The Implications of Hedge Fund Activism on the Target Firm's Existing Bondholders

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Abstract

In contrast to previous studies documenting positive abnormal returns to target shareholders, we find that hedge fund activism significantly reduces existing bondholders' wealth. Bondholders earn an average excess bond return of -3.9% around the initial 13D filing date, and an additional average excess bond return of -6.4% over the remaining year after the filing date. When examining the reasons behind these results, we find that negative excess bond returns are related to a subsequent decline in cash on hand (loss of collateral effects) and an increase in total debt as a percentage of total assets. In addition, negative bond returns are more prominent when the hedge fund activist conducts a confrontational campaign against the target firm or if the activist gains at least one seat on the target's board within a year of the initial 13D filing. We also find evidence of an expropriation of wealth from the bondholder to the shareholder. We conclude that the intervention of the activist results in the firm taking actions that are deleterious to bondholder wealth.

I. Introduction

This paper examines the impact of hedge fund activism on existing bondholders by examining a comprehensive sample of corporate bonds for U.S. firms that were targeted between 1994 and 2006. In contrast to Klein and Zur (2009) and Brav et al. (2008), who find that hedge fund activism benefits target firm shareholders, we find that hedge fund activism significantly reduces existing bondholders' wealth. Bondholders earn a mean excess bond return of -3.9% around the initial 13D filing date, and an additional average excess bond return of -6.4% over the remaining year after the filing date.

We examine, in detail, the reasons behind these results. Consistent with prior studies on determinants of credit risk, we find that the negative excess bond returns are related to a subsequent decrease in cash on hand (loss of collateral effects) and an increase in total debt as a percentage of total assets. In addition, bond returns are more negative when the hedge fund activist conducts a confrontational campaign against the target firm, or if the activist gains at least one seat on the target's board within a year of the initial 13D filing. We conclude that the intervention of the activist results in the firm taking actions deleterious to bondholders.

We also document changes in credit bond ratings over the year subsequent to the initial 13D filing. Consistent with the drop in bond prices, we find a disproportionately large number of rating downgrades for the target firms' bonds, suggesting that the bond market both anticipates and reacts to the increase in default risk as implied by the rating downgrades.

Our findings, along with previously reported positive shareholder abnormal returns, are not inconsistent with each other. Klein and Zur (2009) partially attribute the positive excess returns to shareholders to a reduction of free cash flow agency costs (Jensen, 1986).[1]

[1]Klein and Zur (2009) use a smaller sample of initial 13D filings than this paper does. They examine confrontational hedge activism primarily from 2002 through 2005. They begin with a sample of 151 activism events. We use a

Specifically, they find that in the year subsequent to the initial 13D filing date, target firms, on average, significantly decrease their cash on hand, double their dividends to common shareholders and increase their debt-to-assets ratios. While these actions may be beneficial to shareholders, they amount to a reduction in cash available for future interest and principal payments to existing bondholders. This, along with the increase in leverage, suggests that more creditors are competing for a smaller amount of cash on hand. Further, Klein and Zur (2009), Brav et al. (2008), and Greenwood and Schor (2009) find that hedge fund activists elicit substantial changes in the target firms following the initial 13D filing date. These changes include an increased frequency of the company being merged or acquired, higher CEO turnover, the activist obtaining seats on the targets' boards of directors, and changes in the firm's operating strategies. While these actions may benefit shareholders, they also inject risk into the firm, increasing the bondholders' credit risk.

The positive returns to shareholders, coupled with the negative returns to bondholders, suggest an expropriation of wealth from bondholders to shareholders. This is a valid depiction. Using regression analyses, we find a negative coefficient on abnormal stockholder returns when regressed on abnormal bondholder returns. This result holds for both short-run and long-run windows, indicating that the expropriation of wealth extends beyond the initial Schedule 13D filing period**.**

Our paper adds to the literature on hedge fund activism in several ways. First, it is the first paper to specifically examine the wealth effects that hedge fund activism has on existing bondholders. Previous papers have concentrated almost exclusively on the impact that hedge fund activism has had on existing shareholders, reporting positive excess returns on the inception

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sample of all hedge fund activism (confrontational and non-confrontational) from 1994 through 2006 and begin with a sample of 635 activist events.

and continuation of the activist campaign. This paper illustrates that what might be beneficial, on average, for one set of stakeholders may not be beneficial for a different group. Specifically, the better monitoring hypothesis of the firm put forth by these papers may not translate into increased returns for the bondholder.

Second, our study sheds light on the previously reported positive abnormal shareholder returns for the hedge fund target firm. Our finding of the negative association between excess bond and excess stock returns presents a source of shareholder wealth from hedge fund activism that has not been detected beforehand. We also present evidence that the unsystematic equity risk increases as a result of the shareholder activism. Future work might want to consider how this impacts shareholder value.

Our paper adds to the literature on credit ratings and overall bond risk. Hedge fund activism results in a disproportionately high number of credit rating downgrades, a finding that might be useful to policy makers and credit rating agencies in assessing the risks and perceived rewards of hedge fund activism. We also find that a vast majority of the targeted firms have non-investment grade bonds and that it is these bonds that generate the greatest drop in bondholder value both around and after the initial 13D filing.

Finally, our paper adds to the literature on the expropriation of wealth between existing bondholders and existing shareholders. Previous papers have explored this transfer of wealth for mergers and acquisitions (Billett, King, and Mauer, 2004), LBOs (Warga and Welch, 1993; Billett, Jiang and Lie, 2008), spin-offs (Maxwell and Rao, 2003), seasoned equity offerings (Eberhart and Siddique, 2002) and dividend payments (Dhillon and Johnson, 1994). This study provides empirical evidence that hedge fund activism results in a clear transfer of wealth from the bondholder to the shareholder, both around and after the initial 13D filing.

The rest of the paper proceeds as follows. Section II describes our sample selection and provides descriptive statistics for the hedge fund target and control samples. Section III contains the excess bond returns around and subsequent to the initial 13D filing date. Section IV proposes and tests for possible factors behind the negative bond returns. Section V presents the results on possible expropriation effects from bondholder to shareholder. Section VI examines credit rating changes. We conclude in Section VII.

II. Hedge Fund Activism: Sample Selection and Data Description

A. Sample

There is no legal definition of what a hedge fund is. In fact, many so-called hedge funds do not engage in hedging activity to a great extent. Following previous papers, we define a hedge fund as an investment vehicle that is relatively free from the regulatory controls of the Securities Act of 1933, the Securities Exchange Act of 1934, and most notably the Investment Company Act of 1940.[2] They maintain their exemption from securities and mutual fund registration by limiting the number of investors and by allowing only experienced investors with significantly high net worth.[3] The funds are almost always organized as limited partnerships (LPs) or occasionally limited liability corporations (LLCs) and are managed by a small group of

[2] They are not exempt, however, from filing SEC Forms 13D or 13G when crossing the 5% threshold of ownership or from filing an SEC Form 13F. Form 13D filings are required for active investors who acquire at least a 5% interest in a publicly traded equity security. Passive investors crossing the same 5% threshold are required to file an SEC Form 13G. A Form 13F must be filed within 45 days after the end of March, June, September, and December by all institutional managers who exercise investment discretion over $100 million or more in total securities. The 13F lists the securities, the number of shares owned, and the market value of each investment. It does not contain any indication of investment purpose.

[3] The investments are organized as "3(c)(1)" or "3(c)(7)" funds, referring to exemptions from mutual fund registration. Funds organized as 3(c)(1) funds are limited to 99 "accredited" investors. Section 3(c)(7) funds may have up to 499 "qualified" investors, but the net worth requirement is higher.

highly incentivized managers who are free from pay-for-performance restrictions imposed for mutual fund managers in the Investment Advisors Act of 1940.

We use initial Schedule 13Ds to identify hedge fund activism.[4] We begin by including all initial filings between 1994 and 2006 that identify a hedge fund as the investing party. We rely on several sources to verify the blockholder's classification. These include the funds' Internet web sites, investor journals, Factiva, and newspaper and magazine articles. We also rely on information contained in the 13D filing itself to help us decide the identity of the actual investor. When in doubt, we eliminate the filing, a rare event. We recognize that this search process may be imperfect, but we are confident that we correctly classify almost all (if not all) of our investors.

This search yields 635 hedge fund activism events. From these events, we identify 253 firms (40%) that have outstanding (seasoned) bonds over the year prior to the initial Schedule 13D filing. To ensure adequate bond trading data, we eliminate 60 firms with insufficient data, leaving us with a sample of 193 firms. Since many firms have multiple bonds, we choose the most recently issued bond as the representative bond for the firm (See, for example, Dhillon and Johnson, 1994).

Table 1 contains descriptive statistics. As Panel A shows, there was a rise in the incidence of hedge fund activism over time, a finding consistent with previous longitudinal studies (e.g., Brav et al., 2008). The percentage of target firms with existing bondholders range

[4]Specifically, Rule 13d-1(a) states that "Any person who, after acquiring directly or indirectly the beneficial ownership of any equity security of a class which is specified in paragraph (i) of this section, is directly or indirectly the beneficial owner of more than five percent of the class shall, within 10 days after the acquisition, file with the Commission a statement containing the information required by Schedule 13D." Rule 13d-2(b) further states that the investor could file a Schedule 13G if "such person has acquired such securities in the ordinary course of his business and not with the purpose nor with the effect of changing or influencing the control of the issuer…"

from 17% (17/101) in 2006 to 100% (5/5) in 1994, with no discernable upward or downward temporal pattern.

