Managers' and investors' responses to media exposure of board ineffectiveness

Jennifer R. Joe
Robinson College of Business, Georgia State University
P.O. Box 4050, Atlanta, GA 30302-4050

Henock Louis*
Smeal College of Business, Pennsylvania State University,
University Park, Pennsylvania, 16802-1912 USA

Dahlia Robinson
W.P. Carey School of Business, Arizona State University
PO Box 873606, Tempe, AZ 85287-3606

Abstract

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JEL classification: G14; G34;

Keywords: Media; Public exposure; Board effectiveness; Corporate governance; Behavioral economics; Individual and institutional investor trading

This paper benefits from comments by an anonymous referee, Mark Bradshaw, Marty Butler, Fabrizio Ferri (discussant at the 2006 American Accounting Association annual conference), Sanjay Gupta, Rebecca Han (discussant at the 15th Annual Conference on Financial Economics and Accounting), Steven Huddart, Jennifer Juergens, Bin Ke, Omesh Kini, Andrew Leone, James McKeown, Karen Nelson, Tod Perry, K. Ramesh, Gregory Sommers, Gregory Waymire, Stephen Zeff, and workshop participants at Arizona State University, Emory University, Michigan State University, Penn State University, Rice University, Texas A&M University, University of Iowa, University of Pennsylvania, and Washington University.

**E-mail address:* hul4@psu.edu
Phone: 814-865-5160

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I. Introduction

Keynes (1936) compares financial markets to a beauty contest where the contestants' behavior is based not only on their own beliefs but also on their expectations of the other contestants' beliefs. Accordingly, analyzing the role of higher order beliefs on price formation, Allen, Morris, and Shin (2006) show that the media is likely to play a disproportionate role in asset pricing. However, to date, the extant literature has paid little attention to the role of the media on capital markets participants' behavior. In this study, we examine the impact of the press on managers' and investors' behavior by analyzing how media exposure of board ineffectiveness affects corporate governance, investor trading behavior, and security prices. Our focus on board effectiveness is motivated by the strong media criticism to which corporate boards and corporate America, in general, have been recently subjected.[1] While regulators have long been interested in improving corporate governance (see, e.g., Gompers, Ishii, and Metrick, 2003), the widespread allegations of accounting frauds and the staggering impact of the recent corporate scandals have brought corporate governance to center stage, making it one of the most critical issues in business today, as evidenced by the 2002 Sarbanes-Oxley Act's heightened emphasis on corporate governance.

Our analysis is based on *Business Week* (*BW*)'s publication of institutional investors' assessment of board effectiveness. Notwithstanding some inherent problems with the survey

[1]The media coverage of the recent corporate scandals was intense. In 2003, the Wall Street Journal won a Pulitzer Prize for its coverage of the scandals. The National Journal (2002) even suggests that reporters took advantage of the corporate scandals to express their views about corporate America. According to a survey conducted by Harris Interactive between February and July 2002, managers consider media criticism the greatest threat to a firm's reputation (Hill and Knowlton, 2002, http://www.hillandknowlton.com/crw/index/press_releases/4). The press generally links the corporate scandals to a failure by directors to fulfill their fiduciary and monitoring duties. Business Week (2002, p. 138), for instance, associates the WorldCom's scandal with the ability of Ebbers, WorldCom's CEO, to "keep the board in his pocket [by showering] directors with perks and [winning] their devotion."

data,[2] we posit that, given the extent of *BW*'s circulation and readership,[3] the negative publicity associated with the inclusion of a firm on the *BW* worst board list is likely to have significant economic effects. In particular, we expect the negative media exposure to force the worst board firms to take corrective actions. Not only is the negative media spotlight likely to lead the worst board firms to improve the quality of their governance, it is also likely to force the board members and the managers of the worst board firms to fulfill their fiduciary responsibilities with more diligence.

Our conjecture is consistent with a report by Roger Raber, president of the National Association of Corporate Directors, that, following the recent corporate scandals, "directors are spending about 200 hours a year — twice as much time as before — on board duties" Iwata (2004, p. B.1). They are also consistent with the results of the 2002 survey of top corporate managers conducted by Harris Interactive, in which managers rank negative press as the greatest threat to corporate reputation, ahead of corporate unethical behavior and litigation.[4] The following anecdotal evidence illustrates the potential power of the press to influence corporate governance. In April 1992, shareholder activist Robert Monks bought a full-page advertisement

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[2]We discuss the potential problems in the next section.

[3]*BW* is presumably the most popular general business magazine based on both circulation and readership. According to Media Distribution Services, *BW* has the largest circulation (971,435) followed by Forbes (907,266) and Fortune (855,208) (see http://www.prplace.com/topcirculation.html#Business). A Mediamark Research Inc.'s analysis of U.S. magazine readership also shows that *BW*'s readership (4,666,000) is the highest among the general business magazines (see http://www.ziffdavis.com/press/releases/040603.1.html). In addition, the *BW*'s governance rankings are relayed by regional and local news outlets. For example, *Pittsburgh Post-Gazette* (1996) reported that H.J. Heinz Co. and Westinghouse Electric Corp. (both headquartered in Pittsburgh, PA) were included on the list of worst board firms. Similarly, the *Cincinnati Business Courier* (1997) reported on the *BW* rankings and the fact that the dominant local corporation, Procter & Gamble, was on the best boards list. The *BW*'s governance rankings are also relayed by trade journals. For instance, in 1998, *Hospitals & Health Networks* ran an article on how three of the major medical corporations firms (Johnson & Johnson, Pfizer and Columbia/HCA) fared in the *BW* governance report.

[4]The survey results can be downloaded at: http://www.hillandknowlton.com/crw/index/press_releases/4. The link also provides the press release of the survey results.

in the *Wall Street Journal* to promote shareholder proposals for Sears after the board resisted all sorts of pressure to adopt the proposals.[5] The ad published a picture and the name of each director with a headline referring to the directors as Sears' "Non-Performing Assets." The ad, apparently, led the directors to adopt many of Monks' proposals. Dyck and Zingales (2002, p. 109) reports: "Nell Minow, Robert Monks' business partner, told us that to this day Sears' directors hate Robert Monks, because at their local country club they are still laughed at as a result of Monks' advertisement." Skeel (2001 p. 1848) notes that "within five months of the ad, the board had done more than simply consider a divestment [as proposed by Monks]. In September, the directors announced that the financial services businesses would be spun off." Sears' stock price increased by 9.5% on the day the divestment was announced and the market value of the stock increased by 37% for the year (Monks and Minow 2004, p. 416). This example illustrates, among other things, that, by shaming directors and managers, negative media exposure might accomplish what shareholder activism cannot.

Media information on board ineffectiveness is available from news articles from various sources such as the *Wall Street Journal* and other trade journals. However, the information about board quality provided by these sources often relates to specific governance issues and is usually accompanied by information about a specific scandal or other news about the companies, making it difficult to isolate the effect of the news from the effect of negative exposure. In addition, information gathered from different sources usually has different content and importance and, hence, are not readily comparable. Further, as we explain in the next section, firms make the *BW* list based on nominations by institutional investors. In this regard, the *BW* information is not

[5]Monks wanted Sears to allow confidential shareholder voting, separate the functions of CEO and chairman, require directors to invest in Sears stock, investigate a spinoff proposal, and eliminate staggered terms for directors so that all directors would stand for election annually.

likely to provide new information to a large segment of the market and, therefore, any managerial reaction to the publication is more likely to be driven by the negative exposure. For these reasons, the *BW* publication of the institutions' assessment of the worst corporate boards offers an interesting and unique setting to examine the potential economic effects of media exposure of board ineffectiveness.

Consistent with our expectations, we find that the worst board firms have taken many observable steps to improve the quality of their boards following the negative exposure in *BW*. These steps include, among others, replacements of their chief executive officers (CEOs) and board chairmen and increases in the number of outside board members. However, we also observe that the worst board firms experience poor stock performance over the three years prior to the *BW* publication. This suggests that the media exposure is not necessarily the driver of the worst board firms' actions. Rather, the worst board firms may be pressured to take corrective actions because of their poor performance. Hence, to directly test our hypothesis that negative media exposure forces these firms to improve their board quality, we compare the average change in the independence of the sample firms' boards of directors following the *BW* publication with the average change in the independence of the boards of directors of a set of control firms matched on industry and the prior three-year abnormal returns. We proxy for board independence by the proportion of outside board members. We do not match on board independence prior to the *BW* publication because part of the board composition data is hand-collected. Yet, we find no significant difference between the board composition of the sample firms prior to the media exposure and the board composition of the matched firms. Therefore, any difference in the change in the number of independent directors between the sample and the

matched firms after the *BW* publication is not likely to be driven by difference in performance or the pre-publication board composition.

Consistent with the conjecture that the negative media exposure forced the worst board firms to take corrective actions, we find that, relative to their matches, firms that are included in the worst board list experience a significant increase in the proportion of independent directors after the *BW* publication. We also find a significant reduction in the number of sample firms that use staggered boards over the two years after the *BW* publication, suggesting that the directors of the worst board firms become less entrenched after the negative *BW* exposure. Relative to their matches, the worst board firms also have a marginally significant improvement (decrease) in their G-scores and a marginally significant increase in CEO turnover after the negative exposure.

We also analyze investors' reactions to the negative public exposure. We find that the publication of the worst board list has an asymmetric effect on institutional and individual investor behavior. Individual investors appear to react negatively to the media exposure whereas investment firms trade as if they anticipate the targeted firms' corrective actions. This is consistent with evidence in the behavioral finance literature that unsophisticated investors often make trading mistakes typically avoided by sophisticated investors (Barberis and Thaler 2003). We also find that the sample firms experience very strong stock performance in the week after and over the four months subsequent to the negative public exposure, which is consistent with the conjecture that some investors anticipate the effect that the *BW* publication would have on managers' incentives to improve their firms' governance.

The study contributes to the extant literature in various ways. Carleton, Nelson, and Weisbach (1998) examine the effects of *private* negotiations between managers and institutional investors on corporate governance. However, to our knowledge, our study is the first to

empirically analyze whether and how market participants respond to *public* exposure of board ineffectiveness by the media.[6] The superior market performance of the worst board firms after their exposure by *BW* is also informative. It is usually assumed that effective boards play an important monitoring role and that the market values effective boards; however, extant studies generally fail to document an association between firm performance and (improvement in) board quality (see Baysinger and Butler 1985; and Hermalin and Weisbach 2003). Our study also contributes to the literature on the role of the media as a source of information and on how economic agents react to the arrival of information. With a few exceptions, such as an early study by Foster (1979) that documents a negative market reaction to the publication of Briloff's criticism of firms' financial reporting practices, extant studies focus mainly on the impact that information from firms' insiders or outsiders (e.g. analysts) has on securities prices.

