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Hedge Fund Activism

April Klein, *Stern School of Business, New York University**
Emanuel Zur, *Stern School of Business, New York University***

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*aklein@stern.nyu.edu

** ezur@stern.nyu.edu

44 West 4th Street K-MEC 10-93
Stern School of Business
New York University
New York, N.Y. 10012

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Abstract

This paper examines the causes and consequences of hedge fund activism. Hedge funds target profitable and healthy firms, with above-average cash holdings. The target firms earn significantly higher abnormal stock returns around the initial 13D filing date than a sample of control firm. However, they do not show improvements in accounting performances in the year after the initial purchase. Instead, hedge funds extract cash from the firm through increases in the target's debt capacity and higher dividends. Examination of proxy fights and threats accompanying the activist campaign suggests that hedge fund managers achieve their goals by posing a credible threat of engaging the target in a costly proxy solicitation contest.

Introduction

There has been tremendous growth in the hedge fund industry over the last several years, with investments in hedge funds topping \$1 trillion in 2006 and the number of hedge funds increasing from approximately 5,000 in 2002 to 8,000 in 2005 (Fraidin, 2006). With the proliferation of these funds, there has also been an increase in hedge fund activism by the funds' managers over the same time period. The purpose of this paper is to examine the causes and consequences of this activism.

We define hedge fund activism as a strategy in which a hedge fund purchases a 5 percent or greater stake in a publicly-traded firm with the stated intent of influencing the firm's policies. The 5 percent purchase triggers the filing of SEC Schedule 13D, which reveals the identity of the buyer, the target firm, the stake in the company, and the "purpose" for the purchase. Using 13D filings from January 2003 through December 2005, we identify all or nearly all hedge fund initial purchases that clearly profess in their purpose statements the goal of redirecting managements' efforts. These redirections include seeking seats on the company's board, opposing an existing merger or liquidation of the firm, pursuing strategic alternatives, or replacing the CEO.

The main debate surrounding hedge fund activism is whether it represents a new paradigm in the role that institutional shareholders play in corporate governance. Previous papers, summarized by Black (1998), Karpoff (2001) and Romano (2001), find that institutional investors in the United States spend a trivial amount of money on overt activism efforts, and that when they do, their actions have little impact on the firms they target. Specifically, there is little evidence that institutional investor shareholder proposals, "focus lists," or interactive exchanges between large institutional investors,

e.g., Calpers, and firm management elicit changes in the target firms' corporate governance structures or corporate strategies. Bebchuk (2005a, 2005b), using more recent data, comes to similar conclusions with regard to a shareholder's success in replacing sitting members of boards of directors, and recommends changes in corporate law to better facilitate the removal of board members for poorly-performing companies. Nor is there consistent evidence that investors earn significantly positive returns surrounding the disclosure of these initiatives, or that institutional shareholder activism produces long-term tangible benefits to investors (Black, 1998; Karpoff, 2001).

The primary rationale offered to explain why institutions cannot or will not engage in an activist campaign against a specific firm is the free rider problem. Free riding is when the expected costs of the activist's actions exceeds the benefits it expects to derive from these actions. With regard to institutional activism, it occurs because many shareholders share the benefits of activism, but only one shareholder, the activist, carries the costs of mounting the campaign against the target firm.

According to U.S. federal and state corporate laws, a shareholder can force a firm's existing managers to pursue alternative strategies or changes in corporate governance only through a contested proxy fight. This is in contrast to other countries, for example the United Kingdom, in which any shareholder or group of shareholders with at least 10% of the voting rights in a firm can call a special shareholders' meeting to introduce a binding shareholder proposal (Becht et al., 2006). However, as Bebchuk (2005b) discusses, the costs to an investor mounting a proxy solicitation to replace an incumbent board is substantial, and he concludes that the paucity of observed proxy contests over the last ten years between institutional investors and publicly-traded U.S.

firms is largely due to these costs. With regard to the benefits that an individual fund may accrue from taking an activist stance, Kahan and Rock (2006) present evidence that large mutual funds and pension funds hold similar percentages of stocks in many companies and therefore, no specific fund has the incentive to bear the costs of pursuing an activist campaign against a company.

We argue that hedge funds differ substantially from mutual funds and pension funds in ways that make it beneficial for them to become activists. First, to qualify for significant tax benefits, mutual funds must be diversified, which means they cannot own more than 10% of the outstanding securities of any company. Nor can 5% of the fund's total assets be invested in any one security. Hedge funds are not subject to these tax rules and can hold large amounts of stock in their portfolios without penalty. Second, Hu and Black (2006) and Christoffersen et al. (2006) present evidence that hedge funds can and do buy shareholder voting rights through undisclosed transactions, for example through the stock lending market. Thus, hedge funds are able to accrue large blocks of voting rights either through the direct or indirect purchase of common shares. Third, hedge fund managers are free from pay-for-performance restrictions imposed on mutual fund managers by the Investment Advisors Act of 1940. As a result of these restrictions, mutual and pension fund managers are paid a percentage of the fund's total invested funds. In contrast, hedge fund managers' compensation packages typically include both a percentage of invested funds **and** a percentage of the funds' profits. Thus, they can personally benefit from a successful activist campaign.

We present evidence that over the last several years, hedge funds have engaged in successful and profitable activist campaigns against a large group of publicly-traded

companies. Their financial gains are through both an appreciation of stock price, and an increase in dividends paid by the firms. Target firms earn, on average, 10.3 percent abnormal stock returns during the period surrounding the initial 13D filing. This return is significantly higher than that earned by non-hedge fund activist target firms over the same time period, and a sample of control firms, based on industry, firm size and book-to-market ratio. Dividends per share approximately double in the year following the initial stake.

We also document that hedge funds are extremely successful in getting existing management to acquiesce to their demands, be it representation on the firm's board, a change in strategic operations, share repurchases by the firm, scuttling an existing merger proposal, or being acquired by another firm (sometimes the hedge fund itself). For example, of the 41 times they state a demand for board representation in the 13D filing, they achieve this representation 30 times, for a success rate of 72%. They succeed over 50% of the times in preventing an ongoing merger, or in forcing the firm to be taken over by another entity. In total, we document a 60% success rate for all demands made in the initial 13D filings.

We also present evidence that the existing paradigm of the type of firms that activists invest in is different for hedge funds. Prior studies on blockholder activism find that activists are more likely to target poorly-performing firms (e.g., Bethel et al., 1998; Becht et al., 2006).¹ In contrast, U.S. hedge fund activists are more likely to target profitable and financially healthy firms. These findings hold whether we compare them to a sample of control firms or to non-hedge fund activists over the same time period. In addition, unlike the Bethel et al. (1998) study, we find no evidence that the hedge fund

¹ Faleye (2004) finds that poorly-performing firms are also more likely to be the target of a proxy contest.

activist improves firm performance after the initial investment in the firm. Instead, we show that EPS, return on assets (ROA), and return on equity (ROE) decline one year after the 13D filing, and that cash flows from operations remain stable. Nor do we find that target firms invest more in research and development or capital expenditures. Thus, unlike previous blockholder activist studies that imply that activists target and improve poorly-performing firms, we find no such “turn-around” for the hedge fund targets.

Instead, hedge funds target firms that are rich in cash and short-term investments and that have low debt capacities. After gaining control of the firm’s agenda, they increase the debt load of the firms, reduce the cash on hand, and pay out increased dividends to the shareholders, one being the hedge fund investor. These findings are consistent with hedge funds reducing agency costs related to free cash flows, as articulated by Jensen (1986).

Finally, we ask how these results are achieved by the hedge funds given the restrictive and costly nature of the proxy solicitation process. We conclude that hedge funds use the threat of a proxy solicitation as a major weapon. Of the 155 activist campaigns, 18 resulted in actual proxy fights. However, when examining press announcements after the 13D filings, we find 42 cases in which the hedge fund publicly threatened to begin a proxy solicitation. Thus, 39% of the target firms in our sample were either involved in or threatened with a proxy fight. In almost all cases, the proxy fight was over board representation. Further, we find that the success rate of the hedge fund manager in achieving its stated goal or in gaining representation on the board is unrelated to whether a proxy fight was real, threatened, or otherwise. Thus, we conclude

that the perceived threat of a proxy fight is sufficient to elicit substantial changes in board composition and firm policy.

The paper proceeds as follows. Section 2 explains what a hedge fund is and how the regulatory environment surrounding it is conducive towards it being an activist investor. Section 3 describes the data on the hedge fund activists, the firms they target, and the two control samples. Section 4 examines the pre-13D date market, financial and discretionary spending characteristics of the target firms, and compares them to the control samples. In section 5, we examine the market's response to the initial investment by the hedge fund activist. Section 6 presents the outcomes of the activists' campaigns, both in terms of the activists achieving their stated goals, and changes in firm characteristics for one-year period between the pre-and-post 13D filing dates. Section 7 summarizes and concludes the paper.

I. Hedge Fund Activism

A. Hedge Funds May Not Be Constrained by the Free Rider Problem

Prior studies, summarized by Black (1998) and Karpoff (2001), find that institutional investors invest few resources on overt activism efforts, and that when they do, their actions have little effect on firm performance or changes in the company's corporate governance structure. Bebchuk (2005b), using data from 1996 through 2004, documents that shareholders infrequently engage firms in proxy contests to challenge board composition. He concludes that the proxy solicitation process in the US is highly flawed, and offers a set of proposals designed to empower shareholders over the shareholder voting process.