Panel B presents the most recent bond ratings prior to the filing of the initial 13D filing. Bond ratings are taken from the WRDS Mergent Fixed Income Securities Database (Mergent FISD). For the target firm sample, the ratings originate from three different bond rating agencies – Standard and Poors (S&P), Moody's, and Fitch. While most of the bonds in our sample are rated by one agency only, there are a number of bonds that are rated by two or even three of the bond rating agencies. When a firm's bonds are rated by two or more agencies, we pick only one rating – our order of choosing is S&P followed by Moody's followed by Fitch.[5]

For the full sample, 190 of the 253 bonds (75%) are rated BB+/Ba1/BB+ or below (non-investment grade), with only 63 bonds (25%) rated BBB-/Baa3/BBB- or above (investment grade). Similarly, 152 bonds (79%) in the bond price sample are rated non-investment grade, with the remaining 41 bonds (21%) rated investment grade. Therefore, most of the bonds in the sample can be considered speculative prior to the 13D filing. No bond is rated A+/A1/A+ or above; similarly, no bond is in default (D/Ca/D) at the time of the filing.

The preponderance of non-investment grade bonds in our hedge fund target firm sample is inconsistent with the Mergent FISD, which shows that for all 19,440 listed bonds between 1994 through 2006, only one-third (6,634 – 34%) are non-investment grade. Testing for the association of the percentages of investment grade and non-investment grade bond ratings between the full bond sample and the Mergent FISD yields a Chi-square statistic of 185.15,

[5] For our hedge fund sample, 76 firms have bonds rated by both S&P and Moody's and 56 have bonds rated by both S&P and Fitch. For the bonds covered by S&P and Moody's, 11 or 14% of the bonds have qualitatively different ratings, for example S&P rates one bond BBB but Moody's rates it one grade higher (Baa1). For the bonds rated by S&P and Fitch, 20 or 36% have qualitatively different ratings. As a sensitivity check, when there are multiple ratings on the same bond, we recreate the samples by using the alternative rating agency's bond. All analyses reported in this paper are qualitatively the same when using this alternative sample selection method.

significant at the 0.01 level, supporting the view that the hedge fund target firm sample hails from a different distribution of bond ratings than all firms listed on the Mergent FISD. Our results are also at odds with extant papers that examine large, random samples of bonds over the same time period, for example, Blume, Lim and MacKinlay, 1998, Kliger and Sarig, 2000, Gan, 2004, and Easton, Monahan, and Vasvari, 2009.

B. Control Sample

We create a control sample of seasoned bonds by matching the hedge fund target firm's bond with another bond on the Mergent FISD on four sequential dimensions.[6] First, for each firm, we pull the sub-sample of all seasoned bonds that are in the same Fama-French 48 industry classification as the target firm. Second, from that group, we choose those bonds that have the same bond rating as the activist target bond on the initial 13D filing date. This ensures that the overall risks of the target and control sample bonds are similar. Third, we pare down the possible matches by keeping only those bonds with the same bond maturity, thereby controlling for differences in bond returns attributable to the bond yield curve. Fourth, to control for liquidity in the bond market (a serious problem in calculating bond returns that we address further in the paper), we choose the bond that has the closest average trades per day (trading frequency) in the three-month period preceding the initial 13D filing date.[7] This matching algorithm yields a sample of 253 bonds with the same yearly breakdown and initial bond rating

[6] Bessembinder et al. (2009) provide evidence that calculating a bond's excess return against a matched firm's or matched portfolio's bond return is superior to using a mean-adjusted abnormal return in terms of minimizing both Type I and Type II errors.

[7] We also "match" on the window of the available pricing data. Since bonds do not trade every day, the windows that we use vary from ten days before the Schedule 13D filing to the first trading day after the Schedule 13D filing. We match each sample firm with the same trading window. FISD has the data on the bond ratings, bond maturity, and trading frequency. Compustat has the industry classifications.

as shown in Panels A and B of Table 1. We refer to this sample as the control sample throughout the study.

Our matching technique is similar to, but more complex, than that used by Bessembinder et al. (2009) in their study that evaluates the statistical properties of different measurements of abnormal bond returns. Bessembinder et al. (2009) match by the credit bond rating only when using daily bond returns (i.e., the TRACE dataset), but match by the credit bond rating and the time-to-maturity when using monthly bond returns (i.e., the Lehman Brothers Bond Database). They do not match by industry or by trading frequency.

C. Descriptive Statistics

Table 2, column 1 presents accounting-based data, market-based data, and various dimensions of hedge fund activism for the hedge fund target sample. Variables that use balance sheet or price data only are measured on the last day of the quarter ending prior to the initial 13D filing date. Variables that combine income statement data with balance sheet data are calculated over the one-year period ending on the quarter preceding the initial 13D filing date. Other market–based variables are calculated over varying time periods, all ending prior to the initial 13D filing date. Variable definitions are in the Appendix.

Consistent with Klein and Zur (2009) and Brav et al. (2008), we find that hedge fund target firms with outstanding debt tend to be relatively small in terms of assets. The mean total assets for the target firms is $852.81 million, which compares to $946.81 million for Klein and Zur's sample of confrontational hedge fund targets and $726.56 million for Brav et al.'s sample of all 13D filings. The long-term debt-to-assets ratio has a mean [median] of 0.328 [0.269] and the (cash plus investments)-to-assets ratio has a mean [median] of 0.108 [0.086].

We find, consistent with Klein and Zur (2009), that hedge fund targets have a positive ROA (0.095) prior to the fund's intervention and a healthy operating margin (0.195). Similar to Klein and Zur and to Brav et al., we find that the sample firms have relatively low market-to-book ratios; the mean [median] ratio is 1.607 [1.275]. The standard deviation of the unlevered returns (asset risk) has a mean of 0.331, which is similar to the mean of 0.32 reported by Billet, King and Mauer (2004), suggesting that the asset risk of our hedge fund target firms are similar to the target acquisition firms used in their study. Finally, consistent with Klein and Zur (2009) and with Brav et al. (2008), hedge fund targets have positive abnormal stock returns prior to initial 13D filing date, and more than one-half of the firms pay no common dividends.

We also examine the activism style of the hedge fund; 81% of the hedge funds take a confrontational position from the beginning of their activist campaigns[8] Consistent with Klein and Zur (2009) and Brav et al. (2008), we find that the activists are successful in "shaking up the firm." Within the first twelve months of the initial 13D filing, 48% of the activists gain at least one seat on the target's board, and 34% of the hedge funds initiate or threaten a proxy fight with the target firm's management. Further, within two years of the initial 13D filing, 28% of the target firms are either merged or acquired by another entity (not necessarily the hedge fund itself).

D. Comparisons with Other Samples

We compare the full hedge fund bond sample in column 1 to three groups: Hedge fund target firms without outstanding bonds prior to the initial 13D filing date (Column 2; N=382;

[8] Within the Schedule 13D filing, there is a "purpose statement," in which the investor (hedge fund) must state its purpose for the investment. If, in that statement, the investor states an activist agenda, e.g., gaining a seat on the board, firing the CEO, preventing a merger, then following Klein and Zur (2009) and Brav et al. (2008), we call that a confrontational or aggressive style of activism. On the other hand, if the investor files that he/she reserves the right at the present moment to be an activist, then we call that a non-confrontational style of activism.

[635-235]), control firms (Column 3; N=253), and all firms listed on the Compustat data at the time of the 13D filing date (Column 4; N=64,223). Columns (2) through (4) show significance levels for differences in means and medians between target firms with outstanding bonds (column 1) and the sample for that column. For all tests, the t-statistics are for differences in means, assuming unequal variances between samples. The Z-statistics are from a Wilcoxon signed rank test, which does not require the assumption that the populations are normally distributed.

Somewhat surprisingly, there are few differences in firm characteristics or hedge fund activism dimensions between target firms with (column 1) and without outstanding bonds (column 2). Comparisons of the means and medians for total assets and the market-based variables produce no statistically significant differences between groups. There are some differences, however. As expected, hedge fund activist target firms with outstanding bonds have a higher long-term-debt-to-assets ratio than targets without outstanding bonds. Targets with outstanding bonds have less cash on hand, but are more profitable in terms of ROA and prior abnormal stock returns than targets without outstanding bonds. Overall, however, it does not appear that hedge funds heavily factor in the existence of outstanding debt when making their initial decision to pursue an activist campaign against the target firm.

Column 3 compares the control sample with the target sample. Recall that we match firms by industry, initial bond ratings, bond maturity and bond liquidity. Despite using these criteria, there are some significant differences in firm characteristics between the target and control samples. Specifically, the control firms have a lower asset risk (σ(Unlevered Returns)) and a lower prior period abnormal stock return. There is also weak evidence that the control firms have more total assets, a higher ROA and pay more dividends on average. One interesting

finding is no discernible difference in the long-term debt-to-assets ratio between groups, suggesting no need to further match by the company's leverage ratio.

Finally, to give the reader a flavor as to how our hedge fund targets compare to the Compustat database, we present summary statistics for all firms covered by Compustat from 1994 through 2006. Not surprisingly, the average hedge funds target differs substantially from the representative Compustat firm. Consistent with Klein and Zur (2009) and Brav et al. (2008), hedge fund targets, on average, are smaller, have lower market-to-book ratios, and higher ROAs than the representative Compustat firm. There are also differences in relative debt, cash on hand, dividends paid, beta risk, and asset risk.

III. Bond Market Responses to Hedge Fund Activism

A. Computing Bond Returns: Data Used and Definitions

We compute short-run and long-run bond returns for each firm in the hedge fund activism sample and for its control firm, respectively. The short-run bond return is the firm's total bond return (change in price plus accrued interest) from ten days before the initial 13D filing day (day 0) to the first trading date after the filing date. Our event window allows for the 10-day 13D filing window as well as possible leakage of information prior to the filing date. The long-run bond return is the firm's total bond return from the second trading day after the initial 13D filing through 365 calendar-days following day zero (See the Appendix for a more detailed description of how these returns are calculated).