The remainder of the study is organized as follows. Section 2 describes the data. Section 3 analyzes the effect of media exposure of board ineffectiveness on corporate governance. Section 4 examines the stock price effect of the *BW* publication. Section 5 examines investors' trading patterns around the *BW* publication. The study concludes in Section 6.

2. Sample selection and characteristics

2.1 Data description

The initial sample contains 75 observations. The sample firms are listed in the *BW* articles of the 25 best and 25 worst boards (i.e. a total of 50 firms each year) published in

[6]Carleton, Nelson, and Weisbach (1998) find that at least 87% of the firms targeted by the Teachers Insurance and Annuity Association - College Retirement Equities Fund (TIAA-CREF) take actions to comply with agreements reached through these private negotiations. Smith (1996, p. 251) also concludes that, "shareholder activism is largely successful in changing governance structure …" However, Karpoff, Malatesta, and Walking (1996) find that investor activism has no significant effect on firm value.

November 1996, December 1997, and January 2000.[7] *BW* did not publish the survey in 1998, 1999, and 2001. There is a 2002 survey; we do not include the results of that survey in the sample, however, because it uses a different method to categorize firms and introduces two new classifications: hall of shame and most improved. Isolating the effects of the *BW* publication is also likely to be more difficult starting in 2002 because of all the scandals and the increased pressure to improve corporate governance, including the effects of the Sarbanes-Oxley Act.

The 1996, 1997, and 2000 lists of worst board firms are based on surveys of the largest money managers, pension fund managers, and "leading governance experts."[8] The surveys ask respondents, among other tasks, to identify firms they perceive to have the best and worst boards. The respondents grade the boards on the basis of their assessment of the boards' accountability to shareholders, quality of the directors, independence, and corporate performance. *BW* imposes no restriction on the survey respondents' selection of most and least effective boards. However, *BW* subjects the firms singled out by the institutions as having either the most or least effective boards to another round of scrutiny. *BW* grades them on the independence of their boards, management accountability to shareholders, and the quality of the directors based on analyses of their proxy statements. The final list is based on the average of the scores from the institutions' poll results and *BW*'s analysis of the proxy statements. Note, however, that whether a firm is included in the list is first determined by the institutions.

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[7]Details on the surveys can be found at http://www.businessweek.com/1996/48/b35038.htm, http://www.businessweek.com/1997/49/b3556006.htm, and http://www.businessweek.com/2000/00_04/b3665022.htm, or in *Business Week* (1996, 1997, and 2000).

[8]The response rate is relatively low; on average, only 21.5% of those polled by *BW* responded to the survey. However, the low response rate seems typical for investment managers. For instance, Spaulding (1993) reports a 24% response rate and Fargher and Gramling (1996) report a 27.5% response rate and a 25.8% usable response rate when investment managers were surveyed.

The three surveys include 50 unique worst board firms because some firms appear on the worst board list multiple times. While many firms responded positively to the *BW* publication, some resisted changes. Within one year of the first publication, *BW* reports: "Battered by investor criticism, many of the … boards are … trying to shape up. AT&T, Dow Jones, and Waste Management brought on new, more respected directors. Apple Computer overhauled its much-criticized board. ADM, Champion International, and Fleming embraced more liberal governance guidelines" (*Business Week* 1997, p. 95). However, some firms even denied having governance problems and resisted pressures to change their governance. For instance, Michael Eisner, chairman and CEO of Disney, insisted: "We have a fantastic board and I hope I'm not intimidated into changing the direction of the board" (*Business Week* 1997, p. 90). Disney eventually made some changes, but as *BW* notes "some critics say the changes, while welcome, are largely token" (*Business Week* 1997, p. 95). As a result, Disney appears on all three worst board lists. Disney ultimately terminated Eisner in 2004.

Like most survey data, the *BW* poll results might be subject to some shortcomings. One concern is that the institutions might not respond truthfully. For example, they might simply include the firms that they hold the least on the worst board list. However, we observe that institutional investors still have substantial holdings in the worst board firms. Further, even if an institutional investor includes a firm that has a good board on the worst board list, that firm is not likely to be included in the final sample because, as discussed earlier, *BW* compares the poll results to proxy statement data before generating the final lists. Discussing the role of the media in shaming corporate directors, Skeel (2001, p. 1844) argues that "*Business Week* and its peers … have a huge reputational stake in the accuracy - or at the least, the objectivity - of their

reports." Accordingly, an analysis of the characteristics of the sample firms suggests that, on average, these firms were indeed facing serious governance problems.

Some institutions are actually likely to have incentives to respond truthfully to the survey. Prior studies suggest that institutional investors play a significant monitoring role (Shleifer and Vishny 1986). Kahn and Winton (1998), in particular, argue that, because institutional investors cannot easily exit a stock due to market illiquidity, they tend to intervene in managerial activities to improve shareholder wealth. This argument is counter to the view that institutional investors tend to "vote with their feet," by selling their stakes in mismanaged firms instead of trying to pressure management to change. However, institutional investors' ability and willingness to pressure management can be very limited (Davis and Kim 2007). Mutual funds, in particular, face a conflict between their incentives to demand governance changes (or sell poorly governed firms) and their incentives to preserve lucrative businesses (e.g., management of employee benefits)[9] with their portfolio firms. Providing (private) information by filling out the survey can serve as a form of monitoring where the institutions expose the ineffective boards to pressure the firms into changing their governance and improving their performances, instead of angering management by selling their shares or openly pressing for changes.

2.2 Sample characteristics

Table 1 reports the characteristics of the sample firms. The mean characteristics are reported in Panel A and the median characteristics in Panel B. Firms included in the *BW* worst

[9]Davis and Kim (2007) report, for instance, that Fidelity Management & Research (FMR), parent of the Fidelity funds, derived one-quarter of its revenues in 2001 from management of employee benefits. They observe that, while public pension funds have been very active in fighting poor governance and mismanagement, mutual funds have been largely silent, although they own a very large share of corporate America.

board list have significantly lower raw and abnormal stock returns over the three years prior to the *BW* publication than those included in the best board list. Although the worst board firms have large negative mean and median abnormal returns (-56.30% and -50.20%), they have large positive mean and median raw returns (113.55% and 101.21%). The positive average three-year raw return indicates that the average worst board firm is not in distress, but is simply underperforming at a time of rapid increase in overall stock prices. Consistent with their somewhat poor stock performance, the worst board firms are relatively small and have relatively high book-to-market ratios.

The proportion of independent board members is significantly lower for the worst board firms, which is consistent with the common view that the degree of board independence is closely related to its composition (Fama and Jensen 1983; and Hermalin and Weisbach 1998).[10] There is no evidence that firms on the worst board list are more or less likely to provide equity incentives to their directors. We also find no evidence that the number of board meetings in the year prior to the *BW* publication is related to whether a firm is included in the best or worst board list. There is no evidence that institutional investors' holdings as a percentage of shares outstanding are different between worst and best board firms.[11] The worst board firms represent a lower proportion of the institutional investors' holdings. However, because these firms are

[10]The proportion of independent board members excludes family members of management and former employees. This data is obtained from the Investor Responsibility Research Center (IRRC) database and proxy statements prior to the *BW* publication.

[11]Institutional ownership data are obtained from the CDA/Spectrum Institutional Money Manager Holdings database. CDA/Spectrum collects the data from the SEC's Form 13(f). Form 13(f) must be filed each calendar quarter by all institutions that have more than $100 million in equity securities. The institutions are required to disclose common stock positions greater than 10,000 shares or $200,000. We set institutional ownership to zero if it is not reported on Spectrum.

much smaller than the best board firms, institutional investors' holdings as a percentage of shares outstanding are essentially similar for the two groups of firms.

We also compare the G-score of the two groups of firms prior to the *BW* publication. G-scores are provided by the Investor Responsibility Research Center, Inc. (IRRC) through the Wharton Research Data Services (WRDS). The G-score is a broad measure of managerial power in settings where such power is likely to be hurtful to shareholders; a high G-score indicates weak corporate governance (see Gompers, Ishii, Metrick 2003 for details). The G-score is a far from perfect measure of corporate governance. However, arguably, it is one of the best composite measures of managerial power available. We find that the worst board firms have significantly higher G-scores than the best board firms, suggesting that shareholder influence in the management of the average firm included in the worst board list is relatively weak.[12] Because the managers of these firms are more entrenched, they are more immune to shareholder pressure and takeover threats. Media public exposure then may be a more effective tool to engender changes in these firms. The worst board firms are also more likely to have staggered boards than the best board firms, suggesting that the directors of the worst board firms are relatively more entrenched.

We also report firm characteristics for each of the three *BW* worst board lists. This allows us to assess the degree to which the comparisons between worst and best board firms vary across the three surveys. In addition, because some firms are included in the rankings more than once, reporting results for each survey also allows us to gauge the potential effects of cross-sectional correlations on the test statistics. The results indicate that the differences between worst and best

[12]G-scores are available for the years 1990, 1993, 1995, 1998, 2000, and 2002. We use the 1995 G-score as the G-score prior to the 1996 and 1997 *BW* survey publications and the 1998 G-score as the G-score prior to the 2000 *BW* survey publication.

board firms are generally consistent across the three surveys and it does not appear that our inferences are driven by cross-sectional dependencies. The *p*-values for the year-to-year analyses are higher, but this seems to be due to the substantial reduction in sample size.

We then analyze the industry distribution of the sample firms. Un-tabulated results show no strong evidence of industry clustering. There are seven of the 10 broad industry classifications,[13] 28 two-digit SIC codes, and 42 four-digit SIC codes represented among the worst board firms. The largest concentrations are in manufacturing (38.8%), with food and kindred products accounting for 11.8% of the sample.[14]

We expect that negative media exposure of board ineffectiveness will have a direct impact on the major market participants: managers and investors. Accordingly, we analyze whether and how managers react to the *BW* negative exposure by examining the levels of board independence before and after the media exposure. We also examine the market response to and investor trading activity around the *BW* publication.