The main explanation as to why institutions cannot or will not engage in an activist campaign against a specific firm is the free rider problem.² Free riding is when the expected costs of the activist's actions exceeds the benefits it expects to derive from these actions. It occurs because many shareholders share the benefits of activism, but only one shareholder, the activist, carries the costs of mounting the campaign against the target firm.³

We argue that the regulatory and legal environment surrounding hedge funds alleviates this free rider problem. There is no definition of what a hedge fund is under the federal securities laws. Instead, hedge funds are characterized as being a class of investments 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 1940.⁴ Because they are relatively unregulated, hedge funds differ from mutual funds in several salient ways that make them more apt to be activists.

First, hedge funds are exempt from the diversification requirements in subchapter M of the Internal Revenue Code and the 1940 Investment Company that mutual funds are subject to (Kahan and Rock, 2006). Unlike mutual funds, hedge funds can hold more than 10 percent of any company's stock, and can invest more than 5 percent of their assets in

² See, for example, Black (1998), Bebchuk (2005a), Bainbridge (2006), and Kahan and Rock (2006).

³ Bebchuk (2005b) discusses the costs to an activist engaged in a proxy solicitation contest. While he does not place a dollar amount on these costs, he notes that these costs include mailing and processing proxy cards, legal fees involved in filing the proxy statement with the SEC, and persuading other shareholders to vote with the dissident shareholder.

⁴ Until February 1, 2006, hedge funds also were exempt from all sections of the Investment Advisors Act of 1940. Beginning on that date all hedge funds with at least 15 clients (investors) were required to file SEC Form ADV, which includes disclosures about the manager's background and the fund's business practices (but not details of the fund's investment strategies or trades). In addition, hedge funds were required to develop a system of internal controls, and maintain specified and books and records that must be produced on request to the SEC for examination and inspection (Federal Register, 2004; Paredes, 2006). On June 16, 2006, the Court of Appeals for the D.C. circuit threw out the SEC rules, thus negating these requirements.

any stock. In addition, unlike mutual funds, hedge funds need not have sufficient capital to cover redemptions and can restrict investors from exiting their funds. Hedge funds can also invest in fairly illiquid assets. Thus, hedge funds can make significant investments in a wide variety of publicly-traded securities.

Second, since they are not registered under the Investment Company Act of 1940, hedge funds' investment strategies are wholly unrestricted in terms of short-selling securities, and leveraging the funds' portfolios. Further, they are not required to disclose their holdings, investment strategies, short-selling positions, or leverage ratios. One of the ramifications of these disclosure exemptions is that hedge funds can use the stock lending (Christoffersen et al., 2006) or derivative markets (Hu and Black, 2006) to acquire voting rights without owning a long position in the company's underlying stock. Thus, a hedge fund can build up voting rights in a target company to buttress a threat of an impending proxy fight.

Third, hedge fund managers are free from pay-for-performance restrictions imposed for mutual fund managers in the Investment Advisors Act of 1940. Kahan and Rock (2006) report that 97 percent of mutual funds charge investors a flat rate fee based on the mutual fund's assets alone. In contrast, a hedge fund manager's compensation typically includes both a percentage of invested funds **and** a percentage of the funds' profits, usually 5 to 40 percent over zero percent or the risk-free rate. Thus, hedge fund managers have enormous personal incentives to use activist campaigns to earn abnormal stock returns.

Next, because hedge funds elect to operate as unregistered investment companies, they cannot be offered or advertised to the general public, and are limited to individuals

who are **both** “accredited investors” (those with total annual incomes over \$200,000 or a net worth over \$1 million) and “qualified investors” (those with at least \$5 million in investments). Thus, hedge fund investors have the financial resources to absorb large financial losses. Further, all of our hedge funds are listed as either an LLC (limited liability company) or an LP (limited partnership). For tax purposes LLCs and LPs are taxed on all earnings, i.e., capital gains and dividends received, each year. Because of these tax rules, hedge funds are not required to make distributions to shareholders. Therefore, they can use all of their after-tax resources to engage the target firm in an activist campaign.

Finally, Davis and Kim (2005) and Kahan and Rock (2006) analyze conflicts of interest that mutual funds and public pension funds face in voting against management. Davis and Kim (2005) find a positive relation between mutual funds voting with management and the amounts of pension business these funds have. Kahan and Rock (2006) discuss political conflicts of interest facing politicians who oversee the public pension funds, for example, seeking contributions for re-election. Hedge funds, by and large, do not face these conflicts of interest and therefore will not be deterred from challenging management.

B. Gains to Hedge Fund Activists

The goal of a hedge fund is to yield absolute returns above the benchmark of the riskless rate (Goetzmann and Ross, 2000). Prior to 2000, hedge funds typically profited from the manager’s ability to identify and capture transitory trading opportunities, primarily through arbitrage trading (Goetzmann and Ross, 2000). However, the growth

of the hedge fund industry over the last few years has made it more difficult for managers to identify and exploit these arbitrage opportunities; hence, many funds have turned to an alternative strategy – hedge fund activism.⁵

We define hedge fund activism as a strategy in which a hedge fund purchases a 5 percent or greater stake in a publicly-traded fund with the intention of influencing the firm’s policies. Although not directly stated, the paramount goal of the activism is to increase the market return to shareholders, hopefully in the short-run.

There are two main, non-mutually exclusive ways hedge fund activism can increase shareholder value. First, the activist can alter the firm’s strategic policies, through redirections of investments, including the selling of its less-productive assets. Bethel et al. (1998) examine shareholder activism for 151 block share purchases (5 percent or more) for Fortune 500 U.S. firms between 1980 and 1989. They find that activists target firms with lower returns on assets, lower market-to-book ratios, and less diversification when compared to Fortune 500 firms with no block share activity.⁶ They report market model-adjusted CARs of 15.7 percent and 14.2 percent for days [-30, +5] and [-30, +30], where day 0 is the announcement date of the block purchase. Bethel et al. (1998) trace these abnormal market returns to the group of 73 surviving firms that undertook asset divestitures within two years of the block purchase. If hedge fund activism improves firm profitability, then there should be significant improvements in accounting performances, as measured by accounting returns, earnings-per-share, and

⁵ According to Citigroup (2005), the yearly returns to hedge funds have dropped dramatically over the last few years from an annualized 17 percent from 1990-1999 to 7 percent from 2000-2004.

⁶ They define activist block holders as those announcing an intention of influencing management or who are known for activist policies in the past, e.g., Carl Icahn, Irwin Jacobs, Bass Brothers, Mario Gabelli, and George Soros.

operating cash flows in the period following the acquisition. In addition, there should be significant changes in the firm's investment strategies, including reductions in assets as managers shed less productive businesses and assets from their balance sheets.

Second, the activist can reduce agency costs by forcing the firm to reduce its excess cash holdings through increased dividends, higher debt loads, or share buybacks. Jensen (1986) discusses agency conflicts between shareholders and management over "free" cash flow, which he defines as "cash flow in excess of that required to fund all projects that have positive net present values..." (p. 323). Under Jensen's theory, managers have incentives to grow their company beyond its optimal size, and therefore may increase firm size through indiscriminate purchases of assets or firms.⁷ One implication behind Jensen's theory is that firms may hoard cash to facilitate these purchases.

Jensen (1986) specifically suggests that a firm can reduce its agency costs associated with excess cash by paying out dividends to shareholders or increasing debt and interest payments to creditors. Faleye (2004) presents evidence in favor of shareholder activism in the form of proxy contests acting as a means of allaying the agency costs associated with excess cash. Using a sample of 98 proxy contests conducted without an accompanying takeover bid between 1988 and 2000, he finds that target firms hold 23% more cash than similar non-targets. He also reports that after the proxy contest, excess cash holdings significantly decline most prominently in the form of special cash dividends. In addition, most firms in our sample were targeted after the Jobs

⁷ One prime incentive that Jensen (1986) cites is management compensation. Gabaix and Landier (2006) find that the six-fold increase in CEO pay between 1980 and 2003 can be fully attributed to the six-fold increase in market capitalization of large US firms during that period.

and Growth Tax Relief Reconciliation Act of 2003 was effective, a law that included a reduction in shareholders' income tax on dividends. Thus, hedge funds were given an added incentive to earn returns through increases in regular dividends or through the declaration of special dividends.⁸

We also expand on the definition of cash by additionally aggregating short-term debt investments with cash. Over the last several years, interest rates on short-term investments have been relatively low. For example, the one-year Treasury constant maturity rate, as published by the Federal Reserve Bank of St. Louis (<http://research.stlouisfed.org>) meandered between one and three percent from 2002 through 2005, the time period that we cover in this study. Thus, investments in short-term Treasury bills yield below market returns, suggesting an additional agency cost of holding suboptimal assets. If hedge fund activism reduces the agency costs of excess cash and short-term investment holdings, then (1) hedge funds should target firms with high cash holdings and short-term investments more frequently and (2) after the initial activist stance, there should be declines in cash and short-term investments, as well as increases in the debt capacity of the firm, dividends, and common share repurchases by the firm.

II. Sample Selection, Control Samples, and Data Description

A. *Hedge Fund Activists and Their Targets*

⁸ Blouin et al. (2004) report that following this Act, many firms declared large, special dividends. They find, however, little evidence of an increase in regular, quarterly dividend payments.