Until recently, it was difficult to obtain accurate, daily bond price data. We use the Mergent FISD as our primary source for bond trading data and accrued interest, but replicate many of our tests using the Trade Reporting and Compliance Engine (TRACE) database to

examine the robustness of our findings with respect to the database used. The primary advantage of the Mergent FISD is that it is the only available data source that has daily bond prices dating back to 1994. However, the database contains bond data on trades conducted by U.S. insurance companies alone.[9] In contrast, the TRACE database covers a larger cross-section of daily bond prices, but it contains data from July 1, 2002, thus limiting our study to shorter time frame. Easton, Monahan and Vasvari (2009) perform robustness checks on the two bond databases and find that the pricing differences are "minor," a finding consistent with institutional traders dominating the bond trading market (Bessembinder et al., 2009). We note that several recent published studies have used the Mergent FISD, for example, Campbell and Taksler (2003), Davydenko and Strebulaev (2007) and Easton, Monahan and Vasvari (2009).

There are several econometric issues involved in calculating bond returns. First, unlike the equity markets, bond trading is relatively thin, with many bonds not trading for several days. This sporadic trading will introduce noise into our bond return measures. To minimize the staleness in the data due to non-trading, we eliminate the observation when calculating the short-run bond return if the bond did not trade during the [-30, +10] window surrounding the initial Schedule 13D filing date. Similarly, for the long-run bond return, we eliminate the observation if the bond did not trade over the [+2, +10] and the [+335, +395] trading windows. Without these trading rules, we would have included 64 more firms for the short-run bond return sample and 60 more firms for the long-run bond return sample.

Second, many firms have multiple bonds trading simultaneously. Two approaches in calculating the sample and control sample's bond return for a specific day are to use (1) the

[9]Hong and Warga (2000), Schultz (2001) and Campbell and Taksler (2003) present evidence that insurance companies own between 30% and 40% of the value of all outstanding bonds. Bessembinder et al. (2009) present evidence that institutions, for example, insurance companies, dominate the bond trading market. Specifically, they report that 85.6% of bond trading volume reported on the TRACE database are for trades than are greater than or equal to $1 million. Further, they find that trades of $100,000 or more account for 96.7% of bond trading volume.

weighted average of the firm's multiple bond returns (e.g., Maxwell and Rao, 2003; Billet, King and Mauer, 2004), or (2) to pick a random "representative" bond and use the return on that bond only (e.g., Dhillon and Johnson, 1994).[10] Given the complexity of our matching criteria for the control sample, we present our findings by using a representative bond for both the sample and target firms. To examine the sensitivity of our findings to this approach, we alternatively use simpler matching criteria, i.e., industry and bond rating only, and calculate the daily bond returns by using the weighted average multiple bond return approach. Results using the latter method produce similar findings and, therefore, are not shown in the paper.

Third, Bessembinder et al. (2009) find that the statistical properties of bond returns are better specified when using daily bond returns vis-à-vis monthly bond returns and for larger sample sizes. They also report that non-parametric tests, for example the Wilcoxon signed rank test, have more power than the parametric t-test; their study suggests that researchers include both types of tests in their studies. In this study, we use daily bond returns, have a sample size close to 200 target firms, and present both parametric and non-parametric tests when assessing the significance levels of the bond returns.

B. Short-run Raw and Abnormal Bond Returns

Table 3 contains mean and median short-run and long-run bond returns for the hedge fund targets (column 1) and control samples (column 2). Column 3 shows t- and Z-statistics testing for differences in the means and medians, respectively, between the target and control

[10]Alternatively, we could weight each bond as a separate observation (e.g., Warga and Welch, 1993). However, given the high correlations among bond returns issued by the same firm, this would give undue weight to firms that have more than one bond in the sample. See Eberhart and Siddique (2002), Maxwell and Rao (2003), and Bessembinder et al. (2009) for a critical assessment of using each bond separately.

firms. Panel A contains the results with the Mergent FISD and Panel B presents the returns using TRACE data.

In Panel A, the target firms' mean short-run raw bond return is -4.95%, significant at the 0.05 level, whereas the mean short-run bond raw return for the control firms is an insignificant -1.03%. Testing for the difference in means produces a t-statistic of -3.27, significant at the 0.01 level. The median short-run raw bond return for the target firms is -2.13%, significant at the 0.10 level. This compares to an insignificant median raw bond return of -0.23% for the control firms. Testing for difference in medians yields a Z-statistic of -2.43, significant at the 0.05 level.

We also calculate the abnormal bond return (untabulated), defined as the target's raw return minus its control firm's raw return. The mean short-run abnormal bond return is -3.91%; its t-statistic is -2.68, significant at the 0.05 level**.** The median short-run abnormal bond return is -1.86%, with a Z-statistic of -1.71, significant at the 0.10 level. In summary, we find evidence that the advent of the hedge fund activist results in significantly negative returns to existing bondholders.

Panel B presents bond returns using the TRACE database. Similar results are found. The mean [median] short-run raw bond return is -3.08% [-1.46%], compared with the control firms' sample mean [median] of -1.18% [-0.36%]. The t-statistic testing for the difference in means in -2.16, significant at the 0.05 level; the Z-statistic for difference in medians is -1.79, significant at the 0.10 level. The average [median] abnormal bond return (untabulated) is -1.97 [-1.11%]; the mean is significant at the 0.05 level and the median is significant at the 0.12 level. Thus, overall, the negative bondholder returns are robust to the two datasets.

A comparison of the mean raw and abnormal bond returns to several prior bondholder event studies reveals that the absolute value of the magnitude of the hedge fund target bond

returns are quite substantial. For example, Maxwell and Stephens (2003) report a mean raw bond return of -0.11% (-11 basis points) around the announcement of a stock repurchase and Maxwell and Rao (2003) find a mean excess monthly bond return of -0.878% (-88 basis points) around a spin-off announcement. Billet, King, and Mauer (2004) report a mean excess bond return of 1.09% (109 basis points) for the target firm around a merger or acquisition announcement, whereas Bessembinder et al. (2009) find a mean excess bond return of -0.20% (-20 basis points) for the bidding firm. In fact, after examining over 20 prior abnormal bond return event studies, Bessembinder et al. (2009) introduce shocks ranging from -/+ 2 basis points to no greater than -/+ 50 basis points as being typical of an abnormal bond return.

In economic terms, bondholders lose, on average, $14.6 million (Mergent FISD) around the Schedule 13D filing, which translates into an abnormal dollar return of $-11.2 million. Both dollar returns are significant at the 0.01 level. Given that there are 189 firms in the sample, this translates into a cumulative loss of $2.76 billion in raw bond returns and $2.12 billion in abnormal returns for the representative bond only. Recall that many firms have more than one bond trading. Since bond returns for an individual firm are highly correlated, the overall losses suffered by all bondholders are substantially greater.

C. Long-run Bond Returns

An important question is whether the negative bond returns around the 13D filing date persist into the future, reverse themselves, or remain flat thereafter. We examine this question by calculating long-run bond returns, defined as days [+2, +365]. As Panels A and B show, the negative bond returns over the 13D filing period persist over the one-year period following the 13D filing date. Using the Mergent FISD, we find a mean [median] long-run bond return of -

6.42% [-5.84%] for the target firms; each significant at the 0.01 levels. In contrast, the control sample has a mean [median] long-run bond return of -1.91% [-1.45%]; the former significant at the 0.10 level. More importantly, testing for differences between the target and control groups produce significant t- and Z-statistics (0.01 and 0.05 levels, respectively), supporting the conclusion of a significantly negative excess long-run bond return for the target group.

The average long-run abnormal bond return (untabulated) is -4.48%, significant at the 0.01 level, and the median long-run abnormal bond return is -4.33%, significant at the 0.05 level. Panel B produces similar results and conclusions with the TRACE data.[11] Thus, we conclude that the negative bond returns around the 13D filing date persist for at least one year.

In dollar terms, using the Mergent FISD only, the average [median] long-run raw return is -$18.9 million [-$16.13 million]; both are significant at the 0.01 level. The average abnormal long-run bond return is -$14.8 million, and the median abnormal bond return is -$12.3 million; both are significant at the 0.01 level. Thus, in dollar terms, the bondholder loses, on average, nearly $19 million in addition to the $15 million lost around the initial 13D filing date. For all 193 firms in the sample, this translates into an additional loss of $3.64 billion. Again, these numbers represent just one bond for the target firm, suggesting that the overall loss per firm is substantially higher.

D. Additional Analyses

D1. Bond Returns by Year

Figure 1 presents short-run (top line) and long-run (bottom line) raw bond returns by year for the Mergent FISD sample only. There is a slight upward temporal pattern in the short-term

[11]The mean [median] long-run abnormal bond return using TRACE data is -1.95% [-3.68%], each significant at the 0.05 level.

bond returns, with the average bond return moving from -5.31% in 1994 to -4.75% in 2006. To see if this rise is statistically significant, we estimate a regression of annual short-run bond returns on time.[12] The coefficient, β_1, is -0.017, with an insignificant t-statistic of -1.36; we conclude that no significant temporal trend exists.

For the long-term raw bond returns, we notice an upward pattern from 1994 through 2001, and then a flat bond return of about -6% from 2002 through 2006. To examine the significance of this trend, we estimate the same regression as shown in footnote 12, but with the annual long-run bond return as the dependent variable. The coefficient, β_1, for this regression is 0.093, with an insignificant t-statistic of 0.27. We conclude that no significant temporal pattern exists for the long-run bond returns.

D2. Bond Returns by Initial Bond Rating

Figure 2 presents short-run (top line) and long-run (bottom line) raw bond returns by the target firm's initial bond rating. This analysis is motivated partially by Easton, Monahan, and Vasvari (2009), who find that excess bond returns and trading volume around a firm's earnings announcement are greater if the firm's bond rating is speculative, i.e., rated BBB- or less.[13] Their reasoning for their findings is that the inherent bankruptcy risk for speculative bonds is more sensitive to unexpected earnings changes due to re-assessments of future cash flows.

