Debtholder Responses to Shareholder Activism: Evidence from Hedge Fund Interventions

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Abstract

We investigate the effect of shareholder activism on debtholders. We examine a sample of private loans taken out by firms targeted by hedge fund shareholder activists between 1995 and 2008. We find that lenders' reaction to hedge fund intervention is conditional on the nature of the shareholder activism. We compare spreads in loan contracts of target firms before and after intervention by activist hedge funds. While lenders charge *higher* spreads when the activist's objective is to force the target into being acquired or to increase payouts to shareholders, they charge *lower* spreads when the activist's objective is to block a takeover of the target or to oust an entrenched CEO. We also find that the proportion of general covenants to total covenants increases when the target is likely to be sold after entry of the activist shareholder.

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1. Introduction

We study how shareholder activism affects debt capital providers by examining hedge fund interventions in firms with bank borrowings. Shareholder activism is often viewed as the assertion of control rights by equity investors, and therefore meant to primarily serve the interest of equity holders.¹ Consistent with this view, some recent studies examining the effect of hedge fund activism on debtholders conclude that hedge fund activism exacerbates shareholder expropriation of debtholder wealth. Klein and Zur (2011) find that, on average, hedge fund activism has adverse effects on target firm's bond ratings and returns, which they attribute to a wealth transfer from bondholders to shareholders. Similarly, Li and Xu (2010) document increases in credit risk following hedge fund activism.

While these studies view shareholder activism as primarily redistributing the existing wealth in the firm, shareholder activism could instead enhance the target firm's value as a whole. Brav et al. (2008) suggest that improvements to shareholder wealth can come from sources other than debtholders, such as managers, and from operating efficiencies. Debtholders are not necessarily disadvantaged by some of these actions and would in fact view them favorably.² Therefore, we examine whether debtholders react differentially depending on the nature of actions undertaken by activist shareholders. Our results show that average effects of shareholder activism on debtholders mask the more complex wealth effects. Our study is related to

¹ In contrast, bondholder activism accompanying violations of bondholder rights is a distinct phenomenon involving debtholder rather than shareholder intervention (see Kahan and Rock, 2009; Gao, Gao, and Smith, 2009).

 $^{^{2}}$ In fact, Klein and Zur (2011) find that over 40% of hedge fund targets experience positive short-run and long-run bond returns.

Greenwood and Schor (2009) who similarly document varying wealth effects for equity holders from a wide variety of hedge fund actions.

We focus on a sample of bank loans and examine the effects of shareholder activism on the cost of debt and on monitoring mechanisms used by lenders. This setting complements the results in Klein and Zur (2011) where returns from outstanding bonds are used to measure the effect of shareholder activism. In that setting, bondholders can only use bond pricing to reflect the changes in risk to outstanding bonds. We study how lenders alter their subsequent contracts with the firm to reflect their perceptions of risks. Since the bank lending officers are sophisticated, bank loan terms are set in an informationally efficient manner to incorporate changes in target's risk due to the intervention. By using tailor-made contracts, banks use a richer set of actions including the interest cost and the covenant structure and this allows us to examine the various actions that active lenders might take to protect themselves from adverse consequences of active shareholder monitoring.

We study the effects of hedge fund activism using a sample of activist hedge funds that acquire a significant equity stake in a target firm (i.e., 5% or more beneficial ownership). Activist hedge funds acquire shares in companies where they perceive a weakness or deficiency and use their equity stakes to influence management into taking remedial actions. Hedge fund activism is a rich setting in which to study active and self-interested shareholder activists who are effective in increasing shareholder value.³ Brav et al. (2008) and Klein and Zur (2009) document that targeted firms earn significant abnormal stock returns when the entry of such hedge funds is announced. In contrast, studies of other activists such as pension funds and

³ Consistent with other studies, we label these equity investors "hedge funds" even if they may not employ truly hedged investment strategies. In fact, our sample of activist hedge funds is graciously provided by Alon Brav and consists of the same investors as in Brav et al. (2008).

mutual funds generally conclude that their activism is largely ineffective (Gillan and Starks 2007).

Following Greenwood and Schor (2009), we classify hedge fund activism into the following categories: (1) mergers or asset sales, (2) corporate governance issues, including reorganization of the management and board of directors, and (3) capital structure changes which are not asset-sale related, such as increasing leverage and distributions of special dividends. Each of these actions has potentially varying wealth effects for shareholders, managers, and debtholders of the firm, and could also involve wealth transfers across these stakeholders.

According to Greenwood and Schor (2009), the most value-enhancing hedge fund action is forcing the targeted firms into mergers. While, on average, shareholders of target firms enjoy a premium as a result of a takeover, debtholders view takeovers quite negatively.⁴ Supporting this view, Klock et al. (2005) and Cremers et al. (2007) provide evidence that, in general, stronger anti-takeover provisions are associated with lower cost of debt for public bonds. Similarly, Chava et al. (2009) find that lower takeover defenses are associated with higher cost of bank loans. However, the evidence from these studies is based on cross-sectional associations between cost of debt and the strength of takeover defenses which is assumed to be invariant over time.⁵

In our setting, takeover vulnerability at the target is dynamic. Brav et al. (2008) document that hedge fund activists do make changes to the governance structures at the target firms. We therefore employ a time-series design exploiting the panel structure of our dataset to examine the impact on target firms' cost of debt after hedge fund intervention, relative to borrowing costs in

⁴ This is because takeovers could lead to pre-payment of their claims upon merger if the loan contract has a covenant for change of control, or to subordination of their claims in the combined firm, or could result in higher risk of non-payment due to changes in risk profile of the combined firm.

⁵ In addition to their main cross-sectional levels analysis, Chava et al. (2009) also conduct a change regression but acknowledge the limitation of their approach since their measure of takeover risk is based on the governance index of Gompers et al. (2003) which is not available for all years and does not change very much across time. In contrast, our study focuses on firms experiencing a major change in takeover risk.

the period before intervention. This approach minimizes the risk of unmodeled firm factors driving the relation between takeover vulnerability and cost of debt. We expect that cost of debt after intervention by hedge fund activists will be higher when the lender anticipates an increase in takeover risk of the target firms.

The effectiveness of merger-related actions by hedge funds depends on the pre-existing takeover vulnerability of the target firm, which in turn depends on two factors: (1) the strength of anti-takeover mechanisms, such as existence of a classified board at the target, and (2) the merger attractiveness of the target, which we proxy by the ratio of intrinsic equity value to stock price. Building on prior research which highlights the effectiveness of activism by hedge funds, we predict that intervention by a hedge fund will increase the cost of debt especially when the pre-existing takeover vulnerability of the target firm is low.

We then examine the effects of hedge fund actions when they block mergers. Building on the prior discussion, if lenders face greater risk when the borrower is acquired, then we would expect that blocking of such a merger by the hedge fund should reduce the cost of debt.

Next, we examine cases where the hedge fund activists focus on resolving the managershareholder conflicts of interest arising from managerial entrenchment in the target firm (Brav et al. 2008). All investors could potentially benefit if the removal of entrenched managers results in eliminating or reducing perquisite consumption and other value-destroying behavior by the managers. We therefore expect that if hedge fund activism results in reducing managerial entrenchment, the cost of debt would decrease as a consequence of the shareholder activism.

Finally, we examine cases where the hedge fund's primary strategy is to alter the capital structure of the target firm. We expect that changing capital structure to increase leverage or to increase payouts to shareholders would result in higher cost of debt for the target firm.

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We obtain data from 1995 to 2008 for our analysis. We use a list of activist hedge funds provided by Brav et al. (2008). These activist hedge funds are identified based on a screening of Schedule 13D filings which filters out filers such as banks, insurance companies, brokerages, foreign institutions, companies, pension funds, trusts, and individuals.⁶ The remaining filers are subjected to further data checks and, after dropping all cases where the intent of investment does not appear to be activist in nature, the balance are classified as activist hedge funds. We use the Dealscan database to obtain data on bank loans for firms targeted by the activist hedge funds.

