

The Pennsylvania State University

The Graduate School

The Mary Jean and Frank P. Smeal College of Business Administration

**DO INSTITUTIONAL INVESTORS WHO HOLD LARGE STAKES OVER
LONG HORIZONS HAVE PRIVATE INFORMATION ABOUT FUTURE
PERFORMANCE?**

A Thesis in

Business Administration

by

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Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

August 2006

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ABSTRACT

Prior studies fail to find that dedicated institutional investors (those characterized by long trading horizons and high ownership stakes in portfolio firms) trade in anticipation of future performance. In this study, I find that dedicated institutions sell shares of bankrupt firms at least one quarter ahead of the bankruptcy quarter. Stock sales by dedicated institutions are greater for bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders than for bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders. I infer that dedicated institutions sell shares based on private information about future bankruptcies. In contrast, I find no evidence that transient institutional investors (those characterized by short trading horizons and low ownership stakes in portfolio firms) sell shares based on private information about future bankruptcies.

In a more general setting of all firms they hold, I find that dedicated institutions trade in anticipation of price changes from one to 24 months in the future (price changes over the long term); that dedicated institutions respond more than transient institutions to future price changes from month seven to month 24 (price changes beyond the short term); and based on supplementary analysis, dedicated institutions respond less than transient institutions to future price changes from month one to month three (price changes within the short term). These findings are consistent with dedicated institutions responding to private information about future performance before transient institutions.

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ACKNOWLEDGEMENTS

There are a number of specific individuals to whom I joyfully acknowledge my indebtedness, and gratitude:

First, my dissertation committee- Jim McKeown (chair), Bin Ke, Karl Muller, and Arun Upneja- who contributed most directly to the dissertation itself. Thanks to them for reading several drafts and providing valuable advice. Jim McKeown's wide array of knowledge and scholarly approach are a source of tremendous inspiration. His patient willingness to sit with me, help me sort out my thoughts, and correct my misconstructions have contributed toward the development of my research career. Bin Ke, with whom I share several relationships, as his student, research assistant and co-author, has inspired me in several ways. His passion for research, his efficiency, and work ethic have helped me develop these attributes myself. Karl Muller, has been a wonderful teacher and friend. His high standards and desire to push me to the next level have contributed tremendously toward the development of my research career. Arun Upneja is a wonderful person to talk to and has provided me with valuable comments.

Second, Charlie Smith, as former chair of the Accounting department, was instrumental in my choice to attend Pennsylvania State University. I thank him for his understanding and support throughout my doctoral studies.

Third, fellow students and other faculty members at the Pennsylvania State University, who have helped me in several ways throughout my years as a doctoral student. In particular, Jennifer Altamuro, Orié Barron, Anne Beatty, Shelley Curling, Paul Fischer, Dan Givolý, Steve Huddart, Alan Jagolinzer, Lihong Liang, Henock Louis, Brian Miller, Eddie Riedl, Ram Venkataraman, Hal White, and especially, Chunlin Mao,

Andy Sbaraglia, Monica Stefanescu, Tim Yoder, and Yong Yu (as batch mates, we six (referred to as, “the big six”) endured together coursework, comprehensive exams, and dissertation work). I also thank Garen Markarian for his friendship and support. Thank you all for being part of this uncanny and wonderful ride.

Fourth, I wish to thank a number of individuals at the following institutions for their comments on earlier versions of this dissertation: London Business School, University of Florida, University of Georgia, and University of Minnesota. I also thank Shuba Raghavan (Senior Research Associate, Yale Endowment) for informative discussions about their funds’ investment objectives and style, and the Smeal Dissertation Research Grants Program for financial assistance.

Fifth, I thank my Appa, Amma, Ashokanna, Chandrumama, Jagadeeshbhava Sheelakka, Naguattigge, Anu, Ramumama and Puttaramanna for their constant support and encouragement throughout my life. I also appreciate the support of my athe and mava.

Finally, I am grateful to my beloved wife, Namratha, for her support, sacrifice, and endurance. Thanks for being part of my life.

1. INTRODUCTION

In this study, I examine whether institutional investors characterized by long trading horizons and high ownership stakes in portfolio firms (hereafter, dedicated institutions) have private information on future performance of the firms they hold.^{1,2} Institutional investors constitute the largest investor group in the U.S. equity markets. For example, by December 1996, institutions held more than half of U.S. equities (Gompers and Metrick 2001). Dedicated institutions are non-indexers comprised mainly of private pension funds, endowments, foundations, and banks. Dedicated institutions invest mainly for longer-term dividend income or capital appreciation (Bushee 2001). In December 1999, dedicated institutions examined in this study held approximately \$1.5 trillion in common equity. Knowledge of whether these institutions have private information about future performance is important for investors who delegate their investment decisions to these institutions. Such knowledge contributes to evaluating the superiority of active portfolio management by dedicated institutions over passive investment.

Although there is some evidence that transient institutions (those characterized by high turnover and high diversification) or some mutual funds have private information about future performance (e.g., Wermers 2000; Ke and Petroni 2004), it is unclear whether dedicated institutions have that information. First, prior studies that examine institutions' informational advantages focus on transient institutions or mutual funds based on the idea that high portfolio turnover is associated with better stock-picking skills (Wermers 2000). However, dedicated institutions are characterized by low portfolio turnover. This could

¹ This type of institutional investors is commonly referred to as dedicated institutions by Porter (1992), Bushee (1998; 2001), etc. Following Bushee (1998; 2001), I use low portfolio turnover as a proxy for long trading horizon.

² Private information means non-public information and/or superior processing of public information.

suggest that, instead of investing based on private information, dedicated institutions are merely providing financial intermediary services to an investor clientele that prefers longer-term dividends or capital appreciation, along with low diversification. Second, prior studies that examine dedicated institutions fail to find evidence that dedicated institutions trade in anticipation of future earnings. For example, Ke and Petroni (2004) find that transient institutions sell in the quarter before a break in consecutive earnings increases, consistent with transient institutions being able to predict the timing of an earnings decrease after a string of increases. Their study fails to find evidence of such timed selling by dedicated institutions. Hribar, Jenkins, and Wang (2005) find that transient institutions sell in the quarter before accounting restatement announcements, consistent with transient institutions anticipating short-term earnings-related disclosures. Their study fails to find analogous evidence for dedicated institutions. Finally, Ke and Ramalingegowda (2005b) find that ownership changes by transient institutions are associated with long-term earnings growth forecast revisions made over the following two years but only to the extent that information will be reflected in short-term prices, consistent with transient institutions trading on long-term earnings information only if it will be reflected in prices within their short trading horizon. Their study fails to find evidence of association between changes in ownership by dedicated institutions and long-term earnings growth forecast revisions made more than two years in the future irrespective of when such revisions are reflected in prices.³

The lack of a detectable association between dedicated institutions' investments and future performance in prior studies is puzzling. Dedicated institutions invest large stakes in

³ Another stream of the literature examines institutional investors as firm monitors and asks whether their monitoring is associated with future firm performance. To my knowledge, the evidence is mixed. To the extent that dedicated institutions do not sell their stock based on private information about future poor performance because they believe they can help turn the firm around, some of my tests may lack power to detect trading.

few firms, indicating that they are likely to have profound knowledge of the firms they hold. Moreover, dedicated institutions claim investment advisory expenses in the millions of dollars every year, indicating that these institutions expend huge resources to obtain private information about future performance of stocks. A potential explanation for why the prior literature fails to detect any such association is that the performance events examined are not powerful signals of change in firm value for dedicated institutions. As I argue later, dedicated institutions focus more on the stock price at the end of their long trading horizon than on price movements in the short term. The events that prior studies examine, short-term earnings- related events and two-year sell-side analyst forecast revisions of long-term earnings growth, do not dominantly capture the stock's change in value from the perspective of dedicated institutions if they have a trading horizon longer than two years and/or they are focused on non-earnings information that affects prices of the next two years.

In this study, I use a more focused setting in which to investigate whether dedicated institutions have private information about future performance. First, I examine a firm-specific event, corporate bankruptcy filings, to investigate whether dedicated institutions trade in advance of this event. As I explain later, corporate bankruptcies are a powerful setting in which to determine whether dedicated institutions have private information because the bankruptcy event results in a large persistent loss of value for current shareholders, implying that if institutions anticipate impending bankruptcy filings they should sell their holdings at any time because its effects will last beyond their trading horizon. Next, I probe dedicated institutions' trading behavior in anticipation of future price changes over the long term in all firms they hold. This provides more general evidence on whether dedicated institutions have *any* private information about future performance as reflected in stock

prices by the end of an assumed long horizon. Following Froot, Scharfstein, and Stein (1992), Bushee (2001) and some other papers in the relevant literature, I take institutional investors' trading horizons as given and focus on the consequences of those horizons.

The results indicate that dedicated institutions sell more shares of bankrupt firms, compared to matched firms, at least one quarter ahead of the bankruptcy quarter, implying that dedicated institutions have private information about impending bankruptcies. This selling pattern is stronger for bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders than for bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders, implying that dedicated institutions have private information about the ultimate equity position of future bankrupt firms.⁴ In contrast, I find no evidence that transient institutions sell shares of bankrupt firms, compared to matched firms, after I control for their trades based on past returns and current prices, implying that they may not have incentives to collect *private* information on future bankruptcies.

In a more general setting of all firms they hold, I find that dedicated institutions trade in anticipation of price changes from one to 24 months in the future (price changes over the long term), implying that dedicated institutions have private information about future firm value as reflected in prices by the end of an assumed 24-month horizon. I do not find analogous evidence for transient institutions, consistent with these institutions either not having private information about firm value 24 months in the future or choosing not to trade on it. I also find that dedicated institutions respond more than transient institutions to future price changes from month seven to month 24 (price changes beyond the short term) and

⁴ It is also possible that dedicated institutions have more information about future bankrupt firms whose ultimate equity position is zero.

based on supplementary analysis, dedicated institutions respond less than transient institutions to future prices changes from month one to month three (price changes within the short term), implying that dedicated institutions respond to information about future performance before transient institutions.

This study improves our understanding of the role of dedicated institutions in the U.S. capital markets. It offers evidence that dedicated institutions trade upon private information about future performance. The findings should be of interest to investors who delegate their investment decisions to these institutions and to investors who mimic dedicated institutions' investments. The findings should also appeal to researchers and management consultants who assume that dedicated institutions because of their large long-term holdings have incentives to collect and trade on information about prices realized beyond the short term (e.g., Porter 1992; Jacobs 1992; Lowenstein 1988). Based on this assumption these researchers and consultants argue that U.S. corporations should attract dedicated institutions to alleviate pressures corporate managers face to focus excessively on short-term earnings at the expense of long-term value.

The remainder of this dissertation is organized as follows. Section 2 develops testable hypotheses. Section 3 discusses sample selection. Section 4 describes empirical methods and results. Section 5 discusses sensitivity analyses. Finally, section 6 concludes the study.

2. HYPOTHESIS DEVELOPMENT

2.1 Institutional Investors' Trading Behavior before Bankruptcy Filings

Dedicated institutions are associated with low turnover because they are geared toward longer-term dividend income or capital appreciation (Bushee 2001). This indicates

that dedicated institutions' information gathering ability, if any, is oriented more toward forecasting stock prices at the end of their long trading horizon than forecasting price movements in the short term.^{5,6} Dedicated institutions may not trade on short-term price drops even if they have the information on such movements because taking advantage of short-term price drops may not go over well with corporate management if corporate management believes that those trades will lead to an excessive price decrease. Graham, Harvey, and Rajgopal (2005) present survey evidence that suggests managers are concerned about adverse price reactions to short-term earnings decreases. Dedicated institutions have an incentive to establish and maintain good relations with corporate management if they aspire to seek board representation and/or be involved in strategic decision-making. Consistent with this objective, Porter (1992) argues that dedicated institutions undertake a "relationship investing" role, committing to provide long-term "patient" capital.⁷

Ex-ante, it is not clear what trading horizon captures the impact of dedicated institutions' investments. Data availability and inference problems hinder long-horizon tests. An implicit solution to this problem is to examine their investment decisions in anticipation of an event that results in a large persistent loss of value for current shareholders. A bankruptcy filing represents such an event, providing important information on the filing

⁵ "We measure our success by the long-term progress of the companies rather than by the month-to-month movements of their stocks." (Warren Buffett in *An Owner's Manual 1999*, Berkshire Hathaway, Inc.)