Although there is no monotonic decline in bond returns and initial bond ratings, the pattern in Figure 2 clearly demonstrates that non-investment grade bonds experience larger bond price drops in the short- and long-run than investment grade bonds. The average short-run bond

[12]The regression is Short-Run Bond Return$_t$ = α_0 + β_1Time$_t$, where Time varies from 1994 through 2006.
[13]The BBB- or less is Easton, Monahan, and Vasvari's (2009) definition. We use the standard investment grade/non-investment grade dichotomy, which places all bonds rated BB+ or less in the non-investment grade category.

return is -3.92% for investment grade bonds and -4.98% for non-investment grade bonds. A t-test for the difference in means produces a t-statistic of 2.17, significant at the 0.05 level. Similarly, the average long-run bond return for the investment grade bonds is -5.88%, but -6.67% for the non-investment grade bonds. The t-statistic for difference in means by investment/non-investment grade is -1.89, significant at the 0.10 level. Thus, there is initial evidence that hedge fund activism affects non-investment bonds in a more adverse way.

D3. Abnormal Stock Returns

In Table 3, we present abnormal *stock* returns over the short-run and long-run periods. Our motivation for tabulating abnormal stock returns is twofold. First, Klein and Zur (2009) and Brav et al. (2008) report significantly positive abnormal stock returns around the initial 13D filing date and over the following year.[14] By calculating the abnormal stock returns for our target sample, we can see how representative our firms are to the broader based samples used by these two papers. Second, a positive mean or median stock return coupled with a negative mean or median bond return would strongly suggest an expropriation of wealth by existing shareholders from existing bondholders, an area of inquiry that we would later explore.

Panel A uses the Mergent FISD sample and Panel B uses the TRACE sample. The abnormal stock return is the target's buy-and-hold raw return (with dividends) minus the buy-and-hold value-weighted NYSE/AMEX/NASDAQ index from CRSP over the short or long-run period (see Klein and Zur, 2009; and Brav et al., 2008). We test for statistical significance in two ways. First, we calculate the t- or Z-statistic of the abnormal return itself. Second, we compare

[14] Klein and Zur (2009) report a mean [median] market-adjusted abnormal stock return of 5.7% [4.6%] from -30 days to +5 days, where day 0 is the initial 13D filing date. They also find a mean [median] abnormal stock return of 11.35% [4.90%] from days +30 through 1 year after the initial 13D filing date**.** Brav et al. (2008) report a mean market-adjusted abnormal stock return of 5.2% from 10 days prior through one day after the initial 13D filing date. They do not present a one-year abnormal stock return.

the target firm's abnormal return to the control sample's abnormal return to see if they are different from each other.

For both samples, shareholders earn positive mean [median] abnormal returns for the period surrounding the initial 13D filing. In Panel A, the mean [median] short-run abnormal stock return is 4.72% [3.67%], significant at the 0.01 [0.05] levels. In comparison, the control sample's abnormal stock returns are insignificantly different than zero. Testing for the difference between target and sample mean or median yields a t-statistic of 4.40 and a Z-statistic of 3.82; both are significant at the 0.01 levels. Panel B finds similar results using the TRACE sample. Thus, unlike bondholders who, on average, earn abnormally negative short-run returns, shareholders, on average, reap a positive benefit around the 13D filing. We also note that the short-run stock returns are similar to those reported by Klein and Zur (2009) and Brav et al. (2008) – see footnote 14.

Long-run stock returns bear similar results. Using the Mergent FISD sample, the mean [median] long-run abnormal stock return is 5.79% [4.62%], both significant at the 0.01 levels. The TRACE sample produces a mean [median] long-run abnormal stock return of 5.19% [4.92%], both significant at the 0.01 level. All long-run returns are statistically different from the control samples' returns. We conclude that both in the short-run and in the long-run, shareholders earn abnormally positive returns in conjunction with the hedge fund activism. This contrasts sharply with the significantly negative returns to bondholders, and suggests an expropriation of wealth from bondholders to shareholders.

IV. Reasons Behind Negative Abnormal Bond Returns

We now seek to identify those factors associated with the observed short- and long-run negative bond returns documented in Section III. Our main hypothesis is that the negative bond returns are associated with a deterioration in future cash flows and/or an increase in credit risk by the target firms. We begin by examining one-year changes in financial and accounting variables associated with credit risk. Next, we employ multiple regression analyses to examine the determinants of the negative short-run and long-run returns. In particular, we turn to several hedge fund activism studies to propose independent factors that are unique to this type of shareholder activism.

A. Changes in Firm Characteristics Surrounding the Initial Schedule 13D Filing Date

Klein and Zur (2009) find significant changes in profitability, cash balances, discretionary spending and debt ratios for hedge fund activism targets in the year subsequent to the initial Schedule 13D filing. They attribute the positive shareholder returns to many of these changes.

We calculate one-year changes in firm characteristics that may be linked to changes in credit risk of the targets' bonds. We divide the firm attributes into five generic categories: earnings and profitability, debt, cash on hand, ability to pay off debt and interest, and other, which include risk and collateral variables. Many of these firm characteristics are taken from prior work on bond returns, credit risk, and determinants of bond ratings. Other firm characteristics are from the hedge fund shareholder activism literature.

We define the quarter in which the initial 13D filing is filed as "quarter zero." We then calculate the one-year change in the firm's characteristic as the difference between the aggregated four quarters *after* the initial Schedule 13D (quarters 1 through 4) and the aggregated

four quarters immediately prior to the filing (quarters -4 through -1). All accounting data are from Compustat; market return data are from CRSP. All definitions of the variables are in the Appendix.

Table 4 presents the results for both hedge fund target and control samples. Column (1) contains the mean [median] ratios for the sample firms; column (2) presents the mean [median] ratios for the control firms. We test for differences between columns (1) and (2) and indicate through asterisks whether the mean or medians are different between samples.

The findings in Table 4 are consistent with the proposition that hedge fund activists change the structure of the target firm in many ways that are harmful to existing bondholders. In terms of future earnings, there are statistically significant differences in ΔEPS and ΔEBITDA between the target and control sample firms. Further, EPS and EBITDA drop for the target firms whereas they increase for the control firms. The inferences surrounding changes in the profitability ratios are more limited. Although there is a significant drop in the target firms' mean and median operating margin vis-à-vis the control sample, there are no statistical differences in ΔROA or ΔCFO-to-assets between samples.

In terms of debt, the debt-to-assets ratios, as measured by short-term, long-term or total debt, rise in the year after the hedge fund 13D filing. In contrast, these ratios decline for the control sample. Testing for differences between the two samples results in statistically significant t- and Z-statistics, thus providing evidence that total debt and hence the riskiness of the bonds increases in the year following the initial 13D filing. These findings are consistent with Kaplan and Urwitz (1979) and Blume, Lim, and MacKinlay (1998), who find an inverse association with bond credit ratings and the long-term debt-to-assets and the total debt-to-assets ratios.

When examining cash on hand, the mean [median] Δcash-to-assets ratio for the hedge fund activism is -0.024 [-0.005], compared to 0.004 [0.000] for the control sample. Including short-term investments to the cash balances results in a decrease in cash (more broadly defined) target sample, but an increase for the control sample. The t- and Z-statistics for differences between samples are significant at the 0.01 and 0.05 levels, respectively. Given that cash and cash equivalents balances are the second most commonly cited factor by S&P in their RatingsDirect Reports, these findings are consistent with the negative short-run and long-run bond returns.[15] One explanation for the drop in cash can be gleaned by examining the one-year change in dividends per share. Consistent with Klein and Zur (2009), we find that dividends per share for hedge fund targets rise, on average, by 10.8 cents. This change in dividends is significantly greater than the control firms' dividend increase of 3.2 cents.

We examine three ratios that help gauge the firm's ability to pay off its debt and interest. Two of these ratios, Total Debt-to-EBITDA and FFO-to-Total Debt are mentioned frequently in S&P's RatingsDirect Reports.[16] A third ratio, Altman's (1968) Z-score the bankruptcy risk for an individual firm. We find a one-year increase in Total Debt-to-EBDITA for the sample firms, but a decrease in the ratio for the control sample. We also find a decline in the bond sample's Altman's Z-score – the mean [median] change is -1.622 [-0.016]; in comparison the control sample's mean [median] change in 0.847 [0.029]. Testing for differences between groups yields statistically significant test statistics, respectively, for both variables. In contrast, we find no difference in FFO-to-debt between samples.

[15]RatingsDirect Reports are multipage reports written by the primary credit analyst for the firm and present detailed information on the reasons behind the individual firms' ratings. We examined hedge fund target firm reports surrounding the initial 13D filings and tabulated the factors given by the credit analyst for determining his/her credit rating. We thank S&P for making these reports available to us.

[16]The interest coverage ratio also is mentioned. However, as Bartov and Bodnar (1996) and Blume, Kim and MacKinlay (1998) show, the interest coverage ratio is non-linear in the firm's overall leverage, and therefore, we do not include it in this analysis.

The last section of Table 4 contains other variables. Total assets for the target firms fall by a mean [median] value of $104.157 [63.381] million, which is significantly different than the increase of $461.186 [$132.910] million for the control firms. Thus, the overall collateral of the target firms falls (see Kaplan and Urwitz, 1979 and Maxwell and Rao, 2003). In terms of market risk, the unsystematic equity risk ($\Delta\sigma(\varepsilon)$) rises significantly when compared with the control sample. This finding is consistent with Kaplan and Urwitz (1979), who find an inverse association between credit ratings and the firm's equity risk. The asset risk of the firm ($\Delta\sigma$(Unlevered Returns)) increases significantly when compared to the control sample. In a similar vein, Billet, King and Mauer (2004) report an inverse relation between the subsequent change in the asset risk of the target or acquiring firm and excess bondholder returns.

In summary, hedge fund targets experience decreases in earnings, profitability, cash on hand, and total assets within one year of the hedge fund intervention. Hedge fund targets also have increases in debt, primarily long-term debt, dividends per share, and asset and equity risks. These changes are significantly different than those found for the control sample, suggesting that hedge fund activism results in changes in firm characteristics that are unique to the activism itself.