We find that the cost of debt increases in the post-hedge fund period relative to the prior period when the hedge funds force mergers and make capital structure changes, consistent with these actions increasing the risk for the lenders. In contrast, the cost of debt decreases when the hedge funds block mergers and when they resolve managerial entrenchment problems. Further, we find stronger results when we examine the sub-sample where the takeover vulnerability or merger attractiveness is low prior to hedge fund entry, i.e., when the firm has a classified board or a low value-to-price ratio. We also explore the potential co-insurance effect when the target firm is acquired by a lender with a higher credit quality. We find some evidence that the cost of debt is reduced when the firm is acquired by an acquirer with higher credit quality than the target, consistent with the co-insurance hypothesis.⁷

The preceding discussion suggests that lenders price loans in response to their risk perception of the borrower. However, lenders can also use debt covenants as protective mechanisms to mitigate borrower-related risk (Cremers et al. 2008; Chava et al. 2009). We examine the covenants in loan contracts before and after hedge fund intervention. We find that,

⁶ A schedule 13D filing is required from any investor who acquires more than 5% of any class of securities of a publicly traded company and has an interest in influencing the management of the company.

 $^{^{7}}$ The analysis is performed on the subset for merger related targets where the acquirer could be identified and the Z-score of the acquirer could be computed.

while the number of total covenants remains unchanged in cases where the hedge funds intervene in order to force mergers, the mix between general covenants (that restrict the financial policy of the firm) and financial covenants (that require the firms to meet certain accounting ratio thresholds) changes. This suggests that lenders rely on more general covenants to presumably protect the cash in the firm when the risk associated with mergers increases after hedge fund entry.

We interpret our results as debtholder responses to hedge fund activism. An alternative explanation is that both hedge funds and debtholders are responding to changes in the risk environment faced by the target firms. In other words, activism by hedge funds is not the direct *cause* of changes in the target firms to which debtholders are reacting. Instead, the target firm is undergoing some changes to which the debtholders are reacting and at the same time hedge funds time their investments in anticipation of such changes. This alternative explanation is not likely for several reasons. First, in merger-related interventions, we analyze separately cases where the firm was already in merger talks prior to hedge fund entry from cases where the activist hedge fund forced merger talks. We find that the increase in loan spreads is largely concentrated in the latter cases, where the merger is attributable to hedge fund intervention. Second, prior research concludes that activist hedge funds are not merely stock pickers but engineer equity value enhancements through their actions (Brav et al. 2008). In addition, firms targeted by activist hedge funds have a higher probability of being taken over than other similar firms (Greenwood and Schor 2009).

Our results highlight the mixed effects of shareholder activism on debtholders. First, we show that, while hedge fund activism plays a valuable role in enhancing the effectiveness of the market for corporate control, it is also associated with higher borrowing costs, on average, for the

target firms. This implies that an analysis of the net benefit of shareholder activism has to incorporate the potential increase in the cost of debt for the target firm. Second, while the traditional theories of bondholder-shareholder conflict suggest that shareholder activism would have a detrimental effect on debtholders, we show that this does not necessarily hold true in all circumstances. In cases where the value creation for shareholders arises from solving the managerial entrenchment problem, actions of activist hedge funds, in fact, align the interests of shareholders with those of debtholders.

The rest of the paper is organized as follows: section 2 outlines the institutional details with respect to activism by hedge funds, section 3 describes the data, section 4 contains the analyses and discussions of results, and section 5 concludes.

2. Institutional setting

Shareholder activism has a long history in the U.S. (see Gillan and Starks (2007) for a review). While the early shareholder activists were mainly individuals, a notable trend has been the increasing involvement of institutional investors. In particular, over the past decade, hedge funds have emerged as an important class of shareholder activists.

The term "hedge fund" generally describes a pool of funds managed by professional fund managers on behalf of other investors. Hedge funds share features and characteristics which are very similar to other investment vehicles such as private equity and venture capital funds. These similarities include organizational structure (the funds are typically structured as limited partnerships, with the professional fund manager acting as general partner), compensation structure (management fees and carry arrangements are common), and the unregulated nature of the funds' activities.⁸ Thus, hedge fund managers have very strong financial incentives to generate positive returns from their activities. This stands in stark contrast to other activists such as pension funds, where there is typically not a similar incentive structure for employees engaged in the pension fund's activism efforts.

In addition, hedge funds operate outside of securities regulation and registration requirements and go to great lengths to maintain this status, by limiting the number of investors in the fund itself as well as restricting investors in the fund to wealthy individuals and institutions. As a result, hedge funds have great flexibility in their investment activities and are unencumbered by regulatory measures such as those requiring mutual funds to hold diversified portfolios. Hedge funds are therefore "a particularly nimble kind of shareholder" (Brav et al. 2008, page 1773). As a result, and perhaps not surprisingly, hedge funds have proven to be more effective in achieving their financial objectives than traditional institutional activists such as pension funds and mutual funds (Gillan and Starks 2007).

While hedge funds engage in a variety of investment strategies, some of which involve true hedging, in this study, we are interested in *activist* hedge funds. Activist hedge funds have been contrasted with other shareholder activists by means of the labels "offensive" (applied to hedge funds) and "defensive" (applied to more traditional activists such as pension funds and mutual funds) (Armour and Cheffins 2009). The key difference lies in the investor's stake in the targeted firm before the start of activism and further strengthens the notion of an activist hedge fund as a highly motivated activist. Kahan and Rock (2007, page 1069) describe the difference as follows:

⁸ The annual management fee is typically 2% of assets managed, and the carry (or carried interest) refers to the fund manager's performance fee which is typically 20% of profits made by the fund. There are often hurdle rates which have to be met before the fund manager is entitled to the carry.

"Mutual fund and pension fund activism, if it occurs, tends to be incidental and ex post: when fund management notes that portfolio companies are underperforming, or that their governance regime is deficient, they will sometimes be active (footnote omitted). In contrast, hedge fund activism is strategic and ex ante: hedge fund managers first determine whether a company would benefit from activism, then take a position and become active."

Another characteristic of activist hedge funds is that they rarely seek full voting control, with an average ownership stake of around 9% (Brav et al. 2008). In the U.S., schedule 13D of the Securities Exchange Act of 1934 requires the filing of an ownership report with the SEC within 10 days of the acquisition of 5% or more of a company's shares. Similar to the approaches in other papers, we make use of the schedule 13D filings to construct a dataset of hedge fund activism.

3. Data

We start with a list of 236 activist hedge funds compiled by Brav et al. (2008)⁹. Using this list, we collect from the SEC's Edgar database all Schedules 13D filed by those activist hedge funds between 1995 and 2008. From these 13Ds, we collect information on the filers (i.e., the activist hedge funds), the filing date (deemed to represent the start date of the hedge fund intervention), the target companies, and the reasons given in the 13D filing for the acquisition of shares. The result is a sample of 1,649 target companies. Using Compustat, we then collect data on the target firm's leverage and its aggregate debt issuances for the three fiscal years before and

⁹ We thank Alon Brav for providing this list. In their study, Brav et al. (2008) obtain a list of 13D filers and, based on the names and filer type description disclosed in Item 2 of the 13D filing, remove "banks, brokerage companies, regular corporations, foreign institutions, individuals, insurance companies, pension funds, trusts, and other miscellaneous categories." The determination of hedge funds among the remaining filers is then made using information obtained from their websites, press articles, and telephone calls to the filers. Additionally, Brav et al. exclude filers whose primary objectives are related to bankruptcy reorganization or financing of distressed firms, who are primarily interested in merger arbitrage transactions, or whose targets are closed-end funds.

three fiscal years following the 13D filing date, where available. After excluding firms with less than \$10m of aggregate debt issuances reported during that six-year period, the number of unique firms with either public or private debt issues is 1,055.

In the next step, we use the Dealscan database to obtain data on bank loans taken out by the target companies during a period starting three years before the start date of the activists' intervention, until the earlier of the date the target firm was sold or three years after the start date. For each facility provided to the borrower, we collect from Dealscan the all-in-drawn spread on the bank loan over LIBOR, the facility amount, maturity, whether collateral was provided, and the loan purpose.

Additionally, we collect data on the covenants for each package, and classify covenants into two categories based on Bradley and Roberts (2004)—financial and general covenants. Financial covenants are based on accounting ratios such as net worth, current ratio, etc. General covenants are sweeps and dividend restrictions that tend to restrict financial policy decisions of the borrower. We then obtain the firm's financial characteristics at the time of each loan from Compustat, including the firm's then prevailing Long-Term Issuer Credit Rating from Standard and Poor's, an indicator of the firm's overall creditworthiness at the time.

After imposing the data requirements for our analyses, the final sample consists of 2,109 loans taken out by 610 firms, with 1,208 loans being made in the period before the 13D filing date (i.e., the start of the hedge fund intervention), and 901 loans in the period after. Data on covenants are available for 1,559 loans in the sample.