⁶ "I want a simple business, easy to understand, great economics now, honest and able management, and then I can see about in a general way where they will be ten years from now" (Buffett's *Talk* to MBA students at University of Florida, 1998, pages 8-13, www.tilsonfunds.com/buffetmungerspeeches.html.)

⁷ "Blum Capital takes a substantial position in order to establish a productive "seat at the table." We generally strive to be the largest shareholder and, on a friendly basis, also will seek Board representation, if we feel that it will enhance our ability to create value... Blum Capital is as disciplined when exiting an investment as we are when making one. Our sell decisions are based on a long-term perspective, rather than quarterly performance or short-term price fluctuations." (Statement on Strategy, Blum Capital, <http://www.blumcapital.com/strategy/index.html>)

firm's distress conditions and increased bankruptcy costs.⁸ Once a firm enters bankruptcy, it is liquidated, adjudicated bankrupt, acquired, or reorganized in some form. In any case, pre-petition shareholders usually lose most if not all of their equity to creditors. Gilson (1990) analyzes the reorganization plans of his sample of bankrupt firms and finds that pre-petition shareholders retain only 12% (20%) ownership of common stock in the median (mean) reorganized entity. Similarly, LoPucki and Whitford (1993) find that pre-petition shareholders retain only 13% (28%) ownership of common stock in their median (mean) reorganized entity. These findings imply that if institutions anticipate future bankruptcy filings, they should sell their holdings at any time because its effects will last beyond their trading horizon.⁹

Dedicated institutions are generally contrarian investors, investing in firms that experience poor past and current performance (Bushee 2001; Ke and Ramalingegowda 2005b). This suggests that dedicated institutions are likely to buy or hold poorly performing stocks unless they have private information that those firms are headed for bankruptcy, in which case they are likely to sell. Since bankrupt firms experience poor performance in the periods before bankruptcy, these firms provide a powerful setting in which to examine dedicated institutions' trading behavior based on private information.¹⁰ Although some bankruptcy filings may not take the market by complete surprise, it is not obvious whether investors, including dedicated institutions, have information about future bankruptcies on

⁸ Clark and Weinstein (1983) report an average cumulative abnormal return (CAR) of -47% over three days around the filing date, while Lang and Stultz (1992) report an average CAR of -22% for two days ending on the filing date.

⁹ In some cases pre-petition shareholders don't lose all of their equity. I address this issue in the next hypothesis.

¹⁰ Transient institutions, on the other hand, are momentum investors that sell firms with poor past and current performance, thus it is unclear, ex-ante, if transient institutions will be even holding bankrupt firms in the years before bankruptcy. However, I conduct all analyses on transient institutions as well.

average. According to Weiss Ratings Inc., 79.8% of sample companies that filed for bankruptcy during May to August 2002 received Buy and/or Hold recommendations from brokerage firms six months before the filing date.¹¹ Further, anecdotal evidence suggests that many institutional investors held large amounts of technology and airline stocks in the quarters before the dates those companies filed for bankruptcy (e.g., see Fitzpatrick 2004). Nevertheless, based on their profound knowledge of portfolio firms on account of their large concentrated stakes (Porter 1992), I expect dedicated institutions to have private information on future bankruptcy filings.¹² This leads to Hypothesis 1:

H1: Dedicated institutions decrease their stock holdings in anticipation of future bankruptcy filings.

Some firms emerge from bankruptcy as reorganized firms with pre-petition shareholders retaining a significant positive equity position.¹³ Bankruptcy may not be the end of the road for pre-petition shareholders in these firms. Since dedicated institutions focus on price at the end of their long trading horizon, they are more likely to be concerned about firms in which they anticipate their ultimate equity position to be zero than in bankrupt firms in which they anticipate their ultimate equity position to be positive. Therefore, if dedicated institutions have private information, I expect them to differentiate among future bankrupt firms based on the ultimate equity position of pre-petition shareholders. I expect that dedicated institutions sell more of future bankrupt firms that ultimately are liquidated or

¹¹ <http://www.weissratings.com/News/Broker/20021007broker.htm>

¹² Fitzpatrick (2004), providing supporting evidence, indicates that certain institutional investors like Warren Buffet sold shares in anticipation of impending bankruptcies.

¹³ One main reason for this is that some firms file for bankruptcy protection even though they are economically viable to achieve objectives that are unrealized outside the bankruptcy arena. Reasons include unilateral abrogation of contractual obligations. It is alleged that Texaco filed for chapter 11 protection to avoid paying litigation damages of \$10.53 billion to Pennzoil, even though Texaco's equity was estimated to be \$13 billion and liquidation value of up to \$26 billion (Delaney 1992).

reorganized with zero equity to pre-petition shareholders than of future bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders.

This leads to the following hypothesis:

H2: Dedicated institutional investors decrease their stock holdings more in future bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders than in future bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders.

2.2 Institutional Investors' Trading Behavior ahead of Price Changes in all firms

The above two hypotheses examine the response of dedicated institutions to a specific event. To provide more general evidence on dedicated institutions' information advantage, I examine dedicated institutions' trades in anticipation of future price changes over the long term (i.e., price changes from one to 24 months in the future), in all firms they hold. A drawback to this analysis compared to the bankruptcy analysis is that here I have to make an assumption about dedicated institutions' trading horizon. No such assumption is necessary in the analyses involving bankruptcies because in that setting there is a persistent impact on pre-petition shareholders' value.

As I mention before, prior studies fail to detect any association between dedicated institutions' ownership changes and future earnings. However, since stock prices capture information that is not yet reflected in earnings, examining the response of dedicated institutions to future price changes over the long term provides some general evidence on whether dedicated institutions have *any* private information about future performance as reflected in stock prices by the end of an assumed long trading horizon. An example of information that is likely to be reflected in stock prices but not in earnings is management quality. Anecdotal evidence indicates that dedicated institutions focus on the general trend of

prices over a long term rather than predict price changes around specific events.¹⁴ Bushee (2001) finds that both their level and changes in ownership are insensitive to most performance, growth, and risk characteristics, and he argues that dedicated institutions base their investment decisions on intangible factors such as the quality of management. Thus, if dedicated institutions have any private information about future performance as reflected in stock prices at the end of their long trading horizon, I expect that dedicated institutions' investment decisions are associated with future stock price changes over a long term.¹⁵ This is formalized in Hypothesis 3 as follows:

H3: Dedicated institutions increase (decrease) their stock holdings in anticipation of future stock price increases (decreases) over the long term.

Many researchers and management consultants argue that U.S. firms should attract dedicated institutions to alleviate the pressure for myopic managerial behavior (e.g., Porter 1992; Jacobs 1992; Lowenstein 1988).¹⁶ Widespread allegations suggest that corporate managers are either unwilling or unable to make investments necessary for the long term, focusing excessively on short-term earnings (referred to as myopic managerial behavior) because of pressures from transient institutions that are fixated on short-term earnings (Porter 1992; Jacobs 1992; Lowenstein 1988). A key assumption that drives transient institutions'

¹⁴ “If you are right about a business you will make a lot of money. The timing part of it is very tricky thing so I don't worry about any given event if I got a wonderful business what it does next year or something of the sort” (Buffett's *Talk* to MBA students at University of Florida, 1998, www.tilsonfunds.com/buffetmungerspeeches.html)

¹⁵ Ke and Ramalingegowda (2005b) find no evidence that extreme changes in ownership by dedicated institutions predict future returns. In H3, I examine whether ownership changes by dedicated institutions is associated with decile ranks of future returns. This design is more powerful than examining whether extreme changes in dedicated institutions' ownership predicts future returns because extreme changes in dedicated institutions' ownership could be because of inflow and outflow of funds to institutions rather than their informed trading.

¹⁶ Elgin (1992) provides evidence in support of firms hiring consultants to help them target institutions with long trading horizons.

fixation on short-term earnings is that information on long-term firm value may not be reflected in stock prices within their trading horizons.¹⁷ Consistent with the allegations, empirical and survey evidence suggests that transient institutions' excessive focus on short-term earnings leads to inefficient prices and that managers are willing to sacrifice projects with greater value that will be realized beyond the short term in favor of actions that achieve short-term earnings targets (Bushee 2001; Graham, Harvey and Rajgopal 2005). Researchers such as Porter (1992), Jacobs (1992), and Lowenstein (1988) therefore advocate that firms attract dedicated institutions. They argue that dedicated institutions because of their large long-term holdings can alleviate the pressure for myopic managerial behavior.¹⁸ An underlying assumption behind their arguments is that dedicated institutions collect and trade on information on long-term firm value. As my final hypothesis, I examine whether dedicated institutions respond more than transient institutions to future prices realized beyond the short term (e.g., price change from month seven to month 24 in the future). This will shed light on whether dedicated institutions anticipate long-term value.

Froot, Scharfstein, and Stein (1992) develop a model wherein short-term investors trade only on information that will be reflected in prices within their short trading horizon. Bushee (2001) finds that the level of ownership by transient institutions is positively associated with the proportion of firm value in next year's expected earnings and is negatively associated with the proportion of firm value in expected earnings beyond the next year. These studies suggest that transient institutions respond more to information that is reflected in future short-term prices. Dedicated institutions, as I argue before, focus on stock

¹⁷ Long term firm value is firm value realized beyond the short term.

¹⁸ Dedicated institutions' trades help correctly price managerial actions, which in turn reduces or eliminates pressures for myopic managerial behavior. Another way in which dedicated institutions can reduce managerial myopic behavior is to engage in explicit governance activities.

prices at the end of their long trading horizon. Since information realized beyond the short-term likely affects stock prices at the end of their long trading horizon, dedicated institutions are likely to trade on such information, if it is available. Further, as I argue before, dedicated institutions are less likely to trade on price movements within the short term per se. Thus, I expect dedicated institutions to respond more than transient institutions to information that is reflected in future prices beyond the short term, and I expect dedicated institutions to respond less than transient institutions to information that is reflected in future prices within the short term. This leads to Hypotheses H4a and H4b.¹⁹

H4a: Dedicated institutions respond more than transient institutions to future price changes beyond the short term

H4b: Dedicated institutions respond less than transient institutions to future price changes within the short term.

3. SAMPLE SELECTION

My bankruptcy sample consists of available U.S. public firms that filed bankruptcy petitions under Chapter 11 or Chapter 7 from 1987 to 2002. I require a minimum of 16 and a maximum of 24 consecutive quarters of necessary data to estimate the regression model.²⁰ In the case of multiple filings by a firm, I choose the earliest filing only. Data for my price tests (i.e., H3, H4a, and H4b) consist of all firm-quarters from 1981 to 2002 with required data to estimate the regression models.

¹⁹The difference between Hypothesis 3 and Hypothesis 4 is the following. In Hypothesis 3, I examine whether dedicated institutions respond to information about firm value as reflected in stock price changes, measured over two years. I do not differentiate between when firm value is reflected in stock prices as long as it is reflected in prices within two years. In Hypothesis 4, I seek to provide evidence on whether dedicated and transient institutions differentiate between information reflected in prices in the short term versus beyond the short term.

²⁰ Institutional ownership classification is available from 1981 to 2002.

