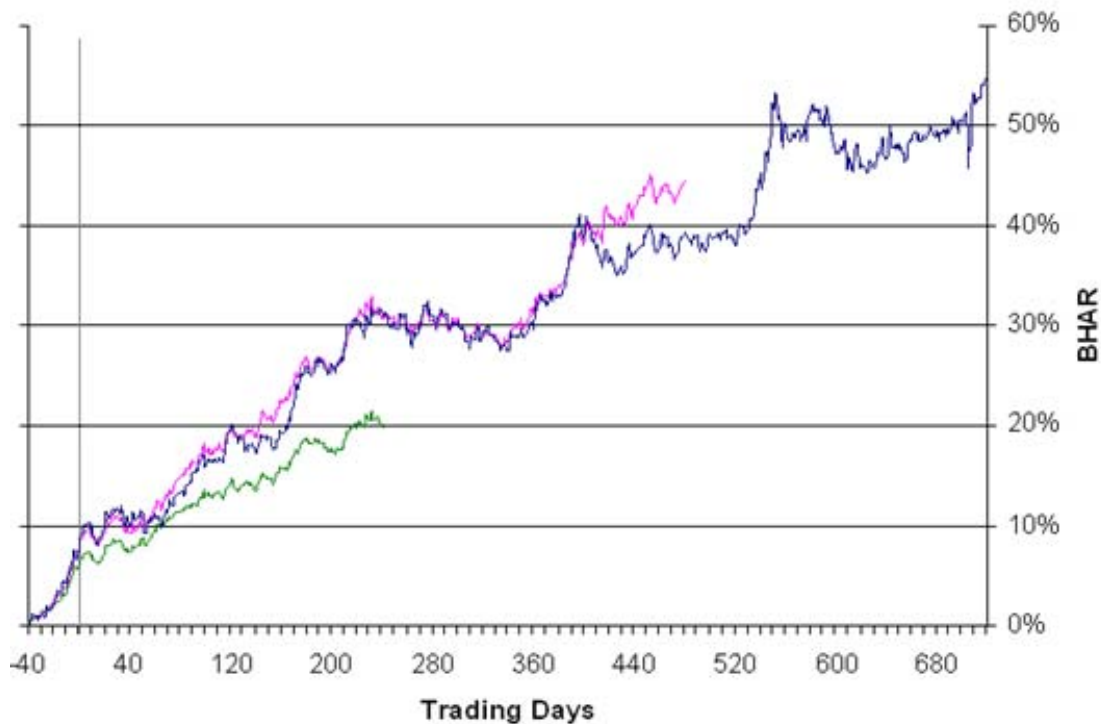
The figure reports buy-and-hold abnormal returns for all events that occurred prior to December 31st, 2005. The CDAX was used as proxy for the market return.

Figure 5.c: Buy-and-Hold Abnormal Returns for all events up to 2005 (n=108)



The figure reports buy-and-hold abnormal returns for all events that occurred prior to December 31st, 2004. The CDAX was used as proxy for the market return.

Figure 5.d: Buy-and-Hold Abnormal Returns for all subsamples



The figure reports buy-and-hold abnormal returns for all three subsamples. The CDAX was used as proxy for the market return.