We initially examine Schedule 13D filings for publicly-trade companies that were filed between January 1, 2003 and December 31, 2005.⁹ Investors are required to file a schedule 13D with the SEC within 10 days after acquiring more than five percent of any publicly-traded equity security class.¹⁰ In the filing, the investor identifies his name, his background (including any criminal convictions within the last five years), number and type of shares purchased, the percentage of the class of equity owned, and the purpose of the transaction. We select only those transactions which (1) correspond to a U.S. publicly-traded firm, (2) are purchased by a hedge fund or hedge fund manager, and (3) present an activist agenda in its purpose statement.

For example, Loeb Partners Corporation filed a schedule 13D with the SEC on October 3, 2005 upon the purchase of shares in Spartan Stores, Inc. In its filing, Loeb Partners writes:

“Loeb ...may engage in discussion with management or the Board of Directors of the Issuer concerning the business, operations, and future plans of the Issuer....Loeb may in the future take such actions with respect to its investment in the Issuer as it deems appropriate including, without limitation, seeking further Board representation, making further proposals to the Issuer concerning the capitalization and operations to the Issuer...”

Loeb Partners further writes:

“We demand that the company conduct a fixed price tender offer for 20% of its shares at \$13.50 per share. Additionally, we demand that the company institute a regular quarterly dividend of .125 cents (50 cents annually) beginning with the fourth quarter of fiscal year 2006.”

⁹ We do not examine 13G filings, which are required for passive investors who acquire at least a five percent interest in a publicly-traded equity security.

¹⁰ 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.”

These demands and statements of interference are not unusual. Nor are they also couched in polite terms. For example, Loeb Partners call management and the board of directors “apathetic” and “sheltered.” In their December 6, 2005 Schedule 13D, Santa Monica Partners accuse Warwick Valley Telephone Company’s management of providing shareholders with “banal, trite, platitudinous, unconvincing statements in place of real supportable facts, estimates and plans” and urges them to pursue alternatives strategies in consultation with the hedge fund.

Table I describes the composition of our sample of hedge fund activists. As Panel A shows, we identify 194 13D filings between January 1, 2003 and December 31, 2005, in which a hedge fund actively targets a U.S. publicly-traded company. In all, there are 102 different hedge funds. While most of the funds (64) invests in only one company during this time period, the remaining 38 target two or more companies, with three hedge funds, Steel Partners II, Santa Monica Partners and Carl Icahn’s Hedge Fund, taking activist positions in nine or more firms. Seven companies are targeted by two or three hedge funds.

Because we are interested in examining first filings only, we trace the 13D schedules backwards in time to find the first event in time. In all, there are 155 first events. Panel B presents the time line of these events. As the panel illustrates, most hedge funds (135) originally invested in the firm from 2003 through 2005. We find, however, a few examples of long-term activism. Carl Icahn’s hedge fund filed its first Schedule 13D on National Energy Group in 1995 and Steel Partners II filed its first Schedule 13D on Ronson in 1998.

As Panel C shows, hedge funds invest in firms trading in a variety of markets, including the OTC bulletin board and the pink sheets. Most of the targeted firms (79) traded on the Nasdaq National Market (NNM) at the time of the initial investment. Forty-seven firms traded on the NYSE, thirteen traded on the AMEX, seven traded on the OTC bulletin board, and nine traded on the pink sheets. In addition, examination of whether these firms are in the S&P 500 Index reveals that only ten companies were part of this Index. Thus, hedge fund managers tend to target relatively smaller companies.

We also tabulate the target firms' industries. The 155 firms hail from 36 of the 48 Fama and French (1997) industry classifications. Further, as Panel D shows, two industries, business services and pharmaceutical products yield at least ten firms – business services with 29 firms and pharmaceutical products with ten firms. Three industries, retail; restaurants, hotels, motels; and banking are targeted at least eight times. However, we also find, but do not tabulate, that twenty-six industries have five or fewer firms. Thus, hedge funds activism appears to be widespread among traded firms.¹¹

In Panel E, we present the primary reasons stated in the original 13D filing for the investment under Item 4: "Purpose of Transaction." The most frequently stated purpose is to change the board's composition (41 filings), with the hedge fund manager usually asking for one or more seats for himself or his representatives. Pursuing alternative strategic goals is the second most frequently found reason, accounting for 29 filings. Opposing a merger (18) or supporting a merger (16) are common goals, as is the threat that the hedge fund would like to take over the firm in the future (12). Some reasons can

¹¹ Many hedge funds specialize in one industry or broader defined class. For example, Vardan Capital Management invests in the "consumer sector," whereas Keefe Managers specializes in "banks and financial institutions."

be construed as being helpful or benign to management, for example, four 13D filings contain statements supporting management. On the other hand, some filings express extremely hostile sentiments against management, for example, replacing the CEO or reducing his salary.

To illustrate, in the 13D filing on November 30, 2004 that Hummingbird Management filed on its purchase of Meade Instruments Corporation, they state:

“We believe that the Board's failure to enact appropriate compensation arrangements between Meade and its executive management is one of the primary reasons for Meade's dismal operating performance. The compensation package of Steven Murdock, the Company's chief executive officer and president, and other top management does not reward them for good performance nor does it penalize them for failure to deliver. Steve Murdock has a \$450,000 base salary, and he received a \$325,000 bonus last fiscal year. Through the first three quarters of fiscal 2006, the Company has lost \$0.8 million. We propose a base salary reduction to \$300,000, and that the rest of his compensation be in the form of restricted stock that vests upon the Company meeting certain profitability benchmarks. We would not oppose a bonus scheme that would more than make up for the base salary reduction but it must be a win-win situation where the interest of the Company's stockholders and Mr. Murdock are aligned. A similar arrangement should be worked out with other key executives. We call for the Board and its Compensation Committee to take immediate action to develop new compensation arrangements and target minimum stock ownership levels for the management team.”

B. Control Samples

Two separate control samples are used throughout our analyses to facilitate comparisons between hedge fund targeted firms and other firms. First, we match each target firm sequentially by industry, using the Fama and French (1997) classifications, size, as measured by revenues and market-to-book ratio. By matching on these three attributes, we control for systematic risk factors associated with stock returns (Fama and French, 1993), as well as financial characteristics associated with firm-type.

Second, we control for hedge fund activism by creating a sample of firms that were targeted by non-hedge fund activists over the same time period as the hedge fund

activist firms. We create the latter sample by examining 13D filings filed between January 1, 2003 and December 31, 2005. We select those filings that (1) correspond to a U.S. publicly-traded firm, (2) are purchased by a non-hedge fund, e.g., by a private investor or by a private equity firm, and (3) present an activist agenda in its purpose statement.

As Panel A of Table I illustrates, the control sample of non-hedge fund activists consists of 209 13D filings by non-hedge fund activists. Of these filings, there are 141 distinct non-hedge fund activists, with 164 separate target firms. Thus, our sample of non-hedge fund activist targets is similar in number and scope to the sample of hedge fund activist target firms. One difference we note, from Panel A, is that non-hedge fund activists tend to be more likely to target one firms only (126 out of 141 activists), when compared to hedge fund activists who are less likely to target one firm only (64 out of 102 activists) and more likely to have multiple targets over our time period.

As Panel C shows, non-hedge fund activists target firms in similar markets as hedge fund activists. Both groups predominantly take positions in firms trading on the NYSE or NNM. However, while there is some overlap in the target firms' industries, Panel D demonstrates that non-hedge fund activists are more likely to invest in restaurants, hotels, motels, banking and communication firms than hedge fund activists; and they are less likely to invest in pharmaceuticals or retail firms.

Finally, we note differences in the reasons behind the activist stance, as stated in the Schedule 13D's "purpose of transaction" section. From Panel E, we see that hedge fund activists are more concerned with mergers, stock buybacks, and receiving cash dividends than non-hedge fund activists. Conversely, non-hedge fund activists are more

interested in buying the target firm themselves, becoming an active investor, and steering the firm towards alternative strategic goals than hedge fund activists are. We note that both groups frequently demand changes in the board of directors' composition.

III. Properties of Targeted Firms Prior to 13D Filing Dates

A. *Descriptive Data and Univariate Tests*

Table II compares firms that are targeted by hedge funds to the control samples. The table shows stock returns, accounting returns, and a variety of other financial variables for the year prior to the hedge fund activism. The first goal of this table is to describe the types of firms that hedge funds target. The second objective is to compare target characteristics with (1) a comparable sample of firms and (2) other activist target firms. We then use these data in logistic and probit models to examine the determinants behind hedge fund activism.

Market price and returns data are from CRSP. Accounting and financial data are from Compustat. We exclude nine hedge fund firms trading on the pink sheets because they are exempt from filing financial statements with the SEC. Missing data further reduces our sample to 140 firms.¹²

The table shows that hedge fund targets perform well in the year prior to being targeted. The one-year size-adjusted average stock return prior to the initial investment is 12.4%. On average, the targeted firm had an EPS of \$0.249, an ROA of 0.062, an ROE of 0.033 and positive cash flows from operations, as evidenced by the CFO/Assets ratio of 0.033. Despite the fact that several hedge funds describe their investment strategies as

¹² We also winsorize outliers to present more meaningful mean statistics.

investing in struggling or distressed companies (e.g., Contrarian Capital Management, Schultze Asset Management), the average Altman's Z-score, a predictor of bankruptcy, is 2.44, well above the predictive level of bankruptcy.

When compared to the size-and-book-to-market control sample, there are no statistically significant differences in these profitability measures. However, when compared to other (non-hedge fund) activists, a different picture emerges. Hedge fund targets are more profitable in terms of BHARS, EPS, and ROE, and are more financially sound, as measured by the Z-score. We particularly note that non-hedge fund targets have, on average, negative earnings per share and a Z-score less than 1.81, indicative of a firm facing a "high probability" of bankruptcy (Stickney, et al., 2006). Thus, it appears that, whereas hedge funds target relatively profitable, healthy firms, other activists target lower-performing companies.