The sample of bankrupt firms is obtained from the SDC Platinum database and from New Generation Research Inc. All U.S. public companies that have \$10 million or more in assets and file for Chapter 11 bankruptcy protection are included in SDC Platinum. Major U.S. public companies that file for Chapter 11 or Chapter 7 bankruptcy protection are obtained from New Generation Research Inc. Information on the ultimate equity position of pre-petition shareholders is collected from bankruptcy reports in LEXIS-NEXIS.

Financial statement data are from CRSP/COMPUSTAT Merged - Combined Industrial Quarterly. Returns data are from the CRSP monthly stock returns file. Data on institutional ownership are from CDA Spectrum. The SEC requires that all institutions with greater than \$100 million of securities file form 13(f) every calendar quarter. On the form, common stock positions greater than 10,000 shares or \$200,000 must be disclosed. Going-concern opinion data are obtained from NAARS reports (1984 to 1993) and EDGAR filings (1994 to 2002).

I identify dedicated institutions based on the classification scheme used in Bushee (2001). To classify the trading orientation, Bushee (2001) collects six variables that capture the past investment behavior of each institutional investor in terms of both portfolio diversification and turnover. He then uses factor analysis to produce one factor that captures the average size of an institution's stake in its portfolio firms and another factor that captures the degree of portfolio turnover and cluster analysis to group similar institutions into one of three clusters: quasi-indexing, transient, or dedicated. Quasi-indexing institutions have low turnover and high diversification, transient institutions are characterized by high turnover and high diversification, and dedicated institutions have low turnover and low diversification. Quasi-indexers are considered passive investors as they tend to make buy-and-hold

investments in a broad set of companies and trade only when there is a major change in a given firm. Transient institutions have short trading horizons, and actively look for short-term trading profits. Dedicated institutions follow a buy-and-hold strategy, placing large stakes in a small number of companies.²¹ Although I focus on dedicated institutions, I conduct all analyses on the other two types of institutions as well.

4. EMPIRICAL METHODS AND RESULTS

4.1 Institutional Investors' Trading Behavior before Bankruptcy Filings

Bankrupt firms experience distress conditions many periods before bankruptcy. Any test of investor trading in anticipation of future bankruptcies should also account for potential trading in response to distress conditions. To test whether dedicated institutions respond to future bankruptcy filings, I use a matched pair design. For each bankrupt firm, I choose a matching firm with similar distress conditions two years before the bankruptcy filing quarter when it is unlikely that bankruptcy could have been predicted with confidence. The matching firm is chosen based on the following criteria: (1) the matching firm has at least 16 consecutive quarters of data required to estimate the regression equation, (2) the matching firm did not file for bankruptcy in any of the years up to three years following the filing of the corresponding bankrupt firm, and (3) the ex-ante probability of bankruptcy (*BKPROB*) of the matching firm is closest to that of the bankrupt firm. The last condition ensures that both matching and bankrupt firms have similar distress conditions at that time. I compute *BKPROB* using the following model, developed by Shumway (2001).²²

²¹ Appendix A contains a sample list of dedicated institutions according to Bushee's classification.

²² The results are not sensitive to using Ohlson's (1980) model.

$$BKPROB = \frac{e^{\alpha}}{1 + e^{\alpha}}$$

where, $\alpha = -13.303 - 1.982$ (net income/ total assets) + 3.593 (total liabilities/total assets) – 0.467*log (market value/total market value on CRSP) -1.809 (market adjusted returns) + 5.791 (std. dev of market model residuals). According to this model, higher *BKPROB* indicates higher probability of bankruptcy.

Table 1 reports the univariate pattern of percentage ownership (shares held as a percentage of shares outstanding) in bankrupt firms (Panel A) and matched firms (Panel B) at the end of each of the 16 quarters before the bankruptcy quarter. In Panel A, columns 1 to 3 report the pattern by institution-type (dedicated, transient, and quasi-indexer) for the full sample of 105 bankrupt firms. Columns 4 to 6 pertain to 38 bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders (hereafter, positive equity firms), and columns 7 to 9 relate to 40 bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders (hereafter, zero equity firms).²³

In the full sample of 105 bankrupt firms (Panel A), dedicated institutions decrease their percentage ownership from 9.63% to 6.87% (difference of -2.76%) over the four quarters before the bankruptcy quarter. Although the net change in percentage ownership over all 16 quarters is only -1.4% (from 8.27% to 6.87%) for all bankrupt firms, it is more negative for zero equity firms. As column 7 reports, dedicated institutions decrease their percentage ownership from 9.19% to 4.76% (difference of -4.43%) in zero equity firms. Overall, the ownership patterns for dedicated institutions indicate that they own bankrupt firms less, and bankrupt firms with zero equity substantially less, as bankruptcy approaches.

²³ Information on the ultimate equity position is unavailable for the remaining 27 bankrupt firms mainly because these cases are not yet resolved or documentation of resolution, if any, is unavailable.

This pattern is consistent with dedicated institutions selling bankrupt firms upon private information about future bankruptcies and ultimate equity position in future bankrupt firms.

Over the 16-quarter horizon, transient institutions appear to be decreasing their percentage ownership in bankrupt firms with most of the decrease occurring in the year before the bankruptcy filing quarter. Although this univariate pattern appears to be consistent with them having private information about future bankruptcy filings, it is important to note that the selling pattern also indicates a mechanical momentum strategy. Unlike dedicated institutions that are contrarian investors, transient institutions are primarily momentum investors, that buy stocks with good past returns and sell stocks with poor past returns (Bushee 2001; Ke and Petroni 2004). Sehyun and Bradley (1997) find that bankrupt firms experience a price drop from two years before the filing month. Given these findings, transient institutions' ownership patterns in Panel A more likely indicate a mechanical momentum strategy of selling firms based on poor past returns or lower current prices than transient institutions having private information about future bankruptcy filings. Healy (2002), providing support for this type of trading behavior, indicates that mechanical trading rules, such as selling a stock if it falls 10-15%, worked well for several mutual funds in 2001 as they sold stocks that later entered bankruptcy. Forthcoming multiple regression analyses provide evidence in support of a mechanical momentum strategy by transient institutions.

Quasi-indexer institutions also appear to be decreasing their ownership in both kinds of bankrupt firms over the 16-quarter horizon. The selling pattern is consistent with quasi-indexers selling bankrupt firms upon private information about future bankruptcies or simply following a momentum investment style (Ke and Petroni 2004). Between the two

alternatives, the former is less likely because quasi-indexers generally follow an indexing strategy and thus may not have a strong incentive to collect any private information.

Panel B reports patterns of institutional ownership in matched firms. Comparing the percentage of ownership in matched firms with that in bankrupt firms, all three types of institutions have smaller ownership levels of bankrupt firms than matched firms in the quarter before bankruptcy. This is in spite of a higher level of percentage ownership in bankrupt firms at quarter -16 .

To more carefully examine the relationship between institutions' trades and future bankruptcy filings, I conduct an event study analysis in which firm quarters are arranged in event time according to the length of the period by which they precede the bankruptcy filing quarter. I estimate the following fixed effects regression model, where the matched-pair difference in the change in percentage institutional ownership (i.e., change in percentage institutional ownership in the bankrupt firm – change in percentage institutional ownership in the corresponding matched firm) is regressed on the pair-wise difference in explanatory variables:-

$$\begin{aligned}
 d\Delta OWN_{it} = & \alpha_p + \beta_1 QTR1_{it} + \beta_2 QTR2_{it} + \beta_3 QTR3_{it} + \beta_4 QTR4_{it} + \beta_5 dBKPROB_{it} \\
 & + \beta_6 dMOM1_{it} + \beta_7 dMOM2_{it} + \beta_8 dTVOL_{it} + \beta_9 d \ln(PRICE)_{it} + \beta_{10} d \ln(MV)_{it} \\
 & + \beta_{11} dBM_{it} + \beta_{12} dUE_{it} + \beta_{13} dSPRANK_{it} + \beta_{14} dYIELD_{it} + \beta_{15} dOWN_{it-1} \\
 & + \beta_{16} dPW_{it-1} + \varepsilon_{it}
 \end{aligned}
 \tag{1}$$

The prefix “d” in front of a variable indicates the difference between the bankrupt firm and its matched firm variable. The description and computation of the variables are as follows:

ΔOWN_{it} = $OWN_t - OWN_{t-1}$; where OWN_t is ownership by institution type (dedicated, transient, or quasi-indexer) as a percentage of the outstanding shares at the end of a calendar quarter;

- α_p = fixed effects dummy for each pair of bankrupt and matched firms;
- $QTRx_{it}$ = one if the institutional ownership measurement quarter is the x^{th} quarter prior to the bankruptcy filing quarter, zero otherwise;
- $BKPROB_{it}$ = probability of bankruptcy using Shumway (2001), computed using accounting data of the prior fiscal quarter-end and returns data prior to the institutional ownership change measurement quarter;
- $MOM1_{it}$ = buy-and-hold raw return for the calendar quarter before the institutional ownership change measurement quarter;
- $MOM2_4_{it}$ = buy-and-hold raw return over two to four calendar quarters before the institutional ownership change measurement quarter;
- $TVOL_{it}$ = average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership change measurement quarter;
- $PRICE_{it}$ = price per share at the end of the institutional ownership change measurement quarter;
- MV_{it} = total market capitalization of the common stock computed at the end of the prior fiscal quarter;
- BM_{it} = ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter;
- UE_{it} = earnings surprise based on seasonal random walk divided by total assets, for the earnings reported in the institutional ownership change measurement quarter;
- $SPRANK_{it}$ = S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership change measurement quarter;
- $YIELD_{it}$ = dividend for the past year divided by MV;
- OWN_{it-1} = ownership by institution type (dedicated, transient, or quasi-indexer) as a percentage of the outstanding shares at the beginning of a calendar quarter; and

PW_{it-1} = weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolio of all institutions of a particular type (dedicated, transient or quasi-indexer).²⁴

$QTR1$ to $QTR4$ measure the difference between the change in institutional ownership in bankrupt firms and the change in institutional ownership in matched firms in the quarter(s) prior to the bankruptcy quarter relative to the difference between the change in institutional ownership in bankrupt firms and the change in institutional ownership in matched firms in quarters of the baseline. For example, $QTR1$ captures the difference between the change in institutional ownership in bankrupt firms and the change in institutional ownership in matched firms in the quarter prior to the bankruptcy quarter relative to the difference between the change in institutional ownership in bankrupt firms and the change in institutional ownership in matched firms in quarters of the baseline. Because it is not clear how many quarters in advance institutions may respond to future bankruptcies, I examine up to four quarters prior to the filing. Sehyun and Bradley (1997) examine the returns to bankrupt firms in the five years before the filing month. They find that the bankrupt firms experienced a price drop from 2 years before the filing month. They show that the price dropped 17.44% in the second year before the filing month, 47.82% in the first year before the filing month, 37.20% in the six months before the filing month and 28.09% in the filing month. Since most of the percentage price decrease occurs in the window starting six months before the filing month, examining institutional trading response in the year before the bankruptcy quarter is a

²⁴ The formula for the weighted mean portfolio weight of a stock is $\Sigma(W_i * MV_i) / \Sigma(MV_i)$, where W_i is the weight of a stock in institution i 's portfolio and MV_i is the market value of all stocks owned by institution i . The portfolio weight of a stock in an institution's stock portfolio is computed as the ratio of the dollar value of the institution's ownership in the stock to the market value of all stocks owned by the institution.

powerful test.²⁵ As a sensitivity analysis, I include an additional variable representing the second year before the bankruptcy quarter and obtain similar results (see section 5). To support Hypothesis 1, I expect dedicated institutions to sell more shares of bankrupt firms than that of matched control firms before the bankruptcy quarter. Specifically, I expect $\beta_1 + \beta_2 + \beta_3 + \beta_4 < 0$.²⁶ I acknowledge that this research design does not allow one to verify whether a negative coefficient on the main variables of interest is because institutions sell bankrupt firms or because they buy matched firms. Thus, I also present analysis wherein I estimate the regression on my sample of bankrupt firms and matched firms separately. As a sensitivity check, I estimate the regression on a stacked sample consisting of both bankrupt firms and matched firms, allowing for different coefficients across bankrupt firms and matched firms (see section 5).

