The Value of Takeover Defenses: Evidence from Exogenous Shocks to Closed-End Mutual Funds

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Abstract

This paper offers the first study of the shareholder welfare effects of poison pills and control share acquisition statutes in a design that can support causal inference. We perform a series of event studies on four court decisions and SEC actions between 2004 and 2010 that affected the legality of poison pills and control-share acquisition statutes under the Investment Company Act of 1940. We examine in particular how these events affected the stock prices of closed-end investment funds, which are regulated by the Investment Company Act, and which face constant pressure from hostile takeovers. We show that as takeover defenses became more legal, closed-end fund stock prices increased, and as takeover defenses became less legal, closed-end fund stock prices decreased. In other words, we find that in closed-end funds, shareholders liked the poison pill.

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1. INTRODUCTION

For more than a generation, the implications of takeover defenses for the welfare of corporate shareholders have been the subject of intense debate by researchers and lawmakers. On the one hand, some have argued that laws that allow managers to resist takeovers tend to coddle ineffective managers and increase agency costs and managerial slack. (Easterbrook & Fischel, 1981; Gilson, 1981.) Others contend that takeover defenses arm boards with valuable bargaining power in negotiations with acquirers. (Lipton, 1979.) Considerable empirical work has been generated on both sides, with each side contending that the data support their view.

It is now well understood, however, that the empirical evidence on the value of takeover defenses is limited in two ways. First, a firm’s decision to adopt a takeover defense is endogenous—that is, it is influenced by firm-specific circumstances that make it hard to distinguish correlation from causation. If a firm adopts a takeover defense and the firm’s performance subsequently declines, we cannot say whether the decline is a response to the takeover defense, or whether the takeover defense is a response to the expected decline. A second limitation of the existing empirical evidence is that, for certain takeover defenses, it has been almost impossible to find variation to study statistically. This is because, as John Coates famously observed, every corporation can be understood to have certain “shadow defenses”—that is, the legal power to adopt antitakeover devices immediately upon detecting the approach of an unwanted activist (Coates, 2000). This is especially true of the poison pill. Since every firm can adopt a poison pill on a few hours’ notice, it is as though every firm already has one.

These factors combine to make empirical research on takeover defenses extremely challenging. Catan and Kahan (2016) have recently shown in an extensive literature review spanning decades of published research that the existing empirical work on takeover defenses
has drawn its causal inferences improperly. What we need in order to draw causal conclusions about the effects of takeover defenses, these authors have explained, is an exogenous change to the law of takeover defenses. Unfortunately, little work has been done to examine the effects of exogenous changes, because these kinds of changes are extremely rare and hard to spot.¹

In this Article, we, however, we identify just such a change. We examine, specifically, four separate unexpected changes to the law of takeover defenses in a peculiar class of company called a closed-end fund (CEF). Like an open-end mutual fund, a closed-end funds is a pool of stocks, bonds and other investment assets that issues shares to the general public. Unlike an open-end mutual fund, however, a closed-end fund does not allow its shareholders to redeem their shares. A CEF locks in its capital like an ordinary company. A CEF’s investors can thus buy and sell their shares on a stock exchange, but they cannot require the fund to redeem their shares for cash.

One of the peculiar results of this share trading system is that CEFs attract hostile takeover attempts with unusual intensity and frequency. CEF shares have a tendency to trade at prices below the liquidation value of the assets that underlie them. You can pay $100 for a share that represents $105 worth of portfolio investments. This tendency to trade at a discount attracts hostile acquirers, because a discount transforms a CEF into an easy profit opportunity: an acquirer can buy shares at $100 and then use its control to liquidate the assets that underlie those shares at $105. Anti-takeover defenses are thus especially important to a CEF’s survival (Bradley, Brav, Goldstein and Jiang, 2010).

¹ There are two important recent exceptions. First, recent work by one of us (Cremers & Ferrell, 2014) used the Delaware Supreme Court’s well-known decision in Moran v. Household International, 500 A.2d 1346 (Del. 1985), as an exogenous shock to corporate governance, finding that restrictions on shareholder rights were associated with lower firm value only after the Court in Moran approved the use of the pill. Second, Alma Cohen and Charles Wang recently used the Delaware Chancery and Supreme Courts’ rulings in the takeover battle involving Airgas Inc., which arguably strengthened the antitakeover effects of staggered boards. These authors found that the Airgas decisions were associated with lower firm value (Cohen & Wang, 2014). Neither of these studies, however, directly examines the value implications of the poison pill.
In most public companies, takeover defenses are governed by a body of state law that has remained static for decades. CEFs, however, are governed by federal law in addition to state law, and this federal law has changed dramatically in recent years. Prior to 2004, practitioners in the field widely believed that the Investment Company Act prohibited CEFs from adopting the poison pill, or relying on state antitakeover statutes, to turn away hostile acquirers. But between 2004 and 2010, a series of events threw the law of takeover defenses for CEFs into considerable doubt. These changes offer the kind of exogenous shock to the law of takeover defenses that permits valid causal inferences about the effects of defenses on firm value. In this study, we examine four specific events: a pair of federal district court opinions in 2004 and 2007 and a pair of pronouncements by the Securities and Exchange Commission (SEC) in 2009 and 2010. The district court opinions uphold takeover defenses as being consistent with the ICA. The SEC pronouncements attacked takeover defenses as being inconsistent with the ICA. Using standard event-study methodology, we examine the share-price effects of each of these exogenous changes in the law. We find strikingly consistent evidence that the validation of takeover defenses had a positive effect on CEF share prices, and that the SEC’s interventions, which returned takeover defenses to their previous illegal status, had a negative effect. After market participants learned from two district court decisions that CEFs could use poison pills and state antitakeover laws to defend against hostile attacks, share prices at CEFs rose. After the market learned about the two SEC events, share prices at CEFs fell. Our results are robust to a variety of specifications, including the choice of event window, different approaches to calculating abnormal returns, adjusting for different investment-fund styles, controlling for the presence of staggered boards and, controlling for state of incorporation. Taken together, these four events tell a clear and

2 This claim is based on extensive conversations with leading CEF practitioners.
compelling story: closed-end fund shareholders believed that giving CEFs the ability to defend themselves against activist attacks increased the value of the funds’ shares, while denying CEFs that freedom decreased the value of the funds’ shares.