These findings make an interesting comparison to those reported by Bethel et al. (1998), who find that between 1980 and 1989, activist investors were more likely to purchase large blocks of shares in firms with poor profitability. Our results support their findings when we focus on non-hedge fund activists, but are in contrast when we examine hedge fund activists. Further, our results contrast those reported by Becht et al. (2006) for the Hermes UK Focus Fund, a British-based pension fund that engaged in shareholder activism over the period 1998-2004. Becht et al. (2006) reported that Hermes professed to invest in under-performing companies, and found that 40% of their targets were in the bottom quintile of performance in the six months prior Hermes' initial investment.

Table II also presents data on discretionary spending items, for example, capital expenditures, research and development (R&D) expenditures and dividends paid to common shareholders. As the table shows, there are no qualitative differences between the hedge fund target firms and either control group. Thus, hedge funds are neither more nor less apt to target firms with above-or-below average spending on investments or dividends paid to common shareholders. In a later section of the paper, we examine if hedge fund targets increase or decrease discretionary spending in response to the activists' investments.

To explore the argument that hedge funds target firms to extract excess cash from them, either in terms of stock repurchases, increased stock dividends, or from near-future borrowings, we present data on the amounts of cash and debt capacities that hedge fund targets and the control firms have. Cash is from the firm's balance sheet and, following generally accepted accounting rules (e.g., SFAS 95), is defined as cash plus short-term interest-denominated investments with maturities of three-months or less. We include a second measure, cash plus short-term investments, the latter defined as interest-denominated investments or passive stock investments as a second measure of cash. Debt is measured as short-term (due within one-year), long-term, and total debt. All variables are divided by total assets. We calculate both actual amounts and industry-adjusted amounts, the latter defined as the firm's measure minus the industry's median measure (Shah, 1994).

As Table II shows, with the exception of the industry-adjusted cash plus short-term investment measure, cash and debt capacities for hedge funds are not statistically different than the control sample based on size and market-to-book value of equity.

However, when compared to target firms of non-hedge fund activists, we find that hedge fund targets have substantially more cash on their balance sheets, be it cash, cash plus investments, or industry-adjusted. Thus, there may be some basis to the argument that hedge funds target cash-rich companies.

With regard to firm size, the table shows that hedge funds target relatively small companies. The median assets for the targeted companies are \$208.7 million; the average assets are \$947.5 million. This compares to \$927 million for the activist block purchases between 1980 and 1989 (a full 20 years earlier than our sample) studied by Bethel et al. (1998). One interesting result in Table II is that the mean (median) number of common shares for firms targeted by hedge funds is only 38.07 (17.56) million, compared to 71.02 [22.67] million for the control sample. This makes sense in light of the fact that hedge funds accrue a relatively large percentage of the target's shares (at least 5%), which is easier to do if the company has fewer shares outstanding. We note that other activists also tend to invest in companies with small amounts of common shares outstanding.

B. Determinants of Hedge Fund Activism – Logistic Models

We examine the determinants of hedge fund activism using pooled logistic models. The observation is coded “1” if it comes from the sample of hedge fund activist targets and zero if it comes from one of the control samples. We fit the models separately for the pooled hedge fund activist/control samples and hedge fund activist/non-hedge fund activist samples.

Table III contains the statistics from the two sets of models. The data in the first two columns are the 140 targets and the 140 matched firms containing all the required

data. The last two columns contain the 140 hedge fund targets and 149 other targets. The primary explanatory variables are the market and accounting profitability measures, discretionary spending variables, and cash and debt capacity measures from the last section. We exclude R&D/Assets and CFO/Assets from the analyses because they are highly correlated with ROA and EPS. The first line in the table shows the coefficient; the bracketed number under the coefficient is its p-value from the chi-squared value.

For the pooled hedge fund target/control sample, several variables have significant predictive values. In the first and second columns, ROA is positively related to the probability of being a target at the 0.03 (0.08) level. Thus, hedge funds are more likely to target profitable firms, i.e., those with higher income. The coefficient on Z-Score is negatively related at the 0.04 (0.05) level, implying that more risky firms are more likely to be targeted by hedge funds. Cash/Assets is significantly positive at the 0.04 level in the first column, although the coefficient on the industry-adjusted measure is not significantly different from zero. Thus, there is some evidence that hedge funds target cash-rich firms. The coefficients on EPS, Capital Expenditures/Assets, Dividends/Share, and the debt capacity measures are insignificantly different from zero, indicating that these variables are not predictors of hedge fund activism vis-à-vis the matched-firm sample.

For the pooled hedge fund/non-hedge fund target firms, BHAR, the one-year abnormal return prior to the initial 13D filing date is significantly different from zero. Thus, hedge funds are more likely to target higher performing firms, where performance is defined in terms of market return. This finding is contrary in spirit to those presented by Becht et al. (2006) who find that the Hermes Focus fund targeted firms with poor

market returns prior to their intervention. Cash/Assets is also positively related to the probability of being a hedge fund target ($p=0.10$), a finding consistent with that reported for the logistic model using the other control sample.

Sensitivity and Additional Analyses

To determine the sensitivity of our results to the choice of a logistic model, we replicate our analyses using probit models. Because the cumulative normal distribution and the logistic distribution are very close to each other, except at the tails, similar results should be observed (Maddala, 1993). To examine the comparability of the two models, we examine the goodness-of-fit tests, the coefficients of the individual independent variables and their significance levels. In all cases, the significance levels of the coefficients for the logistical and probit models are comparable to each other within a 0.02 range. The goodness-of-fit measures, the log likelihood ratios, are also comparable between specifications. Following Maddala (1993), who cites Amemiya (1981), we transform the logistic estimates into approximations of the probit estimates by multiplying the logistic estimates by $1/1.6$. This transformation produces estimates that, in all cases, are within 0.01 of the point estimates for the probit models.

We also include or substitute other variables into the model. Instead of using dividends per share, we substitute a dummy variable equal to one if the firm paid a dividend in the year prior to the filing, and zero otherwise. The coefficient on this indicator variable is insignificant, and its inclusion does not alter the results reported above. We include the firm's book-to-market ratio as an additional independent variable in the logistical and probit models over the pooled activist target samples (columns 3 and

4). The variable is not significant in any of the specifications, and the reported results do not change when this variable was added to the models.

IV. Market Response to First Time Hedge Fund Activism

To gauge how the market responds to the 13D filing, we compute the abnormal share price reaction around the initial filing date. We report abnormal stock returns around two broad event periods to take into account discretions in the allowed filing date and when the information becomes publicly available. Investors are required to file a Schedule 13D with the SEC within ten days of purchasing five percent or more of any equity class of publicly-traded stock. We define the filing date, as reported in www.sec.gov, as “day zero.” We allow for both the ten day filing window and for possible prior leakage of information by beginning our event window on day -30, that is, thirty trading days prior to day zero. Many times, the 13D filing is reported in the press, either in a daily newspaper or television show, or in a weekly business journal. We allow for this broad coverage by extending our event window to either day +5, or day +30.

We report and compare geometrically-compounded size-adjusted abnormal returns for the hedge fund targets and for the two control groups.¹³ Table IV presents the stock returns for each group and parametric and non-parametric test statistics to test for differences between the hedge fund targets and each of the two control groups. We exclude firms trading on the OTC Bulletin Board and the pink sheets because CRSP does not track these returns. Missing data further reduces our sample to 136 hedge fund targets and 144 non-hedge fund targets.

¹³ Our results and conclusions are qualitatively the same when we compare raw stock returns and size-and-book-to-market-adjusted abnormal returns.

The portfolio of hedge fund targeted firms earn a mean size-adjusted return of 7.3% over the [-30,+5] window, and 10.3% over the [-30,+30] window. The medians are 5.0% for the [-30,+5] window and 8.9% over the [-30,+30] window. All means and medians are significantly different from zero at the 0.01 levels, suggesting that on the 13D filing date, the market perceives the activist agenda as a value-enhancing event. This finding contrasts with Becht et al. (2006) who report a significantly cumulative abnormal return of -2.66 ($t=-2.48$) over a [-5,+5] window surrounding the notification by the Hermes Fund of their original stakehold in their UK companies.¹⁴

In contrast, the portfolio of industry-and-size-and-market-to-book-control firms earn mean (median) size-adjusted returns of -0.3% (-0.0%) over the [-30,+5] window and 2.9% (2.0%) over the [-30,+30] window. None of these abnormal returns are significantly different from zero, indicating that our control group is taken from a randomly-selected group of firms.

Testing for differences in means between the hedge fund targets and the matched sample yield t-statistics of 3.29 and 2.89, respectively, each significantly different from zero at the 0.01 level. Testing for differences in medians yield z-statistics of 3.97 and 3.56, respectively, each statistically significant from a median of zero at the 0.01 level. Thus, the market perceives substantial benefits upon learning that a firm is targeted by a hedge fund activist.

But, are there different market reactions to hedge fund and non-hedge fund activism? To examine this question, we compare abnormal stock returns around the 13D filings for the hedge fund and non-hedge activist targets. As the last column shows, non-hedge fund activist target firms earn statistically significant mean and median returns of

¹⁴ Under UK company law disclosure rules, all investments exceeding a 3% threshold must be disclosed.