BKPROB controls for the ex-ante probability of bankruptcy for each firm at a given point in time that is known to the market. *MOM1* and *MOM2_4* control for institutional investors' tendency to trade based on past performance (Lang and McNichols 1997; Wermer 1999). *TVOL*, *MV*, *BM*, and *UE* capture institutional investors' preferences for liquid firms, large vs. small firms, value vs. growth firms, and high unexpected earnings respectively (Gompers and Metrick 2001; Lang and McNichols 1997). *MV* also accounts for any pre-disclosure of bankruptcy information. Because market value of equity (*MV*) is a crude control for bankruptcy information that is pre-disclosed to the market, as a sensitivity check, I use raw returns for the entire quarter as a proxy for pre-disclosure of bankruptcy information and obtain similar results (see section 5). *PRICE* controls for major reasons of potential

²⁵ My sample of bankrupt firms experience a price drop of 20.03% in the second year before the filing quarter, 60.70% in the first year before the filing quarter, and 45.51% in the six months before the filing quarter.

²⁶ Since I do not have a prediction of when dedicated institutions sell, I test Hypothesis 1 on the sum of the four *QTR* coefficients and not on the individual *QTR* coefficients.

delisting.²⁷ *PRICE* also accounts for institutions' preferences toward liquid stocks (Gompers and Metrick 2001). *SPRANK* and *YIELD* account for institutional investors' preferences toward stocks that are considered prudent investments according to prudence case laws, which some institutions are subject to given their fiduciary role (Del Guercio 1996; Gompers and Metrick 2001). *OWN*_{t-1} is included to control for institutional ownership at the beginning of the calendar quarter. Prior literature finds that this variable affects how much buying or selling is likely to occur during the quarter (Ke and Petroni 2004; Ke and Ramalingegowda 2005). For example, if institutions, as a group, already own substantial proportion of a firm, it is difficult for institutional ownership to increase. *PW* is the weighted mean portfolio weight of a stock in the holdings of all institutions of a particular type at the beginning of the quarter. This controls for the extent to which total stock investments of all institutions of a particular type are allocated to a given firm.

To test whether dedicated institutions sell more of bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders than of bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders (Hypothesis 2), I estimate the following fixed effects regression model. The model is the same as Model 1 but with four additional variables, which are interaction terms with the main variables of interest in Model 1. The new interaction terms capture the incremental selling in bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders compared to bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders. Note that Model 1 is a partial model compared to

²⁷ In untabulated analysis, I include an indicator variable equal to one if price is less than \$5, zero otherwise. This accounts for trades by institutions based on a benchmark price. Conclusions are similar.

Model 2. Nonetheless, I estimate Model 1 first because of data availability restrictions with respect to the ultimate equity position of bankrupt firms. Model 2 is specified as follows:-

$$\begin{aligned}
 d\Delta OWN_{it} = & \alpha_p + \beta_1 QTR1_{it} + \beta_2 QTR2_{it} + \beta_3 QTR3_{it} + \beta_4 QTR4_{it} \\
 & + (\beta_{1a} QTR1_{it} + \beta_{2a} QTR2_{it} + \beta_{3a} QTR3_{it} + \beta_{4a} QTR4_{it}) * ZEROEQ + \beta_5 dBKPROB_{it} \\
 & + \beta_6 dMOM1_{it} + \beta_7 dMOM2_{it} + \beta_8 dTVOL_{it} + \beta_9 d \ln(PRICE)_{it} + \beta_{10} d \ln(MV)_{it} \\
 & + \beta_{11} dBM_{it} + \beta_{12} dUE_{it} + \beta_{13} dSPRANK_{it} + \beta_{14} dYIELD_{it} + \beta_{15} dOWN_{it-1} \\
 & + \beta_{16} dPW_{it-1} + \varepsilon_{it}
 \end{aligned}
 \tag{2}$$

ZEROEQ_i = one for bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders and zero for bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders;

The remaining variables are as defined under Model 1. To support Hypothesis 2, I expect that

$$\beta_{1a} + \beta_{2a} + \beta_{3a} + \beta_{4a} < 0.$$

Table 2 reports descriptive statistics on all variables used in the regression analysis. My full bankruptcy sample consists of 2,298 quarterly observations of 105 bankrupt firms and 2,298 quarterly observations of 103 matched firms.²⁸ The observations pertain to 24 quarters before the bankruptcy quarter. Although the median quarterly change in the percentage ownership by dedicated institutions (see $\Delta DEDICATED$) is zero, the mean is negative for bankrupt firms, indicating that trades by dedicated institutions in bankrupt firms are predominantly sales. Note that the mean and median quarterly changes in the percentage ownership by transient and quasi-indexing institutions (see $\Delta TRANSIENT$, and $\Delta QINDEX$) are negative for bankrupt firms. Further, the mean change in the percentage ownership in

²⁸ Two matching firms are included in the sample twice.

bankrupt firms is significantly different from the mean change in the percentage ownership in matched firms, for all three types of institutions.

The last column in Table 2 indicates that there are significant differences between bankrupt firms and matched firms with respect to many control variables. Of particular interest is the ex-ante probability of bankruptcy (*BKPROB*), the variable I use to select matching firms two years before the bankruptcy quarter. Although there is no significant difference between bankrupt firms and matching firms with respect to *BKPROB* in the quarter I undertake the matching process (not tabulated), there appears to be a significant difference on average over all quarters of the six preceding years.²⁹ Significant differences between bankrupt firms and matched firms with respect to *BKPROB* and some other control variables are likely to affect institutional selling, thereby indicating a need to control for these factors in the multiple regression analysis that follows.

Table 3 Panel A reports regression results in support of hypothesis 1. Model 1 estimated separately for each type of institution (*DEDICATED*, *TRANSIENT*, *QINDEX*) is reported in columns 1 to 3.³⁰ Because my main focus is on dedicated institutions, I first discuss results in column 1. My main variables of interest are *QTR1* to *QTR4*. The sum of the four *QTR* variables is -3.482 . Consistent with expectations, this is significantly negative (F-value 18.325, one-tail p-value 0.000), providing support for Hypothesis 1. This finding indicates that dedicated institutions sell shares based on private information about future bankruptcy filings. Since the dependent variable is the difference between the change in the

²⁹ The probability of bankruptcy for bankrupt firms appears to be very low. Hillegeist, Keating, Cram, and Lundstedt (2004) document mean probabilities of bankruptcy of 1.21% and 2.66% based on variables in Altman (1968) and Ohlson (1980) respectively in the year of bankruptcy for bankrupt firms.

³⁰ Inferences made from this table and all the following tables are not sensitive to deletion of outliers according to [1] DFITS influence statistic (observations with DFITS statistic $> \text{abs}(2)$ were deleted), or [2] R-student ratio (observations with R-student ratio $> \text{abs}(2)$ were deleted).

percentage ownership in bankrupt firms and the change in the percentage ownership in matched firms, the sum -3.482 is the net change in the percentage ownership in the year before the bankruptcy quarter by dedicated institutions. One could argue that the negative sum may reflect buying in matched firms and not necessarily selling in bankrupt firms. In subsequent analysis, I examine dedicated institutions' selling behavior in bankrupt firms separately and find results similar to those reported in column 1.

Results on individual *QTR* variables indicate that dedicated institutions' selling in quarters 1 and 3 (see *QTR1* and *QTR3*) is significant at conventional significance levels. Dedicated institutions' selling in quarters 2 and 4 (see *QTR2* and *QTR4*) is significant at 10% one-tail significance levels. The large negative coefficient on *QTR3* compared to that of *QTR2* or *QTR4* is on account of dedicated institutions buying matched firms (see Table 3 Panel B column 2) in quarter 3 before the bankruptcy quarter. Overall, evidence on individual *QTR* coefficients indicates that dedicated institutions have private information about future bankruptcy filings at least one quarter in advance of the bankruptcy quarter.³¹ I leave it to the reader to evaluate the significance of selling in *QTR2* through *QTR4*.

Column 2 reports results for transient institutions. The sum of the four *QTR* variables is insignificant (two-tail p-value 0.899), which indicates insufficient evidence to conclude that transient institutions sell shares based on private information about future bankruptcy filings. This may be surprising given that prior literature finds that transient institutions trade in anticipation of future performance. Significant positive coefficients on *MOM1*, *MOM2_4*, and $\ln(\text{PRICE})$ are consistent with transient institutions selling more shares of bankrupt firms compared to that of matched firms due to relatively lower past returns and lower current

³¹ Untabulated analysis indicates that the mean (median) distance from the start of the bankruptcy quarter to the bankruptcy filing date is 48 (47) days.

prices of bankrupt firms relative to their matched counterparts. Untabulated analysis indicates that the sum of the four *QTR* variables becomes significantly negative when I exclude *MOM1*, *MOM2_4*, and $\ln(\text{PRICE})$ from the regression model. Overall, the findings are consistent with transient institutions selling bankrupt firms based on public information as reflected in prices. Healy (2002), providing support for this type of trading behavior, indicates that mechanical trading rules, such as selling a stock if it falls 10-15%, worked well for several mutual funds in 2001 as they sold stocks that later entered bankruptcy.³² By selling firms with decreasing prices, transient institutions naturally sell bankrupt firms along with other firms with similar poor price performance; whereas dedicated institutions sell only those poor performers that eventually go bankrupt, implying that dedicated institutions somehow distinguish poor price performers into those that will or will not go bankrupt.

Column 3 reports results for quasi-indexing institutions. The sum of the four *QTR* variables is insignificant (two-tail p-value 0.934), indicating insufficient evidence to conclude that quasi-indexing institutions sell shares based on private information about future bankruptcy filings. The results for quasi-indexing institutions may not be surprising because they tend to follow an indexing strategy and thus do not have a strong incentive to collect private information.

To verify that the results for dedicated institutions in column 1 are not driven by dedicated institutions buying matched firms, I estimate a model similar to Model 1 on the

³² Results from Table 1 and Table 3 indicate that both dedicated and transient institutions avoid bankrupt firms. Evidence is consistent with dedicated institutions avoiding bankrupt firms based on private and public information while transient institutions doing so based on public information only. One could ask which type of institution is better off in the end or whether private information about future bankruptcy is required to avoid those firms. While these questions are interesting questions for future research, these are not the focus of my study at this point. My intention is to examine whether dedicated institutions have private information about future performance.

sample of bankrupt and matched firms separately. The difference between Model 1 and the model used for this analysis is as follows. In Model 1, the matched-pair difference in the change in institutional ownership (i.e., the change in institutional ownership in the bankrupt firm – the change in institutional ownership in the matched firm) is regressed on the pairwise difference in explanatory variables. In the model used for this analysis, the variables are not differenced. This helps me examine institutions' trading behavior in bankrupt firms and matched firms separately. The results are reported in Table 3 Panel B. In column 1, the sum of the four *QTR* variables is -2.56 and is significantly negative. This is consistent with dedicated institutions selling shares of bankrupt firms before the bankruptcy quarter based on private information about future bankruptcy filings. The results on individual coefficients *QTR1* to *QTR4* are similar to those in Table 3 Panel A. With respect to matched firms, the sum of the four *QTR* variables in column 2 is 1.23 and is significantly positive. This is consistent with dedicated institutions buying shares of matched firms before the bankruptcy quarter. The coefficient on *QTR3* is almost twice as that of *QTR2*. This sheds some light on the large negative coefficient on *QTR3* compared to that of *QTR2* in Table 3 Panel A column 1. Columns 3 to 6 report transient and quasi-indexer institutions' trading behavior in bankrupt and matched firms separately. Findings are similar to those in columns 2 and 3 of Table 3 Panel A. Basically, there is no evidence that either of these two types of institutions have private information about future bankruptcy filings.