B. Multivariate Analyses

B1. Dependent and Independent Variables

We regress short-run and long-run abnormal bond returns (Mergent FISD) on three types of explanatory variables. First, we include changes in the target firm's accounting and market risk characteristics, similar to those described in Table 4. Second, we include two indicator variables that relate to the bond itself. Kaplan and Urwitz (1979) find that subordinated debt,

ceteris paribus, have lower credit ratings. We therefore create an indicator variable based on whether the representative bond is subordinated or not. For the sample of target firms, 17% of the bonds are subordinated, compared to 7% of the control firms ─ a difference in percentages that is significant at the 0.01 level. We also create an indicator for whether the bond is rated non-investment grade prior to the 13D filing. As we previously show, the majority of target firm bonds are non-investment grade, and these bonds have more negative short- and long-run raw returns.

Third, we include some explanatory variables that are specific to hedge fund activism itself. We include indicators measuring whether the initial hedge fund activism is confrontational, whether the hedge fund receives at least one seat on the target's board of directors within a year of the original 13D filing, whether the hedge fund conducts or threatens a proxy fight within a year of the original 13D filing, and whether the target firm is taken over by another firm or individual within two years of the initial 13D filing. The empirical evidence for stock price reactions find a positive association between these four hedge fund campaign attributes and the target firm's short-run abnormal stock return.

Finally, we include two control variables. We control for whether the short-run period includes an earnings announcement by including a dummy variable equal to one if the target firm had an earnings announcement in the short-run window and zero otherwise. Easton, Monahan, and Vasvari (2009) find a significant bond price reaction around these announcements. For our sample of activist targets, 31 (12%) have earnings announcements within the [-10, +1] window. Thus, to eliminate a confounding event, we control for this type of event. Finally, to control for possible temporal effects, we include time-dummy variables.

B2. Empirical Results

Table 5 presents results for the regressions on short-run abnormal bond returns (column 1) and long-run abnormal bond returns (column 2). As column 1 shows, short-run abnormal bond returns are negatively and significantly related to (1) a confrontational hedge fund activism style (Confrontational), (2) if the bond is non-investment grade, (3) the firm's one-year change in its total debt-to-assets ratio, and (4) whether there is a earnings announcement during the [-10, +1] time period. Short-run abnormal bond returns are positively and significantly related to the one-year change in the firm's cash-and-investments-to-assets ratio.

The significantly negative coefficient on Confrontational is symmetrical with Brav et al. (2008), Clifford (2008), Klein and Zur (2009), and Zur (2009), who report *higher* shareholder returns for confrontational activist campaigns vis-à-vis non-confrontational campaigns. The significantly negative coefficient on Non-Investment Grade suggests that hedge fund activism has a disproportionately negative impact on bondholder wealth for those bondholders who hold more risky bonds. This finding is similar in spirit to Easton, Monahan and Vasvari (2009), who posit and find that non-investment grade bonds are more sensitive to bad news. In Table 4, we reported that hedge fund target firms had a significant one-year increase in total debt-to-assets and a significant one-year decrease in cash-plus-investment-to-assets. The significant coefficients on these two independent variables are consistent with these changes being deleterious to existing bondholders.

In contrast, we find no significant coefficients for changes in the market-to-book ratio, ROA, dividends/share, the operating margin, Z-score, total assets, unsystematic equity risk, asset risk, or whether the bond in subordinated. Nor do we find a significant coefficient on whether

the hedge fund gains a seat on the target's board, whether the hedge fund engages in a proxy fight, or whether the target is merged or acquired with the next two years.

Column 2 presents the regression results for the long-run abnormal bond returns. Similar to the regression on short-run abnormal bond returns, there are significantly negative coefficients on Confrontational, Non-Investment Grade, and ΔTotal Debt-to-Assets, and a significantly positive coefficient on ΔCash-plus-Investments-to-Assets. We also report a significantly negative coefficient on Board, an indicator representing whether the activist gains at least one seat on the target's board within a year.

In summary, hedge fund activism, on average, decreases bondholder wealth for a variety of reasons. First, the subsequent reduction in cash on hand and the increase in the debt to assets ratio increases the existing bondholders' risk by reducing the firm's collateral and placing more debt on the firm's balance sheet. Second, the type of hedge fund activism matters, with confrontational campaigns resulting in more negative excess bond returns than non-confrontational campaigns. Finally, and consistent with the activist style, long-term excess bond returns are more negative if the activist gains at least one seat on the board. This finding is due either to the actions of the new board member(s) or to the perceived increased risk that their presence engenders.

V. Expropriations of Wealth from Bondholders to Shareholders

We examine the possibility that hedge fund activists expropriate wealth from bondholders to shareholders during the course of the activism campaign. We articulate two reasons for why this might occur. First, the hedge funds that we examine invest in the shares of the target company; in fact, to be included in our sample, the hedge fund must have a beneficial

ownership at least 5% of the target firm's shares. Thus, it is in the interest of the hedge fund to pursue activities that benefit shareholders, even at the expense of the other stakeholders. Second, this paper, consistent with Klein and Zur (2009) and Brav et al. (2008), show significantly positive abnormal returns to shareholders around the initial 13D filing, but significantly negative abnormal returns to bondholders.

Brav et al. (2008) briefly examine and rule out the alternative hypothesis that the significantly positive shareholder returns they observe around the initial 13D filing date are due to an expropriation of wealth from the bondholder to the shareholder. However, their conclusion is based solely on comparing shareholder returns between targets that have no long-term debt to those with some long-term debt. They report mean abnormal shareholder returns of 9.46% for those firms with no long-term debt vs. 7.21% with those firms with some long-term debt, and find no significant differences between the two subsamples. They do not report excess bond returns.

We test whether an expropriation from bondholder to stockholder exists by regressing abnormal bond returns on abnormal stock returns, using the same time frames when calculating the abnormal returns. We first present a simple regression analysis, in which the abnormal bond return is regressed on the abnormal stock return only. We then add a multivariate regression in which we include the explanatory variables from Table 5 into the regression analysis. For both regressions, a significantly negative coefficient on the abnormal stock return variable would be consistent with the alternative hypothesis that an expropriation exists.

Table 6 presents the regression results. Columns (1) and (2) present the results with the short-run abnormal returns. Columns (3) and (4) contain the results with the long-run abnormal returns. Column (1) shows a significantly negative association between the short-run abnormal

bond return and the short-run abnormal stock return. The coefficient on short-run abnormal stock return is -0.037, significant at the 0.01 level (t-statistic = -3.81). Thus, there is evidence that shareholders expropriate wealth from the bondholder around the initial 13D filing date. When we add the explanatory variables from Table 5, we find that (1) the coefficient on short-run abnormal stock returns remains significantly negative, (2) the coefficients and significance levels on the additional variables are similar to those reported in Table 5, and (3) the coefficient and t-statistic for the abnormal stock return is similar to that reported in column (1). Thus, we conclude that expropriation effect shown in column (1) is robust to the addition of the other explanatory variables.

We also find a longer-run expropriation effect. In column (3), the coefficient on the long-run stock return is -0.028, significant at the .01 level (t-statistic = -4.67). The addition of the explanatory variables in column (4) does little to dampen the magnitude or the t-statistic on the long-run stock return.

In dollar terms, the mean [median] short-run abnormal stock return is $35.18 [$21.14] million, compared to the -$11.19 [-$9.34] million abnormal bond return. Thus, the transfer of wealth to the shareholder from the bondholder accounts for about one-third to one-half of the dollar denominated shareholders' abnormal return. Over the subsequent year, the mean [median] long-run abnormal stock return is $43.25 [$36.71] million, compared to a mean [median] abnormal bond return of -$14.84 [-$12.29] million. Thus, even over this longer time period, the expropriation effects accounts for about one-quarter to one-third of the shareholders' abnormal return.

In summary, Table 6, in tandem with Table 3, provides evidence that the advent of the hedge fund activist results in an expropriation of wealth from the existing bondholders to the

existing shareholders. This finding is new to the hedge fund activism literature in that it examines both bondholder and shareholder returns. From the bondholders' point of view, it suggests that part of the loss in wealth is due to a transfer of wealth to the shareholder. In particular, our findings illustrate that what may benefit one set of the firms' claimants may be detrimental to a second set of claimants.

VI. Additional Analyses: Changes in Bond Credit Ratings

We next examine whether the credit agencies modify their credit ratings for the bonds in the year following the initial 13D filing. We have several reasons to expect a disproportionately large number of credit downgrades for the hedge fund targets. First, the negative short-run and long-run bondholder returns are consistent with the bond market's perception of an increase in the bonds' default risk. Second, Kaplan and Urwitz (1979) and Blume, Lim, and MacKinlay (1998) find that a firm's bond rating is negatively associated with its debt-to-assets ratio and its unsystematic risk, and is positively related to the firm's total assets. We present evidence that these three attributes deteriorated for the target firms over the one-year period following the 13D filing. Third, Katz (1974), Hettenhouse and Satoris (1976) and Weinstein (1977) find that bond prices adjust to credit rating changes, albeit with lead and lagged time differences, suggesting a link between the two.

Panel A of Table 7 presents changes in credit ratings within one year of the initial 13D filing for a both the hedge fund target and control firms. We present four events: a decrease (Downgrade) in the bond rating, for example, from a B rating to a B- rating; an increase (Upgrade) in the bond rating, for example, from a B rating to a B+ rating; a constant rating (No

Change); and a discontinued rating (Stop Rating).[17] Seventy-four target firm bonds (29.3%) are downgraded within a year of the initial 13D filing, whereas only 13 companies have their credit ratings increased within a year (5.1%). Forty-one companies (16.2%) experience no change in their bond ratings, and 125 firms (49.4%) have their ratings discontinued.

In contrast, 34 firms (13.4%) of the control sample have their bonds downgraded within the same time frame, whereas 59 companies (23.3%) experience a bond upgrade. Eighty-nine firms (35.2%) have no bond rating changes and 71 companies (28.1%) have their ratings discontinued. To determine if the percentages of subsequent changes in bond ratings are similar between sample and control firms, we conduct a Chi-square test on the percentage breakdowns between the target and control firms. This test yields a χ^2 value of 76.80, significant at the 0.01 level, indicating that subsequent changes in bond ratings differ between hedge fund targets and the control group. We also compare the percentage of downgrades for the target firms with downgrades for all bonds rated by S&P between 1994 and 2006.[18] Over this time period, S&P yearly downgrades ranged from a low of 7.32% in 2004 to high of 18.77% in 2002. Thus, the overall percentage of downgrades for the hedge fund sample (29.3%) exceeds all yearly averages for the universe of S&P rated bonds.