3. The effect of media exposure of board ineffectiveness on board quality

To assess whether the *BW* exposure led the worst board firms to take corrective actions, we first conduct a survey of visible corrective measures that the worst board firms have taken

[13]The 10 industry classification are: Agriculture, forestry, and fishing (SIC codes: 100-999), mining (SIC codes: 1000-1499), construction (SIC codes: 1500-1799), manufacturing (2000-3999), transportation and utilities (4000-4999), wholesale trade (SIC codes: 5000-5199), retail trade (5200-5900), finance (6000-6799), services (7000-8999), and public administration (SIC codes: 9100-9999).

[14]There are six of the 10 broad industry classifications, 18 two-digit SIC codes, and 31 four-digit SIC codes represented among the best board firms. Agriculture, forestry, and fishing, mining, construction, and wholesale trade are not represented among the best board firms. The largest concentrations are in manufacturing (66.7%), with chemicals accounting for 18.7% of the sample, machinery and computer equipment 14.7%, food and kindred products 9.3%, and electronic equipment 8.1%. Transportation and business services also account for 8.1%, each. Manufacturing represents the largest concentration in all three rankings: 64% in 1996, 74% in 1997, and 62.5% in 2000. Chemicals accounts for the largest two-digit SIC code concentration in all three polls: 20% in 1996, 20% in 1997, and 16% in 2000.

over the two years after the *BW* publications. These measures are listed in Appendix A. They are obtained through a survey of business news wires on *LexisNexis Academic*. We can observe only "visible" actions. Accordingly, the list of actions presented in the appendix constitutes only a sample of the actions taken by the firms. The firms may have taken many other actions that we do not observe.

We identify 34 worst board firms -- 68% of the 50 unique firms -- that made changes in their governance structures after the *BW* publications. Of the 34 worst board firms that take visible corrective actions, 28 (82%) replace their CEOs, presidents, or board members, 18 (53%) increase the number of outside board members, and 4 (12%) institute some broad corporate governance changes (e.g. creation of a governance committee, annual election of directors). We also observe that, of the 24 worst board firms appearing on the 1996 list, 17 (71%) were removed from the worst board list by 2000.[15]

One limitation of the statistics reported above is that they are not compared to any benchmark. Thus, it is possible that the observed changes are associated with some general trend. However, untabulated results show that, in general, the firms listed on the best board list made few changes that could affect their corporate governance. Of the 45 unique best board firms, a total of 12 (or 27%) made changes that could affect their governance structures. The Pearson Chi-square test of association determining whether the worst board firms are more likely than the best board firms to make observable governance changes after the *BW* exposure is significant at the 0.001 level.

[15]As we explained earlier, some firms (e.g., Disney) resisted changes and ended up on the worst board list multiple times.

Another concern about the above analysis relates to the poor performance of the worst board firms. These firms may have been pressured into improving their board quality because of their poor performance and not necessarily because of the negative exposure by *BW*. To address this issue, we compare the average changes in the board characteristics of the sample firms' boards of directors over the two years after the *BW* publication with the average changes in the board characteristics of a set of control firms matched on industry and the prior three-year abnormal returns. We focus particularly on board independence and board classification (staggered and non-staggered boards).

We proxy for board independence by the proportion of outside board members. We obtain the number of outside directors from the Investor Responsibility Research Center (IRRC). If a firm does not have the necessary data on IRRC, we collect the information directly from the proxy statements through the historical Electronic Data Gathering, Analysis, and Retrieval (EDGAR) archives on the Securities and Exchange Commission (SEC) website. We lose one observation, Digital Equipment, because it was subsequently taken over by Compaq and, therefore, we cannot estimate the change in board independence. We first match each sample firm with the firms in the same industry that have necessary board data on IRRC.[16] Among the potential matches, we choose the firm that has the closest abnormal return over the three years ending the month prior to the *BW* publication month. If a match is not found, we release the requirement that a firm have board data on IRRC. We then collect the board independence data directly from the proxy statements. When a matched firm does not have the necessary board data

[16]To increase the likelihood that we will obtain a match and improve the tightness of the performance matching, we use the 10 broad industry divisions described in footnote 13 instead of two-digit SIC codes.

on EDGAR to compute changes in the board independence proxy, we repeat the process until a match with the necessary data is found.[17]

Panel A of Table 2 compares the abnormal returns of the sample firms with the abnormal returns of the matched firms. The abnormal returns of the sample firms and the abnormal returns of the matched firms are very similar. We are therefore confident that differences in the changes in the board characteristics across the two groups of firms are not likely to be driven by performance.

Panel B of Table 2 compares the changes in the proportions of independent directors for the sample firms and the matched firms. Consistent with the conjecture that the negative media exposure forced the worst board firms to take corrective actions, we find that, relative to their matches, firms that are included in the worst board list significantly increase the number of independent directors on their boards.[18]

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[17]Instead of matching only on industry and prior stock performance, we could use other techniques, such as propensity score matching, which would allow us to control for many other factors – particularly governance characteristics -- that could potentially affect the behavior of the sample firms. However, propensity score matching is not feasible in our setting because many of the relevant variables are available in machine-readable form for a very limited number of potential matches. It is not practical to hand-collect data for every potential match. For some variables, such as G-scores or similar governance proxies, we do not even have alternative sources where we could hand-collect the information. By matching on industry and past stock performance, we focus on the few variables that are most likely associated with governance changes and substantially reduce the need to hand-collect board characteristic data on a massive scale.

[18]Events other than the *BW* publication could lead the worst board firms to take corrective actions. These events could include corporate scandals, investigations by the Securities and Exchange Commission (SEC), and other forms of public exposure. To address this issue, we survey news reports, through Lexis-Nexis, for the year preceding and the two years subsequent to the worst board firms listing in the *BW* rankings, to identify events that could lead to the governance changes. Our search includes the following keywords: fraud, management change, investigation, and auditor change. We do not find any systematic pattern of events that could explain the corrective actions taken by the worst board firms. The few cases we find that could potentially have led to the corrective actions are the SEC investigation of Bausch & Lomb's accounting practices, the Fed's investigation of Archer-Daniels-Midland for antitrust violations and the jailing of some top executives, the SEC investigation of HCA and the sentencing of a former executive, and the SEC investigation of Waste Management. Removing these firms from the sample does not qualitatively change the results of the paper.

In addition to the change in board independence, we also analyze the change in the proportion of firms that have staggered boards because a staggered board presumably increases the power of managers and weakens shareholder rights. Bebchuck and Cohen (2005), for instance, use staggered boards to proxy for board entrenchment and Bebchuck, Cohen, and Ferrell (2005) find that staggered board is one of the few board characteristics that affect firm value. Therefore, if the negative *BW* exposure leads the worst board firms to take genuine actions to improve the quality of their boards and their performance, then they would tend to remove their staggered board provisions. Consistent with this expectation, the results reported in Panel C of Table 2 show a significant reduction in the number of sample firms (relative to the number of matched firms) that use staggered boards.

Untabulated results also show that the worst board firms have a marginally significant reduction in their G-scores, relative to the matched firms that also have G-scores. There are also significant reductions in the number of worst board firms (relative to the number of control firms) that offer pension parachutes to their executives, offer severance packages to their executives, or have director liability agreements, over the two years after the *BW* publication. Finally, there is some evidence of a relative increase in CEO turnover after the negative exposure by *BW*. These results are generally supportive of the conjecture that the negative media exposure forced the worst board firms to take corrective actions.

We observe improvements in some of the governance factors after the *BW* exposure of the worst board firms. However, in general, these factors are not statistically different across the worst board firms and the matches prior to the *BW* publication. Untabulated results show that a significantly larger proportion of the worst board firms have director liability agreements, but we find no evidence that the worst board firms and the matched firms are statistically different on

the other factors. Because the sample firms appear on the worst board list, we would expect them to have poorer governance characteristics. The failure to find statistical differences between the sample firms and the performance-match firms suggests that there may be an association between market performance and board quality over the sample period. Alternatively, we may fail to find statistical differences because the sample size is relatively small. In general, given the limited power of our tests, our findings should be interpreted with caution, particularly when we fail to reject the null hypotheses.

4. The stock price effect of the *BW* publication

We then analyze the stock price effect of the negative public exposure on the targeted firms. Investors would react to the publication if it provides new information. The information provided by the publication is derived partly from public sources and partly from the assessment of institutional investors. To some extent, the publication can provide new information to unsophisticated investors, although it is unlikely that the information would be new to institutional investors. However, the market could react negatively, even if the information is not new. Huberman and Regev (2001), for instance, find that stock prices respond to media articles even when they do not convey new information.

We use the Fama and French three-factor model to estimate return expectations for the individual firms. The model is estimated over a maximum of 127 trading days (six months) starting 22 days (one month) prior to the *BW* publication date. Because of event date clustering, the *t*-statistics for the abnormal returns are likely to suffer from cross-sectional dependence. We, therefore, report *t*-statistics based on both cross-sectional and time-series standard errors. The cross-sectional *t*-value is based on the cross-sectional standard error of the cumulative abnormal

returns over the event windows while the time-series *t*-value is based on the estimation period time-series standard error of daily portfolio average cumulative abnormal returns. The time-series standard deviation test controls for potential cross-sectional correlation problems (Brown and Warner 1985).[19] The results are reported in Panel A of Table 3. We find that the sample firms experience a significant average abnormal return of –1.21% over the window [-1, +1].

One concern is that the survey results may have reached *BW* subscribers, libraries, or newsstands prior to the *BW* publication dates and it is not clear when exactly the subscribers read the publications after they received them. Because the publication dates are on Mondays (November 25, 1996; December 8, 1997; and January 24, 2000), our event window is actually [-3, +1] in calendar time, which may alleviate the timing problem. We also analyze the abnormal returns over the window [-6, -2] ([-10, -4]) in trading (calendar) time. The abnormal return over this time window is statistically insignificant.

The abnormal returns around the *BW* publication are consistent with investors placing a discount on ineffective boards. However, some individuals may have simply overreacted to the publication. Prior studies suggest that investors tend to overreact to news (Kahneman and Tversky 1982; Huberman and Regev 2001). DeBondt and Thaler (1987) finds that market overreaction is especially strong for bad news firms. Alternatively, the abnormal returns could be due to investors' apprehension about potential costly regulatory actions. However, consistent with the overreaction hypothesis, the results reported in Table 3 show a reversal of the initial negative market reaction in the week following the publication.