Table 1 Panel A shows descriptive statistics of the loans in our sample. The average loan has a spread of 247 basis points (BPS), with substantial variation across the sample. The loan spread at the 5th percentile is 60 BPS, and 505 BPS at the 95th percentile, while the median is

225 BPS. Facility amounts also vary substantially, the mean being \$269m, while the 5th and 95th percentiles are \$5m and \$1 billion, respectively. Mean maturity of loans is just over 4 years, with a maturity period of 12 months at the 5th percentile, and 7 years at the 95th percentile. Almost two-thirds of the loans are secured by collateral. We obtain an Issuer Credit Rating for 48% of the loans.

We then separate the firms into investment grade (rating of BBB- and above) and noninvestment grade categories. In order to be able to run tests for our analyses, we set observations where an Issuer Credit Rating was not available to be non-investment grade. 12% of all the loans in the sample, including loans for which a credit rating was not available, fall in the investment grade category. 70% of the loans are obtained for general corporate purposes. The average loan contains 2.3 financial covenants and 2.4 general covenants, for a total of 4.7 covenants.

Table 1 Panel B shows mean values of loan characteristics before and after hedge fund intervention, together with t-tests of differences in means across the two groups. On average, a bank loan made after hedge fund intervention has a spread of 261 BPS, 24 BPS higher than pre-intervention. A loan given post-intervention is also more likely to require collateral and has slightly longer maturity period. Loans given pre- and post-intervention do not differ in terms of facility amounts. A smaller proportion of loans made after hedge fund intervention are for general corporate purposes. Interestingly, while there is no difference in total number of covenants between the before and after periods, the composition changes such that the number of financial covenants declines and the number of general covenants rises.

Table 2 presents descriptive statistics for the 610 firms targeted by activist hedge funds from 1995 to 2008, for which data on bank loans and control variables are available. Table 2 Panel A shows financial characteristics of these firms measured as of the most recent fiscal year end date prior to the activist's intervention. The median book value of total assets in a target firm is just under \$500m, but the distribution is skewed, with a mean of \$1.7 billion. Market value of equity follows a similar pattern, with a median of \$283m and a mean of \$1.0 billion. The median (mean) target firm had a leverage ratio of 0.25 (0.32). Z-scores cover a wide range of values, from -0.81 at the 5th percentile to 7.63 at the 95th percentile. Similarly, we observe wide variability in return on assets (ROA), dividend payouts, and cash holdings, indicating that hedge funds target firms at various levels of financial distress, profitability, dividend payout, and cash retention policies.

Examining the pre-existing anti-takeover mechanisms, we find that 55% of the firms have a classified board as indicated in the most recent proxy statement preceding the 13D filing date. In addition, in order to evaluate the attractiveness of the firms as potential merger targets, we examine the intrinsic value-to-price ratio. We estimate intrinsic value by regressing market value of equity on book value of equity, net income, and leverage for all firms on Compustat in the same industry as the target firm in the year preceding the 13D filing date, and using the estimated coefficients on these variables together with the values of these variables for the target firm. This method is based on the approach described in detail in Rhodes-Kropf et al. (2005). We find that the average firm in our sample is undervalued by the market, with a mean intrinsic value-to-price ratio of 1.5. Hedge funds appear to target both misvalued and properly-valued firms: the intrinsic value-to-price ratios of target firms range from 0.26 to 3.83.

Table 2 Panel B provides some descriptive statistics related to the four categories of actions by hedge funds that we explore in our analysis. We observe a pattern of discrepancy between the initial stated objective of the activist hedge funds and the final outcome. This discrepancy has also been noted by Greenwood and Schor (2009, page 363). While these hedge

funds explicitly stated in their 13D filings that their objective was to get the target firm sold in only 7% of the cases, the actual percentage of firms which eventually get sold is a much higher 27%.

With respect to blocking mergers, the hedge fund activists explicitly stated an opposition to the firm being sold in 2.5% of the filings. However, we find that there is a greater incidence of merger talks that do not materialize. Using the SDC database, we collect data on merger announcements in the year preceding the 13D filing date, up to two years subsequently. We find that 33% of the firms were in merger talks (as potential targets) even before the activist's intervention, and 38% were involved in merger talks afterwards.

An explicit demand by the hedge fund activist to fire the incumbent CEO is quite rare, occurring in less than 1% of the firms in the sample. However, the actual rate of CEO dismissals within one year of the hedge fund intervention is 12%. We therefore assess the extent of entrenchment of the incumbent CEO – whose removal may be an unstated objective of the activist – using data on CEO compensation and the firm's net income just prior to the intervention date.

The data on CEO compensation are obtained from Execucomp, supplemented with the Equilar database. We calculate the most recent (prior to activist's intervention) annual compensation of the target firm's CEO as a fraction of the firm's market capitalization. This measure has a mean value of 1.4%, and varies from 0.04% to 3.4%. The fraction of CEOs' total compensation consisting of equity has a mean value of 0.32 for the sample, but varies over a wide range. There is no equity component in the CEO's compensation at the 5th percentile, and the fraction is 0.81 at the 95th percentile. The mean and median net income are close to breakeven (mean is a loss of \$8.9 million, whereas median is a profit of \$6.2 million), and again

there is a lot of variation in the sample, with the 5th percentile being a loss of \$153 million and the 95th percentile a profit of \$283 million.

Finally, the activist hedge funds make explicit demands which would result in increased payouts to shareholders and/or increased leverage of the target firm in almost one quarter of the sample. In the year following the activists' intervention, the mean distributions to shareholders (in the form or dividends or share repurchases) amount to 5 percent of total assets, with more than 20 percent of total assets being paid out to shareholders at the 95th percentile. We note that there is a pronounced skewness in the data, with the median firm making shareholder payouts amounting to just half of one percent of total assets.

4. Analysis

In order to test our hypotheses, we first need to construct variables to capture the different activism objectives, namely, forcing a takeover, blocking a takeover, ousting an entrenched CEO, and increasing payouts to shareholders.

One proxy for activism objective would be the stated demands disclosed in the Schedule 13D filings. However, hedge funds might be strategic in their stated intentions at the time of the intervention. Consistent with this, Greenwood and Schor (2009) point out that final outcomes often differ from the initial stated objectives. Since our intention is to identify the various activism strategies and quantify the effect on debtholders, we augment the information in the stated objective from the 13D with some ex-post outcomes that occur following the hedge fund intervention.

First, to capture an intention to force a merger or sale of the company, we use an indicator variable (*ForceMerger*) equal to one if there was an explicitly stated demand in the

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13D filing, or if the firm was sold within two years of the 13D filing. We use two years because the average holding period by activist hedge funds is between 5 and 6 quarters in our sample, similar to the holding period reported in Brav et al. (2008). We obtain very similar results (but slightly statistically weaker) to those reported in this paper if we use a one year cutoff point instead of two years.

Second, to capture intention to block a takeover, we use an indicator variable (*BlockMerger*) equal to one if the 13D contains an explicit statement to that effect, or if the firm was in merger talks before the arrival of the hedge fund, there were no merger talks subsequently, and no merger took place within two years of the intervention date.

Third, to capture an intention to oust an entrenched CEO, the indicator variable used (*RemoveCEO*) is equal to one if there was a stated intention to remove the CEO, or if the CEO was fired within two years of the 13D filing date, or the CEO's compensation as a fraction of market capitalization of the employing firm was above the median for the sample and the CEO's compensation was cash-based, indicating that the CEO was drawing excessive cash compensation, and the firm made a loss in the year immediately preceding intervention by the hedge fund.

Finally, in order to capture an intention to increase payouts to shareholders, we form an indicator variable (*IncreasePayout*) which is equal to one if the 13D contains an explicit demand to that effect, or if the proportion of total assets distributed to shareholders in the year following the 13D filing date is greater than the median value for the sample. The results reported in the paper are robust to alternative variants of the above definitions of the groups.¹⁰

¹⁰ Since we are not evaluating trading strategies for debtholders at the time of the intervention but rather we wish to understand how different activism strategies affect lenders, we use some ex-post outcomes in the construction of our groups. However, since we measure the response of lenders in our analyses (cost of debt and covenants), we need to make some assumptions regarding what the lenders knew at the time of the loan contract. We assume that, since

Panel A of Table 3 shows the number of target firms in our sample which are classified into the various activism objectives described above. Of the 610 firms in the sample, 194 (32%) were subject to a forced merger intention, 68 (11%) a blocked merger, 109 (18%) a CEO firing intention, and 137 (23%) were subject to an intention to increase payouts to shareholders. These activism objectives are not mutually exclusive, and close to two-thirds of the sample are subjected to at least one of these four objectives, meaning that the remainder (36%) were subject to some other uncategorized activism objectives, or the unstated objective of the activist hedge fund was not accomplished.