The economic magnitude of these effects is significant. We estimate that, in response to the two district court decisions suggesting that CEFs may use takeover defenses, funds’ share prices rose by an average of between 15 and 46 basis points on a benchmark-adjusted basis. Conversely, in response to the SEC’s two interventions indicating that takeover defenses were illegal at CEFs, share prices fell by between 18 and 43 basis points. These findings indicate that investors viewed takeover defenses at CEFs to have significant implications for the value of the funds.

To be sure, because of the unusual nature of CEFs and their investors, it is far from clear that our findings are generalizable to settings beyond closed-end funds. In particular, we do not assert that these findings extend to the ordinary public companies on which the takeover defense literature has focused. CEFs are unusual firms with unusual regulatory regimes, share pricing patterns and business models, and it is not obvious whether takeover defenses should be more or less valuable in these firms than in other firms.

Nevertheless, we think this study offers a valuable contribution to the large and growing literature on the value effects of takeover defenses.\(^3\) Perhaps no single issue in corporate law debate has attracted more attention than the value of takeover defenses. Yet the challenges in drawing causal inferences about the effects of these defenses have remained frustratingly persistent, leading to questions about the methodological soundness of much research in the field. For that reason, a study offering clear causal inferences provides valuable information,

\(^3\) Even in the narrow context of CEFs, a cleanly identified examination of the value implications of takeover defenses is important, particularly in light of recent work (Souther 2015) establishing associations, but not causal relationships, between closed-end fund governance and value.
even if it applies only in a unique context. We hope that this work, by providing a cleanly identified understanding of the value effects of antitakeover devices for a narrow set of firms, will make an important step toward understanding of the effects of takeover defenses more generally.

The paper proceeds as follows. Part 2 provides institutional background on CEFs, the circumstances under which they are subject to hostile takeover attempts, and the funds’ use of takeover defenses in response. Part 3 describes our event-study setting, detailing the four events that exogenously altered the legality of takeover defenses at CEFs. Part 4 describes our data and methodology. Part 5 describes our results. Part 6 briefly concludes.

2. INSTITUTIONAL BACKGROUND

2.1 Closed-End Funds and Hostile Attacks

Closed-end funds are frequently the targets of hostile acquisitions. In this section, we describe the reasons why investors pursue hostile approaches at CEFs and offer descriptive statistics on the investors’ tactics and objectives.

The basic strategy of many closed-end fund activists is to arbitrage the difference between the price at which a closed-end fund’s shares trade on a stock exchange and the value of the portfolio securities that underlie those shares. This strategy works, because closed-end funds tend to trade at a discount to their net asset values, or NAVs. A fund’s NAV is the value of the portion of the fund’s portfolio that corresponds to each share. So, for example, a fund’s shares might trade at a price of only $95 per share on the New York Stock Exchange, even when its NAV is $100 per share. The idea of much of the activism in closed-end funds is to buy a share in a fund like this one at $95 and then somehow gain access to the $100 worth of portfolio investments that underlie the share.
To understand how activists try to implement this strategy, we begin by hand-collecting information from every Schedule 13D ever filed by an outside investor in a closed-end fund. We include all filings between June of 1995, when the EDGAR system first began placing these filings online, and September of 2015, when we commenced our data collection efforts. We examined a total of 4,985 filings. From among these filings, we identified 361 unique instances in which an investor or group of investors disclosed an intention to push for specific changes at a particular fund. Some of the attempts at activism disclosed in the 13Ds involved an informal request by an activist that called on a board to implement certain changes. Other disclosures threatened more formal action, expressing an intention to initiate a formal shareholder vote or run a proxy campaign on a set of specific proposals.

Investors requested several different types of reforms. For the 361 filings that made at least one specific request, Table 1 below describes the proportion that requested each of various specific reforms.

[Insert Table 1 Here.]

The most well known way to arbitrage the difference between a closed-end fund’s share price and its NAV is to force the fund to go open-end. This works, because when a fund goes open-end, it must redeem its shares for a cash amount equal to NAV. A shareholder who buys on the stock market at a price below NAV can thus obtain NAV by redeeming. Of the 361 unique instances in which an investor made at least one specific request or proposal, 8.5% involved an attempt to convert a fund to an open-end format. This is consistent with evidence assembled by

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4 As at all public companies, investors in CEFs who obtain beneficial ownership of 5% or more of the company’s outstanding shares must file a Schedule 13D describing their identity, ownership, and intentions. An investor must amend its Schedule 13D if to provide details if its beneficial ownership changes.
5 Many investors filed several amendments to their 13Ds. If we count each subsequent amendment in addition to each initial filing in a particular fund by a particular group of investors, we end up with 716 total filings that disclose an intention to request reforms.
Bradley, Brav, Goldstein and Jiang (2010), who analyze news reports of closed-end fund activism attempts and suggest that many activists try to force CEFs to go open-end. Note that these authors also show that the size of the discount between the share price and NAV is a significant determinant of such attempts.

Another strategy that is less studied than open-ending but more common in our data is for an activist to cause a fund to self-tender for its own shares at a price close to NAV. This has an effect similar to open-ending, by causing a fund to liquidate some of its assets in order to repurchase some of its shares. Our data show that 12.1% of the 13D filings that proposed activism tried to encourage a fund to pursue a self-tender. Another common strategy was simply to try cause a fund to liquidate entirely, selling off all of its assets and distributing the cash to shareholders. Our data show that 7.2% of the Schedule 13Ds that attempted activism tried to get a fund to completely liquidate.

Interestingly, we also find that arbitrage is not the only form of activism in closed-end funds. In addition to trying to force funds to give up cash, investors also occasionally attempt a number of other kinds of reforms. A very significant proportion of these investors seek termination of the fund’s advisory agreement (18.6%). Still more investors seek other corporate-governance changes (43.8%). These other corporate governance changes included a wide array of proposals, such as eliminating a staggered board and changing a fund’s investment strategy.

2.2 **Takeover Defenses and the Investment Company Act**

Closed-end funds adopt a variety of defenses against these forms of hostile activism. In this study, we examine two such defenses: poison pills and state control-share acquisition statutes. Poison pills, which are often known more formally as “shareholder rights plans,” deter takeovers by diluting hostile acquirers’ interests. When a hostile acquirer buys more than a
certain percentage of stock, a pill requires a company to issue stock at a discounted price to all of the company’s shareholders except the acquirer. Because the acquirer is excluded, the effect of triggering the pill is to dilute the acquirer’s holdings in both percentage and value.