We also analyze the abnormal return in the months subsequent to the *BW* publication. The expectation model is estimated over a maximum of 60 months ending on the 24 months

[19]We also estimate the market model by both ordinary least squares and joint generalized least squares (to control for potential event clustering effects) and obtain qualitatively the same results as those reported in the paper.

prior to the *BW* publication. The results are reported in Panel B of Table 3. We find that the worst board firms continue to experience strong stock performance in the months subsequent to the *BW* publication month.[20] Most of the abnormal return (about 7%) occurs over the first four months. The average abnormal return increases to only 8.5% when the horizon is extended over the twelve months after the publication month.

Barber and Lyon (1997) and Kothari and Warner (1997) maintain that extant methods of computing long-term returns are generally mis-specified. They suggest estimating the abnormal return by adjusting the buy-and-hold return by the return of a matched firm. They find that such a procedure yields test statistics that are well specified and controls for potential new listing, survivor, rebalancing, and skewness biases that arise in studies of long-run abnormal returns. Accordingly, we also use a match-firm procedure to estimate abnormal returns. Each month, we rank all the firms on CRSP into quintiles based on their market capitalization. Within each size-quintile and each industry, we match the sample firm with the firm that has the closest size-adjusted return over the three years ending the month prior to the *BW* publication month. The results are reported in Panel C of Table 3. We find that the worst board firms continue to experience strong stock performance in the months after the *BW* publication month. The average abnormal return is about 11.8% over the first four months and 11.5% over the twelve months subsequent to the *BW* publication month.[21]

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[20]Fama (1998) and Brav, Geczy, and Gompers (2000) suggest that events may be correlated in calendar time and that existing methods of computing long-term abnormal returns may not fully account for the correlation. However, the worst board firms experience the abnormal returns over a relatively short period, four months. Further, we report *t*-statistics based on both cross-sectional and time-series standard errors. The time-series standard deviation test controls for potential cross-sectional correlation problems.

[21]We also analyze whether financial analysts understood the stock price implications of the *BW* exposure by examining the revision in their stock recommendations in the month following the *BW* publication. We use the median analyst recommendation from the Institutional Brokers Estimate System (IBES) to proxy for analyst recommendation. IBES recommendations range from 1 to 5 with 1 indicating a strong buy recommendation and 5 a

The cumulative abnormal returns are plotted in Figure 1. The graph shows a steady decrease in stock price prior to the *BW* publication. The stock price continues to decline for the first two months after the publication and then rebounds. This result is somewhat puzzling in view of our previous finding that the negative initial reaction around the *BW* publication was followed by a correction over the subsequent week. One interpretation of the results could be that, in the weeks after the *BW* publication, the worst board firms' stock prices continue the same downward trajectory that started prior to the publication, with the initial overreaction and the subsequent correction in the following week offsetting each other. However, the overall downward trend reverses only later, probably after investors observe some indications that the firms will indeed take corrective actions. This interpretation is consistent with our subsequent analyses that show that institutional investors increase their holdings in the worst board firms in the quarter of, as well as the quarter after, the *BW* publication

5. Investors' trading around the *BW* exposure of board ineffectiveness

5.1 Individual versus institutional investors' trading

The results reported in the previous section suggest that some investors initially overreacted to the *BW* exposure of the most ineffective boards. To the extent that the average institutional investor is more sophisticated than the average individual investors and because the *BW* publication partly reflects the institutions' assessment of the firms' board quality, it is more

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sell recommendation. We find 48 (64) worst (best) board observations that have recommendations both prior to and in the month after the publication. The average (median) revision recommendation for the worst board firms is –0.145 (0.000), with a one-tail *p*-value of 0.047 (0.043). One limitation of this analysis is that most of the post-publication recommendations seem to be stale recommendations. Only 13 recommendations are different from the pre-publication recommendations. Nevertheless, for these 13 observations, the average (median) revision recommendation is –0.538 (-0.500), with a one-tail *p*-value of 0.047 (0.043), and all but two of these observations were more optimistic than the pre-publication recommendations, which is consistent with the conjecture that sophisticated investors anticipated the positive effects of the negative exposure by *BW*.

likely that the initial overreaction is driven by individual investors. This conjecture is consistent with the behavioral finance literature suggesting that unsophisticated investors often make trading mistakes typically avoided by sophisticated investors (see Barberis and Thaler 2003). Hermalin and Weisbach (1998), in an analysis of the monitoring role of corporate boards, also argue that the market should react negatively if a managerial change is based on private information and positively if the change is based on public information. We posit that the reaction of an *average* individual to the ranking of a firm on the *BW* worst board list will probably be to sell or, at least, to avoid buying that firm's stock.[22] We believe that the *BW* publication is more likely to convey new information to individual investors relative to institutional investors. We also assume that less sophisticated investors are less likely to anticipate the worst board firms' corrective actions and more likely to overreact to the firms' inclusion on the worst board lists. We further assume that the risk associated with buying a stock on the expectation that managers will take corrective actions is much higher for individuals because they generally hold less diversified portfolios and are less able to hedge their positions than the institutions. Finally, because of the institutions' level of sophistication and the fact that the *BW* publication reflects institutional investors' own assessment, we assume that the *BW* publication is less likely to convey much information to the institutions. Upon the *BW* publication, the institutions would trade if they perceive that some investors have overreacted to

[22]We focus on the reaction to the *BW* listing of worst board firms because we expect that investors will be more likely to sell on bad news than to buy on good news. Barber and Odean (2003) suggest that attention has a stronger impact on what individual investors buy than on what they sell. Their rationale is that most investors do not short-sell stocks and, thus, must sell only stocks that they own whereas they can buy almost any trading stock that catches their attention. However, attention is endogenous, in the sense that news about stocks that individual investors own are more likely to catch their attention than news about stocks they do not own. We also assume that investors already have positive opinions about stocks that they own and, hence, are more likely to be surprised by bad publicity than by good publicity about firms that they hold.

the publication and/or expect the negative publicity to force the worst-board firms to take corrective actions.

Consistent with the market microstructure literature, we infer individual and institutional investors' trading in the days surrounding the *BW* publication using trade size from the Trade and Quote (TAQ) database. Small trades are used to proxy for individual investor trading. Following Lee and Radhakrishna (2000), we use the dollar value of trade to define trade size. A trade is considered small if it is below $25,000 and large if it is $100,000 or more.[23] In line with Lee and Ready (1991), we use the midpoint of the bid and ask prices to infer trade directions. A trade above (below) the midpoint is deemed a buying (selling) transaction. We match the trades with the last bid-ask prices that are at least five seconds old. Following Odders-White (2000), we delete all the midpoint trades. We also delete locked or cross-quoted quotes (i.e., bid price ≥ ask price) and negative trades or quotes (Christie and Schultz 1994).

To determine whether the two types of investors (individual or institutional) increase or decrease their overall holdings in the sample firms, we use the following formula: $NETBUY = [(BUY - SELL) / (BUY + SELL)] \times 100$. A positive (negative) *NETBUY* for a given group of investors indicates that, as a group, these investors were increasing (decreasing) their holdings. We use three different definitions for *BUY* and *SELL*. First, we define *BUY* (*SELL*) as the total volume in dollar amount of buying (selling) transactions initiated by each of the two groups of investors. Second, we define *BUY* (*SELL*) as the number of shares bought (sold) by each of the

[23]One could use the number of shares as the cut-off. One problem is that the monetary value of the cut-off varies across firms. If we use 10,000 shares, as some prior studies do, the cut-off will be $100,000 for a firm that has a $10 price per share and $1,000,000 for another firm that has a $100 price per share. In addition, we do not believe that a typical individual investor is likely to increase his/her holding in a single firm by $100,000 to $1,000,000. For these reasons, we believe that $25,000 is a more appropriate cut-off for individual investors' trading. While institutional investors sometimes split their trades into small blocks, because of transaction costs, we assume that the institutions are not likely to split their trades in volume of less than $25,000.

two groups of investors. Third, we define *BUY* (*SELL*) as the number of buying (selling) transactions initiated by each of the two groups of investors.

Table 4 presents the results for the sample firms as well as the matches. For the matched firms, there is no clear pattern in the trading of small and large investors around the *BW* publication. In contrast, for the sample firms, small traders are net sellers of worst board firms in the three trading days around and the week after the *BW* publication whereas large traders are net buyers of the worst board firms in the week after the publication, which is consistent with an efficient market where sophisticated investors move relatively quickly to arbitrage mispricing caused by less sophisticated investors. It appears that the average individual should learn over time that s/he has been mistaken and, thus, change her/his behavior. One potential reason why small investors, as a group, may fail to learn from their mistakes is that individual investors are very dispersed. That is, individuals who overreact in one year are not necessarily the same individuals who overreact in subsequent years. In addition, many individuals do not necessarily follow stocks that they sell and, hence, might not know that their reaction to the *BW* publication was unwarranted.

5.2 Institutional investors' quarterly trading patterns

The findings presented in Table 4 must be interpreted with caution because of the high probability of trade misclassification (see Odders-White 2000). In this section, we analyze the effects of the *BW* publication on the institutional investors' quarterly trading patterns. One advantage of this approach is that the quarterly institutional trading data is much less noisy than the institutional trading inferred from TAQ. In addition, as explained below, our approach to examine the institutional investors' quarterly trading patterns uses a firm as its own control and

compares the institutions' trading in the quarter of the publication with their trading in the surrounding quarters. More specifically, we use the following regression model:

$$\begin{aligned}\Delta INSTITUTION_i = {} & Firm\ Fixed\ Effects_i + \beta_1 * Q_{\_4i} + \beta_2 * Q_{\_3i} + \beta_3 * Q_{\_2i} + \beta_4 * Q_{\_1i} + \beta_5 * Q_{0i} \\ & + \beta_6 * Q_{+1} + \beta_7 * Q_{+2i} + \beta_8 * Q_{+3i} + \beta_9 * RETURN1Y_i + \beta_{10} * LOGSIZE_i \\ & + \beta_{11} * BOOK\text{-}TO\text{-}MARKET_i + \beta_{12} * LAG\_INSTITUTION_i + e_i, \end{aligned} \quad (1)$$

where $\Delta INSTITUTION$ is the change in the quarterly percentage institutional holdings from the eighth calendar quarter before to the third quarter after the quarter of the *BW* publication;[24]