The selling in bankrupt firms by dedicated institutions in the quarter before the bankruptcy quarter (1.089% of shares outstanding in bankrupt firms) is economically significant. Because the mean dedicated institutional ownership in bankrupt firms at the beginning of the quarter is 7.96% and the mean fiscal quarter end market capitalization of

firms in the quarter before the bankruptcy quarter is \$572.40 million, the 1.089% selling figure represents 13.68% ($1.089/7.96$) of dedicated institutions' total ownership and \$US 6.23 million ($1.089\% * 572.40$), on a per firm basis. Similarly, if one considers dedicated institutions' selling in the four quarters before bankruptcy, they sell 26.58% ($2.56/9.63$) of their total ownership, which amounts to \$US 18.69 million per firm.

In Hypothesis 2, I expect dedicated institutions to sell more of bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders than bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders. Table 4 Panel A reports the regression results of Model 2. The main variables of interest are the four interaction variables, where *ZEROEQ* is interacted with *QTR1* to *QTR4*. In column 1, the sum of the four *QTR* interaction variables is -4.154 . Consistent with expectations, this is significantly negative (F-value 6.794, one-tail p-value 0.004), providing support for Hypothesis 2. This finding indicates that dedicated institutions sell more of bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders than of bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders. This is consistent with dedicated institutions having private information about the ultimate equity position of bankrupt firms. To verify that the results are not driven by dedicated institutions buying matched firms, I estimate the regression on the samples of bankrupt and matched firms separately. The results are reported in Table 4 Panel B. In column 1, the sum of the four *QTR* interaction variables is -4.529 and is significantly negative (F-value 11.998, one-tail p-value 0.000). This is consistent with the findings in column 1 of Table 4 Panel A. The sum of the coefficients on the stand-alone *QTR* variables is negative and significant (F-value 4.170, one-tail p-value 0.020) in column 1 of

Table 4 Panel A but significant only at the one-tail 10% level in column 1 of Table 4 Panel B (F-value 1.99, one-tail p-value 0.079). These findings suggest that the statistically significant sum of the coefficients on the stand-alone *QTR* in column 1 of Table 4 Panel A may be partially driven by dedicated institutions buying matched firms. Thus, evidence on dedicated institutions selling bankrupt firms that are liquidated or reorganized with positive equity is inconclusive.

Columns 2 and 3 of Table 4 Panel A report results for transient and quasi-indexer institutions respectively. The findings are similar to those in Table 3 Panel A. Overall, there is no evidence that either of these two types of institutions sell shares based on private information of future bankruptcy filings.

4.2 Institutional Investors' Trading Behavior ahead of Price Changes in all firms

Thus far, the evidence indicates that dedicated institutions have private information about future bankruptcy filings. To provide more general evidence on their information advantage, I test: (1) whether dedicated institutions trade in anticipation of future price changes over the long term, that is Hypothesis 3, and (2) whether dedicated institutions respond more (less) than transient institutions to future price changes beyond (within) the short term, that are Hypotheses 4a and 4b. To test the former (i.e., Hypothesis 3), I examine the association between changes in institutional ownership and future buy-and-hold market-adjusted returns from one to 24 months after the institutional ownership change measurement quarter (i.e., calendar quarters $t+1$ to $t+8$). I use S&P 500 index return as the market

benchmark.³³ I estimate the following fixed effects regression model over a sample of all firms that have required data:-

$$\Delta OWN_{it} = \alpha_i + \alpha_t + \beta_1 RRET_{it+1,t+8} + \beta_2 MOM1_{it} + \beta_4 MOM2_{4it} + \beta_5 TVOL_{it} + \beta_6 \ln(PRICE)_{it} + \beta_7 \ln(MV)_{it} + \beta_8 BM_{it} + \beta_9 UE_{it} + \beta_{10} SPRANK_{it} + \beta_{11} YIELD_{it} + \beta_{12} OWN_{it-1} + \beta_{13} PW_{it-1} + \varepsilon_{it}.$$

(3)

α_i = fixed effects dummy for each firm;

α_t = fixed effects dummy for each calendar quarter; and

$RRET_{it+1,t+8}$ = decile rank of buy-and-hold market adjusted returns computed over calendar quarters t+1 to t+8, where calendar quarter t is the institutional ownership change measurement quarter.

The remaining variables are as defined under Model 1. $RRET_{it+1,t+8}$ is a proxy for future price changes over the long term.³⁴ To facilitate the interpretation of the regression coefficients, the decile rankings of $RRET_{it+1,t+8}$ are reduced by one and divided by nine, so as to range between zero and one. As a result, the regression coefficient on this variable can be interpreted as the difference in institutional investors' ownership change between the top and bottom deciles of this variable. To support Hypothesis 3, I expect β_1 to be positive.

To test whether dedicated institutions respond more (less) than transient institutions to future price changes beyond (within) short term, which are Hypotheses 4a and 4b, I estimate the following regression model, where the difference between the change in dedicated institutional ownership and the change in transient institutional ownership is regressed on firm-specific explanatory variables and institution-wise difference in explanatory variables. I

³³ My investigation of dedicated institutions' websites indicates that many use the S&P 500 index as their benchmark. However, the results are similar when I use the CRSP value weighted index as a benchmark.

³⁴ In untabulated analysis, I measure returns from t+2 to t+9 and find similar results.

use buy-and-hold market-adjusted returns from month one to month six after the institutional ownership change measurement quarter (i.e., calendar quarters t+1 and t+2) as a proxy for future price changes within the short term and buy-and-hold market-adjusted return from month seven to month 24 after the institutional ownership change measurement quarter (i.e., calendar quarters t+3 and t+8) as proxy for future price changes beyond the short term.

The specification is as follows:-

$$\begin{aligned} \Delta DOWN_{it} = & \alpha_i + \beta_1 RRET_{it+1,t+2} + \beta_2 RRET_{it+3,t+8} + \beta_3 MOM1_{it} + \beta_4 MOM2_{it} + \beta_5 TVOL_{it} + \beta_6 \ln(PRICE)_{it} \\ & + \beta_7 \ln(MV)_{it} + \beta_8 BM_{it} + \beta_9 UE_{it} + \beta_{10} SPRANK_{it} + \beta_{11} YIELD_{it} + \beta_{12} DOWN_{it-1} + \beta_{13} DPW_{it-1} + \varepsilon_{it} \end{aligned} \quad (4)$$

The prefix ‘‘D’’ in front of a variable indicates a difference between dedicated institutions’ and transient institutions’ variable. The definition and computation of variables not already defined under Model 1 are as follows:

α_i = fixed effects dummy for each firm;

$RRET_{it+1,t+2}$ = decile rank of buy-and-hold market adjusted returns computed over calendar quarters t+1 and t+2, where calendar quarter t is the institutional ownership change measurement quarter; and

$RRET_{it+3,t+8}$ = decile rank of buy-and-hold market adjusted returns computed over quarters t+3 to t+8, where calendar quarter t is the institutional ownership change measurement quarter.

$RRET_{it,t+2}$ is a proxy for future price changes within the short term and $RRET_{it+3,t+8}$ is a proxy for future price changes beyond the short term. To facilitate the interpretation of the regression coefficients, the decile rankings of $RRET_{it+1,t+2}$ and $RRET_{it+3,t+8}$ are reduced by one and divided by nine, so as to range between zero and one. To support Hypothesis 4a, I expect $\beta_2 > 0$. To support Hypothesis 4b, I expect $\beta_1 < 0$. Note that this research design restricts the

coefficients across institution types. Thus, I also present analysis wherein I estimate the regression for dedicated and transient institutions separately. As a sensitivity check, I estimate the regression on a stacked sample (wherein the unit of observation is institution-firm-quarter) and use interaction terms to capture the incremental effect for one institution type over the other (see section 5).

Table 5 reports descriptive statistics on 321,718 firm-quarters from 1981 to 2002 that have data on all variables used in regression Models 3 and 4. The mean quarterly change in the percentage ownership by dedicated institutions ($\Delta DEDEDICATED$) is 0.137%, in contrast to that of 0.064% by transient institutions ($\Delta TRANSIENT$). The mean quarterly percentage ownership is higher for quasi-indexing institutions ($QINDEX$) compared to the other two types. The values of PW indicate that quasi-indexing institutions' stock portfolios are more diversified than those of dedicated and transient institutions.

Untabulated spearman correlation coefficients indicate that $\Delta DEDEDICATED$ is positively correlated with $RRET_{it+1,t+8}$, $RRET_{it+1,t+2}$, and $RRET_{it+3,t+8}$. The correlation between $\Delta DEDEDICATED$ and $RRET_{it+3,t+8}$ is larger than the correlation between $\Delta DEDEDICATED$ and $RRET_{it+1,t+2}$, indicating that dedicated institutions may have more private information on $RRET_{it+3,t+8}$ than on $RRET_{it+1,t+2}$. With respect to transient institutions, $\Delta TRANSIENT$ is positively correlated with $RRET_{it+1,t+8}$, $RRET_{it+1,t+2}$ and $RRET_{it+3,t+8}$. However, the correlation between $\Delta TRANSIENT$ and $RRET_{it+3,t+8}$ is smaller than the correlation between $\Delta TRANSIENT$ and $RRET_{it+1,t+2}$, indicating that transient institutions may have more private information on $RRET_{it+1,t+2}$ than on $RRET_{it+3,t+8}$. With respect to quasi-indexer institutions, $\Delta QINDEX$ is positively correlated with $RRET_{it+1,t+2}$ but not significantly correlated with

either $RRET_{it+3,t+8}$ or $RRET_{it+1,t+8}$. This may not be surprising because quasi-indexing institutions tend to follow an indexing strategy and thus do not have a strong incentive to collect any private information.

Table 6 presents results estimated on Model 3. Column 1 reports results for dedicated institutions. Consistent with expectations, $RRET_{it+1,t+8}$ is significantly positive, providing support for Hypothesis 3. This is consistent with dedicated institutions responding to private information about future firm performance as reflected in stock prices by the end of two years. Consistent with prior literature (e.g., Ke and Petroni 2004; Ke and Ramalingegowda 2005b), the significantly negative coefficients on $MOM1$, and $MOM2_4$ imply that dedicated institutions are contrarian investors. The significantly positive coefficients on $\ln(PRICE)$, BM , and $YIELD$ indicate that dedicated institutions prefer to invest in high-priced, value-oriented, dividend-yielding stocks.

Table 6 column 2 reports results for transient institutions. The coefficient on $RRET_{it+1,t+8}$ is negative. Although significant, the negative coefficient provides no evidence that transient institutions trade in anticipation of future price changes from one to 24 months. The negative association could be a manifestation of transient institutions moving away from firms whose value will not be reflected in prices in the short term. Consistent with this idea, Bushee (2001) finds that transient institutions respond positively to future expected short-term earnings and negatively to future expected long-term earnings. Table 6 column 3 reports results for quasi-indexer institutions. The coefficient on $RRET_{it+1,t+8}$ is significantly negative, providing no evidence that quasi-indexer institutions trade in anticipation of future price changes from one to 24 months. Ke and Petroni (2005) and Hribar et al. (2005) also find that quasi-indexers trade in the wrong direction.