The second antitakeover defense we consider is a state control share acquisition statute. Control share acquisition statutes appear in the corporation codes of about 27 states. (Bebchuk & Cohen, 2002.) The details of these statutes vary from state to state, but the general principle is that an acquirer who purchases shares in excess of a certain percentage may not vote any shares in excess of that percentage unless the acquirer receives permission from the company’s board of directors in advance of the acquisition or a supermajority of the company’s other shareholders after the acquisition. Though a board of directors has the authority to waive the statute or approve an acquisition, a board will ordinarily refuse to do this in the context of a hostile attack. Thus, most observers agree that these statutes impose a significant burden on acquirers seeking to obtain control from incumbent directors. Note that some of these statutes apply by default, and others require a company to expressly opt in.

When Congress first adopted the Investment Company Act of 1940, it did not have poison pills and control share acquisition statutes in mind, because these defenses had not yet been invented. Nevertheless, many people have subsequently interpreted the ICA to prohibit both of these defenses. Poison pills are arguably inconsistent with the ICA for two reasons. First, section 18(d) of the ICA imposes a non-discrimination rule in the issuance of shares: a fund cannot issue warrants or rights to purchase shares unless these rights are issued “ratably” to all holders of a particular class of securities. Poison pills arguably violate this provision by preventing a hostile acquirer from purchasing shares at the same rate as other shareholders when

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6 Section 18(d) provides: “It shall be unlawful for any registered management company to issue any warrant or right to subscribe to or purchase a security of which such company is the issuer, except in the form of warrants or rights . . . issued exclusively and ratably to a class or classes of such company's security holders.”
a poison pill is triggered. Second, section 18(d) says that any subscription right to purchase a share in a CEF must expire “not later than one hundred and twenty days after [the] issuance” of that right. This provision arguably requires a fund to terminate a poison pill within four months of the time it adopts it.

The ICA also arguably restricts state control-share acquisition statutes. Section 18(i) of the ICA imposes an equal voting rule. It says that every share of stock issued by a closed-end investment fund “shall...have equal voting rights with every other outstanding voting stock.” Control share acquisition statutes arguably violate this rule by preventing hostile acquirers who cross the triggering threshold from voting their shares on the same terms as other shareholders.

2.2 Motivations for Takeover Defenses

We can imagine a number of reasons why a fund might adopt a takeover defense. Some of those reasons revolve around the interests of advisers. An adviser might want to avoid a hostile acquisition, for example, because an acquirer might try to terminate a fund’s contract with its adviser. An adviser may also wish to avoid a hostile acquisition, because an acquirer may reduce the adviser’s fees by forcing the fund to liquidate and distribute some of its assets. Since advisers tend to charge fees as a percentage of their funds’ total assets, a fund that has fewer assets will tend to generate fewer fees. Directors might be expected to take advisers’ concerns seriously, because at the time a fund is initially formed, its directors tend to be selected and appointed by the adviser.

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7 Section 23(b) of the ICA adds to this rule, providing that a fund cannot issue shares at less than NAV unless the issuance complies with the nondiscrimination rule in Section 18(d). Section 23(b) provides: “No registered closed-end company shall sell any common stock of which it is the issuer at a price below the current net asset value of such stock,” although Section 23(b)(4) supplies an exception where the stock is “issued in accordance with the provisions” of Section 18(d).
8 Section 18(i) provides, in relevant part: “[e]xcept as provided in subsection (a) of this section, or as otherwise required by law, every share of stock hereafter issued by a registered management company . . . shall be a voting stock and have equal voting rights with every other outstanding voting stock.”
Advisers are not the only people who stand to gain from takeover defenses, however. Shareholders may benefit as well. Takeover defenses may help shareholders by serving as a bonding device to ensure shareholders that a fund’s directors and adviser will maintain a specific investment strategy that the shareholders want. Takeover defenses may also protect shareholders from the costs of liquidating a fund’s portfolio. Liquidating a fund’s portfolio to pay for share redemptions or tender offers may harm shareholders by requiring a fund to sell illiquid assets at fire sale prices. A forced liquidation might also harm shareholders by requiring a fund to realize tax liabilities earlier than it otherwise might. If a fund sells off investments that have appreciated in value, it will have to pay income tax on the appreciation. These concerns about forced liquidation may be especially important in closed-end funds, because one of the appeals of the closed-end format relative to the open-end format is that it avoids the need to liquidate assets. Unlike open-end funds, closed-end funds do not have to maintain cash and liquidate assets in order to fund share redemptions.

3. SETTING

3.1 Events Affecting the Legality of Takeover Defenses at Closed-End Funds

Before 2004, legal practitioners and industry observers widely believed that poison pills and control share acquisition statutes were prohibited by the ICA. Prior to this time, no closed-end fund that we know of had ever adopted a poison pill or used a control share acquisition statute during a takeover battle, even though hostile takeover attempts against closed-end funds were common. Our informal conversations with practitioners indicate that many practicing

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9 An activist seeking to open-end a CEF can profit even where a fire sale of the fund’s assets results from open-ending so long as the fund’s NAV after such a fire sale exceeds the acquisition price of the activist’s stake. Particularly given the significant gap between the price of CEF shares and the fund’s NAV, causing a fire sale can be a profitable strategy for the activist, even though those profits would come at the expense of other shareholders.
lawyers strongly believed poison pills and control share statutes were illegal before 2004—or, at a minimum, that the validity of these devices was deeply uncertain.

In 2004, however, a federal court case in Maryland raised significant doubts about this prevailing wisdom. The court’s ruling, and the events that followed, resulted in four exogenous changes to the perceived legality of poison pills and control share statutes. Each of these events, and their effect on the legality of poison pills and control share statutes in CEFs, is summarized in Table 2.

[Insert Table 2 Here.]

**Event 1**

The first event we study involved Maryland district court’s initial ruling. During the fall of 2004, a set of trusts controlled by Stewart Horejsi, a professional activist investor who specializes in taking over closed-end funds, commenced a tender offer for shares of the Neuberger-Berman Real Estate Income Fund. Horejsi and his affiliates acquired 10.05% of the fund’s common stock in open market transactions. Horejsi and his affiliates then disclosed an intent to acquire a majority stake in the fund, remove the fund’s directors and then appoint Horejsi’s own affiliates as the fund’s advisors and administrators.