4.3% and 3.5% over the [-30,+5] window and 5.2% and 6.8% over the [-30,+30] window. Thus, consistent with Bethel et al. (1998), targets of non-hedge fund activists earn significantly positive abnormal returns surrounding the 13D filing date. Comparison between the two groups, however, reveals few differences in abnormal returns. The mean BHAR over the [-30,+30] window is significantly higher for the hedge fund targets ($t=1.94$, significant at the 0.05 level), suggesting that hedge fund targets earn higher returns than other targets. The other measures, e.g., the median BHAR over the same window and the mean and median BHARS for the shorter window, [-30,+5] produce test statistics indicating that the two groups' BHARS are not significantly different from each other.

Figure 1 presents the cumulative average abnormal returns from day -30 through day +30 for the three samples. The SEC filing rules decree that the 13D should be filed between days -10 and zero. We note, however, that for both groups of activists, the stock market reaction begins at about day -15 and that it rises steadily through day zero and slightly beyond. Thus, the news of the stock purchase appears to hit the market at least one week prior to the filing of the 13D. We further observe that the market reaction flattens out for the other activists after day +5, but that the upward stock price movement continues through day +30 for the hedge fund activists. Assuming markets are efficient, the latter result suggests that new, value-increasing information occurs after the initial filing date.

V. Consequences of Hedge Fund Activism

A. *Purposes of the Investment and Outcomes*

Table V examines the hedge fund activists' purposes for the activism as stated in the original 13D filings' "Purpose of Transaction," and the outcomes of these activist campaigns. The most prevalent agenda item is a change in the current board of directors, with the activist always asking for representation on the board. Forty-one out of the 155 purpose statements (26%) demand board representation. Twenty-nine 13D filings (19%) state that the firm should pursue alternative strategies. Eighteen (12%) and sixteen (10%) filings either oppose a merge or demand that the firm sell the company to another, many times the activist fund itself. Twelve activists profess the intention of buying more stock in the future, and the bulk of remaining stated reasons deal with cash payments to payments, corporate governance issues, or punishing the current CEO.

As Table V shows, in 60 percent of the cases, the hedge fund activist gets the firm to acquiesce to its demands. Most strikingly, the hedge fund gains representation on the target's board 31 out of 41 times, for a success rate of 73 percent. They have 100 percent success rates in getting the firm to buyback its own stock, replace the current CEO, and initiating a cash dividend. In about 50 percent of the times, the target firm changes its operating strategies, drops its merger plans, or agrees to be taken over by another company.

We interpret these percentages as evidence that hedge fund activists are extremely effective in making significant changes to their target firms. These findings are contrary to other studies; in particular, they run counter to Bebchuk's (2005b) evidence that U.S. shareholders' ability to replace the board of directors is "largely a myth." Our results, however, are consistent with Becht et al.'s (2006) study on UK shareholder activism, in

which they document the Hermes pension fund's capacity to make significant changes to its target firms, most notably board changes and asset restructurings.

Becht et al. (2006) attribute their results to legal and regulatory differences between U.S. and U.K. corporate laws with respect to shareholder voting rights and the fact that in the U.K., any shareholder can call a special or extraordinary shareholder meeting to vote on a shareholder proposal (see also Bebchuk, 2005a). Thus, the interesting question is: why are U.S. hedge funds so successful in achieving their stated purposes?

We examine this issue by tracking actual and threatened proxy fights by the hedge fund managers against the target firm. Bebchuk (2005a, 2005b), Briggs (2006) and Kahan and Rock (2006) suggest that proxy fights are the only effective weapon that an individual shareholder has in its arsenal to bring about change in the board and ultimately the firm. Becht et al. (2006) present the interesting observation that the Hermes Fund rarely called for a special meeting, but that the perceived threat that they were able to do so appears to have been a potent tool for achieving their goals.

Panel B presents data on proxy fights and threatened proxy fights for our sample of hedge funds. Proxy solicitations are from the Georgeson Shareholder website, which presents a comprehensive list of "contested solicitations" for each year in our data sample. Georgeson lists the target company, the dissident, the contested issue and also whether the dissident or management won, or whether there was a settlement between the two parties. Threatened proxy fights are from Factiva (formerly Dow Jones Interactive), and consist of all public announcements of the hedge fund planning, beginning, or threatening a proxy fight.

As the panel shows, there were 18 actual proxy solicitations. Opportunity Partners engaged in three proxy fights for our sample firms, Steel Partners II, and Santa Monica had two proxy fights, and 11 other hedge funds were involved in one proxy fight each.¹⁵ In addition, there were 42 instances of threatened proxy fights – reports in the financial press that the hedge fund activist was beginning to or threatening to begin a proxy solicitation, but never got to the SEC level of an actual solicitation. Thus, the onus of a proxy fight was evident to target’s management in 39 percent of our sample. In the remaining 95 cases (61% of the sample), there was no public information of an actual or threatened proxy fight, although we acknowledge that there might have been private correspondences between activist and the firm that we are unaware of.

Panel B also shows the success rates based on whether a proxy fight was initiated or not. Of the 18 proxy fights, the dissident achieved its 13D stated goal 13 times, and failed five times. For the 42 threatened proxy solicitations, the activist succeeded 26 times in getting its objective, but failed in 16 cases. For those firms without known proxy fights, the activist was successful in 54 cases, but was unsuccessful 41 times. To see if there is a relation between engaging in, threatening, or not engaging in a proxy solicitation and the success rate of the activist, we perform a χ^2 test. We find no evidence of a relationship between proxy fights and the rate of success, and similar to Becht et al. (2006), conclude that the perceived threat of knowing that a proxy fight can occur is a weapon that hedge fund activists use against standing management.

A perusal of the Georgeson database reveals that the vast majority of contested proxy solicitations are over board composition. In the last two columns of Panel B, we

¹⁵ These hedge funds and others engaged in other proxy fights during our sample period, but they were for firms not in ours sample, for example, against mutual funds.

present the incidence of hedge fund activists eliciting a change in the target firms' board of directors independent of whether that change is in their original purpose statement. We find that 44 percent of the 155 targets resulted in the activist getting at least one seat on the target's board of directors. Of the 68 firms, 13 were engaged in a proxy fight with the activist, 24 were threatened with a proxy solicitation, and 31 were not public recipients of a real or threatened proxy fight. A χ^2 test on the relation between groups and success rates finds no significant association between the two. Thus, as before, we conclude that the perceived threat of a proxy fight is sufficient to elicit change in the board's composition.

B. One-Year Changes in Profitability, Discretionary Spending, Capital Structure, and Cash Reserves After the Initial Target Date

Section 5 presents evidence that the stock market reacts positively to the disclosure of the 13D activist filing by a hedge fund. This implies that the market perceives the hedge fund's intervention as a value-increasing event. In Section 2, we present two mutually-exclusive hypotheses on how hedge funds could increase shareholder value. First, we propose that the hedge fund can change the company's strategic policies, thus increasing its overall profitability. If this proposition is true, then following the 13D filing, hedge fund targets should experience significant increases in ROA, ROE, EPS, and CFO/Assets. Further, if these changes in company strategies include redirections of investments, then targets should significantly alter their relative R&D and capital expenditures. We would also expect to see reductions in assets as managers shed less productive businesses and assets from their balance sheets.

Second, a hedge fund could increase shareholder value by reducing agency costs associated with the firm carrying excess cash and short-term investments. Section 4 shows that hedge funds are more likely to target cash and short-term investment rich firms. If the free cash flow hypothesis is valid, then 13D filings should be followed by increases in dividends per share to common stockholders and the companies' debt/assets ratios, as well as reductions in the number of shares outstanding and the amount of cash and short-term investments on the firms' balance sheets.

Table VI presents one-year changes in financial and market measures for both the targeted firms and the sample of matched firms. Existing Compustat data extend to December 31, 2005, reducing our sample to 136 target and 132 control firms.¹⁶ We report means and median measures for both groups, testing whether the mean or median is statistically different from zero. We also compare the two groups, determining whether the difference in means or medians is different from zero.

The mean one-year BHAR for the sample of hedge fund targets is 16.5%, which is statistically different from zero at the 0.01 level. The BHAR is 6.9% for the control group, which is statistically different from zero at the 0.05 level. Testing for the difference in the means between groups yields a t-statistic of 1.97, statistically significant at the 0.05 level. When comparing median BHARS, we get similar results. Hedge funds targets earn a median BHAR of 10.7%, compared to 2.4% for the control sample firms. The z-statistic for differences in medians is 2.26, significant at the 0.05 level. Thus, hedge fund targets earn higher abnormal returns than their control group. We note that

¹⁶ The reductions in sample sizes are due to time constraints as well as some of the firms leaving the Compustat database. We do the analyses with annual Compustat data because quarterly data are not currently available past 2004. When using quarterly data through 2004 for a smaller sample, we get qualitatively the same results as presented in Table 6.

the BHAR includes both the thirty day return reported in Table IV and dividends per share.

When examining accounting profitability, we find no evidence that the hedge fund target becomes more profitable in terms of EPS, ROA, ROE and cash flows from operations. On the contrary, there appears to be a deterioration of profitability as measured by EPS, ROA, and ROE. The (mean) median EPS drops 13.8 (7.5) cents in the fiscal year following the 13D filing, with the median being statistically different from zero at the 0.10 level. When comparing changes in EPS to the control sample, we find an increase in EPS for the control sample, and also that the median changes between the hedge fund targets and the control sample are statistically different at the 0.01 level. Hedge fund targets experience a significant drop in ROA; in contrast, the control sample's ROA increases over the same time period. The differences in mean and median between the two groups are statistically significant at the 0.05 level. ROE drops by 7.1 percent, which is significantly lower than the increase in 2.4 percent for the control sample. Thus, earnings, whether measured by earnings per share, return on assets, or return on equity deteriorate in the year following the 13D filing. We find no evidence that cash flows from operations drop in a similar manner, although we document that the control firm's median CFO (in actual dollars) increases substantially more than the sample of hedge fund targets.