Panel B presents the short-run and long-run abnormal bond by the subsequent one-year rating change. As this panel illustrates, the short-run and long-run negative abnormal bond returns are dominated by the group of firms that are downgraded within the year. The average short-run abnormal bond return is -11.65% for the group of downgrades, compared to a range of -0.31% to 4.92% for the other three groups. Similarly, the mean long-run abnormal bond return

[17]Credit rating agencies generally rate bonds only for companies that request a rating from the credit agency. As a consequence, many firms have their bond ratings discontinued over time.

[18] We thank S&P for supplying us with this data.

for the downgraded bonds is -11.33%, compared to a range of -0.74% to 3.29% for the other firms.

These findings suggest that the subsequent change in credit rating may be an additional explanatory variable in the regression analyses on short-run and long-run abnormal bond returns that we presented in Section IV (Table 5). To examine this possibility, we add two independent variables to the short-run and long-run abnormal bond return regressions – upgrade is an indicator equal to one if the target firm's bond is upgraded in the year subsequent to the initial 13D filing; downgrade is an indicator equal to one if the target firm's bond is downgraded in the year subsequent to the 13D filing. The coefficient (untabulated) on upgrade is 0.018 (t-statistic = 0.48) for the regression on short-run abnormal bond returns and 0.038 (t-statistic = 0.88) for the regression on long-run abnormal bond returns. In contrast, the coefficient (untabulated) on downgrade is -0.015 (t-statistic = -2.67; $p < 0.01$) for the regression on short-run abnormal bond returns and -0.052 (t-statistic = -2.15; $p < 0.05$) for the regression on long-run abnormal bond returns. The coefficients and significance levels remain qualitatively the same for the other independent variables in Table 5. Thus, we conclude that (1) the bond market anticipates the subsequent downgrade in the short-run return and (2) longer-run negative abnormal bond returns are related to the coinciding downgrade.

VIII. Summary and Conclusions

We examine the impact that hedge fund activism has on bonds for companies targeted between 1994 and 2006. Our results suggest, on average, that bondholders are disadvantaged by the activism in the short- and long-run. First, bondholders earn, on average, a -3.9% excess bond return around the initial 13D filing date, and an additional excess bond return of -6.4% over the

remaining year after the filing date. Second, 29% of the target firms have their corporate credit rating lowered by a U.S. credit agency within one year of the initial 13D filing. This compares to 13% for a control sample of bonds.

Much of the paper is devoted to finding the reasons behind these negative bond returns. We find that a confrontational activism style is more closely associated with negative excess bond returns than a non-confrontational activism style. We also find a negative association between the long-run abnormal bond return and whether the activist gains at least one seat on the target's board within a year. These findings suggest that hedge funds that actively manage or influence their target firms elicit changes in financial and accounting firm characteristics that are harmful to bondholder wealth. Our results support this contention. Excess bond returns are negatively related to decreases in the firm's cash, and to increases in total debt. Further, we present evidence that some of these excess bond returns are the result of an expropriation of wealth from the bondholder to the shareholder. Specifically, we document positive short-run and long-run shareholder abnormal returns, and find a significantly negative association between these shareholder returns and excess bondholder returns. We therefore conclude that although the activism may be beneficial to shareholders, some of this benefit comes at the expense of the existing bondholders.

We also find that the majority of the target firm bonds are rated non-investment grade prior to the initial Schedule 13D filing. These bonds may be more vulnerable to the activists' actions as they are more likely to default than investment grade bonds. In support of this contention, we document that short-run and long-run bond returns are more negative for non-investment grade bonds, in both univariate and multivariate analyses.

Our study provides new insights into the hedge fund activism process. It is the first study to examine the impact that hedge fund activism has on existing bondholder wealth. Our paper also has implications for policy makers and for credit risk agencies by revealing a new factor, hedge fund activism, as a potential risk factor when assessing a firm's overall credit risk.

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Appendix

Variable Definitions and Data Sources

Variable	Definitions	Data Sources
	I. Bond Data	
Short-Run Bond Return	is the short-run raw bond return around the initial Schedule 13D filing date (t=0), calculated as: $$BR_{t=0} = \frac{BP_{t+1} + C_c - BP_{t-10}}{BP_{t-10}}$$ where, BP_{t+1} is the bond price on the first trading day after day zero. BP_{t-10} is the price for the same bond for the earliest transaction that took place within 10 calendar days prior to day zero. C_t is the sum of all coupon payments between day t-10 and day t+1. We eliminate the observation if the bond did not trade during the [-30, +10] trading window.	• Mergent Fixed Income Securities Database (FISD) and • Trade Reporting and Compliance Engine Database (TRACE).
Long-Run Bond Return	is the long-run raw bond return following the initial Schedule 13D filing date (t=0), calculated as: $$BR_{t=0} = \frac{BP_{t+365} + C_c - BP_{t+1}}{BP_{t+1}}$$ where, BP_{t+365} is the bond price for the latest transaction that took place within 365 calendar days following day zero. BP_{t+1} is the bond price for the same bond on the first trading day after day zero. C_t is the sum of all coupon payments between days [+1, +365]. We eliminate the observation if the bond did not trade during [+1, +10] and [+335, +395] trading windows.	
Short (Long)-Run Abnormal Bond Return	is the difference between the sample firm's and its control firm's short (long)-run raw bond returns.	
Subordinated Debt	is an indicator = 1 when the target firm has subordinated debt in its capital structure, and = 0 otherwise.	
Downgrade	is an indicator = 1 when the bond rating decreased over the year following the initial Schedule 13D filing date, and = 0 otherwise.	

Upgrade	is an indicator = 1 when the bond rating increased over the year following the initial Schedule 13D filing date, and = 0 otherwise.	
No Change	is an indicator = 1 when the bond rating did not change over the year following the initial Schedule 13D filing date, and = 0 otherwise.	
Stop Rated	is an indicator = 1 when the rating agencies stop rated the bond following the initial Schedule 13D filing date, and = 0 otherwise.	
Non-Investment Grade Bond	is an indicator =1 if the bond's rating prior to the initial Schedule 13D filing date is BB+ or lower, and = 0 otherwise.	
II. Hedge Fund Data		
Confrontational	is an indicator = 1 when the hedge fund uses a confrontational activism style, and = 0 otherwise. Based on Klein and Zur (2009), we define the beginning of a confrontational activist campaign as the filing of an initial SEC Schedule 13D, in which the activist clearly professes in the "purpose" statement" of the filing its goal to redirect managements' efforts.	• The investment activism style is from the Schedule 13D filings. • Board representation and the threat to start a proxy fight are from the popular press, using the Factiva database (formerly Dow Jones Interactive).
Board	is an indicator = 1 when the hedge fund successfully appoints at least one member to the board of its current investment within the year following the initial Schedule 13D filing, and = 0 otherwise.	
Proxy	is an indicator variable = 1 when the hedge fund publicly threatens a proxy fight against its current investment within the year following the initial Schedule 13D filing, and = 0 otherwise.	
M&A	is an indicator variable = 1 if the target firm is merged or acquired within two years of the initial 13D filing, and = 0 otherwise.	• Compustat
III. Target Firm characteristics and others		
Short-Run Abnormal Stock Return	is the geometric raw return minus the value-weighted NYSE/AMEX/NASDAQ index over a window of [-10, +1] days, where day 0 is the initial Schedule 13D filing date.	• Stock returns and the value-weighted market index are from CRSP
Long-Run Abnormal Stock Return	is the geometric raw return minus the value-weighted NYSE/AMEX/NASDAQ index over a window of [+2, +365] days, where day 0 is the initial Schedule 13D filing date.	

ROA	is EBITDA (earnings before interest, taxes, depreciation and amortization) divided by total assets.	COMPUSTAT Fundamentals Quarterly. The balance sheet items are calculated at the end of the quarter prior to the initial Schedule 13D filing. The income statement items are calculated r over the 4 quarters preceding the Schedule 13D filing date.
Operating Margin	is EBITDA divided by sales.	
Short-term Debt-to-Assets	is the ratio of debt in current liabilities to total assets.	
Long-term Debt-to-Assets	is the ratio of total long-term debt to total assets.	
Total Debt-to-Assets	is the ratio of sum of the long and short-term debt to total assets.	
Cash-to-Assets	is total cash divided by total assets.	
(Cash plus Investments)-to-Assets	is cash and short term investments divided by total assets.	
Dividends per Share	is the dividend per share-ex date.	
Z-Score	is the Altman (1968) model to determine the likelihood of bankruptcy amongst companies.	
Total Assets	are the total assets of the firm ($ Millions).	
Market-to-Book	is stock's market value of equity divided by the book value of total assets minus total liabilities.	
Beta	is the coefficient of the error term from the market model estimation.	
$\sigma(\varepsilon)$	is the standard deviation of the error term from the market model estimation.	
σ(Unlevered Returns)	is the standard deviation of unlevered monthly stock returns.	
FFO	is funds from operations.	
EPS	is the primary earnings per share excluding extraordinary items and discontinued operations.	
EBITDA	is the earnings before interest, taxes, depreciation and amortization.	
CFO	is cash from operating activities.	
Earnings Announcement	is an indicator = 1 when the target firm announced earning during the event study window, and = 0 otherwise.	

Table 1

Descriptive Statistics

This table reports descriptive statistics for the hedge fund target firms. Panel A summarizes the number of firms with existing debt. The full hedge fund activist target bond sample contains all firms with existing debt. The hedge fund activist target bond sample with bond price contains all observations with adequate bibd price data in the Mergent-FISD database. Panel B summarizes the number of target firm bonds by their initial S&P/Moody's/Fitch ratings.