Q_{-4}, …, Q_0, …, *and* Q_{+3} are indicator variables taking the value one in the fourth calendar quarter before, …, the calendar quarter of the *BW* publication, …, and the third calendar quarter after the quarter of the *BW* publication, respectively, and zero otherwise;

RETURN1Y is the stock return over the year inclusive of the calendar quarter prior to the change in ownership measurement quarter;

LOGSIZE is the log of total assets at the end of the fiscal quarter prior to the change in the ownership measurement quarter;

BOOK-TO-MARKET is the ratio of common book equity to total market capitalization at the end of the fiscal quarter prior to change in the ownership measurement quarter;

LAG_INSTITUTION is the percentage of institutional ownership at the beginning of the calendar quarter; and

the firm fixed effects represent the conditional average change in the quarterly percentage institutional holdings from the eighth to the fifth calendar quarter before the quarter of the *BW* publication for each sample firm;

We condition the analysis on recent stock price performance, size, and book-to-market ratio because these variables are identified in prior studies as determinants of institutional investors' holdings (see, e.g., Gompers and Metrick 2001). We include lagged ownership in the model, *BIH*, because the level of current ownership is likely to affect how much an institution

[24]Institutional ownership data are obtained from the CDA/Spectrum Institutional Money Manager Holdings database. Because "data coverage in March 2000 is different from the rest of the data due to lost files" and the "June 2000 data files are missing," we exclude the *BW's* 2000 poll results from this analysis, limiting the analysis to the 1996 and 1997 poll results.

can change its holdings. We control for firm fixed effects because the estimation period (from the eighth calendar quarter before to the third calendar quarter after the quarter of the *BW* publication) includes multiple trading quarters for the same firm. The coefficients on Q_{-4}, …, Q_0, …, *and* Q_{+3} represent the conditional difference in institutional investor trading between the fourth calendar quarter before, …, the calendar quarter of the *BW* publication, …, and the third calendar quarter after the quarter of the *BW* publication, respectively, and the average trading over the eighth to the fifth calendar quarters before the quarter of the publication. We expect the institutions will increase their holdings in the sample firms in the quarter of the *BW* publication (Q_0). We measure the effect of the *BW* publication by the difference between the coefficient on Q_0 and the coefficient on Q_{-1}. We also compare the sum of the changes in institutional holdings for the four quarters before the *BW* publication (the coefficients on Q_{-4}, Q_{-3}, Q_{-2}, and Q_{-1}) with the sum of the changes in institutional holdings for the subsequent four quarters (the coefficients on Q_0, Q_{+1}, Q_{+2}, and Q_{+3}).

Table 5 presents the results for the sample firms and the matches. Panel A reports results for the institutions as a group. We find no evidence that the institutions significantly increase or decrease their holdings in the worst board firms prior to the *BW* publication. In contrast, they appear to significantly increase their holdings in the worst board firms in the quarter of and the quarter after the publication. The coefficient on Q_0 is positive and highly significant (p-value = 0.001). The coefficient on Q_{+1} is also positive and marginally significant. The F-test comparing the coefficient on Q_0 with the coefficient on Q_{-1} has a p-value of 0.007 and the F-test comparing the sum of the coefficients on Q_0, Q_{+1}, Q_{+2}, and Q_{+3} with the sum of the coefficients on Q_{-1}, Q_{-2}, Q_{-3}, and Q_{-4} has a p-value of 0.003.

Some firms have multiple observations with overlapping quarterly data. The firm-fixed effects should mitigate the effects of multiple observations. To further ensure that the overlaps do not affect our inferences, we replicate the analysis after limiting the sample to the first observation for each of the sample firm. The results are qualitatively similar to those reported in the table. The coefficient on Q_0 is 2.87 with a *p*-value of 0.000. The *F*-test comparing the coefficient on Q_0 with the coefficient on Q_{-1} has a *p*-value of 0.004 and the *F*-test comparing the sum of the coefficients on Q_0, Q_{+1}, Q_{+2}, and Q_{+3} with the sum of the coefficients on Q_{-1}, Q_{-2}, Q_{-3}, and Q_{-4} has a *p*-value of 0.005. We find no discernible trading pattern for the matched firms. Overall, the results are consistent with the conjecture that the institutions would increase their holdings in the worst board firms in response to the *BW* publication.

Next, we condition the analysis on the business classifications of the institutions. The results are reported in Panel B of Table 5. We find that the pattern of institutional investor trading documented in Panel A is driven mainly by investment firms. This is consistent with Boyer and Zheng (2007) who find that mutual funds are the primary market movers. It is also plausible that the results are affected by the fact that the surveys were conducted among managers of investment firms and pension funds.

Finally, we condition on the trading styles of the institutions. The classification is based on Bushee (1998; 2001).[25] The results reported in Panel C of Table 5 show that the pattern of institutional investor trading documented in Panel A is stronger for arbitrageurs (short-term

[25]Bushee (1998; 2001) classifies institutions as transient institutions (arbitrageurs or short-term institutions), quasi-index funds, and dedicated institutions (long-term institutions). Transient institutions are those with diversified portfolios and high turnovers. Quasi-index funds are institutions with diversified portfolios and low turnovers. Dedicated institutions are those with more concentrated holdings and low turnovers. This classification has been widely used in the literature (see, e.g., Ke and Ramalingegowda 2005; Gong, Louis, and Sun 2007; Chen, Harford, and Li, 2007). More detail on the institutional investor classification can be found in Bushee (1998; 2001). We thank Brian Bushee for providing us with the institutional investor classification.

institutional investors). The percentage of net purchase by quasi-index funds in the quarter of the *BW* publication (the coefficient on Q_0) is significantly positive; however, it is not statistically different from the net purchase in the previous quarter (the coefficient on Q_{-1}). There is also no evidence that the sum of the coefficients on Q_0, Q_{+1}, Q_{+2}, and Q_{+3} is statistically different from the sum of the coefficients on Q_{-1}, Q_{-2}, Q_{-3}, and Q_{-4}.

6. Conclusion

We examine the role of the media in capital market participants' behavior by examining how media exposure of board ineffectiveness affects corporate governance, investor trading behavior, and security prices, using *BW* publication of institutional investors' assessment of board effectiveness. The evidence suggests that firms ranked by *BW* on its worst board list overall improve their board quality after the *BW* publication.

The results also suggest that, on average, individual investors overreact to the *BW* publication of the worst board list, putting a downward price pressure on these firms around the publication. Institutional investors, on the other hand, purchase the worst board firms leading to a price reversal. The worst board firms experience very strong stock performance in the week after and over the four months subsequent to the *BW* publication, consistent with the notion that some investors anticipate the effect that the *BW* publication has on the worst board firms' incentives to improve their governance. In sum, this study indicates that media releases of (noisy) information affect the behavior of market participants and that exposing board ineffectiveness forces targeted firms to take corrective actions and enhances shareholder wealth.

Appendix A

Observable corporate governance actions taken by firms included in the *BW* worst board list subsequent to the *BW* publications

	Month/Year of appearance on worst board lists	Actions taken following the ranking on the worst board lists
ADVANCED MICRO DEVICES	11/1996 12/1997 01/2000	1999: Will increase the proportion of independent members of its board. 2001: Separation of CEO and chairman positions.
APPLE COMPUTER INC	11/1996 12/1997	1997: Resignations of chairman and CEO, and executive vice-president. The announcement …did not contain the standard thanks and recognition usually attributed to a resignation (McKenna, P., Post-Newsweek Business Information Inc.). Replace all but two former directors with four new hands-on industry executives. The board is now composed of six outside directors. New CEO will join the board. Separation of CEO and chairman positions.
ARCHER DANIELS MIDLAND CO	11/1996 12/1997 01/2000	1997: President to retire. 1999: Chairman to step down. 2001: Prominent directors resign as part of a shake-up. ADM spokesman Larry Cunningham said the move should make the board "more manageable and responsive." Leonard Teitelbaum, an analyst with Merrill Lynch, called the moves a "formal changing of the guard" (Associated Press Online).
AT&T	11/1996 12/1997	1997: New chairman and CEO elected. New president elected. A new outside director appointed. Two former directors retire reducing board to 10 members.
AUTODESK	01/2000	2000: Names two new outside directors to board.
BANKAMERICA CORP	01/2000	2001: Chairman and CEO steps down.
BAUSCH & LOMB INC	11/1996	1998: Senior Executive changes, including: Chairman and CEO, President and Chief Operating Officer, Senior Vice President and President-Surgical/Pharmaceuticals, and Senior Vice President and Chief Technical Officer.
CBS CORP	12/1997	1998: Separation of CEO and chairman positions.
CENDANT CORP	01/2000	2000: Number of employee directors to be reduced by three; board composition provisions of class action settlement to be completed two years ahead of schedule.
CHAMPION	11/1996	1997: Hire a new chairman and CEO. Announce broad corporate governance

INTERNATIONAL CORP	12/1997	changes including: (1) Executive compensation based on Return on Capital Employed and Total Shareholder Return, (2) managers required to attain designated levels of common stock ownership within a specific time, and (3) Marakon Associates retained to help establish a value-improvement program to increase shareholder value.
COLUMBIA HCA HEALTHCARE CORP	12/1997	1998: Add four outsiders to the board.
COMPUTER ASSOCIATES	01/2000	2000: Corporate reorganization involving a change of chief executive. Separation of CEO and chairman positions.
DISNEY WALT CO	11/1996 12/1997 01/2000	1998: End of the board's classification by staggered, three-year terms; all directors will stand annually for one-year terms.
DOW JONES	12/1997	1998: President and COO to retire. Elects a new outside director to the board.
FLEMING COMPANIES INC	11/1996 12/1997	1998: Hire new chairman and CEO. 1999: To eliminate classification of directors so that all directors stand for election annually. All new stock option plans will be submitted to shareholders for their approval.
FRUIT OF THE LOOM INC	01/2000	2000: Separation of CEO and chairman positions.
GENERAL MOTORS CORP	01/2000	2001: Separation of CEO and chairman positions.
GRACE W R & CO	11/1996	1997: Add three outside board members.
HEINZ H J CO	11/1996 12/1997	1997: CEO and chairman has close ties to Heinz's board of directors. He steps down as CEO. Separation of CEO and chairman positions.
HUMANA INC	11/1996 01/2000	1999: President and CEO resigns. 2000: Separation of CEO and chairman positions.
ITT INDUSTRIES	01/1997	1998: Appoint two new outside directors.
KMART CORP	11/1996 12/1997 01/2000	1999: Name outsiders to the board. 2000: President and CEO retiring; replaced by outsider.
MATTEL INC	01/2000	2000: Chairman and CEO ousted. Separation of CEO and chairman positions.
OCCIDENTAL PETROLEUM CORP	12/1997 01/2000	1998: New outside member added to board. 1999: Add another outsider to the board.
OGDEN CORP	11/1996	1998: Proposed changes to the composition of the board**:** mandatory retirement at

	12/1997 01/2000	72, elimination of interlocking relationships between Directors and the Company, and the creation of a Governance Committee.
QUAKER OATS CO	11/1996	1997: CEO and chairman steps down.
RITE AID CORP	01/2000	2000: Retirement and resignation of COO and President from company as well as the board. Replaced by new outside director.
SEARS ROEBUCK & CO	01/2000	2000: Separation of CEO and chairman positions.
TEXACO INC	12/1997	1998: Add two new outside directors to the board.
TIME WARNER INC	11/1996 12/1997	1997: Replace three retiring directors with two new outside directors.
TOYS R US INC	01/2000	2000: Appoint new outside CEO and board member.
UNISYS CORP	11/1996	1997: Separation of CEO and chairman positions.
WARNACO INC	11/1996 01/2000	2001: Chairman and CEO ousted.
WESTINGHOUSE ELECTRIC CORP	11/1996	1997: Add two outsiders, including Raymond W. Smith, named "CEO of the Year" by *CNBC* and a "Top Manager" by *BW*.