The results in changes in discretionary spending show little to no changes in R&D and capital expenditures. The mean change in R&D/Assets for the hedge fund investment firms is 0.002, compared to 0.001 for the control sample. The change in Capital Expenditures/Assets for the hedge fund investment firms is 0.004, compared to -

0.002 for the control sample. Median values for all variables are equal to zero. All t-statistics and z-statistics are insignificant at conventional levels. Thus, there appears to be little redirection in the firms' investment strategies following the initial 13D filing.

In contrast, we find strong evidence that hedge fund activism reduces agency costs associated with excess cash and short-term investments. First, the mean Δ Industry-Adjusted Cash/Assets and Δ Industry-Adjusted (Cash+Short-term investments)/Assets are each negative, indicating that excess cash on hand (relative to the industry norm) drops in the fiscal year following the initial 13D filing. More telling, perhaps, testing for differences in means between the hedge fund and control groups yield t-statistics of -2.63 for cash alone, and -2.70 for cash plus short-term investments. Both t-statistics are significant at the 0.01 levels, indicating that reductions in cash holdings for the hedge fund targets are significantly different than the changes of a control sample.

Next, dividends per share rises 11.6 cents per share (median=10.0 cents per share) for the hedge fund targets – almost doubling in size from the prior period (see Table II). In contrast, the control sample's mean dividend per share rises by less than a penny per share. The difference in means is statistically significant at the 0.05 level. We also find (not tabled) that seven target firms initiate common stock dividends in the fiscal year following the 13D filing date, compared to four control firms.

Third, debt capacities, as measured by total debt or long-term debt rise significantly after the initial hedge fund investment. When examining total debt/assets, the unadjusted ratio rises by 0.016, significant at the 0.05 level, and the industry-adjusted ratio increases by 0.020, significant at the 0.01 level. Long-term debt/assets increases by 0.024 and industry-adjusted long-term debt/assets increases by 0.026; both changes are

significant at the 0.01 levels. When comparing the sample of hedge fund targets to its control group, each of these changes in debt capacity are significantly different from each other, supporting the view that following the initial 13D filing, hedge fund targets increase the amount of debt in their capital structures.

Since ROE is basically ROA times the leverage ratio for the firm (see, Stickney et al., 2006), an increase in debt coupled with a decrease in ROA will result in a relatively deep decline in ROE. As the profitability panel in Table VI shows, this is what occurs in the year following the activists' investment. For the hedge fund targets, mean ROA decreases by 1.6 percent, whereas mean ROE declines by 7.1 percent. Thus, in the short-run, the increase in debt capacity in tandem with the reduction in accounting profitability results in a significant decline in the common shareholders' accounting return.

Finally, we present changes in common shares outstanding and changes in total firm assets. We find no evidence that hedge fund target firms engage in share buybacks; in fact, they increase the number of outstanding shares by 3.75 million shares. We also find that total assets do not decline after the initial purchase, thus negating the view that target firms sell off unwanted assets at an unusual pace.

In summary, we conclude that hedge fund activism does not result in an immediate increase in the firm's accounting profitability—on the contrary, we find evidence that EPS, ROA, and ROE decline in the year following the initial 13D investment. Nor do we find that the targeted firms invest more in R&D or in capital expenditures, or that they engage in large sell-offs of unwanted assets. Thus, we present no evidence supporting the view that hedge fund activism acts as a lever to turn-around poorly-performing firms.

We do find, however, that cash on hand declines for the target firms, and that part of this cash decline can be explained by hefty increases in dividends paid to common shareholders. We also find that target firms increase the relative amount of debt in their capital structures. These findings are consistent with Jensen's (1986) free cash flow theory, and suggest that the increase in shareholder value around the 13D filing date can be attributed to an expected reduction in agency costs associated with excess cash and short-term investments on the firms' balance sheets.

VI. Summary and Conclusions

This paper examines a large, sample of hedge fund activism between January 1, 2003 and December 31, 2005. Hedge fund activism is when a hedge fund files a 13D filing after taking an initial stake of 5 percent or more in the company, and clearly states in the filing's "purpose" section that it intends to proactively influence management's future decisions.

Hedge fund activism is widespread, in terms of number of hedge funds, number of targeted firms and the firms' industries. Our 155 13D filings (and number of targeted firms) come from 36 of the 48 Fama and French (1993) industry classifications. One hundred two distinct hedge funds are investors. Most of the firms trade on the Nasdaq National Market (79), but 16 firms either trade on the OTC Bulletin Board or on the pink sheets.

We find that the market reacts favorably to the filing of the 13D. Over a 61 day period, surrounding and including the filing date, firms targeted by hedge funds activists

have a an abnormal return of 10.3%. This compares to 2.9% for the matched-firm control sample, and 5.2% for the sample of non-hedge fund activist targets.

Unlike Bethel et al.'s (1998) study that examines a sample of Fortune 500 firms targeted by activist block holders, we find that hedge funds are more likely to invest in healthy, profitable firms. The findings also contradict those reported by Becht et al. (2006) for a UK pension fund that targets “underperforming” companies.

Finally, we investigate the outcomes of the hedge fund activism, both in terms of the activists' success in achieving their goals and subsequent changes in firm performance and discretionary spending. We find that over 60 percent of the time, hedge fund activists are successful in getting existing management to acquiesce to their demands, be it representation on the firm's board, a change in strategic operations, share repurchases by the firm, scuttling an existing merger proposal, or being acquired by another firm. Further, they do not improve the accounting performances of firms in the year after the initial purchase – in fact, EPS, ROA, and ROE decline in the fiscal year after the activism. Instead, they appear to extract cash from the firm through increasing the debt capacity of the target firm and paying themselves higher dividends. The latter result, coupled with the positive stock price reaction surrounding the 13D filing date, suggests that stockholders perceive benefits to reducing agency costs associated with excess cash and short-term investments. Examination of proxy fights and threats accompanying the activist campaign suggests that hedge fund managers achieve their goals by posing a credible threat of engaging the target in a costly proxy solicitation contest.

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Table I

Descriptive Statistics

This table reports the descriptive statistics for the final sample of hedge funds and non-hedge funds activists and the target firms. Panel A summarizes the number of activists and target firms in each of the samples. Panel B summarizes the number of firms targeted in each year by the hedge fund and the non-hedge fund activists. Panel C summarizes the number of target firms over the different exchanges or markets. Panel D summarizes the different industries of the target firms. Industry is defined according to Fama and French (1997) industry classifications. Panel E summarizes the activists' initial stated reasons for targeting the firms. The information was collected from the Schedule 13D's "Purpose of Transaction" section.

Panel A: Number of Activists and Target Firms

| | <i>Hedge Fund Activists</i> | <i>Non-Hedge Fund Activists</i> |
|---|-----------------------------|---------------------------------|
| Total Number of Filings | 194 | 209 |
| Total Number of Activists | 102 | 141 |
| Total Number of Target Firms | 155 | 164 |
| Number of Firms Targeted by 2 Activists | 4 | 5 |
| Number of Firms Targeted by 3 Activists | 3 | 2 |
| Number of Firms Targeted by 4 Activists | 0 | 1 |
| Number of Activists that Target: | | |
| 1 Firm | 64 | 126 |
| 2 Firms | 17 | 11 |
| 3 Firms | 11 | 3 |
| 4 Firms | 5 | 0 |
| 5 Firms | 1 | 0 |
| 7 Firms | 1 | 1 |
| 9 Firms | 2 | 0 |
| 10 Firms | 1 | 0 |

Panel B: Number of Firms and Year of First 13D Filing

| | <i>Hedge Fund Activists</i> | <i>Non-Hedge Fund Activists</i> |
|-------------------------------------|-----------------------------|---------------------------------|
| No. of Firms Initially Targeted in: | | |
| 1995 | 1 | 0 |
| 1998 | 1 | 2 |
| 1999 | 3 | 0 |
| 2000 | 1 | 7 |
| 2001 | 3 | 4 |
| 2002 | 11 | 21 |
| 2003 | 28 | 33 |
| 2004 | 41 | 43 |
| 2005 | 66 | 54 |

Panel C: Exchange or Market Where Target Firm Trades at Time of Initial Investment

| | <i>Hedge Fund Activists</i> | <i>Non-Hedge Fund Activists</i> |
|-----------------------------|-----------------------------|---------------------------------|
| Number of firms trading on: | | |
| New York Stock Exchange | 47 | 57 |
| American Stock Exchange | 13 | 15 |
| Nasdaq National Market | 79 | 67 |
| OTC Bulletin | 7 | 12 |
| Pink Sheets | 9 | 13 |

Panel D: Industry (SIC 2 Digit Code) of Target Firm (8 or More Firms for Either Group)

| | <i>Hedge Fund Activists</i> | <i>Non-Hedge Fund Activists</i> |
|--------------------------------------|-----------------------------|---------------------------------|
| Number of firms in: | | |
| SIC 34 – Business Services | 29 | 14 |
| SIC 13 – Pharmaceutical Products | 10 | 5 |
| SIC 42 – Retail | 9 | 3 |
| SIC 43 – Restaurants, Hotels, Motels | 8 | 20 |
| SIC 44 – Banking | 8 | 19 |
| SIC 32 – Communication | 5 | 12 |