Panel A: Year of the Initial SEC Schedule 13D Filing

Year	Number of Filings	Full Hedge Fund Activist Target Bond Sample	Hedge Fund Activist Target Bond Sample with Bond Prices
1994	5	5	3
1995	21	10	7
1996	28	15	12
1997	38	27	19
1998	41	15	12
1999	42	13	9
2000	44	12	11
2001	36	10	9
2002	50	19	13
2003	61	22	16
2004	70	37	31
2005	98	51	39
2006	101	17	12
Total	635	253	193

Panel B: Initial Bond Ratings by S&P/Moody's/Fitch

Rating (S&P/Moody's/Fitch)	Full Target Bond Sample	Target Bond Sample with Bond Prices	Mergent FISD
	Investment Grade		
AAA/Aaa/AAA	0	0	1,537
AA+/Aa1/AA+	0	0	364
AA/Aa2/AA	0	0	828
AA-/Aa3/AA-	0	0	1,373
A+/A1/A+	0	0	1,669
A/A2/A	3	2	1,670
A-/A3/A-	16	9	1,405
BBB+/Baa1/BBB+	12	8	1,424
BBB/Baa2/BBB2	14	10	1,374
BBB-/Baa3/BBB-	18	12	1,162
Total Number of Firms with Investment Grade Bonds	63	41	12,806
	Non-Investment Grade		
BB+/Ba1/BB+	14	11	533
BB/Ba2/BB	18	14	551
BB-/Ba3/BB-	12	10	752
B+/B1/B+	24	17	873
B/B2/B	30	24	1,359
B-/B3/B-	34	27	1,711
CCC+/Caa1/CCC	34	31	532
CCC/Caa2/DDD	18	13	206
CCC-/Caa3/DD	6	5	61
D/Ca/D	0	0	56
Total Number of Firms with Non-Investment Grade Bonds	190	152	6,634
Total Number of Target Firms with Bonds	253	193	19,440
χ^2 Statistic for Association between Investment/Non-Investment Grade (Full Target Bond Sample vs. Mergent FISD)	185.15^{***}		

Table 2

Characteristics of Target Firms Prior to the Initial 13D Filing Date

This table summarizes the characteristics of hedge fund target firms with outstanding bonds, hedge fund target firms without outstanding bonds, the control sample, and the entire COMPUSTAT population in the quarter prior to the initial Schedule 13D filing date. For each variable the mean [median] is reported. All data are winsorized at the 1% and 99% levels. Columns (2)-(4) contain significance levels for differences between the means [medians] with column (1). See Appendix for variable definitions. ***significant at the 0.01 level; **significant at the 0.05 level; *significant at the 0.10 level.

	Hedge Fund Target Firms with Outstanding Bonds (1)	Hedge Fund Target Firms without Outstanding Bonds (2)	Control Firms (3)	COMPUSTAT Database (4)
Total Assets ($ Millions)	852.81 [189.42]	947.29 [210.16]	997.21* [242.09]	2,354.636*** [230.821]**
Long-term Debt-to Assets	0.328 [0.269]	0.265** [0.247]*	0.339 [0.305]	0.190*** [0.104]***
(Cash plus Investments)-to-Assets	0.108 [0.086]	0.192*** [0.119]**	0.106 [0.085]	0.171** [0.070]
ROA	0.095 [0.105]	0.042** [0.076]*	0.124* [0.126]*	0.064* [0.078]*
Operating Margin	0.195 [0.146]	0.192 [0.141]	0.179 [0.134]	0.114** [0.105]**
Market-to-Book	1.607 [1.275]	1.162 [1.074]	1.596 [1.173]	2.688*** [1.718]**
Beta	0.814 [0.752]	0.785 [0.736]	0.789 [0.728]	1.0335** [0.955]*
$\sigma(\varepsilon)$	0.275 [0.209]	0.270 [0.199]	0.288 [0.211]	0.297 [0.221]
σ(Unlevered Returns)	0.331 [0.324]	0.326 [0.316]	0.288** [0.240]**	0.271** [0.234]**
Dividends-to-Share	0.097 [0.000]	0.092 [0.000]	0.110* [0.000]	0.221** [0.000]
Abnormal Stock Return [-365, -31]	10.73% [6.94%]	8.14%** [4.89%]*	3.71%*** [2.40%]***	
Confrontational (%)	205 (81%)	290 (76%)		
Board (%)	121 (48%)	156 (41%)		
Proxy (%)	88 (34%)	99 (26%)		
M&A (%)	70 (28%)	118 (31%)		
Total	253	382	253	64,223

Table 3

Short-Run and Long-Run Bond and Stock Returns

This table shows short- and long-run bond returns and the short- and long-run abnormal stock returns in the periods surrounding and after the initial Schedule 13D filing date. Control firms are matched by industry, credit rating prior to the 13D filing, bond maturity, and trading frequency . Panel A presents the results based on the Mergent FISD, while Panel B present the results based on the TRACE database. For each variable, the mean [median] is reported. The number of observations (*N*) reported is for the short/long-run respectively. See Appendix for variable definitions. All data are winsorized at the 1% and 99% levels. ***significant at the 0.01 level; **significant at the 0.05 level; *significant at the 0.10 level.

Panel A: Mergent Fixed Income Securities Database (Mergent FISD)

	Hedge Fund Target Firms Mean [Median] (1)	Control Firms Mean [Median] (2)	*t*-statistic [*Z*-statistic] for difference between Columns (1) and (2) (3)
Short-Run Bond Returns	-4.95** [-2.13%]*	-1.03% [-0.23%]	-3.27*** [-2.43]**
Long-Run Bond Returns	-6.42%*** [-5.84%]***	-1.91%* [-1.45%]	-3.39*** [-2.52]**
Short-Run Abnormal Stock Returns	4.72%*** [3.67%]**	1.11% [0.84%]	4.40*** [3.82]***
Long -Run Abnormal Stock Returns	5.79%*** [4.62%]***	2.11%* [2.01%]*	2.17** [2.03]**
N (short-run/long-run)	189/193	189/193	

Panel B: TRACE Database

	Hedge Fund Target Firms Means [Medians] (1)	Control Firms Means [Medians] (2)	*t*-statistic [*Z*-statistic] for difference between Columns (1) and (2) (3)
Short-Run Bond Returns	-3.08%** [-1.46%]*	-1.18% [-0.36%]	-2.16** [-1.79]*
Long -Run Bond Returns	-4.56%*** [-4.06]***	-0.83% [-0.12%]	-2.91*** -2.18**
Short-Run Abnormal Stock Returns	4.84%*** [3.63%]**	1.19% [0.87%]	4.31*** [3.67]***
Long -Run Abnormal Stock Returns	5.19%*** [4.92%]***	2.38%** [2.05%]*	2.05** [1.92]*
N (short-run/long-run)	121/107	121/107	

Table 4

One-Year Changes in Firm Characteristics for Hedge Fund Target and Control Firm Samples

This table presents mean [median] one-year changes (Δ) in accounting and financial ratios for the sample of 253 firms (column 1) targeted by hedge funds and their matching control firms (column 2). Change is measured over 4 quarters following the quarter of the initial 13D filing minus the 4 quarters preceding the 13D filing. Control firms are matched by industry, credit rating prior to the 13D filing, bond maturity, and trading frequency. For each variable, the mean [median] is reported. See the Appendix for variable definitions. All data are winsorized at the 1% and 99% levels. Column (1) contains significance levels for differences between the means [medians] between sample and control firms. ***significant at the 0.01 level; **significant at the 0.05 level; *significant at the 0.10 level.

	Hedge Fund Target Sample (1)	Control Sample (2)
Earnings and Profitability		
ΔEPS	-0.109***	0.007
	[-0.018]**	[0.000]
ΔEBITDA [$ million]	-127.073**	31.498
	[-4.971]**	[5.068]
ΔROA	-0.019	-0.028
	[-0.001]	[-0.003]
ΔCFO-to-Assets	-0.012	-0.025
	[-0.003]	[-0.004]
ΔOperating Margin	-0.206***	-0.073
	[-0.067]***	[-0.010]
Debt		
ΔShort-term Debt-to-Assets	0.002**	-0.021
	[0.001]*	[-0.002]
ΔLong-term Debt-to-Assets	0.069**	-0.031
	[0.010]**	[-0.003]
ΔTotal Debt-to-Assets	0.073***	-0.052
	[0.010]**	[-0.009]
Cash on Hand		
ΔCash-to-Assets	-0.024***	0.004
	[-0.005]**	[0.000]
ΔCash plus Investments-to-Assets	-0.026***	0.004
	[-0.005]**	[0.000]
ΔDividends per Share	0.108**	0.032
	[0.075]**	[0.011]

Ability to Pay Off Debt and Interest		
ΔTotal Debt-to-EBITDA	2.318**	-4.481
	[1.216]***	[-0.135]
ΔFFO-to-Total Debt	0.065	0.058
	[0.005]	[0.002]
ΔZ-Score	-1.622***	0.847
	[-0.016]***	[0.029]
Other		
ΔTotal Assets	-104.157***	461.186
	[-63.381]***	[132.910]
ΔMarket-to-Book	-0.051	-0.106
	[0.000]	[0.000]
Δσ(ε)	0.027**	-0.000
	[0.020]**	[-0.000]
Δσ(Unlevered Returns)	0.049**	-0.002
	[0.024]**	[-0.001]
N	253	253

Table 5

Regressions of Short- and Long-Run Abnormal Bond Returns

This table reports the results of OLS regressions on the hedge fund target sample's abnormal bond returns. The dependent variable in column (1) is the short-run abnormal bond return, and in column (2) is the long-run abnormal bond return. For each variable, the coefficient (*t*-statistic) is reported. All data are winsorized at the 1% and 99% levels. See Appendix for variable definitions. ***significant at the 0.01 level; **significant at the 0.05 level; *significant at the 0.10 level.