In response to the tender offer, the fund’s board adopted a poison pill, setting the trigger threshold just above Horejsi’s ownership level, at 11%. The board also passed a resolution opting in to the Maryland Control Share Acquisition Act (MCSAA). The MCSAA is a standard control-share acquisition statute that disables the voting rights of any shares that would entitle a single acquirer and its affiliates to control more than 10% of a company’s outstanding equity securities unless the acquirer receives approval from the company’s board beforehand or from a 2/3
majority of the other stockholders afterward.  

Although the MCSAA applies to most Maryland corporations by default, it does not apply by default to CEFs registered under the ICA, because of the doubts about the MCSAA’s legality in closed-end funds. Nevertheless, the statute permits the board of a CEF to opt-in by adopting an appropriate resolution.

After the fund adopted its takeover defenses, Horejsi and the fund sued each other. Horejsi claimed that the fund’s poison pill violated section 18(d) of the ICA and that the fund’s decision to opt into the MCSAA violated section 18(i) of the ICA. Horejsi also argued that the MCSAA did not apply to him, because the MCSAA included a grandfather clause that exempted stockholders who had acquired shares before a company opted into the statute. In an opinion issued on October 28, 2004, the court upheld the poison pill against the ICA challenge. The court also concluded that the grandfather clause exempted Horejsi from the MCSAA. Because Horejsi was exempted from the MCSAA, the court did not reach the question of whether the MCSAA was consistent with the Investment Company Act.

Technically, the court’s opinion applied only to Horejsi and the Neuberger Berman fund. As a trial-court judgment, the opinion did not establish the law in all jurisdictions nationwide. The event nevertheless significantly affected the market’s perception of the legal validity of poison pills at CEFs. Because practitioners had previously thought that pills were unlikely to be legal in this context, the court’s clear statement that pills were available to CEFs significantly increased investors’ estimation of the odds that other funds would be allowed to use the pill as well.

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10 The relevant provisions are Sections 3-701 through 3-710 of the Maryland Corporations and Associations Code.
11 Maryland Corporations and Associations Code § 3-702(c)(4).
12 Specifically, this clause provided that the MCSAA did not apply to shareholders who were shareholders at the time a fund opted into the statute’s application.
The court issued its opinion on October 28, 2004. However, because the opinion did not appear on the federal courts’ PACER web site until 5:23 pm—i.e., after the stock markets had already closed that day—we take the following day, October 29, 2004, as the first day of our event window for purposes of this event. News coverage of the opinion was thin and the few news reports we could find about the opinion dribbled out slowly. However, closed-end fund investors and practicing lawyers we have talked with insist that the Neuberger-Horejsi takeover battle was closely followed by people in the industry. In particular, investors who specialize in closed-end funds said that they downloaded the opinion from the federal courts’ PACER web site and read it almost as soon as it appeared.

**Event 2**

After the ruling, Horejsi continued his attack on the Neuberger fund, extending his tender offer for several more years, up through the summer of 2007. The fund’s board refused to yield, however. Because Section 18(d) of the ICA limits the duration of warrants in closed-end funds, the fund’s board repeatedly renewed its poison pill every 120 days from the fall of 2004 up through the spring of 2007. Horejsi and his allies eventually challenged this practice in the same district court in which they had previously sued the fund, arguing that this serial renewal of the pill violated the spirit of section 18(d)’s limit on the duration of closed-end fund subscription rights.

On March 30, 2007, the court issued, without elaboration, a brief order saying that it would deny in part and grant in part the parties’ cross-motions for summary judgment. The court then issued a more detailed judgment order two weeks later, on April 15, 2007, in which it identified which claims were being denied and granted without explaining the reasons why. On May 9, 2007, the court issued a full opinion explaining both its decisions and its reasoning.
The court reached two conclusions. First, the court strengthened the legality of the poison pill by holding that the Neuberger-Berman fund’s serial renewal of the pill did not violate Section 18(d) of the ICA. Second, the court squarely held that the MCSAA did not violate the ICA. The court had to rule on the legality of the MCSAA, because the grandfather clause that had earlier exempted the shares Horejsi purchased prior to the time the fund opted into the MCSAA in 2004 did not cover additional shares that Horejsi purchased subsequently.

The gradual release of the district court’s decision in three different orders gives us an array of different possible dates to choose as the date of this second event. We think the best date is the release of the first order. Although the first order did not explain the court’s reasoning, this order revealed the likely outcome of the case, and so it probably provided the key piece of information that the markets were waiting for. Because the first order was not released until after the markets had already closed on Friday, March 30, 2007, we take the next stock market trading day, Monday April 2, as the first date of our event window for this the second event.

**Event 3**

Two and a half years after the Maryland court issued its second opinion, the Securities and Exchange Commission intervened. On November 12, 2009, Andrew J. Donohue, then Director of the SEC’s Division of Investment Management, gave the keynote address at the Investment Company Directors Conference in Amelia Island, Florida. The conference was organized by the Independent Directors Council, a nonprofit organization dedicated to educating independent directors of mutual funds and closed-end funds. In his address, Donohue criticized the use of poison pills and control share statutes in CEFs and expressly disapproved of the Maryland district court’s holdings. Donohue reiterated the same arguments that Horejsi had made in the Neuberger-Berman litigation, arguing that, in his view, the use of poison pills by

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13 Mr. Donohue is now the Commission’s Chief of Staff.
closed-end funds violated Sections 18(d) and 23(b) of the ICA. Donohue also attacked the MCSAA and similar statutes, saying they ran afoul of Section 18(i) of the ICA. Donohue made no specific threats of enforcement, but he nevertheless said that under the ICA, “I believe it could be very difficult for fund counsel to advocate for, or fund directors to approve, a fund's use of a poison pill and the restrictions on the voting shares of a dissident shareholder.”

Like the Maryland district court opinions, Donohue’s speech took a few days to produce news stories. Professional investors and others with a strong interest in the closed-end fund industry nevertheless noticed Donohue’s speech almost immediately. From conversations with those who were in the room during Donohue’s speech, we understand that his remarks produced a chaotic scene, with some audience members angrily arguing with Donohue while others rushed out of the room to make phone calls to colleagues and investors. All of the professionals we have spoken with conveyed the strong view that news of Donohue’s speech spread quickly among industry observers.