Source: Business news wires on *LexisNexis Academic*

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Table 1: Characteristics of the sample firms

Panel A: Mean [number of observations]

Variable	Full Sample		1996 List		1997 List		2000 List	
	Worst board	Best board	Worst board	Best board	Worst board	Best board	Worst board	Best board
ABN_RETURN3 (%)	-56.298^{+++} [75]	75.480 [75]	-30.555^{+++} [25]	41.978 [25]	-53.889^{+++} [25]	56.212 [25]	-80.717^{+++} [25]	128.251 [25]
RAW_RETURN3 (%)	113.553^{+++} [75]	251.208 [75]	114.192^{+++} [25]	193.912 [25]	40.922^{+++} [25]	259.040 [25]	74.745^{+++} [25]	300.672 [25]
ASSET (000,000)	29,462^{++} [75]	68,371 [75]	17,980^{++} [25]	56,745 [25]	13,835^{++} [25]	58,810 [25]	56,571 [25]	89,558 [25]
MARKET_CAP (000,000)	12,709^{+++} [75]	88,038 [75]	9,997^{+++} [25]	48,159 [25]	14,015^{+++} [25]	69,782 [25]	14,146^{+++} [25]	146,174 [25]
BOOK-TO-MARKET	0.512^{+++} [75]	0.202 [75]	0.425^{+++} [25]	0.264 [25]	0.457^{+++} [25]	0.204 [25]	0.541^{+++} [25]	0.139 [25]
INDEPENDENT_BOARD	0.638^{+++} [75]	0.729 [75]	0.644^{++} [25]	0.734 [25]	0.618^{++} [25]	0.728 [25]	0.651 [25]	0.723 [25]
STAGGERED_BOARD	0.527^{++} [74]	0.347 [75]	0.600^{+} [24]	0.360 [25]	0.542 25]	0.320 [25]	0.440 [25]	0.360 [25]
BOARD_MEETINGS	8.905 [74]	8.986 [74]	9.250 [24]	8.760 [25]	8.960 [25]	9.125 [24]	8.520 [25]	9.080 [24]
EQUITY_GRANT	0.865 [74]	0.932 [74]	0.792 [24]	0.832 [25]	0.880 [25]	0.958 [24]	0.920 [25]	1.000 [24]
INSTITUTION	54.813 [75]	49.548 [75]	50.621 [25]	47.485 [25]	58.870 [25]	51.607 [25]	54.947 [25]	49.550 [25]
G-SCORE	9.535^{+++} [71]	8.419 [74]	9.833^{++} [24]	8.240 [25]	9.783^{+} [23]	8.600 [25]	9.000 [24]	8.417 [24]

Panel B: Median [number of observations]

Variable	Full Sample		1996 List		1997 List		2000 List	
	Worst board	Best board	Worst board	Best board	Worst board	Best board	Worst board	Best board
ABN_RETURN3 (%)	-50.200^{+++} [75]	29.800 [75]	-27.339^{+++} [25]	25.590 [25]	-47.488^{+++} [25]	31.980 [25]	-84.450^{+++} [25]	37.570 [25]
RAW_RETURN3 (%)	101.207^{+++} [75]	195.700 [75]	101.347^{+++} [25]	172.000 [25]	146.725^{+++} [25]	237.600 [25]	85.547^{+++} [25]	195.700 [25]
ASSET (000,000)	8,624^{+++} [75]	21,677 [75]	5,364^{+++} [25]	20,149 [25]	9,187^{+++} [25]	21,677 [25]	11,030^{+++} [25]	27,277 [25]
MARKET_CAP (000,000)	4,747^{+++} [75]	64,964 [75]	4,212^{+++} [25]	36,288 [25]	6,449^{+++} [25]	51,013 [25]	4,747^{+++} [25]	127,284 [25]
BOOK-TO-MARKET	0.445^{+++} [75]	0.156 [75]	0.539^{+++} [25]	0.200 [25]	0.419^{+++} [25]	0.158 [25]	0.520^{+++} [25]	0.105 [25]
INDEPENDENT_BOARD	0.667^{++} [75]	0.769 [75]	0.688 [25]	0.750 [25]	0.643^{++} [25]	0.769 [25]	0.676 [25]	0.778 [25]
STAGGERED_BOARD	1.000^{++} [74]	0.000 [75]	1.000^{+} [24]	0.000 25]	1.000 [25]	0.000 [25]	0.000 [25]	0.000 [25]
BOARD_MEETINGS	8.000 [74]	9.000 [74]	8.500 [24]	9.000 [25]	8.000 [25]	9.000 [24]	8.000 [25]	9.000 [24]
EQUITY_GRANT	1.000 [74]	1.000 [74]	1.000 [24]	1.000 [25]	1.000 [25]	1.000 [24]	1.000 [25]	1.000 [24]
INSTITUTION	58.771 [75]	52.054 [75]	53.313 [25]	49.989 [25]	58.929 [25]	52.444 [25]	67.348^{++} [25]	50.690 [25]
G-SCORE	10.000^{+++} [71]	9.000 [74]	10.000^{++} [24]	8.000 [25]	10.000^{+} [23]	9.000 [25]	9.000 [24]	8.500 [24]

Notes Table 1:

ABN_RETURN3 is the size-adjusted return for the three years ending the month prior to the *BW* publication month. *RAW_RETURN* is the raw return for the three years ending the month prior to the *BW* publication month. *ASSET* is total assets at the end of the fiscal quarter prior to the *BW* publication. *MARKET_CAP* is total market value of the common stock at the end of the fiscal quarter prior to the *BW* publication. *BOOK-TO-MARKET* is the ratio of common book equity to total market capitalization at the end of fiscal quarter prior to the *BW* publication. *INDEPENDENT_BOARD* is the proportion of independent directors on the board. *BOARD_MEETINGS* is the number of board meetings in the fiscal year. *STAGGERED_BOARD* is the proportion of observations with staggered (classified) boards. *EQUITY_GRANT* is an indicator variable taking the value one if the firm grants either stock or stock options to its directors and zero otherwise. The board data and director compensation data were obtained from the proxy statements and Wharton WRDS executive compensation database for the year prior to *BW* exposure. *INSTITUTION* is the institutional ownership (as a percentage of total shares outstanding) at the end of the quarter prior to the *BW* publication. If no institutional ownership is reported, *INSTITUTION* is set to zero. *G-SCORE* is the Gompers, Ishii, Metrick's (2003) Governance Index score (G-score). G-scores are available for the years 1990, 1993, 1995, 1998, 2000, and 2002. We use the 1995 G-score as the G-score prior to the 1996 and 1997 *BW* survey publications and the 1998 G-score as the G-score prior to the 2000 *BW* survey publication. $^{+}$, $^{++}$, and $^{+++}$ indicate that the difference between the worst and best board firms is significant at the 10%, 5%, and 1% levels in a two-tail test, respectively. The tests for mean differences are based on the *t*-test assuming unequal variances and the tests for median differences are based on the Wilcoxon two-sample test. We report results for the full sample as well as the individual surveys.

Table 2: Effect of the negative media exposure on board independence and entrenchment

Panel A: Pre-publication percentage abnormal returns

Sample	Sample firms		Matched firms		Pair-difference	
	Mean	Median	Mean	Median	Mean	Median
Full sample [N = 74 pairs]	-56.181	-50.200	-56.171	-49.710	0.010 (0.971)	0.018 (0.753)
1996 [N = 24 pairs]	-30.555	-27.339	-29.868	-27.097	0.687 (0.282)	0.085 (0.052)
1997 [N = 25 pairs]	-53.428	-43.531	-53.557	-42.408	-0.129 (0.715)	0.185 (0.372)
2000 [N = 25 pairs]	-84.450	-80.717	-84.982	-81.953	-0.532 (0.613)	-0.001 (0.364)

Panel B: Average change in board independence

Sample	Proportion of independent directors prior to the *BW* publication			Change in the proportion of independent directors after the *BW* publication		
	Sample firms	Matched firms	Pair-difference	Sample firms	Matched firms	Pair-difference
Full sample [N = 74 pairs]	0.635	0.659	-0.024 (0.438)	0.064 (0.000)	0.012 (0.551)	0.052 (0.030)
1996 [N = 24 pairs]	0.644	0.631	0.014 (0.794)	0.062 (0.004)	0.048 (0.157)	0.014 (0.746)
1997 [N = 25 pairs]	0.607	0.693	-0.087 (0.113)	0.066 (0.008)	-0.044 (0.314)	0.110 (0.020)
2000 [N = 25 pairs]	0.651	0.654	-0.003 (0.964)	0.063 (0.046)	0.029 (0.268)	0.034 (0.350)