Firm-level descriptive statistics for the sample as a whole and for groups of firms formed according to the activism objective are presented in Table 3 Panel B. The measurement of variables in this table is made as of the most recent fiscal year end preceding the hedge funds' intervention. Interestingly, hedge funds' objective to increase shareholder payouts tends to be made in larger firms (\$2.4 billion in total assets or \$1.8 billion in market capitalization). Target firms susceptible to a forced merger objective tend to have lower leverage (leverage ratio of 0.26, compared to 0.32 for the entire sample), while firms susceptible to blocked merger or CEO firing objectives tend to be undervalued by the market (intrinsic value-to-price ratios of 1.63 and 1.82, higher than the sample mean of 1.51), and also tend to have higher leverage.

4.1 Main Results for Loan Spreads

Univariate comparisons of mean loan characteristics for loans taken before and after intervention by hedge funds are shown in Panel C of Table 3. Similar to Panel B, the borrowers

lenders have access to private information, they would have private information about the hedge fund's activism strategy and impending events such as mergers and CEO resignation even before the event is final. As a robustness check, we exclude loans with dates falling within six months following the hedge fund intervention date, when there may still be some uncertainty about the hedge fund's plans, and our results continue to hold.

are grouped by activism objective. For the sample as a whole, there is an increase in the mean loan spread, from 237 to 261 BPS, however, there are decreases in mean loan spreads in the blocked merger and CEO firing categories (the difference in spreads for the latter category is not statistically significant in a univariate setting). We observe variations in loan characteristics across the activism objective categories. For example, compared to the average loan in the period before intervention, loans made to firms with entrenched CEOs have longer maturity in the postintervention period (47 months vs. 42 months) and are less likely to be investment grade (6% likelihood vs. 13%). In order to take these variations in loan characteristics into account, we analyze the changes in loan spreads using regression specifications.

We estimate the following regression of loan spreads on the hedge fund strategy, the presence of the hedge fund and their interactions as follows:

Loan Spread =
$$\alpha + \sum_{i=1}^{4} \beta_i I_i + \delta Post _HF + \sum_{i=1}^{4} \gamma_i Post _HF * I_i + \lambda Controls$$
, (1)

where the four indicator variables (I_i) represent the activism objectives we study— ForceMerger, BlockMerger, RemoveCEO, and IncreasePayout.

The four indicator variables by themselves capture firms that are subsequently subject to their specific activism strategy and their coefficients (the β_i 's in equation 1) serve as a benchmark for the cost of capital faced by those firms prior to the intervention. The coefficient δ on the *Post_HF* variable therefore captures the effect of hedge fund intervention on the cost of debt when their activism strategy is not one of the four that we study. The coefficients γ_i on interactions of the strategies with the *Post_HF* indicator allow us to measure the impact of hedge fund activism on the cost of debt. We include firm-level and loan specific control variables and industry and year fixed effects in all the regressions. The standard errors are clustered two-way by firm and by year. The regression results are shown in Table 4. Our tests of hypotheses are all designed as changes in cost of debt after the hedge fund intervention relative to the prior period for each group of firms based on the activism strategy. Therefore, we need to test whether the sum of the *Post_HF* and the interaction term of *Post_HF* and each of the indicator variables that capture the three objectives is significantly different from zero. For example, in order to estimate the effect of hedge fund intervention on loan spreads for companies being forced into a merger, we need to compare the average loan spread pre-hedge fund, which is the constant term plus the coefficient on *ForceMerger* ($\alpha + \beta_1$ in equation 1), and the average loan spread post-hedge fund, which is the constant term plus *ForceMerger*, plus *Post_HF*, plus the interaction term of those two indicator variables ($\alpha + \beta_1 + \delta + \gamma_1$ in equation 1). The statistical test therefore consists of testing whether the linear combination of *Post_HF* and the interaction term *Post_HF*ForceMerger* is different from zero (i.e., $\delta + \gamma_1 = 0$). The results of these tests are reported at the bottom of Table 4 and are consistent with our hypotheses.

In forced merger cases, loan spreads are on average 56 BPS higher in the post period compared to the pre period. In blocked merger cases, loan spreads decrease by 46 BPS, on average, while in entrenched CEO removal cases, there is also a decrease in loan spreads by an average of 34 BPS. All of these results are economically and statistically significant.

When interpreting the regression results for the fourth activism objective, *IncreasePayout*, we note that increased payouts to shareholders are associated with increased leverage (Klein and Zur 2011), and our regression tests include leverage as a control variable, in line with the banking literature. This makes interpretation of the results for this group less straightforward. Nevertheless, even after the effect of leverage has been controlled for, we find that, in the increased payout cases, loan spreads increase by 26 BPS, on average.

4.2 Pre-Existing Anti-Takeover Provisions

In Table 5, we examine the role of pre-existing anti-takeover provisions on the effect of hedge fund interventions. We repeat the loan spread regression specified in equation (1), but estimate it separately on partitions of the data based on anti-takeover provisions in place before the hedge fund intervention.

The first two columns of results show estimated coefficients from partitioning the sample based on whether the target firm had a classified board. The first column of Table 5 shows results for the subsample of firms that had a classified board. Since classified boards constitute barriers to prevent outsiders from being able to gain control of the board of directors, they are often thought of as a weak governance feature, facilitating entrenchment of managers and acting as a powerful anti-takeover defense mechanism in the market for corporate control (Bebchuck et al. 2002).

As shown by the results in the first two columns, in the sub-sample representing weak governance, we find that all of the intervention strategies have a significant impact on debtholders. In contrast, when governance is strong, i.e., in the sub-sample of firms with no classified boards, we only find strong results for the cases where there is a forced merger, and even though in these forced merger cases the result is statistically significant, the magnitude is smaller.

One interpretation of this result is that forcing a merger affects the lenders irrespective of the anti-takeover protection in place, but the reaction is muted in cases where absence of a classified board, and therefore weaker anti-takeover protection, caused banks to presumably price the takeover risk even in the pre-intervention loans.

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The results on blocking mergers are somewhat surprising. If pre-existing governance was weak, we would have expected that the hedge fund's role in preventing the merger would be limited since the classified board would have played that role. However, that is the sub-sample where we find results for the blocking merger strategy. Interestingly, when governance is strong (absence of a classified board), lenders do not appear to value the blocked merger, presumably because another merger could always go through given the lack of antitakeover mechanisms. Thus, it appears that activist hedge funds have a particularly important role to play in "difficult" cases, where implementing changes to unlock value at a target is less straightforward because of the presence of a classified board.

In the case of CEO entrenchment, the weak governance structure (presence of a classified board) made it harder to replace the CEO. The benefit in terms of a lower cost of debt after the hedge fund intervention accrues in this sub-sample only. Finally, in the increased payouts to shareholders cases, there is an increase in loan spreads only in firms with a classified board. Taken together, these results indicate that debtholders perceive that activist hedge funds are able to successfully overcome a classified board's potential opposition to its actions and point to a special role played by activist hedge funds above and beyond the governance implications of classified boards.

4.3 Pre-Existing Merger Attractiveness

We then examine how the merger attractiveness of the target firm influences the effect of hedge fund intervention. The third and fourth columns in Table 5 show a partitioning of the sample, by the extent to which stock market prices diverge from intrinsic value. The low V-to-P ratio column analyzes firms with market prices higher than intrinsic value, whereas the high V-to-P ratio partition contains firms for which market prices are below intrinsic value as of the most recent fiscal year end date before activism.

We find that the effects of hedge fund intervention is mostly concentrated in the subsample of firms which have low V-to-P ratios, i.e., are relatively less undervalued by the market. To interpret these results, we first note that a highly undervalued firm (i.e., with a high V-to-P ratio) is an attractive merger target. Conversely, a low V-to-P ratio indicates a less attractive merger target. In such firms, an activist hedge fund is more likely to apply other techniques than the forcing a merger route in order to unlock value, for example, by ousting an entrenched CEO. We would therefore expect that the partition with the less undervalued firms will produce stronger effects of hedge fund intervention in non-forced merger cases.

The third and fourth columns of Table 5 show that, while the results for forced mergers continue to hold in both sub-samples, the results for blocked mergers and for entrenched CEO removal are concentrated in the low V-to-P sub-sample, i.e., firms which are relatively less attractive as merger targets. Interestingly, when the activists' objective is to increase payouts to shareholders, the effect of activism on loan spreads is statistically stronger for the high V-to-P ratio sub-sample, although the magnitude of the effect is lower.