Because Donohue’s speech was an informal statement of a personal position, its effect on the law might seem weak or doubtful. The professional investors and industry observers we have spoken with, however, say that for all practical purposes, Donohue’s speech ended the use of poison pills and control share statutes in CEFs. These observers argue that no sensible board of directors would run afoul of the SEC regarding the interpretation of the ICA. They note further that a mere phone call from the SEC—even without any formal action—would be enough to force a closed-end fund board to abandon the use of a poison pill or control-share statute in a takeover battle. 14

14 Jim Hanks, a leading closed-end fund defense lawyer, has argued along with his colleagues that the legality of the poison pill and control-share statutes technically remains open for debate even after Donohue’s speech. (Hanks, Leber and Carmell 2010.) He contends that, if a CEF board were sufficiently motivated to litigate with the SEC on these questions, the board might very well prevail for the same reasons that the Neuberger-Berman fund prevailed
For this third event, we choose November 12, 2009 as the start of our event window. This was the date that Donohue gave his speech. Since he gave the speech at lunchtime, the markets may well have had time to react that same day.

**Event 4**

The final event we study is the public refusal by the SEC staff to issue a no-action letter. Like most people in the CEF industry, Horejsi had heard Donohue’s speech and wanted to be certain about how strongly the SEC stood behind it. Thus, on November 12, 2010, Horejsi caused another fund that he already controlled, the Boulder Total Return Fund, to send a no-action letter request to the SEC asking if the fund could opt into the MCSAA. In the letter, the fund set out the arguments against the MCSAA, explaining why the statute violated the ICA and arguing that the fund should not be allowed to opt into the statute’s protections. The staff of the Office of Chief Counsel of the SEC’s Division of Investment Management replied three days later on November 15, 2010 by posting a letter to the SEC’s website. In the letter, the staff agreed with the fund, offering a lengthy, intricately reasoned opinion explaining in detail why it believed the MCSAA violated Section 18(i) of the ICA. The letter concluded by saying that “the Fund, by opting into the [MCSAA], would be acting in a manner inconsistent with Section 18(i) of the Investment Company Act.”

The legal effect of this letter was probably smaller than that of the other events we study here. The letter simply restated the position that Donohue had already staked out in his speech a year earlier. Nevertheless, the letter did confirm the SEC staff’s position in a more formal way and reiterated the Division of the Investment Management’s commitment to the issue. Since the

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against Horejsi. Even Hanks, however, concedes in private conversations that few funds would actually be willing to challenge the SEC. He agrees that challenging the SEC would be extremely expensive in both money and reputation, and for the time being, no CEF is likely to adopt a poison pill or take advantage of a control-share statute unless and until the Commission announces that it has revisited Donohue’s position.
SEC’s letter was dated November 15, 2010 and was probably posted to the SEC’s web site that same day, we take November 15, 2010 as the first date of our event window for this fourth and last event.

4. DATA AND RESULTS

4.1 Dataset

Our analysis of these events begins with the collection of a dataset. We identify all closed-end funds traded on a U.S. stock exchange in the CRSP equity database on any of the four event dates we study. We then identify each fund’s style in order to ensure that we compare the fund’s returns to an appropriate benchmark. We hand-match the funds identified in CRSP to Morningstar Direct to get information on each fund’s self-declared benchmark and Morningstar’s general classification of the fund’s investment style. For a few of the funds that we cannot match to Morningstar, we use the fund’s name or (when in doubt) the fund’s prospectus to classify the fund into one of 13 broad fund style groups. Four style groups contain so few funds that we leave those groups out of the sample.15

For the remaining 9 style groups, we order the fund benchmarks and assign the most popular benchmark within each style group as that group’s main benchmark. This style-specific benchmark is used to compute the benchmark-adjusted return, which is the difference between the return of the closed-end fund and the main benchmark within its style group.

As an alternative measure of style-adjusted fund performance, we calculate abnormal returns using a style-specific multifactor model, which includes a selection of the benchmarks as factors. The resulting multifactor models for each of the 9 style groups are presented in Table 3,

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15 For this reason we drop funds we identify as “commodities” funds (11 funds), “inflation-linked” funds (3 funds), a “multialternative” fund, and an “other fixed income” fund.
together with a brief description of the benchmark. The number of factors included ranges from 4 (for the ‘allocation’ and ‘high yield fixed income’ style) to 2 (for five style groups).

[Insert Table 3 Here.]

Further descriptive statistics are provided in Panel B of Table 3, which shows the distribution of funds across the 9 style groups. The most common style is “U.S. municipal fixed income,” with about 38% of funds. The next three styles with the largest number of funds are “U.S. fixed income” with about 17% of funds, “international equity” and “U.S. equity” with about 9% of funds each, and “high yield fixed income” with about 8% of funds. The remaining 4 styles have fewer than 8% of funds each.

In order to control for heterogeneity in governance and corporate law across our sample of funds, we next obtain governance data by hand. We assess whether a fund’s board of directors is elected annually or in classes staggered over time and we identify each fund’s state of incorporation as of the date the fund first appears in our sample.\(^{16}\)

Having obtained appropriate benchmarks for calculating fund returns and controls for fund governance and state of incorporation, we next calculate the daily abnormal return windows. For each of the four events, we select the 210 trading days preceding the event day, from which we drop the last 20 days. Over this 190-day window, we calculate each fund’s loadings on the factors included in its style-specific multifactor model. We require at least 50 daily returns to be available during this pre-event window; otherwise, the abnormal return of the fund is set to missing. The abnormal return is calculated as the difference between the fund’s return and the product of the factor (i.e., benchmark) returns times the fund’s loadings. For each

\(^{16}\) In future iterations of this study, we intend to control for additional fund governance characteristics by drawing data on these characteristics by hand. We will collect data on whether a fund requires a supermajority vote to go open-end, whether a fund vests exclusive control of its bylaws in its board, and whether a fund requires advance notice of shareholder proposals at annual meetings, as in Souther (2015). Following publication of Souther (2015), we requested that the author share his data from that study, but he understandably declined.
of our four events, we calculate abnormal returns over three separate windows, in each case starting with the event day and ending 1, 2, and 3 days later.

Table 4 below provides summary statistics. For each of the four event days, Panel A of Table 4 shows the number of funds trading on that day, the number of funds for which we could calculate abnormal returns, the percentage of funds incorporated in Maryland and the percentage of funds with a staggered board. For each event, we have more than 600 closed-end funds with trading prices in our sample. We only use a few funds due to insufficient pre-event window returns when using abnormal returns. About 70% of funds have a staggered board, and about 30% of the funds are incorporated in Maryland.