Table 7 reports results (estimated on Model 4) in support of Hypotheses 4a and 4b. Consistent with expectations, $RRET_{it+3,t+8}$ is significantly positive in column 1, providing support for Hypothesis 4a. This finding is consistent with dedicated institutions responding more than transient institutions to private information on future firm performance that is reflected in prices beyond the short term. The coefficient on $RRET_{it+1,t+2}$ is negative but significant only at the one-tail 10% level. This is inconsistent with Hypothesis 4b. Untabulated analysis indicates that $RRET_{it+1,t+2}$ is significantly negative at the one-tail 5% level when I use the CRSP value weighted index as market benchmark. In an ex-post analysis, I re-estimate Model 3 using a more powerful proxy for price changes within the short term, namely, price changes over the next quarter ($RRET_{it+1}$). Results from this analysis are presented in column 2. The coefficient on $RRET_{it+1}$ is significantly negative. More importantly, it is significant at the 1% level, providing evidence consistent with dedicated institutions responding less than transient institutions to private information about future firm performance that is reflected in prices within the short term.

Because the dependent variable is the difference between the change in percentage ownership by dedicated institutions and the change in percentage ownership by transient institutions, one could argue that the positive coefficient on $RRET_{it+3,t+8}$ may be a manifestation of transient institutions selling in response to an anticipated increase in $RRET_{it+3,t+8}$, rather than dedicated institutions buying in response to an anticipated increase in $RRET_{it+3,t+8}$. To verify this, I estimate the model separately for each type of institution. The results are reported in columns 3 to 6. The dependent variable is the change in percentage ownership by each institution type. Because the results in column 2 indicate that $RRET_{it+1}$ is a more powerful proxy than $RRET_{it+1,t+2}$ for future price changes within the short term, I

present two sets of results for each institution type, one with $RRET_{it+1,t+2}$ and $RRET_{it+3,t+8}$ as proxies for future price changes within the short term and beyond the short term respectively and another with $RRET_{it+1}$ and $RRET_{it+2,t+8}$ as proxies for future price changes within the short term and beyond the short term respectively. Columns 3 and 4 relate to dedicated institutions. Consistent with expectations, the coefficient on $RRET_{it+3,t+8}$ is positive. This implies that dedicated institutions buy shares in response to an anticipated increase in $RRET_{it+3,t+8}$. The coefficient on $RRET_{it+1,t+2}$ is insignificant, providing insufficient evidence to conclude that dedicated institutions respond to future price changes within the short term. This is consistent with dedicated institutions not gathering or trading on private information about future short-term prices per se. This is not surprising because, as I argue before, dedicated institutions focus on prices at the end of their trading horizon and not on price movements in the short term. Column 4 reports results for dedicated institutions based on the alternate proxies for future price changes within the short term and beyond the short term. The results are similar to those in column 3.

Columns 5 and 6 relate to transient institutions. In column 5, the coefficient on $RRET_{it+3,t+8}$ is significantly negative. This is consistent with the findings in Table 6. The coefficient on $RRET_{it+1,t+2}$ is insignificant, which is inconsistent with prior literature that finds that transient institutions respond positively to private information that is reflected in prices in the short term. When I re-estimate the model using a more powerful proxy to capture future price changes in the short term (see column 6), the coefficient on $RRET_{it+1}$ becomes significantly positive. In untabulated analysis, I find no evidence that quasi-indexer institutions respond to future price changes within or beyond the short term. Overall, the

results in table 7 are consistent with dedicated institutions trading on private information about future performance before transient institutions.

5. SENSITIVITY ANALYSES

Stacked regression analysis

Models 1 and 4 are difference-in-variables design (i.e., in model 1 all variables are differences between bankrupt firms and matched firms and in model 4 the dependent variable and some control variables are differences between that for dedicated and transient institutions). As a sensitivity check, I estimate the following regression on a stacked sample of bankrupt firms and matched firms in lieu of Model 1:

$$\begin{aligned}
\Delta OWN_{it} = & \alpha_i + \alpha_t + \beta_1 QTR1_{it} + \beta_2 QTR2_{it} + \beta_3 QTR3_{it} + \beta_4 QTR4_{it} \\
& + BKFIRM * (\beta_{1a} QTR1_{it} + \beta_{2a} QTR2_{it} + \beta_{3a} QTR3_{it} + \beta_{4a} QTR4_{it}) \\
& + \beta_5 BKFIRM + \beta_6 BKPROB_{it} + \beta_7 MOM1_{it} + \beta_8 MOM2_4_{it} + \beta_9 TVOL_{it} \\
& + \beta_{10} \ln(PRICE)_{it} + \beta_{11} \ln(MV)_{it} + \beta_{12} BM_{it} + \beta_{13} UE_{it} + \beta_{14} SPRANK_{it} \\
& + \beta_{15} YIELD_{it} + \beta_{16} OWN_{it-1} + \beta_{17} PW_{it-1} + BKFIRM * (\beta_{6a} BKPROB_{it} \\
& + \beta_{7a} MOM1_{it} + \beta_{8a} MOM2_4_{it} + \beta_{9a} TVOL_{it} + \beta_{10a} \ln(PRICE)_{it} \\
& + \beta_{11a} \ln(MV)_{it} + \beta_{12a} BM_{it} + \beta_{13a} UE_{it} + \beta_{14a} SPRANK_{it} \\
& + \beta_{15a} YIELD_{it} + \beta_{16a} OWN_{it-1} + \beta_{17a} PW_{it-1}) + \varepsilon_{it}
\end{aligned} \tag{5}$$

and the following regression on a stacked sample of dedicated and transient institutional ownership observations in lieu of Model 4:

$$\begin{aligned}
\Delta OWN_{it} = & \alpha_i + \alpha_t + \beta_1 RRET_{it+1,t+2} + \beta_{1A} DEDICATED * RRET_{it+1,t+2} + \beta_2 RRET_{it+3,t+8} \\
& + \beta_{2A} DEDICATED * RRET_{it+3,t+8} + \beta_3 MOM1_{it} + \beta_4 MOM2_4_{it} + \beta_5 TVOL_{it} + \beta_6 \ln(PRICE)_{it} \\
& + \beta_7 \ln(MV)_{it} + \beta_8 BM_{it} + \beta_9 UE_{it} + \beta_{10} SPRANK_{it} + \beta_{11} YIELD_{it} + \beta_{12} OWN_{it-1} + \beta_{13} PW_{it-1} \\
& + \beta_{14} DEDICATED + DEDICATED * (\beta_{3A} MOM1_{it} + \beta_{4A} MOM2_4_{it} + \beta_{5A} TVOL_{it} \\
& + \beta_{6A} \ln(PRICE)_{it} + \beta_{7A} \ln(MV)_{it} + \beta_{8A} BM_{it} + \beta_{9A} UE_{it} + \beta_{10A} SPRANK_{it} + \beta_{11A} YIELD_{it} \\
& + \beta_{12A} OWN_{it-1} + \beta_{13A} PW_{it-1}) + \varepsilon_{it}
\end{aligned} \tag{6}$$

in the above two models,

α_i = fixed effects dummy for each firm;

α_t = fixed effects dummy for each calendar quarter;

BKFIRM = equals 1 if bankrupt firm, 0 if non-bankrupt matched firm;

DEDICATED = equals 1 if ΔOWN is by dedicated institutions, zero if ΔOWN is by transient institutions; and

all other variables are as defined under Model 1 or Model 4. The above regressions allow for different coefficients across the two groups. The results based on stacked regression of bankrupt firms and matched firms are reported in Table 8. The sum of the four *QTR*BKFIRM* variables is -2.889 and is significantly negative. Consistent with findings in Table 3 Panel A, the results in Table 8 indicate that dedicated institutions sell more shares of bankrupt firms compared to matched firms in anticipation of future bankruptcy filings. The results based on stacked regression of dedicated and transient institutional ownership observations are reported in Table 9. In column 1, the coefficient on *DEDICATED*RRET_{t+3,t+8}* and *DEDICATED*RRET_{t+1,t+2}* is significantly positive and negative respectively.³⁵ Overall, the results are consistent with Hypothesis 4a and 4b. Note that although dedicated institutions respond to longer term returns (*RRET_{t+3,t+8}*) more positively than transient institutions do, the total response by dedicated institutions to longer term returns is insignificant (sum of *RRET_{t+3,t+8}* and *DEDICATED*RRET_{t+3,t+8}* is insignificant, F-value=0.67). Column 2 of table 8 reports results when I re-estimate Model 6 by adding current quarter returns (*MOM0*) as an additional control variable. Here, the total

³⁵ The likely reason why the coefficients in Table 9 column 1 are different from those in Table 7 columns 3 to 6 is that the fixed effects dummies are constrained across the dedicated and transient groups in Model 6.

response by dedicated institutions to longer term returns is significantly positive (F-value=25.23). A likely explanation is that a positive response to $RRET_{t+3,t+8}$ was confounded by a negative response to $MOM0$ (see $DEDICATED * MOM0$).

Institutional trading in periods up to two years before bankruptcy

In the main analysis, I examined institutions' trading behavior in the one year before the bankruptcy quarter. Here, I examine whether any type of institutions anticipate bankruptcies earlier than the one year examined before. Table 10 presents analysis similar to Table 3 (based on model 1) but with the addition of another variable to capture trades in the second year (quarters 5 to 8) before the bankruptcy quarter. As in Table 3, I estimate the model separately for each type of institution. Column 1 reports the results for dedicated institutions. The sum of the four QTR variables, representing the first year before bankruptcy is -3.337 and significantly negative (F-value 15.901, one-tail p-value 0.000). This is consistent with the results in Table 3 Panel A that dedicated institutions are selling in the year before bankruptcy. However, the coefficient on the second year, $QTR5_8$ is insignificant indicating a lack of detectable trades by dedicated institutions in the second year before bankruptcy.³⁶ Columns 2 and 3 pertain to transient and quasi-indexer institutions respectively. Neither the sum nor any of the QTR variables is significant, indicating a lack of detectable trades by transient or quasi-indexers in the periods up to two years before bankruptcy. In untabulated analysis, I examine whether any type of institution differentiates between zero equity and positive equity bankruptcies two years before the bankruptcy quarter. Inferences remain unchanged.

³⁶ However, the sum of all QTR variables, representing both first and second year before bankruptcy is -3.292 and significantly negative (F-value 13.07, one-tail p-value 0.000).

Addition of current quarter returns and going-concern opinions as control variables

Table 11 reports regression results based on Model 1 with addition of current-quarter returns ($MOM0$) as an additional control variable. Although $MOM0$ loads marginally for dedicated institutions and strongly for transient institutions, there is no indication that $MOM0$ affects the inferences made on my main variables of interest. The results on my main variables are similar to that found in Table 3 Panel A. Tables 12 and 13 report regression results based on Models 3 and 4 respectively, with the addition of current-quarter returns ($MOM0$) as an additional control variable. In Table 12, $MOM0$ is significantly negative in column 1 and significantly positive in column 2. However, the sign and significance of $RRET_{t+1,t+8}$ is similar to that in Table 6, providing no indication that $MOM0$ affects the inferences made in Table 6. In Table 13, addition of $MOM0$ enhances the significance of $RRET_{t+1,t+2}$ in columns 1 and 3 as compared to that in Table 7 columns 1 and 5, thereby, providing stronger support for Hypothesis 4b.

Table 14 reports regression results based on Model 1 with an addition of going-concern opinion (GC) as a control variable. As mentioned before, going-concern opinion data are obtained from NAARS reports (1984 to 1993) and EDGAR filings (1994 to 2002). If the auditor's signature date in NAARS reports is in the last two weeks of the calendar quarter, I assume that the market has access to this information in the next calendar quarter, otherwise in the quarter of the auditor's signature date. If the 10K filing date in EDGAR is in the last week of the calendar quarter, I assume that the market has access to this information in the next calendar quarter, otherwise in the quarter of the 10K filing date. As reported in Table 14, the coefficient on GC is insignificant for all three institutions. More importantly, the

coefficients and signs of my main variables are not sensitive to the addition of GC.

Inferences are similar to that made from Table 3 Panel A.

Do dedicated institutions possess private information for both past winners and past losers?