4.4 Forced Merger Sub-Categories

Next, we focus our attention on the forced merger cases. First, we consider cases where the activist's objective is to force the target into being taken over, considering separately cases where there were pre-existing merger talks involving the target prior to the hedge fund's intervention and cases without any pre-existing merger talks.

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If there were pre-existing merger talks, it is likely that debtholders would have already adjusted lending terms to reflect the likelihood of the discussed merger taking place. In cases without pre-existing merger talks, if intervention by the hedge fund signals an increased likelihood of the borrower being taken over, we expect post-hedge fund arrival loans to reflect those expectations in the form of higher spreads, since there is an increase in takeover vulnerability (Chava et al. 2009).

We repeat the regression test following equation (1), except that we split the *ForceMerger* indicator variable into two components: with and without pre-existing merger talks. We then conduct tests of hypotheses as described in section 4.1, and the results of the tests of hypotheses are shown in Panel A of Table 6. The results show that the increase in loan spreads for the *ForceMerger* category is concentrated in cases without pre-existing merger talks. We still obtain an increase in loan spreads of 40 BPS for the 34 target firms where there were pre-existing merger talks, but the increase is not statistically significant (t-statistic of 1.348).

We consider a second set of sub-categories for the forced merger cases. We note that 31 out of the 194 forced merger cases resulted in a leveraged buyout (LBO). By definition, LBOs involve substantial increases in leverage in the target firm, and we therefore expect these cases to have larger increases in loan spreads. Panel B of Table 6 shows the results of tests of hypotheses following regressions allowing for LBO and non-LBO sub-categories of the *ForceMerger* cases. As expected, the increase in loan spreads in more than twice as large in magnitude for the LBO outcomes (66 BPS) as it is for the non-LBO outcomes (31 BPS).

4.5 Co-insurance in Forced Merger Cases

The results discussed so far indicate that, on average, the arrival of a hedge fund is seen as bad news by banks, who respond by charging higher spreads. Prior research on bondholder wealth effects in mergers has shown, however, that target bonds which are below investment grade have positive returns on announcement of a takeover which are larger when the acquirer's rating is better than the target's rating, consistent with a co-insurance effect (Billett et al. 2004). We explore whether this co-insurance effect may be present in our setting.

Using SDC, we collect, whenever available, data on the identity of the proposed acquirer in merger talks. For acquirers which are public companies, we are able to collect data from Compustat to calculate their Z-score. We are able to obtain a Z-score for 57 acquirers in our sample. We compare the acquirer's and target's Z-score in each case to determine which is higher.

Table 7 reports univariate tests for the mean and median loan spreads in the pre and post periods for forced mergers, showing separately cases where the acquirer has a Z-score greater and lower than the target's Z-score at the time of merger announcement. There is a decline in spreads for this group of firms suggestive of a co-insurance effect. For the forced merger observations where the acquirer's Z-score is lower than the target's, we observe large increases in spread, as expected.

4.6 Loan Covenants

Table 8 reports the results of separate regressions of total number of covenants, number of financial covenants, and number of general covenants, on the same set of independent variables as in Table 4:

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Number of Covenants =
$$\alpha + \sum_{i=1}^{3} \beta_i I_i + \delta Post _HF + \sum_{i=1}^{3} \gamma_i Post _HF * I_i + \lambda Controls$$
 (2)

The tests of hypotheses parallel those discussed in section 4.1 and involve tests of linear combinations of coefficients. The results, reported at the bottom of Table 8, confirm the univariate findings in Table 1 Panel B that the number of general covenants increases, but the number of financial covenants declines, in the post period. Furthermore, the univariate results in Table 3 Panel C and the regression results in Table 8 show that the effect is concentrated in cases where the hedge fund's strategy was to force a merger.

These results suggest that, when the borrower is at risk of being acquired, banks respond to the intervention of an activist hedge fund by substituting financial covenants with general covenants. Since financial covenants are more effective in going concern situations, it is not surprising that banks substitute some of them for general covenants when there is a potential looming change of control and lenders would like to restrict cash outflows.

In Table 9, we distinguish between forced merger cases resulting in LBOs versus those resulting in non-LBO outcomes. The LBO outcomes appear to drive the pattern of decreased reliance on financial covenants by lenders post-hedge fund intervention, whereas both LBO and non-LBO outcomes are accompanied by an increase in the number of general covenants used in the post period. These results, together with the results reported in Table 6 Panel B, suggest that LBO outcomes are a particularly important factor for private lenders, who not only require higher spreads, but also shift from using financial to using general covenants when making loans to LBO targets.

5. Conclusion

In this paper, we examine the effect of shareholder activism on debtholders. We view activism as an exercise of control rights by equity investors, aimed at effecting change in the targeted firm in order to address an underlying problem within the firm which has resulted in an undervalued firm.

We focus on hedge fund activism since prior research has shown that activist hedge funds are a much more successful class of activists compared to individual activists or to other institutional investors such as mutual funds and pension funds (Gillan and Starks 2007). Prior research has also documented the changes that hedge fund activists seek to implement in the target companies.

These changes can be classified into three broad categories (adapted from Greenwood and Schor 2009): merger related (including being either for or against a merger), governance related changes (including obtaining board representation and replacing the CEO), and capital structure related (e.g., share repurchases or special dividends). We hypothesize that each of these types of activism objectives affects debtholders differentially.

We find evidence consistent with our predictions, namely: (1) when the activism objective is to force a merger, banks respond to the arrival of an activist hedge fund by increasing the cost of borrowing, and furthermore switch from using financial to using general covenants in the loan contracts; (2) when the objective of the activist is to block a merger, banks reduce the cost of loans subsequent to the arrival of the hedge fund; (3) when the objective is to rectify a governance issue within the target firm by ousting an entrenched and potentially value-destroying CEO, banks offer reduced cost loans after hedge fund intervention; and (4) when the

objective is to increase payouts to shareholders, loan spreads increase after involvement of hedge funds.

We perform additional analyses to generate further insights about the role of activist hedge funds and their impact on debtholders. When pre-existing anti-takeover provisions are weak, proxied by the absence of a classified board, the effects of hedge fund intervention are weaker across all intervention objectives. This suggests that hedge funds are perceived to be able to overcome classified board mechanisms in pursuing their activism objectives in target firms. When firms targeted by activists are less attractive merger targets, spreads are lower after intervention when the activists' objective is to block a merger or to remove an entrenched CEO, but these effects are not observed when the target firms is an attractive merger target.

Focusing on forced merger objectives, the effect of hedge fund intervention on loan spreads is more pronounced when the activists initiate merger talks, and when the merger takes place in the form of an LBO. Finally, we document a shift in the type of covenants used by private lenders when faced with intervention by an activist whose objective is to force a merger: lenders incorporate more general covenants and fewer financial covenants in the loan contracts. In particular, the decreased reliance on financial covenants is concentrated in forced merger cases with LBO outcomes.

We have focused on hedge fund activism as an effective assertion of control rights by equity investors over management. Whereas the extant literature tends to view the question of how governance affects debtholders by considering governance features already in place, such as anti-takeover provisions, our study exploits a setting where a resourceful and result-oriented shareholder is intent on causing change to happen. Our study can therefore potentially provide a more focused lens through which to examine these questions.

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Table 1. Bank Loans

	Ν	Mean	Std. Dev.	p5	Med	p95
Loan spread (basis points above LIBOR)	2,109	247.4	148.8	60.0	225	505
Facility amount (\$m)	2,109	268.8	559.6	5.0	120	1,000
Maturity in months	2,109	49.3	57.0	12	53	84
Collateral (Yes/No)	2,109	0.66				
S&P Issuer Credit Rating available (Yes/No)	2,109	0.48				
Investment grade (Yes/No)	2,109	0.12				
General purpose loan (Yes/No)	2,109	0.70				
Number of covenants, total	1,559	4.72	2.56	1	4	9
Number of financial covenants	1,559	2.33	1.17	0	2	4
Number of general covenants	1,559	2.39	2.14	0	2	6

Panel A. Descriptive Statistics

Panel B. Comparison of mean loan characteristics before and after hedge fund intervention

	N = 1,208 (898 for covenants data)	N = 901 (661 for covenants data)		
	Before hedge fund intervention	After hedge fund intervention	Difference	t-test of difference in means
Loan spread (basis points above LIBOR)	237 3	261.0	23.8	3 64***
Facility amount (\$m)	264.6	274.5	9.9	0.40
Maturity in months	46.6	52.9	6.3	2.52**
Collateral (Yes/No)	0.63	0.69	0.07	3.30***
Rating (Yes/No)	0.47	0.49	0.02	0.98
Investment grade (Yes/No)	0.13	0.10	-0.02	-1.47
General purpose loan (Yes/No)	0.74	0.63	-0.11	-5.41***
Number of covenants, total	4.64	4.82	0.17	1.32
Number of financial covenants	2.43	2.20	-0.23	-3.84***
Number of general covenants	2.22	2.62	0.40	3.70***

This table reports descriptive statistics for bank loans in the sample. Panel A shows summary statistics of loan characteristics for the entire sample of loans. Panel B compares the mean values of the loan characteristics in the periods before and after intervention by activist hedge funds. ***, **, * indicate statistical significance of the difference in means across the two periods at 1%, 5%, and 10%, respectively.