[Insert Table 4 Here.]

4.2. Results

In this section, we describe our empirical results. We first present the cumulative abnormal returns (CARs) for the full sample, with the benchmark-adjusted CARs reported in Panel A of Table 5, and the abnormal returns using the benchmark models that differ by style group reported in Panel B of Table 5. The 2-day event window is denoted as [0,1], where day 0 is the first trading day following the event and day 1 is the following trading day. The 3-day event window is [0,2] and the 4-day event window is [0,3].

[Insert Table 5 Here.]

Event 1

Recall that, upon our first event, the legality of the poison pill—which had previously been doubtful for CEFs—was upheld by a federal district court. As Table 5 shows, the CARs for this event are consistently positive and statistically significant, both for benchmark-adjusted returns (see Panel A) and for abnormal returns (see Panel B). This suggests that when markets

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17 We have benchmark-adjusted returns for all funds trading on a given day.
learned that, for the first time, the poison pill could be used by CEFs, markets responded with unusually positive share-price results at these funds. Economically, the abnormal returns seem meaningful, with 4-day CARs of 46 basis points (t-statistic of 9.74) using benchmark-adjusted returns and of 39 basis points (t-statistic of 7.72) using abnormal returns.

**Event 2**

During our second event, the federal district court affirmed that boards of directors at CEFs could serially renew their poison pills to thwart hostile advances. In addition, the court upheld the MCSAA’s legality under the ICA. As with the first event, the CARs we observe around the second event are positive and statistically significant. This indicates that the market again reacted positively when the district court strengthened the authority of fund directors to use antitakeover devices. Economically, the announcement returns are a bit weaker for the second event than the first. The CAR over the first 2 days using benchmark-adjusted returns equaled 32 basis points (t-statistic of 8.93) for our first event but just 15 basis points (t-statistic of 3.78) for the second.

One explanation for the weakness of the results for this second event is that the second event was a weaker signal than the first. Recall that the news of the court’s opinion for the second event leaked out gradually over the course of three opinions containing progressively more information. Additionally, this second event was probably less of a surprise than the first event. Once the Maryland court had already upheld the poison pill’s basic legality, it was perhaps easy to predict that the court would also uphold the poison pill against further challenges and uphold the legality of the MCSAA.
**Event 3**

Recall that, during our third event, the Director of the Division of Investment Management at the Securities and Exchange Commission surprised a lunchtime audience by announcing his view that the use of both poison pills and state control-share statutes at CEFs was prohibited by federal law. As Table 5 shows, the abnormal returns following this third event are consistently negative and strongly statistically significant. The market responded negatively, then, when learning about the Director’s speech, which expressly disagreed with the earlier decisions of the federal court that constituted events 1 and 2. The meaningful economic magnitudes of the CARs are in line with those of these previous events. For example, the 2-day CARs using benchmark-adjusted returns equals -52 basis points (t-statistic of 7.44), and using abnormal returns equals 41 basis points (t-statistic of 5.69). Compared to the earlier 2 events, the 2-, 3- and 4-day event window CARs for event 3 are all very similar. This suggests that the market learned about the implications of the district court decisions over a period of a few days, with some additional reaction occurring on the third and fourth trading days after the event, while basically the full market reaction after the third event seemed complete after 2 days.

**Event 4**

The fourth and final event shows the most volatile but also the largest abnormal returns. Recall that this event reflects the response to a no-action letter request by the staff of the SEC confirming the position of the Director of the Division of Investment Management that the MCSAA was inconsistent with the ICA. The abnormal returns using style-specific benchmark models appear to be robust: the 2-, 3- and 4-day CARs for the fourth event are all negative, statistically significant, and economically large. For example, the 4-day CAR using abnormal returns equals 1.03% (t-statistic of 9.94). This, too, suggests that the market reacted negatively
when it learned that the SEC intended to adhere to the position articulated in the speech given by
the Director of the Division of Investment Management in event 3.18

Overall, the event-study returns described in Table 5 present a clear and consistent
picture. The two events that increased the legality of poison pills and control-share statutes were
associated with positive and statistically significant abnormal returns. These positive returns
were subsequently reversed when the market learned, in two separate events (our events 3 and
4), that these takeover defenses were legally unavailable to CEFs, leading to generally negative
and statistically significant abnormal returns.

Robustness to Staggered Boards and State of Incorporation

We checked the robustness of the results in Table 5 for variation in staggered boards and
state of incorporation. We separately run the analysis in Table 5 for funds with and without
staggered boards and for funds that were incorporated inside and outside of Maryland. We do not
report these results here, but we find that they remain strongly consistently across all of these
different specifications.

Style-Specific Benchmark Returns

In Table 6, we examine the above event-study results from a slightly different
perspective, presenting the 4-day CARs for the four events for each of the 7 fund styles with
most significant representation in our sample.19 As Table 6 shows, these results are strikingly
consistent across fund styles. We observe positive and statistically significant CARs for events 1
and 2—events that strengthened the use of takeover defenses in CEFs—and negative and

18 We note, however, the need for caution in the interpretation of this result, because the benchmark-adjusted returns
in the full sample of closed funds for this event (Panel A of Table 5), although negative and statistically significant
in the one-day window specification, switch signs in the two- and three-day specification.
19 For the remaining fund-style categories, we have fewer than 30, and often fewer than 10-observations. In light of
this sample-size constraints, analysis of returns in these styles is not meaningful. When we analyze these returns, we
generally see results that are statistically insignificant, but directionally consistent with the result we report.
statistically significant CARs for events 3 and 4—which weakened the legal authority of directors at these funds to use such defenses.\textsuperscript{20}

The results in Table 6 allow us to consider in more detail the varying explanations for the use of takeover defenses in the CEF context. As noted in Section 2.1, at CEFs, takeover defenses may serve the arguably unique purpose of preventing a hostile attacker from destroying shareholder value by selling off illiquid fund assets at fire sale prices. To the extent that this explanation reflects a meaningful proportion of the value we identify for takeover defenses in this study, we would expect that our results to be most economically and statistically significant at funds whose styles emphasize illiquid asset classes.