Panel C: Average change in board entrenchment

Sample	Proportion of observations with staggered boards prior to the *BW* publication			Change in the proportion of observations with staggered boards after the *BW* publication		
	Sample firms	Matched firms	Pair-difference	Sample firms	Matched firms	Pair-difference
Full sample [N = 74 pairs]	0.527 (0.000)	0.541 (0.000)	0.014 (0.870)	-0.081 (0.013)	0.027 (0.321)	-0.108 (0.011)
1996 [N = 24 pairs]	0.600 (0.000)	0.520 (0.000)	-0.080 (0.578)	-0.040 (0.327)	0.000 (no variation)	0.040 (0.322)
1997 [N = 25 pairs]	0.542 (0.000)	0.542 (0.000)	0.000 (1.000)	-0.083 (0.162)	0.083 (0.162)	0.167 (0.047)
2000 [N = 25 pairs]	0.440 (0.002)	0.560 (0.000)	0.120 (0.407)	-0.120 (0.083)	0.000 (1.000)	0.120 (0.179)

Notes to Table 2:

The abnormal returns are size-adjusted returns over the three years ending on the month prior to the *BW* publication of the most ineffective boards. The proportion of independent directors is obtained from the Investor Responsibility Research Center (IRRC) for the period immediately prior to the *BW* publication. If a firm does not have necessarily data on IRRC, we collect the information directly from the proxy statements through EDGAR. The sample firms are matched on industry and the prior three-year size-adjusted return. We first match each sample firm with the firms in the same industry that have necessary board data on IRRC. Among the potential matches, we choose the firm that has the closest abnormal return over the three years ending in the month prior to the *BW* publication month. If a match is not found, we release the requirement that a firm have board data on IRRC. We then collect the board variables directly from the proxy statements. Some matches do not have the necessary board data on EDGAR. We then repeat the process until we find a match that has the necessary data. We compare changes in the proportion of independent directors between the sample firms and their matches. The changes are measured over the two years after the *BW* publication of the most ineffective boards.

Two-tail *p*-values are presented in parentheses.

Table 3: Abnormal returns around the *Business Week* publication of institutional investors' assessment of board effectiveness

Panel A: Cumulative abnormal return (CAR) in the days around the publication ($N = 75$)

Return window	Mean	CS *t*-value	TS *t*-value
One week before the *BW* publication: $D = [-6, -2]$	0.0063	0.680	0.924
Three days around the *BW* publication: $D = [-1, +1]$	-0.0121	-1.832^{+}	-2.282^{++}
One week after the *BW* publication: $D = [+2, +6]$	0.0155	2.881^{+++}	2.216^{++}

Panel B: Cumulative abnormal return (CAR) in the months after the publication ($N = 73$)

Return window	Mean	CS *t*-value	TS *t*-value
The month of *BW* publication: $M = 0$	-0.0183	-1.119	-1.417
Four months after the *BW* publication: $M = [+1, +4]$	0.0704	2.397^{++}	2.731^{+++}
Twelve months after the *BW* publication: $M = [+1, +12]$	0.0852	1.791^{+}	1.908^{+}

Panel C: Firm-matched buy-and-hold abnormal return after the publication ($N = 74$)

Return window	Mean	*t*-value
Four months after the *BW* publication: $M = [+1, +4]$	0.1179	2.984^{+++}
Twelve months after the *BW* publication: $M = [+1, +12]$	0.1153	1.614

Notes to Table 3:

In Panel A, CAR is computed over the week prior to the *BW* publication ($D = [-6, -2]$), the three days around the *BW* publication date ($D = [-1, 1]$), and the week after the publication ($D = [+2, +6]$). D is the number of trading days relative to the publication day. The Fama and French three-factor model is used to estimate return expectations. The model is estimated over a maximum of 127 days ending 22 trading days prior to the *BW* publication date. In Panel B, CAR is computed over the month of the publication date ($M = 0$), the subsequent four months ($M = [+1, +4]$), and the subsequent twelve months ($M = [+1, +12]$), respectively. M is the number of months relative to the publication month. The model is estimated over a maximum of 60 months ending 24

months prior to the *BW* publication month. CS *t*-value is the *t*-value based on the cross-sectional standard error of the cumulative abnormal returns over the event window. TS *t*-value is the *t*-value based on the estimation period time-series standard error of the cross-sectional average cumulative abnormal returns. In Panel C, we estimate the abnormal return of a sample firm as the difference between its raw buy-and-hold return and the raw buy-and-hold return of a matched firm. Each month, we rank all the firms on CRSP into quintiles. Within each quintile and each industry, we select we match the sample firm with the firm that has the closest abnormal return over the three years ending the month prior to the *BW* publication month. $^{+}$, $^{++}$, and $^{+++}$ indicate significance at the 10%, 5%, and 1% levels in a two-tail test.

Table 4: Small versus large investors' median percentage of net purchases

Transaction	Three days around the *BW* publication				The week following the *BW* publication			
	Sample firms (N = 74)		Matched firms (N = 70)		Sample firms (N = 74)		Matched firms (N = 70)	
	Small trades	Large trades	Small trades	Large trades	Small trades	Large trades	Small trades	Large trades
Dollar volume	-9.400	0.662	-0.740	0.000	-9.509	5.931	-2.931	0.000
	(0.003)	(0.626)	(0.664)	(0.165)	(0.004)	(0.054)	(0.234)	(0.320)
Share volume	-9.585	0.512	-0.701	0.000	-9.756	5.882	-3.431	0.000
	(0.002)	(0.586)	(0.580)	(0.159)	(0.003)	(0.060)	(0.181)	(0.315)
Trades	-9.275	0.000	0.463	0.000	-11.474	8.249	-3.524	0.000
	(0.002)	(0.814)	(0.805)	(0.199)	(0.001)	(0.004)	(0.144)	(0.212)

Notes to Table 4:

Investors' net purchase indicates whether investors increase or decrease their holdings in the sample firms. It is computed as follows: [(*BUY* - *SELL*) / (*BUY* + *SELL*)] x 100. A positive (negative) value for a given group of investors indicates that, as a group, these investors were increasing or decreasing their overall holdings. Under "*Dollar Volume*", *BUY* (*SELL*) is the total volume in dollar amount of buying (selling) transactions initiated by each of the two groups of investors. Under "*Share Volume*", *BUY* (*SELL*) is the number of share bought (sold) by each of the two groups of investors. Under "*Trades*", *BUY* (*SELL*) is the number of buying (selling) transactions initiated by each of the two groups of investors. A trade is considered small if it is below $25,000 and large if it is $100,000 or more. A trade above (below) the midpoint bid-ask quotes is deemed a buying (selling) transaction. We match the trades with the last bid-ask prices that are at least five seconds old. Trades are made at the midpoint of the bid-ask quotes are classified as neither sell nor buy. We also delete locked or cross-quoted quotes (i.e., bid price ≥ ask price) and negative trades or quotes. Two-tail *p*-values are presented in parentheses.

The sample firms are matched on industry and the prior three-year size-adjusted return. The matching process is described in Section 3 and in the notes to Table 2.

Table 5: The relation between institution investors' trading and a firm's inclusion in the worst board list

$$\Delta INSTITUTION_i = Firm\ Fixed\ Effects_i + \beta_1 * Q_{\_4i} + \beta_2 * Q_{\_3i} + \beta_3 * Q_{\_2i} + \beta_4 * Q_{\_1i} + \beta_5 * Q_{0i} + \beta_6 * Q_{+1} + \beta_7 * Q_{+2i} + \beta_8 * Q_{+3i} + \beta_9 * RETURN1Y_i + \beta_{10} * LOGSIZE_i + \beta_{11} * BOOK\text{-}TO\text{-}MARKET_i + \beta_{12} * LAG\_INSTITUTION_i + e_i$$

Panel A: All institutions

	Sample (*N*=377)	Match (*N*=547)
Q_{-4}	-0.219 (0.785)	-0.428 (0.618)
Q_{-3}	0.520 (0.510)	0.087 (0.919)
Q_{-2}	-0.113 (0.888)	-0.140 (0.954)
Q_{-1}	-0.131 (0.871)	-0.414 (0.635)
$\boldsymbol{Q_0}$	**2.340** **(0.001)**	**0.154** **(0.858)**
Q_{+1}	1.435 (0.064)	0.846 (0.350)
Q_{+2}	1.340 (0.149)	-2.712 (0.012)
Q_{+3}	1.270 (0.179)	0.891 (0.457)
RETURN1Y	0.101 (0.916)	-0.371 (0.680)
LOGSIZE	0.716 (0.506)	2.693 (0.045)
BOOK-TO-MARKET	1.465 (0.441)	-2.739 (0.088)
LAG_INSTITUTION	-0.307 (0.000)	-0.384 (0.000)
Firm Fixed Effects	*Not reported*	*Not reported*
Adjusted R^2	0.309	0.096
P-value for testing: $\alpha_5 = \alpha_4$	**0.007**	**0.596**
P-value for testing: $\alpha_5 + \alpha_6 + \alpha_7 + \alpha_8 = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4$	**0.003**	**0.976**