Table 2. Target Firms

N = 610	Mean	Std. Dev.	p5	Med	p95
Total assets (\$m)	1,714.7	3,946.6	26.6	494.6	7,398.5
Market value of equity (\$m)	999.5	1,897.1	9.4	283.3	4,472.4
Leverage ratio	0.32	0.28	0.00	0.25	0.88
Z-score	2.73	3.25	-0.81	2.44	7.63
ROA (%)	-3.0	20.4	-42.5	1.8	14.6
Dividend payout (%)	8.2	59.4	-26.8	0.0	63.1
Cash to assets (%)	11.3	14.5	0.3	5.8	42.0
Has classified board (Yes/No)	0.55	0.50			
Intrinsic value-to-price ratio	1.51	1.83	0.26	1.07	3.83

Panel A. Financial Characteristics of Target Firms, Pre-Hedge Fund Intervention

Panel B. Objectives and Outcomes of Activism by Hedge Funds

	Ν	Mean	Std. Dev.	р5	Med	p95
Hedge fund stated intention to force merger (Yes/No)	610	0.069	0.253			
Target firm sold within two years of HF intervention (Yes/No)	610	0.274	0.446			
Hedge fund stated intention to block merger (Yes/No)	610	0.025	0.155			
Target firm was in merger talks before HF intervention (Yes/No)	610	0.331	0.471			
Target firm was in merger talks after HF intervention (Yes/No)	610	0.385	0.487			
Hedge fund stated intention to fire CEO (Yes/No)	610	0.008	0.090			
CEO was replaced within one year after HF intervention (Yes/No)	610	0.121	0.327			
CEO compensation as a fraction of market value (pre-HF intervention)	434	0.014	0.061	0.0004	0.003	0.034
Fraction of equity component in CEO's total compensation (pre-HF intervention)	437	0.323	0.297	0	0.318	0.809
Net income of target firm, pre-HF intervention (\$m)	607	-8.9	534.3	-153.4	6.2	283.4
Hedge fund stated intention to increase payouts to shareholders (Yes/No)	610	0.225	0.418			
Total payouts in year following HF intervention, as a fraction of total assets	504	0.050	0.182	0	0.005	0.205

This table reports descriptive statistics of firms targeted by hedge funds and which had bank loans during the sample period. Panel A shows summary statistics of firm-level characteristics measured as of the most recent fiscal year-end date prior to intervention by activist hedge funds. Panel B shows summary statistics of outcome-related measures of the activist hedge funds' objectives when intervening in the target firm.

Table 3. Sample Breakdown by Activism Objective

	Number of firms	% of overall sample
Force merger	194	31.8
Block merger	68	11.2
Replace CEO	109	17.9
Increase payout	137	22.5
At least one of the above	390	63.9
None of the above	220	36.1
Total	610	100.0

Panel A. Classification of Target Firms by Activism Objective

Panel B. Mean Financial Characteristics of Target Firms as of Most Recent Fiscal Year End Before Hedge Fund Intervention, grouped by Activism Objective

	Overall sample	Force Merger	Block Merger	Replace CEO	Increase Payout	Others
Number of firms	610	194	68	109	137	220
Total assets (\$m)	1,714.7	1,642.0	2,185.4	2,155.0	2,391.7	1,152.8
Market value of equity (\$m)	999.5	1,238.9	941.0	573.3	1,802.7	556.2
Leverage ratio	0.32	0.26	0.33	0.39	0.22	0.38
Z-score	2.73	2.96	3.04	1.89	3.81	2.42
ROA (%)	-3.0	0.5	-5.6	-7.4	2.5	-6.0
Dividend payout (%)	8.2	12.0	10.9	4.4	12.1	5.2
Cash to assets (%)	11.3	12.5	12.5	11.8	11.0	10.3
Has classified board (Yes/No)	0.55	0.56	0.62	0.52	0.54	0.55
Intrinsic value-to-price ratio	1.51	1.17	1.63	1.82	1.28	1.77

Table 3. Sample Breakdown by Activism Objective (continued)

Before Hedge Fund Intervention	Overall Sample	Force Merger	Block Merger	Replace CEO	Increase Payout	Others
Loan spread (basis points above LIBOR)	237.3	221.8	253.3	277.0	181.3	257.9
Facility amount (\$m)	264.6	200.5	274.2	257.4	399.1	238.7
Maturity in months	46.6	44.7	47.0	42.2	51.5	48.4
Collateral (Yes/No)	0.63	0.62	0.58	0.71	0.51	0.69
Rating (Yes/No)	0.47	0.43	0.62	0.54	0.47	0.43
Investment grade (Yes/No)	0.13	0.12	0.19	0.13	0.18	0.09
General purpose loan (Yes/No)	0.61	0.69	0.49	0.58	0.65	0.56
Number of covenants, total	4.64	4.52	4.88	4.86	4.20	4.91
Number of financial covenants	2.43	2.57	2.20	2.20	2.23	2.51
Number of general covenants	2.22	1.94	2.67	2.66	1.96	2.40

Panel C. Mean Loan Characteristics Before and After Hedge Fund Intervention, grouped by Activism Objective

After Hedge Fund Intervention	Overall Sample	Force Merger	Block Merger	Replace CEO	Increase Payout	Others
Loan spread (basis points above LIBOR)	261.0***	281.1***	220.8*	258.4	208.9**	280*
Facility amount (\$m)	274.5	471.3***	222.0	184.2**	332.3	176*
Maturity in months	52.9**	72.1***	42.6	47.2**	51.5	44.4**
Collateral (Yes/No)	0.69***	0.75***	0.53	0.71	0.58*	0.74
Rating (Yes/No)	0.49	0.62***	0.45***	0.56	0.46	0.39
Investment grade (Yes/No)	0.10	0.08*	0.16	0.06**	0.2	0.08
General purpose loan (Yes/No)	0.53***	0.32***	0.73***	0.64	0.61	0.58
Number of covenants, total	4.82	5.31***	5.02	4.73	4.67*	4.63
Number of financial covenants	2.20***	1.85***	2.36	2.26	2.48**	2.19***
Number of general covenants	2.62***	3.46***	2.67	2.47	2.19	2.43

This table shows a breakdown of the sample by activism objective. Panel A shows the number and proportion of firms in the sample which were subjected to the following non-mutually exclusive activist objectives: force the target firm into being taken over ("Force Merger"), block a proposed takeover of the target firm ("Block Merger"), remove an entrenched CEO ("Replace CEO"), and increase payouts to shareholders in the form of higher dividends or share repurchases ("Increase Payout"). Panel B shows mean values of firm-level characteristics for the overall sample, and for sub-samples formed according to activism objective. Panel C compares mean values of loan characteristics in the periods before and after intervention by activist hedge funds, for the overall sample as well as for sub-samples formed according to activism objective. ***, **, * indicate statistical significance of the difference in means across the two periods at 1%, 5%, and 10%, respectively.