Indeed, the fund-style results in Table 6 are consistent with that hypothesis. The fund style that is best-represented in our sample, and for which are results are most consistent, is the U.S. Municipal Fixed Income fund style, a type of fund well-known for investment in illiquid municipal bonds (Ang et al., 2014). And the economic significance of our results appears to be most pronounced in other fund styles, such as High Yield Fixed Income, that emphasize illiquid securities. These results suggest that the value of poison pills and control-share statutes that we have identified at CEFs may be attributable to the value investors place on preventing an activist from forcing a fire sale of illiquid assets—and, hence, permitting pursuit of an investment strategy that involves heavy use of those investments.

We emphasize, however, that our style-specific results are not limited to funds of this type. Indeed, as Table 6 shows, we observe statistically and economically significant abnormal returns for fund styles, such as Sector U.S. Equity and U.S. Equity, that focus on highly liquid

\textsuperscript{20} We note that, in contrast to the event-study results described above, the signs and significance for four-day style-adjusted CARs do change direction for two fund styles, U.S. Fixed Income and International Equity, for two events (event 3 and event 4, respectively). But signs and significance in Table 6 are generally quite consistent with those described in Table 5.
assets traded on large U.S. stock exchanges. We note also that the strength of the results for municipal bond fund category may simply be an artifact of the category’s large size. We have more statistical power for municipal bond funds than for funds in other investing styles.

5. Conclusion

The results of this study identify, for the first time, the effects of poison pills and control share acquisition statutes in a study design that can support causal inference. We focus our analysis on a series of exogenous changes to the law of closed-end funds. We find that as poison pills and control share statutes became more legal, stock prices reacted positively. And as these devices became less legal, stock prices reacted negatively.

Given that these results emerge from a study of a unique kind of company, one might reasonably ask whether these results can tell us anything about other kinds of companies. Do poison pills and control share statutes have the same effects in industrial companies as they do in closed-end funds? Unfortunately, it is difficult to say. Some of the motives that push closed-end funds to adopt takeover defenses might be unique to closed-end funds. But other motives might be shared more generally by other kinds of companies. Consider, for example, the desire to avoid premature liquidation of assets. This concern may be especially important in closed-end funds, because of the tendency of closed-end fund activists to aggressively demand the liquidation of fund assets as the activists attempt to profit off the difference between a closed-end fund’s stock price and its NAV. But closed-end funds are not the only companies in which activists try to liquidate assets. It is not uncommon for activists in industrial companies to demand spinoffs of corporate subsidiaries and distributions of cash through dividends and stock buybacks. It is thus very difficult to say whether our results are unique to closed-end funds, or are more broadly
applicable to other contexts. In other words, we readily acknowledge that our study has a problem of uncertain external validity.

External validity problems are endemic to all experimental and quasi-experimental research designs, however. Thus, if taken with the appropriate caveats, the results presented here may have much to tell us. This is especially true because there may be no single topic in corporate law that has attracted more scholarly attention than the shareholder wealth effects of takeover defenses. Given the frustrating difficulty of finding research designs that can support clear causal inferences, we think our results—however limited in scope—will make an important and lasting contribution to that debate.
REFERENCES


Table 1. Requests by Outside Investors at Closed-End Funds. This table describes the specific requests that investors disclosed in Schedule 13Ds in closed-end funds. We coded every Schedule 13D filed between June of 1995 and September of 2015. We identified 361 separate filings in this period in which an investor or group of investors disclosed for the first time an intention to request specific reforms in a particular fund.

<table>
<thead>
<tr>
<th>Percentage of Schedule 13Ds Including Proposals</th>
<th>Director Nomination</th>
<th>Self-Tender Offer</th>
<th>Open-End Conversion</th>
<th>Liquidation</th>
<th>Terminate Advisory Agreement</th>
<th>Change Investment Policy</th>
<th>Corporate Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>49.3%</td>
<td>19.1%</td>
<td>8.6%</td>
<td>7.2%</td>
<td>18.6%</td>
<td>11.6%</td>
<td>21.6%</td>
<td></td>
</tr>
</tbody>
</table>
Table 2. Effect of Events on Legality of Takeover Defenses. This table describes the series of events that form the basis of our event study and explains their implications for the legality of poison pills and control share acquisition statutes. We provide a description of each event, the date of the event, and the effect of the event on the legality of both pills poison and control share acquisition statutes.

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
<th>Date</th>
<th>Poison Pills</th>
<th>Control Share Statutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Court ruling upholding the poison pill</td>
<td>Oct. 29, 2004</td>
<td>More legal</td>
<td>Neutral</td>
</tr>
<tr>
<td>2</td>
<td>Court ruling upholding the serial renewal of a poison pill and</td>
<td>April 2, 2007</td>
<td>More legal</td>
<td>More legal</td>
</tr>
<tr>
<td></td>
<td>addressing the Maryland Control Share Acquisition Act</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Speech by SEC official questioning the legality of the poison pill and</td>
<td>Nov. 12, 2009</td>
<td>Less legal</td>
<td>Less legal</td>
</tr>
<tr>
<td></td>
<td>the Maryland Control Share Acquisition Act</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>SEC no action letter refusing to accept the legality of the</td>
<td>Nov. 15, 2010</td>
<td>Neutral</td>
<td>Less legal</td>
</tr>
<tr>
<td></td>
<td>Maryland Control Share Acquisition Act</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3. Benchmark Models. This table describes the benchmarks used in the multi-factor models we use to calculate abnormal fund returns. Within each fund style, we choose the benchmarks to be included in the factor model as follows. After ordering the benchmark by popularity, we begin by including the most popular, or main, benchmark as a factor. We then add the next most-popular benchmark, as long as that benchmark does not have a 90% or higher correlation (based on daily returns during our sample period, from 2004 through 2010) with one of the benchmarks that are already included. We do this until all of the benchmarks assigned in Morningstar for funds in the style are exhausted.

Panel A. Benchmark Factors.

<table>
<thead>
<tr>
<th>Closed-end fund style</th>
<th>Benchmark 1</th>
<th>Benchmark 2</th>
<th>Benchmark 3</th>
<th>Benchmark 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation</td>
<td>S&amp;P 500</td>
<td>MSCI World</td>
<td>Barclays US Agg Bond</td>
<td>Russell 3000 Value</td>
</tr>
<tr>
<td>Energy US Equity</td>
<td>Alerian MLP</td>
<td>S&amp;P 500</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>International Equity</td>
<td>S&amp;P 500</td>
<td>MSCI World</td>
<td>MSCI Golden Dragon</td>
<td>N/A</td>
</tr>
<tr>
<td>International Fixed Income</td>
<td>JPM_EMBI</td>
<td>Barclays US Agg Bond</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Sector US Equity</td>
<td>S&amp;P 500</td>
<td>MSCI US REIT</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>US Equity</td>
<td>S&amp;P 500</td>
<td>Russell 2000</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>US Municipal Fixed Income</td>
<td>Barclays Municipal</td>
<td>Barclays Municipal Long 22+ Yr</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Panel B. Distribution of funds by style category (averaged over 4 events).