Panel E: Activists' Stated Reasons in Schedule 13D's "Purpose of Transaction"

| | <i>Hedge Fund Activists</i> | <i>Non-Hedge Fund Activists</i> |
|--|-----------------------------|---------------------------------|
| Number of Reasons in 13D filing: | | |
| Change Board of Directors' Composition | 41 | 35 |
| Firm Should Pursue Strategic Alternatives | 29 | 41 |
| Oppose a Merger | 18 | 6 |
| Sell the Firm or Merge with Another Company | 16 | 5 |
| Buy More Stock with Intention of Buying the Firm | 12 | 25 |
| Firm Should Buyback its Own Stock | 4 | 0 |
| Get List of Shareholders | 4 | 8 |
| Support Management | 4 | 4 |
| Become an Active Investor | 4 | 12 |
| Expresses Concerns with Corporate Governance | 3 | 8 |
| Replace the CEO | 3 | 2 |
| Cut CEO's Salary | 2 | 0 |
| Firm Should Pay a Cash Dividend | 2 | 0 |
| Other Reasons | 13 | 20 |

Table II

Descriptive Statistics for Hedge Fund Targets and Comparisons to Control Sample Firms and Non-Hedge Fund Activist Target Firms

This table reports descriptive statistics of firms targeted by hedge funds, firms in the control sample (based on industry-size-and-book-to-market) and firms targeted by non-hedge fund activists. For each variable the mean [median] is reported. BHAR is defined as the Buy-Hold abnormal return for the full year (365 days) previous to the filing day of the Schedule 13D (day zero). The remaining variables are the accounting data from the end of the year previous to the filing of the initial Schedule 13D taken from COMPUSTAT. EPS is earning per share adjusted for dividends and splits. ROA (ROE) is the return on asset (equity) ratio. CFO/Assets is the net cash flow from operating activities to assets ratio. Z-Score uses the Altman model to determine the likelihood of bankruptcy amongst companies. Capital Expenditures/Assets is capital expenditures less the sale of PP&E to assets ratio. R&D Expenditures/Assets is research and development expense to assets ratio. Dividends/Share is dividends per share – ex date. Cash/Assets is total cash (MM\$) to total assets ratio. (Cash + Short-term Investments)/Assets variable is cash and short term investments (MM\$) to total assets ratio. The Total Debt/Assets is the sum of the long and short term debt to total assets ratio. The Short-term Debt/Assets variable is the debt in current liabilities (MM\$) to total assets ratio. Long-term Debt/Assets is total long term debt (MM\$) to total assets ratio. Assets are total assets (MM\$) of the company. Revenues are net sales (MM\$) of the company. Market-to-Book ratio is the stock's market value to the value of total assets less total liabilities ratio. Common shares are the number of common shares outstanding. The industry-adjusted variable is the firm value's variable minus the median value for all firms in the company's Fama and French (1997) industry classification.

| | Hedge Fund Activists | Control Sample | Non-Hedge Fund Activists |
|-------------------------------|----------------------|--|--|
| Profitability | | | |
| BHARS [year -1 through 0] | 12.4% [4.0%] | 8.1% ^a [5.6%] ^b | 3.0% ^{a*} [0.5%] ^{b*} |
| EPS | 0.249 [0.275] | -0.012 [0.345] | -0.491** [0.010]** |
| ROA | 0.062 [0.088] | 0.025 [0.073] | 0.045 [0.050] |
| ROE | 0.033 [0.054] | 0.027 [0.053] | -0.004* [0.027]** |
| CFO/Assets | 0.033 [0.053] | 0.025 [0.065] | 0.032 [0.033] |
| Z-Score | 2.44 [2.47] | 2.92 [2.39] | 1.71** [1.17]* |
| Discretionary Spending | | | |
| Capital Expenditures/Assets | 0.031 [0.018] | 0.023 [0.014] | 0.027 [0.010] |
| R&D Expenditures/Assets | 0.045 [0.000] | 0.045 [0.000] | 0.035 [0.000] |
| Dividends/Share | 0.128 [0.000] | 0.136 [0.000] | 0.102 [0.000] |
| Cash and Debt Capacity | | | |
| Cash/Assets | 0.138 [0.091] | 0.120 [0.055] | 0.098*** [0.036]*** |
| Industry-Adjusted | 0.111 | 0.096 | -0.005*** |

| | | | |
|---------------------------------------|--------------------|--------------------|-------------------------|
| | [0.097] | [0.097] | [0.08]** |
| (Cash+Short-term Investments)/Assets | 0.203 [0.118] | 0.185 [0.090] | 0.143*** [0.056]*** |
| Industry-Adjusted | 0.051 [0.056] | 0.048 [0.046] | -0.157*** [0.04]** |
| Total Debt/Assets | 0.220 [0.162] | 0.231 [0.187] | 0.234 [0.162] |
| Industry-Adjusted | -0.939 [-0.462] | -0.905 [-0.431] | -0.610 [-0.250] |
| Short-term Debt/Assets | 0.049 [0.007] | 0.050 [0.015] | 0.045 [0.011] |
| Industry-Adjusted | -0.718 [-0.210] | -0.700 [-0.245] | -0.481 [-0.115] |
| Long-term Debt/Assets | 0.164 [0.096] | 0.183 [0.125] | 0.190 [0.096] |
| Industry-Adjusted | -0.185 [-0.168] | -0.178 [-0.150] | -0.123 [-0.057] |
| Firm Size and Other Attributes | | | |
| Assets (\$ millions) ^c | 947.5 [208.7] | 1,170.9 [249.0] | 927.0 [137.6] |
| Revenues (\$ millions) | 802.3 [149.4] | 902.9 [130.2] | 446.06*** [70.83]*** |
| Market-to-Book Ratio | 1.46 [1.24] | 1.72 [1.31] | 1.25 [1.08] |
| Common Shares (millions) | 38.07 [17.56] | 71.02** [22.67] | 31.93 [10.29] |
| Number of Firms | 140 | 140 | 164 |

^a (^b) Test statistic for difference in means (medians) between column's sample and sample of hedge fund activists' firms is statistically different at 0.10 level (*), 0.05 level (**) or 0.01 level (***)

Table III

Logistic Models Predicting Hedge Fund Activism

This table reports the results of two sets of logistic regressions of the firms that are targeted by hedge funds. The first set uses the firms in the control sample (based on industry-size-and-book-to-market) in addition to the firms that are targeted by hedge funds. The second set uses the firms that are targeted by non-hedge fund activists in addition to the firms that are targeted by Hedge Funds. The explanatory variables are: BHAR is the Buy-Hold Abnormal Return for the full year (365 days) previous to the filing day of the Schedule 13D (day zero). EPS is earning per share adjusted for dividends and splits. ROA is return on assets ratio. Z-Score uses the Altman model to determine the likelihood of bankruptcy amongst companies. Capital Expenditures/Assets is capital expenditures less the sale of PP&E to assets ratio. Dividends/Share is dividends per share – ex date. Total Debt/Assets is the sum of long and short tem debt to total assets ratio. Cash/Assets is total cash (MM\$) to total assets ratio. The industry-adjusted variable is the firm value's variable minus the median value for all firms in the company's Fama and French (1997) industry classification.

| | Control Group | | Non-Hedge Fund Activists | |
|--|--------------------|--------------------|--------------------------|-------------------|
| | Model I | Model II | Model I | Model II |
| Intercept | -0.268 (0.36) | 0.102 (0.62) | -0.324 (0.26) | -0.281 (0.17) |
| BHAR [year -1 through 0] | 0.043 (0.81) | 0.034 (0.84) | 0.520 (0.03)** | 0.545 (0.02)** |
| EPS | 0.031 (0.35) | 0.034 (0.31) | 0.057 (0.20) | 0.065 (0.16) |
| ROA | 1.566 (0.03)** | 1.12 (0.08)* | 0.224 (0.80) | -0.030 (0.96) |
| Z-Score | -0.057 (0.04)** | -0.052 (0.05)** | 0.024 (0.53) | 0.023 (0.50) |
| Capital Expenditures /Assets | 1.45 (0.54) | 1.283 (0.58) | 1.257 (0.57) | 1.703 (0.44) |
| Dividends/Share | -0.082 (0.85) | -0.292 (0.46) | 0.151 (0.66) | 0.198 (0.57) |
| Total Debt/Assets | 0.293 (0.60) | | 0.405 (0.45) | |
| Cash/Assets | 1.961 (0.04)** | | 1.591 (0.10)* | |
| Industry-Adjusted Total Debt/Assets | | -0.068 (0.56) | | -0.180 (0.14) |
| Industry-Adjusted Cash/Assets | | -0.391 (0.55) | | 0.838 (0.20) |
| | | | | |
| Log Likelihood Ratio | 11.55 | 8.52 | 12.20 | 31.40 |
| No. Of Observations | 140/140 | 140/140 | 140/149 | 140/149 |

*** significant at the 0.01 level; ** significant at the 0.05 level ; * significant at the 0.10 level

Table IV

Size-Adjusted Stock Returns Surrounding the Initial Schedule 13D Filing Dates

This table presents the size-adjusted stock returns surrounding the initial Schedule 13D filing dates for firms targeted by hedge fund activists, for a control group based on industry, size and market-to book ratio, and surrounding the 13D filing dates for firms targeted by non-hedge fund activists. BHAR is the Buy-Hold abnormal return for the 30 trading days prior to the filing day of the Schedule 13D (day zero) through the 5 (30) trading days after the filing day of the Schedule 13D. In addition, the table presents test statistics for differences in means (medians) between firms targeted by hedge funds, and firms in the control sample (based on industry-size-and-book-to-market), as well as firms targeted by the non-hedge fund activists.