	Short-Run Abnormal Bond Returns (1)	Long-Run Abnormal Bond Returns (2)
Intercept	0.008	0.012
	(1.04)	(1.14)
Hedge Fund characteristics		
Confrontational	-0.064***	-0.039**
	(-4.59)	(-2.51)
Board	-0.007	-0.008*
	(-1.07)	(1.70)
Proxy	-0.002	0.005
	(-0.44)	(0.32)
M&A	-0.062	-0.054
	(-0.92)	(-0.56)
Bond Characteristics		
Subordinated Debt	-0.013	-0.010
	(-1.46)	(-0.34)
Non-Investment Grade Bond	-0.016*	-0.007**
	(-1.71)	(-1.96)
Target Firm Characteristics		
ΔROA	-0.001	-0.059
	(-0.11)	(-1.50)
ΔOperating Margin	0.000	0.010
	(0.02)	(0.58)
Δ Total Debt-to-Assets	-0.027**	-0.070***
	(-2.07)	(-2.87)
Δ (Cash plus Investments)-to-Assets	0.015*	0.011*
	(1.67)	(1.81)
ΔDividends per Share	-0.001	0.011
	(-0.56)	(0.07)
ΔZ-Score	-0.000	-0.000
	(-0.69)	(-0.19)

ΔLn(Total Assets)	0.016	0.007
	(1.32)	(0.95)
ΔMarket-to-Book	-0.061	-0.005
	(-0.91)	(-1.32)
Δσ(ε)	0.019	0.002
	(1.48)	(0.01)
Δσ(Unlevered Returns)	-0.000	-0.006
	(-0.32)	(-0.11)
Earnings Announcement	-0.015**	
	(-2.07)	
Year Dummies	Yes	Yes
Adjusted R^2	0.045	0.020
N=	189	193

Table 6

Short and Long-Run Expropriation of Wealth from Bondholder to Shareholder

This table reports the results of OLS regressions on the hedge fund target sample's short- and long-run excess bond returns. For each variable, the coefficient (*t*-statistic) is reported. All data are winsorized at the 1% and 99% levels. See Appendix for variable definitions. ***significant at the 0.01 level; **significant at the 0.05 level; *significant at the 0.10 level.

	Short-Run Excess Bond Returns		Long-Run Excess Bond Returns	
	(1)	(2)	(3)	(4)
Intercept	-0.014***	-0.007	0.193***	0.248***
	(-4.43)	(-0.88)	(49.79)	(11.09)
Short-Run Abnormal Stock Returns	-0.037***	-0.049***		
	(-3.81)	(-2.58)		
Long-Run Abnormal Stock Returns			-0.028***	-0.035***
			(-4.67)	(-5.02)
Hedge Fund Characteristics				
Confrontational		-0.051**		-0.064***
		(-2.40)		(-3.38)
Board		-0.004		-0.034*
		(-0.81)		(-1.68)
Proxy		-0.006		0.001
		(-0.94)		(0.84)
M&A		-0.090		-0.000
		(-1.44)		(-0.11)
Bond Characteristics				
Subordinated Debt		-0.017		-0.010
		(-1.31)		(-0.44)
Non-Investment Grade		-0.014*		-0.030**
		(-1.84)		(-2.44)
Target Firm Characteristics				
ΔROA		-0.000		-0.000
		(-0.20)		(-1.12)
ΔOperating Margin		0.000		0.007
		(0.24)		(0.61)
Δ Total Debt-to-Assets		-0.015***		-0.085***
		(-2.67)		(-2.84)
Δ (Cash plus Investments)-to-Assets		0.015		0.092*
		(1.58)		(1.76)
ΔDividends per Share		-0.002		0.007
		(-0.78)		(0.82)

ΔZ-Score		-0.000		-0.000
		(-0.70)		(-0.70)
ΔLn (Total Assets)		0.017		0.003
		(1.35)		(0.59)
ΔMarket-to-Book		-0.012		-0.004
		(-0.72)		(-0.96)
Δσ(ε)		0.005		0.000
		(1.24)		(0.14)
Δσ(Unlevered Returns)		-0.000		-0.003
		(-0.10)		(-1.43)
Earnings Announcement		-0.001		
		(-2.10)		
Year Dummies	No	Yes	No	Yes
Adjusted R^2 Value	0.035	0.097	0.012	0.086
N=	189	189	193	193

Table 7

Changes in Credit Ratings

This table stratifies the sample by directional changes in credit ratings within one year of the initial 13D filing. Panel A contains the changes in credit rating. Panel B shows the short- and long-run abnormal bond returns in the period by the subsequent credit rating change. For each variable in Panel B, the mean [median] is reported. See Appendix for variable definitions. All data are winsorized at the 1% and 99% levels. ***significant at the 0.01 level; **significant at the 0.05 level; *significant at the 0.10 level.

Panel A: Changes in Credit Rating within One Year of Initial 13D Filing

Direction of Change	Hedge Fund Target Sample	Control Sample
	Number (Percentage)	Number (Percentage)
Downgrade	74 (29.3%)	34 (13.4%)
Upgrade	13 (5.1%)	59 (23.3%)
No Change	41 (16.2%)	89 (35.2%)
Stop Rating	125 (49.4%)	71 (28.1%)
Total	253 (100%)	253 (100%)
χ^2 Statistic for Association between Ratings	76.80^{***}	

Panel B: Abnormal Bond Returns by Subsequent Change in Credit Rating

	Downgrade	Upgrade	No Change	Stop Rating
Short-Run Abnormal Bond Returns	$-11.65\%^{***}$ $[-8.04\%]^{***}$	$2.38\%^{**}$ $[2.01\%]^{**}$	$4.92\%^{***}$ $[3.11\%]^{***}$	-0.31% [-0.13%]
Long -Run Abnormal Bond Returns	$-11.33\%^{***}$ $[-8.91\%]^{***}$	$3.29\%^{*}$ [2.58%]	$-0.74\%^{**}$ $[-0.26\%]^{**}$	1.71% [1.32%]
N (short-run/long-run)	59/59	11/12	33/34	86/88

Figure 1

Raw Bond Returns Surrounding the Initial Schedule 13D Filing by year

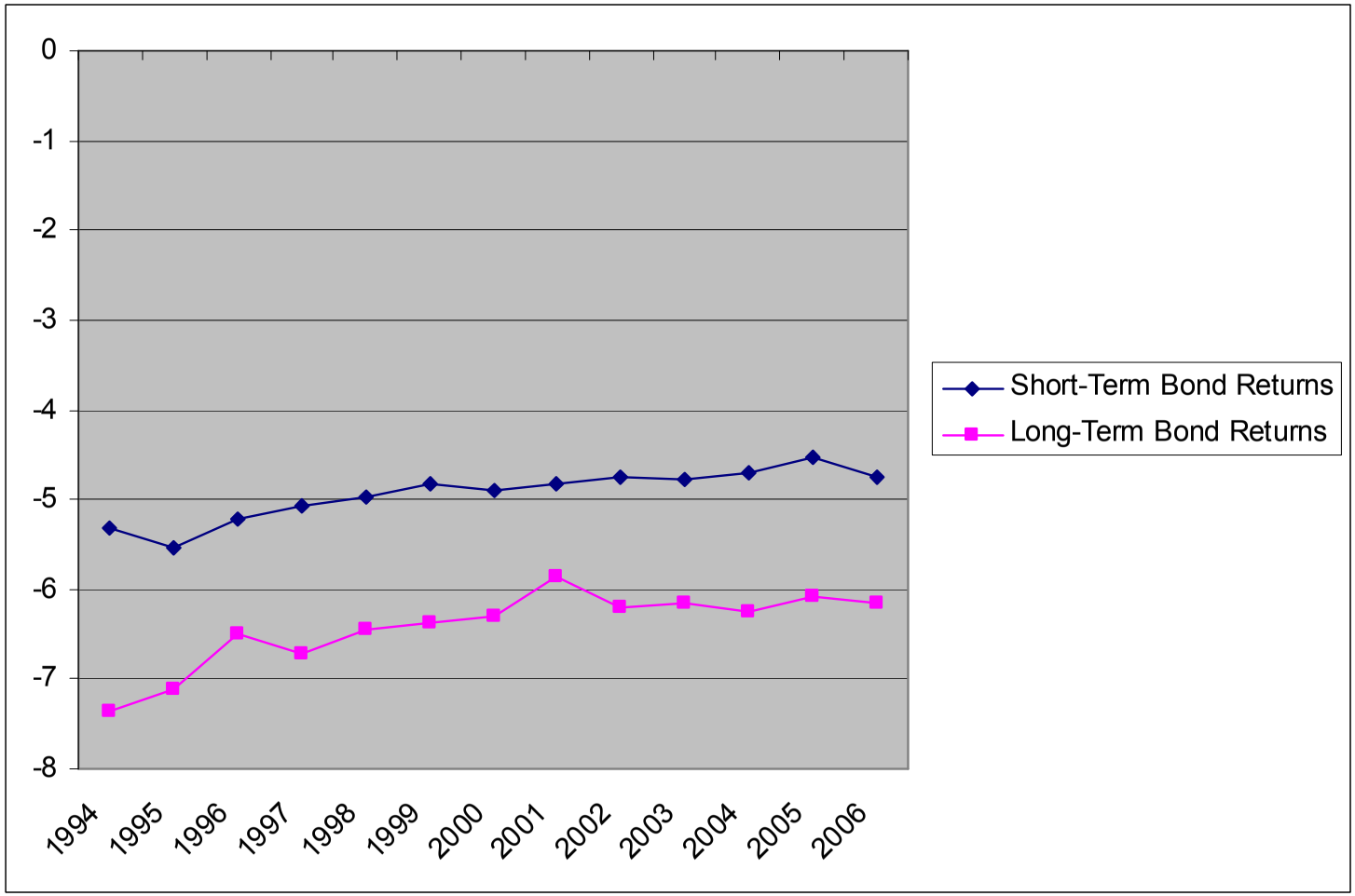

Figure 2

Raw Bond Returns Surrounding the Initial Schedule 13D Filing by Rating