(Standard error in parentheses below coefficient estimate)	Coefficient	Overall sample
Post_HF	δ	-2.295
		(18.24)
ForceMerger	β_1	-27.54***
		(7.09)
Post_HF * ForceMerger	γ_1	58.31***
		(17.12)
BlockMerger	β_2	29.57**
		(13.15)
Post_HF * BlockMerger	γ_2	-43.25**
		(17.27)
ReplaceCEO	β_3	25.92**
		(11.47)
Post_HF * ReplaceCEO	γ_3	-32.18*
		(17.65)
IncreasePayout	β_4	-48.58***
		(7.64)
Post_HF * IncreasePayout	γ_4	28.65*
		(15.61)
Natural logarithm of total assets of target firm	λ_1	9.382
		(7.31)
Profitability	λ_2	-130.5***
		(19.82)
Leverage	λ_3	60.65***
		(21.51)
Market-to-book ratio	λ_4	-0.559***
		(0.19)
Z-score	λ_5	0.142
		(0.51)
I_Investment Grade	λ_7	-90.75***
		(13.17)
Natural logarithm of loan maturity	λ_8	-15.08**
		(6.04)
Natural logarithm of loan amount	λ_9	-24.64***
		(7.58)
I_Collateral	λ_{10}	49.15***
		(6.33)
I_General purpose loan	λ_{11}	-45.62***
		(9.97)
Intercept term	α	645.9***
		(119.80)
Observations		2,109
Industry fixed effects		Yes
Year fixed effects		Yes
Adjusted R-squared		30.2%

Table 4. Regression of Loan Spreadson Indicator Variable for Hedge Fund Presence and Activism Objective

Table 4. Regression of Loan Spreads on Indicator Variable for Hedge Fund Presence and Activism Objective (continued)

Tests of Hypotheses	Test	
Effect of hedge fund in forced merger cases t-stat	$\delta+\gamma_1\!=\!0$	56.02*** 5.019
Effect of hedge fund in blocked merger cases t-stat	$\delta + \gamma_2 = 0$	-45.54*** -2.916
Effect of hedge fund in entrenched CEO removal cases t-stat	$\delta+\gamma_3\!=\!0$	-34.48** -2.335
Effect of hedge fund in increased payouts to shareholders cases t-stat	$\delta+\gamma_4\!=\!0$	26.36** 2.556

This table reports the results of a regression of loan spreads on: an indicator variable for hedge fund presence, indicator variables for hedge fund objective, interactions of those indicator variables, and control variables. The control variables include firm-level and loan specific variables as well as industry and year fixed effects. Standard errors are clustered two-way by firm and by year. Tests of hypotheses examining the effect of hedge fund presence in each of the activism objective categories are presented after the regression results. ***, **, * indicate statistical significance at 1%, 5%, and 10%, respectively.

Table 5. Regressions of Loan Spreads on Indicator Variablefor Hedge Fund Presence and Activism Objective, by Partitions of the Sample

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	Partitions t hed	Partitions formed on takeover vulnerability at time hedge fund intervention (Low vs. High)				
(Standard error in parentheses below coefficient estimate)	Classified Board	No Classified Board	Low V-to-P ratio	High V-to-P ratio		
Post-HF	4.988	0.371	0.517	7.354		
	(17.40)	(23.05)	(33.91)	(12.24)		
ForceMerger	-23.20***	-21.61*	-26.03*	-16.74**		
	(8.44)	(11.11)	(15.36)	(8.33)		
Post-HF * ForceMerger	62.52***	46.24*	63.81**	36.57		
	(19.57)	(24.50)	(30.66)	(22.29)		
BlockMerger	38.73**	-6.787	17.12	24.85		
	(17.64)	(19.27)	(19.56)	(21.56)		
Post-HF * BlockMerger	-63.27***	6.067	-39.79	-23.74		
	(18.77)	(30.72)	(26.03)	(29.58)		
ReplaceCEO	18.60*	32.64	37.85***	15.8		
	(10.32)	(23.96)	(13.99)	(16.15)		
Post-HF * ReplaceCEO	-40.58***	-12.06	-30.18	-34.43**		
	(15.57)	(22.48)	(26.07)	(17.16)		
IncreasePayout	-45.63***	-47.52***	-53.99***	-37.89***		
	(12.17)	(16.09)	(14.63)	(10.75)		
Post-HF * IncreasePayout	32.70*	15.36	35.06*	11.41		
	(17.31)	(27.76)	(20.27)	(17.25)		
Natural logarithm of total assets of target firm	13.58	12.19**	9.991	13.18**		
	(9.48)	(5.23)	(8.33)	(6.36)		
Profitability	-92.47***	-155.2***	-130.1***	-105.5***		
	(23.59)	(57.52)	(27.60)	(40.46)		
Leverage	29.16	55.63**	64.58*	38.2		
	(25.90)	(23.86)	(34.00)	(23.27)		
Market-to-book ratio	-0.813***	-0.310***	-0.561***	-3.575***		
	(0.31)	(0.08)	(0.16)	(1.00)		
Z-score	-3.333***	0.686*	0.229	-2.438		
	(1.15)	(0.40)	(0.47)	(1.81)		
I_Investment Grade	-90.31***	-100.0***	-101.4***	-84.70***		
	(16.46)	(21.11)	(21.48)	(16.13)		
Natural logarithm of loan maturity	-15.53	-14.13	-11.80*	-16.42***		
	(11.89)	(9.90)	(7.11)	(6.04)		
Natural logarithm of loan amount	-24.28**	-28.93***	-24.94***	-27.48***		
	(9.89)	(5.07)	(7.44)	(7.21)		
I_Collateral	67.57***	27.15**	39.56**	54.54***		
	(4.76)	(12.87)	(16.90)	(8.42)		
I_General purpose loan	-39.00***	-49.34***	-53.72***	-40.42***		
	(12.31)	(12.73)	(17.18)	(10.89)		
Intercept term	641.1***	739.9***	640.7***	726.1***		
	(138.50)	(98.37)	(124.10)	(101.90)		
Observations	1 101	1008	948	1 161		
Industry fixed effects	Ves	Yes	Yes	Yes		
Year fixed effects	Yes	Yes	Yes	Yes		
Adjusted D. servered	22 40/	24.804	20.40/	28.00/		
Adjusted K-squared	55.4%	24.8%	29.4%	28.0%		

Table 5. Regressions of Loan Spreads on Indicator Variable for Hedge Fund Presence and Activism Objective, by Partitions of the Sample (continued)

	Partitions formed on takeover vulnerability at time of hedge fund intervention (Low vs. High)					
	Classified Board	No Classified Board	Low V-to-P ratio	High V-to-P ratio		
Tests of Hypotheses						
Effect of hedge fund in forced merger cases	67.51***	46.61**	64.33***	43.92**		
t-stat	5.784	2.569	2.717	2.134		
p-value	0.000	0.011	0.007	0.033		
Effect of hedge fund in blocked merger cases	-58.28***	6.438	-39.27*	-16.39		
t-stat	-3.931	0.153	-1.884	-0.6		
p-value	0.000	0.879	0.060	0.549		
Effect of hedge fund in entrenched CEO removal cases	-35.59***	-11.69	-29.66**	-27.07		
t-stat	-2.844	-0.469	-2.055	-1.384		
p-value	0.005	0.639	0.040	0.167		
Effect of hedge fund in increased payouts to shareholders cases	37.69**	15.73	35.58	18.77*		
t-stat	2.303	0.843	1.534	1.717		
p-value	0.022	0.400	0.126	0.087		

This table reports the results of regressions of loan spreads on: an indicator variable for hedge fund presence, indicator variables for hedge fund objective, interactions of those indicator variables, and control variables, on partitions of the overall sample formed in two ways: (1) pre-existing anti-takeover provisions, proxied by the presence or absence of a classified board in the target firms at the time of intervention by the activist hedge funds and (2) pre-existing merger attractiveness, proxied by intrinsic equity value-to-price ratio having a value below or above one at the time of intervention by activist hedge funds. The control variables include firm-level and loan specific variables as well as industry and year fixed effects. Standard errors are clustered two-way by firm and by year. Tests of hypotheses examining the effect of hedge fund presence in each of the activism objective categories are presented after the regression results. ***, **, * indicate statistical significance at 1%, 5%, and 10%, respectively.