<table>
<thead>
<tr>
<th>Closed-end fund style</th>
<th>% of funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation</td>
<td>6.2%</td>
</tr>
<tr>
<td>Energy US Equity</td>
<td>3.9%</td>
</tr>
<tr>
<td>High Yield Fixed Income</td>
<td>7.8%</td>
</tr>
<tr>
<td>International Equity</td>
<td>9.5%</td>
</tr>
<tr>
<td>International Fixed Income</td>
<td>3.5%</td>
</tr>
<tr>
<td>Sector US Equity</td>
<td>5.9%</td>
</tr>
<tr>
<td>US Equity</td>
<td>8.5%</td>
</tr>
<tr>
<td>US Fixed Income</td>
<td>16.5%</td>
</tr>
<tr>
<td>US Municipal Fixed Income</td>
<td>38.3%</td>
</tr>
</tbody>
</table>
Table 4. Descriptive Statistics on Fund Governance and Incorporation. This table describes the number of funds for which we are able to calculate abnormal returns and obtain board-election and incorporation information for each of the four events we study.

<table>
<thead>
<tr>
<th>Event year</th>
<th># funds</th>
<th># abnormal returns</th>
<th>% staggered board</th>
<th>% Maryland incorporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>604</td>
<td>598</td>
<td>72%</td>
<td>30%</td>
</tr>
<tr>
<td>2007</td>
<td>625</td>
<td>621</td>
<td>76%</td>
<td>31%</td>
</tr>
<tr>
<td>2009</td>
<td>610</td>
<td>610</td>
<td>76%</td>
<td>29%</td>
</tr>
<tr>
<td>2010</td>
<td>608</td>
<td>607</td>
<td>77%</td>
<td>28%</td>
</tr>
</tbody>
</table>
### Table 5. Basic Event Study Abnormal Returns

Results show 2, 3 and 4-day cumulative benchmark-adjusted returns (in Panel A) and abnormal returns using the style-specific benchmark model (in Panel B) starting with the event day, for each of the 4 events and using the full sample of closed-end funds. Event day 0 is the start of each event window. T-statistics based on robust standard errors are given between parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

**Panel A. Benchmark-adjusted returns, full sample of closed-end funds**

<table>
<thead>
<tr>
<th>Event</th>
<th>Event 1 in 2004</th>
<th>Event 2 in 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event window</td>
<td>[0,1]</td>
<td>[0,2]</td>
</tr>
<tr>
<td>Abnormal return</td>
<td>0.319%***</td>
<td>0.492%***</td>
</tr>
<tr>
<td></td>
<td>(8.93)</td>
<td>(11.63)</td>
</tr>
<tr>
<td>N</td>
<td>604</td>
<td>604</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Event</th>
<th>Event 3 in 2009</th>
<th>Event 4 in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event window</td>
<td>[0,1]</td>
<td>[0,2]</td>
</tr>
<tr>
<td>Abnormal return</td>
<td>-0.523%***</td>
<td>-0.483%***</td>
</tr>
<tr>
<td></td>
<td>(-7.44)</td>
<td>(-5.50)</td>
</tr>
<tr>
<td>N</td>
<td>610</td>
<td>610</td>
</tr>
</tbody>
</table>
Panel B. Abnormal returns using benchmark models by style group, full sample of closed-end funds

<table>
<thead>
<tr>
<th>Event</th>
<th>Event 1 in 2004</th>
<th>Event 2 in 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event window</td>
<td>[0,1]</td>
<td>[0,2]</td>
</tr>
<tr>
<td>Abnormal return</td>
<td>0.299%***</td>
<td>0.430%***</td>
</tr>
<tr>
<td>(8.22)</td>
<td>(9.72)</td>
<td>(7.72)</td>
</tr>
<tr>
<td>N</td>
<td>598</td>
<td>598</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Event</th>
<th>Event 3 in 2009</th>
<th>Event 4 in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event window</td>
<td>[0,1]</td>
<td>[0,2]</td>
</tr>
<tr>
<td>Abnormal return</td>
<td>-0.406%***</td>
<td>-0.376%***</td>
</tr>
<tr>
<td>(-5.69)</td>
<td>(-4.20)</td>
<td>(-3.67)</td>
</tr>
<tr>
<td>N</td>
<td>610</td>
<td>610</td>
</tr>
</tbody>
</table>
Table 6. Four-Day Cumulative Abnormal Returns by Style. The table presents the four-day cumulative abnormal returns (CARs), i.e., with event window [0,3], for each of the four events by style. For each style, we use a different benchmark model to calculate abnormal returns, see Table 3.

<table>
<thead>
<tr>
<th>Event 1 in 2004</th>
<th>Event 2 in 2007</th>
<th>Event 3 in 2009</th>
<th>Event 4 in 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation</td>
<td>0.525%**</td>
<td>(2.47) 29</td>
<td>0.0238%</td>
</tr>
<tr>
<td>High Yield Fixed Income</td>
<td>-0.298%</td>
<td>(-1.40) 44</td>
<td>-0.225%</td>
</tr>
<tr>
<td>International Equity</td>
<td>-0.357%</td>
<td>(-1.20) 47</td>
<td>0.356%</td>
</tr>
<tr>
<td>Sector US Equity</td>
<td>0.890%***</td>
<td>(4.08) 32</td>
<td>0.463%*</td>
</tr>
<tr>
<td>US Equity</td>
<td>0.628%**</td>
<td>(2.53) 40</td>
<td>0.284%</td>
</tr>
<tr>
<td>US Fixed Income</td>
<td>0.0446%</td>
<td>(0.39) 85</td>
<td>0.519%***</td>
</tr>
<tr>
<td>US Municipal Fixed Income</td>
<td>0.656%***</td>
<td>(12.09) 295</td>
<td>0.394%***</td>
</tr>
</tbody>
</table>