To examine if dedicated institutions possess private information for both past winners and past losers in my price tests, I allow the coefficient on $RRET$ in Model 4 to vary between firms whose past one-year abnormal returns were positive vs. negative. $PASTRET$ equals one if the past one-year SP500 index adjusted returns is negative, zero otherwise. The results are reported in Table 15. In column 1, the coefficients on $RRET_{t+1,t+8}$ and $PASTRET * RRET_{t+1,t+8}$ are insignificant and significantly positive respectively. This indicates that dedicated institutions' positive response to future two-year performance, as observed in Table 6, is likely driven by firms that experienced poor past performance.

6. CONCLUSION

Ex-ante, it is not clear whether dedicated institutional investors (those characterized by long trading horizons and high ownership stakes in portfolio firms) have private information on future performance of their portfolio firms. Prior studies that examine these institutions fail to find evidence that dedicated institutions trade in anticipation of future earnings. In this study, I analyze the trading patterns of dedicated institutions in the quarters leading up to the bankruptcy filing quarter. After controlling for distress (through a matched-pair design), and other factors known to affect institutional trades, I find that dedicated institutions decrease their stock holdings in bankrupt firms at least one quarter ahead of the bankruptcy quarter. I infer that dedicated institutions' trades are motivated in part by private

information about future bankruptcies. The selling pattern is stronger in bankrupt firms that ultimately are liquidated or reorganized with zero equity for pre-petition shareholders than for bankrupt firms that ultimately are liquidated or reorganized with positive equity for pre-petition shareholders. I infer that dedicated institutions' trades are motivated in part by private information about the ultimate equity position of future bankrupt firms.

I find no evidence that transient institutions (those characterized by short trading horizons and low ownership stakes in portfolio firms) sell shares of bankrupt firms, compared to matched firms, after I control for their trades based on past returns and current prices, implying that they may not have incentives to collect *private* information on future bankruptcies. This is surprising in the context of findings from prior research that shows that these institutions have private information about future performance. My findings are consistent with momentum investing being their primary investment strategy, in that, transient institutions appear to be selling bankrupt firms based on past and current performance. The results are insensitive to numerous sensitivity checks that incorporate alternate research design choices and additional controls.

To provide more general evidence on dedicated institutions' information advantage, I analyze dedicated institutions' trades in anticipation of future price changes over the long term in all firms they hold. I find that dedicated institutions trade in anticipation of price changes from one to 24 months in the future. I infer that dedicated institutions have private information about future firm performance as reflected in stock prices by the end of a 24-month trading horizon. I also find that dedicated institutions respond more than transient institutions to future price changes from month seven to month 24; and based on supplementary analysis, dedicated institutions likely respond less than transient institutions to

future price changes from month one to month three. I infer that dedicated institutions trade on private information about future performance before transient institutions. The results are insensitive to numerous sensitivity checks that incorporate alternate research design choices and additional controls.

This study contributes to our understanding of the role of dedicated institutions in the U.S. capital markets. It offers evidence that dedicated institutions possess, and trade upon, private information about (1) a forthcoming major event (i.e., bankruptcy filings) and (2) future price changes over the long term in all firms they hold. The findings should be of interest to investors who delegate their investment decisions to these institutions and to investors who mimic dedicated institutions' investments. The findings should also appeal to researchers and management consultants who assume that dedicated institutions because of their large long-term holdings have incentives to collect information on long-term value. Based on this assumption these researchers and consultants argue that U.S. firms should attract dedicated institutions to alleviate pressures corporate managers face to focus excessively on short-term earnings at the expense of long-term firm value. An interesting area of future research, with respect to the latter finding, is to shed light on the specific source of the price changes that dedicated institutions trade upon.

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Table 1 Panel A: Pattern of percentage ownership (shares held as a percentage of shares outstanding) at the end of the quarter by institution type in bankrupt firms.

Pattern in (1) all bankrupt firms (2) subsample of bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders, and (3) subsample of bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders

TIME	All bankrupt firms (n=105)			Bankrupt firms with positive equity (n=38)			Bankrupt firms with zero equity (n=40)		
	DEDICATED	TRANSIENT	QINDEX	DEDICATED	TRANSIENT	QINDEX	DEDICATED	TRANSIENT	QINDEX
-1	6.87	3.76	10.44	7.62	3.60	10.39	4.76	5.50	11.91
-2	7.96	4.99	12.21	7.75	4.71	11.77	7.27	7.49	14.58
-3	8.40	5.49	13.04	8.23	5.19	12.89	8.02	8.11	15.29
-4	9.09	6.37	14.10	8.87	6.43	13.81	9.03	8.83	16.56
-5	9.63	7.03	14.86	9.65	7.12	14.66	9.36	9.74	17.84
-6	9.50	8.26	15.96	8.87	7.45	15.36	9.53	11.01	19.30
-7	9.31	7.66	16.69	8.79	6.87	15.58	9.19	9.90	21.00
-8	9.37	8.46	16.74	8.26	7.58	15.15	8.90	10.92	21.38
-9	9.67	8.27	16.82	8.51	7.64	15.47	8.95	11.08	21.24
-10	9.45	8.25	16.61	8.33	8.05	15.12	8.64	11.06	20.42
-11	9.75	8.32	16.91	8.39	7.49	15.23	9.55	12.06	20.62
-12	9.63	8.61	17.11	8.07	8.07	15.42	9.75	12.17	20.59
-13	9.27	9.15	17.01	7.14	8.60	14.79	9.89	12.82	20.57
-14	8.85	9.26	16.94	6.74	9.30	14.60	9.68	12.13	20.80
-15	8.42	9.23	16.54	5.92	9.42	14.09	9.38	11.64	20.44
-16	8.27	9.54	16.69	5.56	9.18	14.31	9.19	11.56	20.80

TIME is the quarter relative to the bankruptcy quarter. DEDICATED, TRANSIENT, and QINDEX are the percentage of ownership (shares held as a percentage of shares outstanding) at the end of the calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively.

Table 1 Panel B: Pattern of percentage ownership (shares held as a percentage of shares outstanding) at the end of the quarter by institution type in matched firms.

Pattern in (1) all matched firms (2) subsample of matched firms that correspond to bankrupt firms with positive equity, and (3) subsample of matched firms that correspond to bankrupt firms with zero equity.

TIME	All matched firms (n=105)			Matched firms for bankrupt firms with positive equity (n=38)			Matched firms for bankrupt firms with zero equity (n=40)		
	DEDICATED	TRANSIENT	QINDEX	DEDICATED	TRANSIENT	QINDEX	DEDICATED	TRANSIENT	QINDEX
-1	8.82	7.37	15.17	9.52	8.06	16.21	8.47	7.20	13.26
-2	8.54	7.47	15.35	9.31	8.41	17.15	8.00	7.23	13.08
-3	8.59	6.91	15.14	9.43	8.08	16.58	8.05	6.04	13.28
-4	8.15	7.16	15.27	9.37	7.85	16.88	7.11	6.28	13.80
-5	8.12	6.78	15.32	9.27	6.82	16.92	6.95	6.35	13.90
-6	8.18	6.23	15.36	9.18	6.29	16.65	7.07	6.18	14.10
-7	8.21	6.08	15.50	8.84	6.47	16.67	7.27	5.88	13.88
-8	8.40	5.98	15.53	8.35	6.76	16.49	8.38	5.20	13.73
-9	8.27	6.34	15.62	7.75	7.01	16.92	8.65	5.72	13.68
-10	8.17	6.29	15.97	8.02	7.23	17.03	8.10	5.73	14.18
-11	8.12	6.83	15.81	8.08	8.28	16.18	8.05	6.22	14.94
-12	8.01	7.20	15.93	8.13	8.56	15.84	8.14	6.84	15.40
-13	8.07	7.62	15.62	8.30	9.14	14.98	8.36	6.56	15.82
-14	7.70	7.78	15.61	8.17	9.01	15.59	7.33	6.72	15.48
-15	7.56	7.76	15.45	7.58	8.25	15.95	7.36	7.20	15.03
-16	7.26	7.56	15.01	7.17	7.27	16.25	7.10	7.64	13.98

TIME is the quarter relative to the bankruptcy quarter. DEDICATED, TRANSIENT, and QINDEX are the percentage of ownership (shares held as a percentage of shares outstanding) at the end of the calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively.

Table 2: Descriptive statistics on 2,298 quarterly observations of 105 bankrupt firms that filed for bankruptcy over the 1987 to 2002 period and 2,298 quarterly observations of 103 matched firms. The observations pertain to 24 quarters before the bankruptcy quarter.

Variable	Bankrupt Firms			Matched Firms			Test of Difference	
	Mean	Std Dev	Median	Mean	Std Dev	Median	Mean	Pr > t
Δ DEDICATED	-0.061	2.559	0.000	0.133	1.975	0.000	-0.194	0.004
Δ TRANSIENT	-0.224	3.642	-0.016	0.075	2.747	0.000	-0.299	0.001
Δ QINDEX	-0.247	2.991	-0.048	0.065	2.905	0.000	-0.311	0.000
DEDICATED _{t-1}	9.060	9.910	5.773	7.666	7.785	5.358	1.395	0.000
TRANSIENT _{t-1}	8.348	9.289	5.001	6.816	8.145	3.969	1.532	0.000
QINDEX _{t-1}	16.032	12.731	13.073	15.298	13.438	11.156	0.734	0.045
PW_DEDICATED _{t-1}	0.049	0.148	0.013	0.063	0.309	0.010	-0.013	0.055
PW_TRANSIENT _{t-1}	0.066	0.187	0.020	0.046	0.100	0.014	0.020	0.000
PW_QINDEX _{t-1}	0.022	0.067	0.004	0.024	0.083	0.003	-0.002	0.444
BKPROB	0.553	4.911	0.029	0.193	2.432	0.023	0.360	0.002
MOM1	-0.009	0.335	-0.030	0.041	0.313	0.010	-0.050	0.000
MOM2_4	0.025	0.605	-0.058	0.104	0.581	0.024	-0.079	0.000
TVOL	0.448	1.700	0.090	0.111	0.381	0.043	0.338	0.000
PRICE	13.077	14.195	8.000	13.894	14.324	8.500	-0.818	0.044
MV	730.57	3240.7	124.25	451.34	1367.6	71.779	279.22	0.000
BM	0.801	4.260	0.768	0.767	0.681	0.656	0.034	0.701
UE	-0.007	0.076	0.000	0.004	0.100	0.001	-0.011	0.000
SPRANK	2.710	2.394	3.000	3.339	2.490	4.000	-0.630	0.000
YIELD	0.011	0.032	0.000	0.034	0.141	0.000	-0.023	0.000

Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001), and DEDICATED_{t-1}, TRANSIENT_{t-1}, and QINDEX_{t-1} are the percentage of ownership at the beginning of the calendar quarter. PW_DEDICATED, PW_TRANSIENT, and PW_QINDEX are the weighted mean portfolio weights (in percentage, measured at the beginning of a calendar quarter) of a stock in the portfolios of transient, dedicated, and quasi-indexing institutions, respectively (see the text for a formula to compute this variable). BKPROB is the ex ante probability of bankruptcy, in percentage, using Shumway (2001, Table 6 Panel b); see the text for a description of the model. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV.

Table 3 Panel A: Fixed effects regression of $d\Delta OWN$ (by Trading Type) on variables denoting the time between the observation quarter and the bankruptcy quarter and control variables.