Panel B: Institutional investors' business classification

	Investment firms		Insurance firms		Banks		Others	
	Sample (*N*=377)	Match (*N*=547)	Sample (*N*=377)	Match (*N*=547)	Sample (*N*=377)	Match (*N*=547)	Sample (*N*=377)	Match (*N*=547)
Q_{-4}	-0.224 (0.753)	0.238 (0.751)	0.118 (0.466)	-0.034 (0.803)	-0.190 (0.506)	-0.552 (0.012)	0.060 (0.752)	0.023 (0.879)
Q_{-3}	0.843 (0.230)	1.143 (0.132)	0.310 (0.051)	-0.198 (0.154)	-0.662 (0.019)	-0.365 (0.102)	0.020 (0.913)	-0.397 (0.008)
Q_{-2}	0.561 (0.439)	0.985 (0.195)	0.255 (0.117)	-0.054 (0.701)	-0.930 (0.001)	-0.687 (0.002)	-0.040 (0.834)	-0.145 (0.339)
Q_{-1}	0.577 (0.428)	0.124 (0.872)	0.034 (0.832)	0.109 (0.434)	-0.735 (0.013)	-0.175 (0.445)	-0.072 (0.704)	-0.080 (0.600)
Q_{0}	2.424 (0.000)	0.980 (0.199)	0.133 (0.364)	-0.105 (0.470)	-0.325 (0.236)	-0.700 (0.002)	0.009 (0.958)	-0.037 (0.808)
Q_{+1}	2.853 (0.000)	1.879 (0.019)	-0.316 (0.039)	-0.105 (0.470)	-1.073 (0.000)	-0.635 (0.008)	-0.180 (0.318)	-0.106 (0.504)
Q_{+2}	1.759 (0.041)	-1.258 (0.188)	0.094 (0.615)	-0.307 (0.077)	-0.713 (0.037)	-0.358 (0.209)	0.011 (0.959)	-0.592 (0.002)
Q_{+3}	1.540 (0.077)	1.265 (0.231)	0.280 (0.140)	-0.012 (0.949)	-0.891 (0.012)	0.299 (0.338)	0.141 (0.525)	-0.446 (0.035)
RETURN1Y	0.517 (0.545)	0.499 (0.527)	0.076 (0.691)	0.228 (0.113)	-0.171 (0.614)	-0.385 (0.094)	-0.448 (0.045)	-0.563 (0.000)
LOGSIZE	0.332 (0.724)	1.441 (0.216)	0.028 (0.896)	0.523 (0.015)	0.244 (0.521)	0.372 (0.283)	0.102 (0.680)	0.380 (0.100)
BOOK-TO-MARKET	1.700 (0.299)	-2.148 (0.127)	-0.042 (0.914)	-0.088 (0.731)	-1.203 (0.074)	-0.206 (0.613)	0.874 (0.049)	-0.401 (0.148)
BEG_INSTITUTION	-0.282 (0.000)	-0.422 (0.000)	-0.416 (0.000)	-0.205 (0.000)	-0.331 (0.000)	-0.387 (0.000)	-0.238 (0.000)	-0.261 (0.000)
Firm Fixed Effects	*Not reported*	*Not reported*	*Not reported*	*Not reported*	*Not reported*	*Not reported*	*Not reported*	*Not reported*
Adjusted R^2	0.279	0.115	0.356	0.129	0.267	0.148	0.308	0.145
P-value for testing: $\alpha_5 = \alpha_4$	**0.023**	**0.362**	**0.591**	**0.346**	**0.209**	**0.056**	**0.705**	**0.816**
P-value for testing: $\alpha_5 + \alpha_6 + \alpha_7 + \alpha_8 = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4$	**0.000**	**0.860**	**0.213**	**0.916**	**0.530**	**0.540**	**0.978**	**0.169**

Panel C: Institutional investors' trading style

	Arbitrageurs		Quasi-index funds		Long-term investors	
	Sample (*N*=362)	Match (*N*=547)	Sample (*N*=362)	Match (*N*=547)	Sample (*N*=362)	Match (*N*=547)
Q_{-4}	-0.922 (0.107)	-0.031 (0.949)	0.617 (0.282)	-0.571 (0.323)	0.132 (0.794)	0.093 (0.785)
Q_{-3}	-0.753 (0.179)	0.172 (0.725)	0.907 (0.110)	-0.321 (0.580)	0.202 (0.686)	0.172 (0.615)
Q_{-2}	-0.477 (0.403)	1.053 (0.031)	-0.175 (0.761)	-0.779 (0.178)	0.482 (0.341)	-0.482 (0.157)
Q_{-1}	-0.665 (0.242)	0.017 (0.972)	0.306 (0.593)	-0.164 (0.779)	0.289 (0.566)	-0.282 (0.415)
Q_0	**0.926** **(0.074)**	**0.691** **(0.158)**	**1.013** **(0.052)**	**-0.267** **(0.646)**	**0.251** **(0.583)**	**-0.332** **(0.334)**
Q_{+1}	0.224 (0.678)	-0.170 (0.741)	-0.134 (0.805)	1.154 (0.058)	1.120 (0.018)	-0.099 (0.783)
Q_{+2}	0.027 (0.967)	-0.403 (0.508)	0.331 (0.615)	-1.086 (0.136)	0.853 (0.142)	-1.124 (0.009)
Q_{+3}	0.542 (0.417)	1.159 (0.088)	-0.040 (0.953)	0.531 (0.510)	0.734 (0.218)	0.707 (0.138)
RETURN1Y	1.361 (0.060)	1.213 (0.018)	-1.080 (0.112)	-0.543 (0.367)	0.146 (0.801)	-0.989 (0.006)
LOGSIZE	-0.084 (0.918)	0.741 (0.324)	-0.001 (0.999)	1.995 (0.028)	0.988 (0.183)	0.187 (0.723)
BOOK-TO-MARKET	3.533 (0.010)	-0.369 (0.686)	-1.705 (0.209)	-1.748 (0.103)	0.858 (0.474)	-0.634 (0.317)
BEG_INSTITUTION	-0.308 (0.000)	-0.384 (0.000)	-0.217 (0.000)	-0.413 (0.000)	-0.231 (0.000)	-0.250 (0.000)
Firm Fixed Effects	*Not reported*	*Not reported*	*Not reported*	*Not reported*	*Not reported*	*Not reported*
Adjusted R^2	0.138	0.131	0.230	0.108	0.190	0.102
P-value for testing: $\alpha_5 = \alpha_4$	**0.015**	**0.267**	**0.283**	**0.886**	**0.947**	**0.907**
P-value for testing: $\alpha_5 + \alpha_6 + \alpha_7 + \alpha_8 = \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4$	**0.003**	**0.962**	**0.747**	**0.184**	**0.170**	**0.069**

Notes to Table 5:

Δ*INSTITUTION* is the change in the quarterly percentage institutional holdings in the sample firms from the eighth calendar quarter before to third calendar quarter after the quarter of the *BW* publication. The firm fixed effects represent the conditional average change in the quarterly percentage institutional holdings from the eighth to the fifth calendar quarter before the quarter of the *BW* publication for each of the sample firms. Q_{-4},..., Q_0, ..., *and* Q_{+3} are indicator variables taking the value one in the fourth calendar quarter before, the third calendar quarter before, …, and the third calendar quarter after the quarter of the *BW* publication, respectively, and zero otherwise. *RETURN1Y* is the stock return over the year inclusive of the calendar quarter prior to the change in ownership measurement quarter. *LOGSIZE* is the log of total assets (in millions) at the end of the fiscal quarter prior to the change in the ownership measurement quarter. *BOOK-TO-MARKET* is the ratio of common book equity to total market capitalization at the end of the fiscal quarter prior to change in the ownership measurement quarter. *LAG_INSTITUTION* is the percentage of institutional ownership at the beginning of the calendar quarter. The number of observations is larger for the worst board firms because there are more unique worst board firms in the sample. Two-tail *p*-values are presented in parentheses. The *p*-values for the coefficient comparisons are based on the *F* test.

The sample firms are matched on industry and the prior three-year size-adjusted return. The matching process is described in Section 3 and in the notes to Table 2.

The institutions' trading classification in Panel B is based on Bushee (1998). He classifies institutions as transient institutions (arbitrageurs or short-term institutions), quasi-index funds, and dedicated institutions (long-term institutions). Transient institutions are those with diversified portfolios and high turnovers. Quasi-index funds are institutions with diversified portfolios and low turnovers. Dedicated institutions are those with more concentrated holdings and low turnovers. More detail on the institutional investor classification can be found in Bushee (1998; 2001).

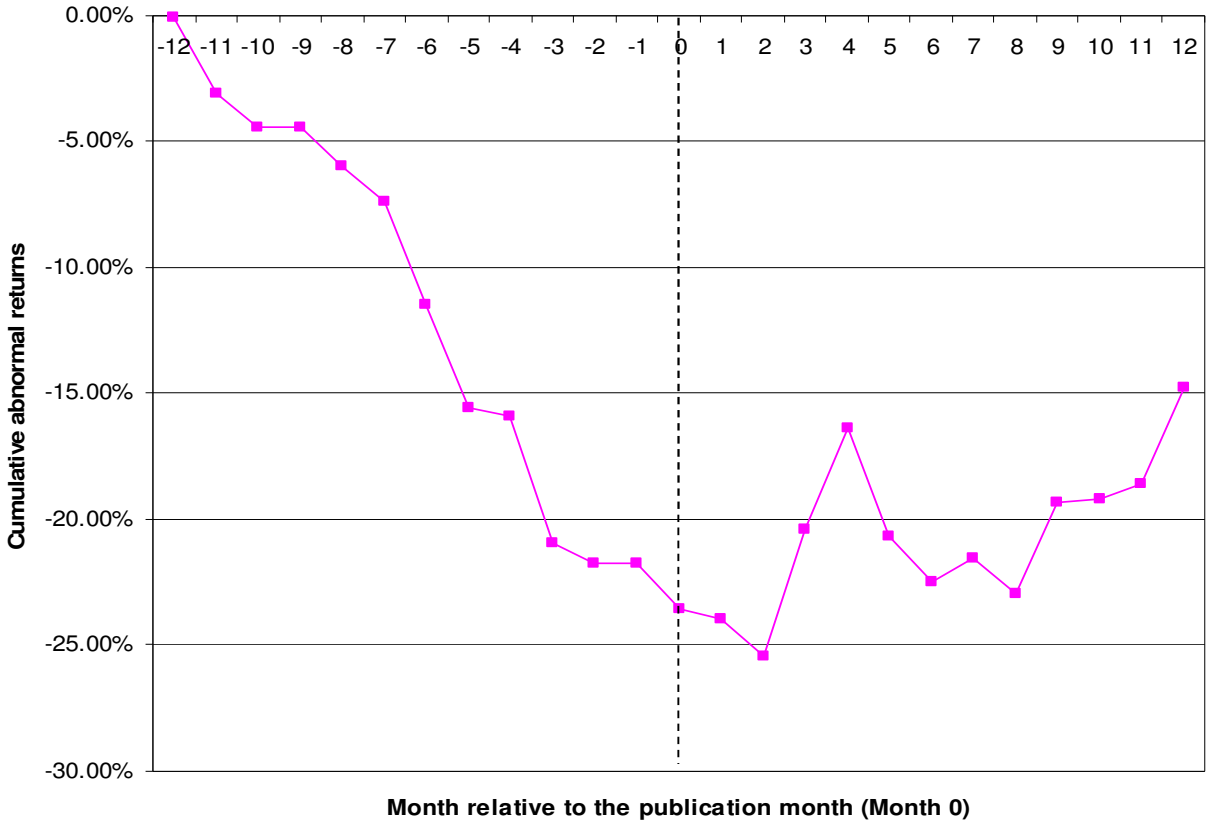

Figure 1. Cumulative abnormal returns around the *BW* publication of institutional investors' assessment of board ineffectiveness. The Fama and French three-factor model is used to estimate return expectations. The model is estimated over a maximum of 60 months ending 24 months prior to the *BW* publication month (Month 0).