| | Hedge Fund Activists (n=136) | Control Group (n=136) | Non-Hedge Fund Activists (n=144) |
|---|---------------------------------|--------------------------|-------------------------------------|
| BHAR[-30,+5 days] | | | |
| Mean | 7.3%*** | -0.3% | 4.3%*** |
| 25% | -1.7% | -6.9% | -4.4% |
| 50% | 5.0%*** | -0.0% | 3.5%*** |
| 75% | 13.9% | 6.9% | 15.9% |
| T-statistic for Difference in Means | | 3.29*** | 1.22 |
| [Z-statistic for Difference in Medians] | | 3.97*** | 0.79 |
| Between Hedge Fund Activists and This Group | | | |
| BHAR[-30,+30 days] | | | |
| Mean | 10.3*** | 2.9%* | 5.2%*** |
| 25% | 0.1% | -7.5% | -6.0%*** |
| 50% | 8.9%*** | 2.0% | 6.8%*** |
| 75% | 20.5% | 9.7% | 17.9% |
| T-statistic for Difference in Means | | 2.89*** | 1.94** |
| [Z-statistic for Difference in Medians] | | 3.56*** | 1.42 |
| Between Hedge Fund Activists and This Group | | | |

*** significant at the 0.01 level; ** significant at the 0.05 level ; * significant at the 0.10 level

Table V

Outcomes of Hedge Fund Activism

This table reports descriptive statistics for the outcomes of the hedge fund activism. Panel A summarizes the hedge fund activists' purposes for the activism as stated in the original 13D filings' "Purpose of Transaction," and the outcomes of these activist campaigns (and the percentage of success). Panel B summarizes the relation between the proxy fight/publicly threatens/non publicly threaten and the outcomes of the activist campaigns. Panel B also describes the relation between the proxy fight and the success in gaining a seat(s) on the target firm's board.

Panel A: Stated Purposes in Schedule 13D's "Purpose of Transaction" and Success Rates of Achieving Their Stated Goals

| <u>Purpose</u> | <u>Num of Firms</u> | <u>Num of Successes (%)</u> |
|--|---------------------|-----------------------------|
| Change Board of Directors' Composition | 41 | 30 (73%) |
| Firm Should Pursue Strategic Alternatives | 29 | 14 (48%) |
| Oppose a Merger | 18 | 10 (56%) |
| Sell the Firm or Merge with Another Company | 16 | 9 (56%) |
| Buy More Stock with Intention of Buying the Firm | 12 | 7 (58%) |
| Firm Should Buyback its Own Stock | 4 | 4 (100%) |
| Get List of Shareholders | 4 | 2 (50%) |
| Support Management | 4 | 2 (50%) |
| Become an Active Investor | 4 | 4 (100%) |
| Expresses Concerns with Corporate Governance | 3 | 1 (33%) |
| Replace the CEO | 3 | 3 (100%) |
| Cut CEO's Salary | 2 | 1 (50%) |
| Firm Should Pay a Cash Dividend | 2 | 2 (100%) |
| <u>Other Reasons</u> | <u>13</u> | <u>4 (31%)</u> |
| Total Number | 155 | 93 (60%) |

Panel B: Relation Between Proxy Fights and Success of Activist in Achieving Their Goal and Obtaining at Least One Seat of the Target Firm's Board of Directors

| | Achieve Goal? | | | Gain at Least One Seat on Target's Board? | |
|-----------------------|----------------------|-----------------|-----------------|--|-----------------|
| | <u>Num</u> | <u>Yes</u> | <u>No</u> | <u>Yes</u> | <u>No</u> |
| Proxy Fight | 18 (12%) | 13 (72%) | 5 (28%) | 13 (72%) | 5 (28%) |
| Threaten Proxy Fight | 42 (27%) | 26 (62%) | 16 (38%) | 24 (57%) | 18 (43%) |
| <u>No Proxy Fight</u> | <u>95 (61%)</u> | <u>54 (57%)</u> | <u>41 (43%)</u> | <u>31 (33%)</u> | <u>64 (67%)</u> |
| Total | 155(100%) | 93 (60%) | 62 (40%) | 68 (44%) | 87 (56%) |

Table VI

Changes in Profitability, Discretionary Spending, Cash, and Debt Capacities in the Fiscal Year Following the Hedge Fund Investment for the Target and Matching Control Firms

This table reports descriptive statistics of the changes in market and accounting measures between the fiscal year prior and following the filing of the schedule 13D. BHAR is the Buy-Hold abnormal return for the full year (365 days) following the filing day of the Schedule 13D (day zero). The remaining variables are the differences between the accounting data from the end of the year following minus the accounting data from the end of the year previous to the filing of the initial Schedule 13D. EPS is earning per share adjusted for dividends and splits. ROA (ROE) is return on assets (equity) ratio. CFO is cash flow from operating activities (MM\$). CFO/Assets is net cash flow from operating activities to assets ratio. Capital Expenditures/Assets is capital expenditures less the sale of PP&E to assets ratio. R&D Expenditures/Assets is research and development expenses to assets ratio. Dividends/Share is dividends per share – ex date. Cash/Assets is total cash (MM\$) to total assets ratio. (Cash + Short-term Investments)/Assets variable is cash and short term investments (MM\$) to total assets ratio. Total Debt/Assets is the sum of long and short-term debt to total assets ratio. Short-term Debt/Assets is debt in current liabilities (MM\$) to total assets ratio. Long-term Debt/Assets is the total long term debt (MM\$) to total assets ratio. Common shares are the number of common shares outstanding. Ln(assets) is the natural logarithm of total assets (MM\$) of the company. The industry-adjusted variable is the firm value's variable minus the median value for all firms in the company's Fama and French (1997) industry classification.

| | Hedge Fund Target Firm Mean [Median] | Control Firm Mean (Median) | T-value (Z-Score) for Differences in the Mean |
|-----------------------------------|--|-------------------------------------|--|
| Profitability | | | |
| BHAR [year 0 through +1] | 16.5%*** [10.7%]*** | 6.85%** [2.41%]** | 1.97** [2.26]** |
| ΔEPS | -0.138 [-0.075]* | 0.273* [0.080]* | -1.18 [-2.43]*** |
| ΔROA | -0.016** [-0.006]** | 0.014 [0.003] | -2.49** [-2.13]** |
| ΔROE | -0.071** [-0.022]* | 0.024 [0.028] | -2.21** [-2.22]** |
| ΔCFO (\$millions) | 3.385 [2.135] | 17.535** [10.04]** | -1.40 [-2.34]*** |
| ΔCFO/Assets | -0.001 [-0.0002] | 0.005 [0.000] | -1.21 [-0.10] |
| Discretionary Spending | | | |
| ΔCapital Expenditures/Assets | 0.004 [0.000] | -0.002 [0.000] | 1.32 [1.21] |
| ΔR&D Expenditures/Assets | 0.002 [0.000] | 0.001 [0.000] | 0.58 [0.29] |
| ΔDividends/Share | 0.116*** [0.100]*** | 0.009* [0.000]* | 2.47** [0.90] |

| Cash and Debt Capacity | | | |
|---|--|---|--|
| Δ Cash/Assets | -0.013 [*] [0.000] | -0.003 [0.000] | -0.91 [-0.46] |
| Δ Industry-Adjusted | -0.096 ^{**} [0.001] | -0.049 ^{**} [0.004] [*] | -2.63 ^{***} [-0.98] |
| Δ (Cash+Short-term Investments)/Assets | -0.009 [-0.004] | 0.000 [0.000] | -0.59 [-0.68] |
| Δ Industry-Adjusted | -0.201 ^{***} [-0.001] | -0.045 ^{**} [0.002] | -2.70 ^{***} [-0.33] |
| Δ Debt/Assets | 0.016 ^{**} [0.001] | -0.001 [0.000] | 1.72 [*] [1.59] |
| Δ Industry-Adjusted | 0.020 ^{***} [0.004] ^{***} | 0.001 [-0.000] | 1.91 [*] 1.92 [*] |
| Δ Long-term Debt/Assets | 0.024 ^{***} [0.046] ^{***} | -0.005 [0.000] | 2.92 ^{***} [3.22] ^{***} |
| Δ Industry-Adjusted | 0.026 ^{***} [0.006] ^{***} | -0.004 [-0.0006] | 2.94 ^{***} [3.30] ^{***} |
| Δ Short-term Debt/Assets | -0.007 [*] [0.000] | 0.004 [0.000] | -2.13 ^{**} [-0.73] |
| Δ Industry-Adjusted | -0.006 [0.000] ^{**} | 0.005 [0.0003] | -2.02 ^{**} [-0.50] |
| Firm Size | | | |
| Δ Common Shares | 3.75 ^{**} [2.01] ^{**} | 5.01 [*] [4.83] [*] | 1.88 [*] [1.23] |
| Δ Ln(Assets) | 0.006 [0.026] | 0.048 ^{**} [0.041] ^{***} | -1.46 [-1.34] |

*** significant at the 0.01 level; ** significant at the 0.05 level ; * significant at the 0.10 level

Figure 1

Cumulative Average Abnormal Returns

Graphical illustration of the Cumulative Average Abnormal Returns from Day -30 through Day +30, for the three samples.