Table 6. Tests of Hypotheses Following Regressions of Loan Spreads on Indicator Variable for Hedge Fund Presence and Activism Objective, with Forced Merger Objective Sub-Categories

Tests of Hypotheses	
Effect of hedge fund in forced merger cases with pre-existing merger talks t-stat	40.19 1.348
Effect of hedge fund in forced merger cases with no pre-existing merger talks t-stat	60.89*** 3.714
Effect of hedge fund in blocked merger cases t-stat	-45.1*** -2.929
Effect of hedge fund in entrenched CEO removal cases t-stat	-34.57** -2.311
Effect of hedge fund in increased payouts to shareholders cases t-stat	25.91** 2.545

Panel A: Forced Merger Objective With and Without Pre-Existing Merger Talks

Panel B: Forced Merger Objective With Leveraged Buyout (LBO) and non-LBO Outcome

Tests of Hypotheses	
Effect of hedge fund in forced merger cases with LBO outcome t-stat	65.95*** 3.082
Effect of hedge fund in forced merger cases with non-LBO outcome t-stat	30.91*** 2.681
Effect of hedge fund in blocked merger cases t-stat	-47.74*** -3.053
Effect of hedge fund in entrenched CEO removal cases t-stat	-33.75** -2.41
Effect of hedge fund in increased payouts to shareholders cases t-stat	29.35*** 2.642

Table 6. Tests of Hypotheses Following Regressions of Loan Spreads on Indicator Variable for Hedge Fund Presence and Activism Objective, with Forced Merger Objective Sub-Categories (continued)

This table reports tests of hypotheses examining the effect of hedge fund presence in each activism objective category, following regressions of loan spreads on: an indicator variable for hedge fund presence, indicator variables for hedge fund objective, interactions of those indicator variables, and control variables. The control variables include firm-level and loan specific variables as well as industry and year fixed effects. The activism objectives common to Panel A and Panel B are: block a takeover of the target, remove an entrenched CEO, and increase payouts to shareholders. Additionally, in Panel A, the following activism objectives are also considered: force target into being acquired when there were pre-existing merger discussions involving the target as a takeover candidate at the time of intervention by the activist hedge fund, and force target into being acquired when there were no such pre-existing merger discussions. In Panel B, the following additional activism objectives are included in the analysis: force the target into being acquired with a resulting leveraged buyout (LBO) outcome, and force the target into being acquired with a non-LBO outcome. ***, **, * indicate statistical significance at 1%, 5%, and 10%, respectively.

Table 7. Co-insurance	Effect in	1 Forced	Merger	Cases
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1-test of equality of means:					
	Mean loa	an spread	Difference	p-value	
	Pre	Post	Difference	(one sided)	
Acquirer Z-score higher than target Z-score	239.7	185.3	-54.4	0.098	
Acquirer Z-score lower than target Z-score	218.0	284.8	66.8	< 0.001	

T-test of equality of means:

Fisher's exact test of equality of medians:

	Median loan spread		Difformed	p-value
	Pre	Post	Difference	(one sided)
Acquirer Z-score higher than target Z-score	250	225	-25	0.089
Acquirer Z-score lower than target Z-score	200	275	75	< 0.001

This table reports univariate comparisons of mean and median loan spreads in the periods before and after intervention by activist hedge funds, for target firms subjected to forced merger activism objectives. The sample consists of 57 observations for which a Z-score could be calculated for the acquirer. Shown separately are results for cases where the acquirer had a higher Z-score (38 observations) and cases where the acquirer had a lower Z-score (19 observations) than the target firm at the time of loan initiation.

	Number of covenants in loan contract		an contract
(Standard error in parentheses below coefficient estimate)	Total	Financial	General
Post_HF	-0.207	-0.298	0.0911
	(0.36)	(0.20)	(0.34)
ForceMerger	0.0211	0.127	-0.105
	(0.26)	(0.10)	(0.24)
Post_HF * ForceMerger	-0.0782	-0.635**	0.557*
	(0.37)	(0.26)	(0.32)
BlockMerger	0.475	-0.0824	0.557
	(0.41)	(0.14)	(0.37)
Post_HF * BlockMerger	0.53	0.169	0.361
	(0.67)	(0.19)	(0.60)
ReplaceCEO	0.167	-0.045	0.212
	(0.28)	(0.14)	(0.21)
Post_HF * ReplaceCEO	-0.22	0.0817	-0.301
	(0.63)	(0.30)	(0.41)
IncreasePayout	-0.471**	-0.236*	-0.235
	(0.21)	(0.12)	(0.18)
Post_HF * IncreasePayout	0.28	0.482*	-0.199
	(0.41)	(0.25)	(0.29)
Natural logarithm of total assets of target firm	0.0295	-0.133***	0.163***
	(0.08)	(0.04)	(0.06)
Profitability	0.834**	0.640***	0.194
	(0.42)	(0.19)	(0.33)
Leverage	1.227***	0.447*	0.780***
	(0.36)	(0.23)	(0.29)
Market-to-book ratio	-0.0042	0.00035	-0.0045***
	(0.00)	(0.00)	(0.00)
Z-score	-0.0166*	-0.000699	-0.0159**
	(0.01)	(0.01)	(0.01)
I_Investment Grade	-0.618*	-0.0884	-0.529**
	(0.34)	(0.12)	(0.24)
Natural logarithm of loan maturity	0.730***	0.281***	0.449***
	(0.16)	(0.06)	(0.12)
Natural logarithm of loan amount	-0.0965	-0.0613*	-0.0352
	(0.10)	(0.03)	(0.07)
I_Collateral	1.345***	-0.0415	1.386***
	(0.20)	(0.11)	(0.15)
I_General purpose loan	-1.105***	-0.122	-0.983***
	(0.20)	(0.09)	(0.17)
Intercept term	3.102*	3.509***	-0.407
	(1.71)	(0.94)	(1.20)
Observations	1,559	1,559	1,559
Industry fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
Adjusted R-squared	22.1%	14.5%	26.1%

Table 8. Regressions of Loan Covenant Use on Indicator Variablefor Hedge Fund Presence and Activism Objective

Table 8. Regressions of Loan Covenant Use on Indicator Variable for Hedge Fund Presence and Activism Objective (continued)

	Number of covenants in loan contract		
	Total	Financial	General
Tests of Hypotheses			
Effect of hedge fund in forced merger cases	-0.285	-0.933***	0.648***
t-stat	-0.968	-3.867	3.245
Effect of hedge fund in blocked merger cases	0.323	-0.129	0.452
t-stat	0.624	-0.471	1.092
Effect of hedge fund in entrenched CEO removal cases t-stat	-0.426	-0.216	-0.21
	-0.599	-0.702	-0.393
Effect of hedge fund in increased payouts to shareholders cases t-stat	0.0758	0.184	-0.108
	0.194	0.923	-0.392

This table reports tests of hypotheses examining the effect of hedge fund presence in each activism objective category, following regressions of three loan covenant measures on: an indicator variable for hedge fund presence, indicator variables for hedge fund objective, interactions of those indicator variables, and control variables. The classification of covenants into two categories follows Bradley and Roberts (2004). Financial covenants are based on accounting ratios such as net worth, current ratio, etc. General covenants are sweeps and dividend restrictions that tend to restrict financial policy decisions of the borrower. The control variables include firm-level and loan specific variables as well as industry and year fixed effects. Standard errors are clustered two-way by firm and by year. Tests of hypotheses examining the effect of hedge fund presence in each of the activism objective categories are presented after the regression results. ***, **, * indicate statistical significance at 1%, 5%, and 10%, respectively.

Table 9. Tests of Hypotheses Following Regressions of Loan Covenant Use on Indicator Variablefor Hedge Fund Presence and Activism Objective, with Forced Merger Objective Sub-Categorizedinto Leveraged Buyout (LBO) and non-LBO Outcome

	Number of covenants in loan contract		
	Total	Financial	General
Tests of Hypotheses			
Effect of hedge fund in forced merger cases with LBO outcome	-0.279	-1.201***	0.921**
t-stat	-0.493	-3.528	2.339
Effect of hedge fund in forced merger cases with non-LBO outcome	0.128	-0.501	0.629**
t-stat	0.277	-1.556	2.387
Effect of hedge fund in blocked merger cases	0.378	-0.0756	0.454
t-stat	0.713	-0.269	1.085
Effect of hedge fund in entrenched CEO removal cases	-0.405	-0.202	-0.203
t-stat	-0.57	-0.661	-0.382
Effect of hedge fund in increased payouts to shareholders cases	0.0142	0.118	-0.104
t-stat	0.0363	0.597	-0.377

This table reports tests of hypotheses examining the effect of hedge fund presence in each activism objective category, following regressions of three loan covenant measures on: an indicator variable for hedge fund presence, indicator variables for hedge fund objective, interactions of those indicator variables, and control variables. The classification of covenants into two categories follows Bradley and Roberts (2004). Financial covenants are based on accounting ratios such as net worth, current ratio, etc. General covenants are sweeps and dividend restrictions that tend to restrict financial policy decisions of the borrower. The activism objective categories are: force the target into being acquired with a resulting leveraged buyout (LBO) outcome, force the target into being acquired with a non-LBO outcome, block a takeover of the target, remove an entrenched CEO, and increase payouts to shareholders. The control variables include firm-level and loan specific variables as well as industry and year fixed effects. ***, **, **, indicate statistical significance at 1%, 5%, and 10%, respectively.