	Dependent variable=		
	d Δ DEDICATED	d Δ TRANSIENT	d Δ QINDEX
	(1)	(2)	(3)
QTR1	-1.446 [3.995]***	0.463 (0.953)	0.082 (0.181)
QTR2	-0.537 [1.595]*	-0.083 (0.183)	0.028 (0.066)
QTR3	-1.055 [3.237]***	0.126 (0.289)	-0.085 (0.208)
QTR4	-0.444 [1.384]*	-0.368 (0.856)	-0.110 (0.274)
dBKPROB	1.815 (1.291)	-0.332 (0.176)	1.106 (0.627)
dMOM1	-0.006 (0.036)	0.828 (3.495)***	-0.427 (1.914)*
dMOM2_4	-0.110 (1.142)	0.259 (1.997)**	-0.193 (1.567)
dTVOL	-0.026 (0.385)	-0.041 (0.462)	-0.098 (1.162)
dln(PRICE)	0.312 (2.204)**	1.720 (9.073)***	1.183 (6.674)***
dln(MV)	-0.113 (0.782)	-0.672 (3.353)***	0.606 (3.170)***
dBM	-0.013 (0.721)	-0.014 (0.583)	-0.011 (0.496)
dUE	-0.060 (0.113)	-0.442 (0.616)	0.355 (0.529)
dYIELD	1.987 (1.899)*	-0.910 (0.648)	1.185 (0.867)
dSPRANK	0.022 (0.516)	0.094 (1.635)	0.048 (0.886)
dOWN _{t-1}	-0.168 (14.036)***	-0.214 (16.040)***	-0.201 (15.314)***
dPW _{t-1}	-0.142 (0.568)	-0.598 (1.160)	1.893 (0.488)
Constant	0.355 (2.905)***	0.753 (4.639)***	-0.204 (1.312)

Observations	2298	2298	2298
Adjusted R ²	0.049	0.108	0.092
Fixed effects included	Matched pair	Matched pair	Matched pair
QTR1+QTR2+QTR3+QTR4	-3.482	0.138	0.085
F test	18.325	0.016	0.007
Prob>F	[0.000]	(0.899)	(0.934)

Absolute values of *t*-statistics are reported below coefficient estimates. One-tail *p*-values are in brackets. Two-tail *p*-values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

The prefix 'd' in front of a variable indicates the difference between the bankrupt firm and the matched firm variable. Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). QTR_x equals one if the institutional ownership measurement quarter is the x^{th} quarter prior to the bankruptcy filing quarter, zero otherwise. BKPROB is the ex ante probability of bankruptcy, in percentage, using Shumway (2001, Table 6 Panel b); see the text for a description of the model. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking ($7=A+\dots=0$ if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV. OWN_{*t-1*} is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 3 Panel B: Firm and Calendar Quarter Fixed Effects Regression of Δ OWN (by Trading Type) on Variables Denoting the Time between the Observation Quarter and the Bankruptcy Quarter and Control Variables.

	Δ DEDICATED		Δ TRANSIENT		Δ QINDEX	
	Bankrupt Firms (1)	Matched Firms (2)	Bankrupt Firms (3)	Matched Firms (4)	Bankrupt Firms (5)	Matched Firms (6)
QTR1	-1.089 [3.351]***	0.418 (1.746)*	0.612 (1.366)	-0.106 (0.333)	-0.098 (0.263)	-0.319 (0.925)
QTR2	-0.447 [1.507]*	0.256 (1.109)	0.351 (0.858)	0.313 (1.020)	0.201 (0.592)	0.002 (0.007)
QTR3	-0.595 [2.095]**	0.543 (2.421)**	-0.104 (0.265)	-0.265 (0.890)	-0.197 (0.608)	-0.166 (0.513)
QTR4	-0.426 [1.553]*	0.013 (0.060)	0.097 (0.256)	0.360 (1.244)	0.021 (0.068)	0.019 (0.059)
BKPROB	1.764 (1.391)	-0.862 (0.426)	-1.461 (0.836)	-0.831 (0.309)	1.868 (1.281)	-0.974 (0.334)
MOM1	-0.069 (0.371)	-0.267 (1.652)*	1.182 (4.600)***	0.960 (4.464)***	0.187 (0.862)	-0.331 (1.414)
MOM2_4	-0.073 (0.684)	-0.141 (1.601)	0.123 (0.834)	0.296 (2.524)**	0.077 (0.628)	-0.038 (0.294)
TVOL	-0.030 (0.549)	0.217 (0.931)	-0.071 (0.933)	-0.602 (1.945)*	-0.100 (1.596)	-0.148 (0.440)
ln(PRICE)	0.319 (2.185)**	0.056 (0.411)	2.039 (10.118)***	1.930 (10.505)***	1.164 (6.973)***	0.983 (4.972)***
ln(MV)	0.055 (0.367)	0.054 (0.372)	-1.113 (5.275)***	-0.759 (3.800)***	0.400 (2.203)**	0.714 (3.273)***
BM	-0.006 (0.455)	-0.007 (0.052)	-0.005 (0.265)	0.008 (0.049)	-0.014 (0.829)	0.493 (2.754)***
UE	0.790	-0.107	0.823	0.026	-0.265	0.065

	(1.095)	(0.241)	(0.828)	(0.044)	(0.321)	(0.102)
YIELD	-1.394 (0.455)	0.285 (0.373)	-5.730 (1.357)	-0.433 (0.430)	-6.120 (1.740)*	0.699 (0.595)
SPRANK	0.038 (0.763)	0.039 (0.999)	-0.055 (0.805)	0.178 (3.376)***	0.010 (0.178)	0.017 (0.294)
OWN t-1	-0.187 (14.635)***	-0.128 (11.566)***	-0.237 (16.687)***	-0.201 (15.419)***	-0.175 (14.036)***	-0.209 (15.066)***
PW t-1	0.110 (0.257)	-0.317 (1.770)*	-0.365 (0.801)	-1.829 (2.211)**	1.864 (0.478)	-1.238 (0.296)
Constant	-1.873 (0.519)	-0.753 (0.235)	17.352 (3.442)***	10.205 (2.336)**	-10.675 (2.522)**	-15.532 (3.312)***
Observations	2298	2258	2298	2258	2298	2258
Adjusted R-squared	0.078	0.011	0.144	0.120	0.116	0.073
Fixed effects included	Firm and calendar qtr	Firm and calendar qtr	Firm and calendar qtr	Firm and calendar qtr	Firm and calendar qtr	Firm and calendar qtr
QTR1+QTR2+QTR3+QTR4	-2.56	1.23	0.956	0.302	-0.073	-0.464
F test	10.014	4.082	0.736	0.139	0.006	0.280
Prob>F	[0.000]	(0.043)	(0.391)	(0.709)	(0.937)	(0.597)

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). QTR x equals one if the institutional ownership measurement quarter is the x^{th} quarter prior to the bankruptcy filing quarter, zero otherwise. BKPROB is the ex ante probability of bankruptcy, in percentage, using Shumway (2001, Table 6 Panel b); see the text for a description of the model. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV. OWN $_{t-1}$ is the one-quarter lagged

ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 4 Panel A: Fixed effects regression of $d\Delta\text{OWN}$ (by trading type) on variables denoting the time between the observation quarter and the bankruptcy quarter interacted with bankrupt firm type and control variables.

	Dependent variable=		
	$d\Delta\text{DEDICATED}$ (1)	$d\Delta\text{TRANSIENT}$ (2)	$d\Delta\text{QINDEX}$ (3)
QTR1	-0.494 [0.894]	0.494 (0.687)	0.700 (1.022)
QTR2	-0.507 [0.946]	-0.130 (0.187)	-0.813 (1.227)
QTR3	-0.704 [1.332]*	-0.808 (1.175)	0.041 (0.062)
QTR4	-0.781 [1.481]*	-1.030 (1.505)	-0.352 (0.540)
QTR1 x ZEROEQ	-2.859 [3.887]***	-0.669 (0.699)	-1.458 (1.604)
QTR2 x ZEROEQ	-0.536 [0.734]	-0.556 (0.585)	1.436 (1.589)
QTR3 x ZEROEQ	-1.207 [1.657]**	1.079 (1.138)	0.040 (0.044)
QTR4 x ZEROEQ	0.448 [0.614]	0.955 (1.005)	-0.078 (0.087)
dBKPROB	1.273 (0.640)	-0.144 (0.056)	0.147 (0.060)
dMOM1	-0.112 (0.527)	0.760 (2.757)***	-0.380 (1.440)
dMOM2_4	-0.080 (0.710)	0.343 (2.324)**	-0.231 (1.625)
dTVOL	-0.064 (0.933)	-0.056 (0.631)	-0.093 (1.100)
dln(PRICE)	0.264 (1.603)	1.803 (8.459)***	1.207 (5.945)***
dln(MV)	-0.214 (1.265)	-0.881 (3.903)***	0.630 (2.838)***
dBM	-0.013 (0.705)	-0.016 (0.660)	-0.019 (0.832)
dUE	0.230 (0.268)	-0.302 (0.270)	0.080 (0.076)

dYIELD	1.623 (1.540)	-0.992 (0.723)	1.206 (0.892)
dSPRANK	0.040 (0.846)	0.103 (1.676)*	0.034 (0.576)
dOWN _{t-1}	-0.171 (12.280)***	-0.195 (12.773)***	-0.221 (14.172)***
dPW _{t-1}	-12.760 (0.509)	-16.065 (0.193)	83.725 (0.214)
Constant	0.336 (2.324)**	0.983 (5.234)***	-0.117 (0.638)
Observations	1715	1715	1715
Adjusted R-sq	0.062	0.103	0.113
Fixed effects included	Matched pair	Matched pair	Matched pair
QTR1+QTR2+QTR3+QTR4	-2.486	-1.474	-0.424
F test	4.170	0.87	0.08
Prob>F	[0.020]	(0.352)	(0.779)
(QTR1+QTR2+QTR3+QTR4) x ZEROEQ	-4.154	0.809	-0.060
F test	6.794	0.152	0.001
Prob>F	[0.004]	(0.697)	(0.975)

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

The prefix 'd' in front of a variable indicates the difference between the bankrupt firm and the matched firm variable. Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). QTR x equals one if the institutional ownership measurement quarter is the x^{th} quarter prior to the bankruptcy filing quarter, zero otherwise. ZEROEQ equals one for bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders and zero for bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders. BKPROB is the ex ante probability of bankruptcy, in percentage, using Shumway (2001, Table 6 Panel b); see the text for a description of the model. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV. OWN_{t-1} is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 4 Panel b: Fixed effects regression of ΔOWN (by trading type) on variables denoting the time between the observation quarter and the bankruptcy quarter interacted with bankrupt firm type and control variables

	$\Delta\text{DEDICATED}$		$\Delta\text{TRANSIENT}$		ΔQINDEX	
	Bankrupt Firms (1)	Matched firms (2)	Bankrupt Firms (3)	Matched Firms (4)	Bankrupt Firms (5)	Matched Firms (6)
QTR1	0.022 [0.048]	0.194 (0.498)	0.275 (0.448)	-0.325 (0.661)	-0.191 (0.344)	-1.048 (2.123)**
QTR2	-0.387 [0.888]	0.255 (0.668)	0.285 (0.483)	0.230 (0.477)	-0.001 (0.001)	0.325 (0.672)
QTR3	-0.584 [1.364]*	0.072 (0.190)	-0.713 (1.231)	0.318 (0.667)	-0.110 (0.211)	-0.517 (1.080)
QTR4	-0.557 [1.316]*	-0.003 (0.007)	-0.205 (0.360)	0.801 (1.697)*	-0.152 (0.293)	0.018 (0.039)
QTR1 x ZEROEQ	-3.198 [5.452]***	0.673 (1.314)	-0.032 (0.041)	0.569 (0.879)	-0.651 (0.908)	1.061 (1.635)
QTR2 x ZEROEQ	-0.829 [1.437]*	0.011 (0.022)	0.010 (0.013)	0.761 (1.187)	0.242 (0.343)	-0.722 (1.123)
QTR3 x ZEROEQ	-0.593 [1.043]	1.105 (2.188)**	0.840 (1.093)	-0.543 (0.852)	-0.300 (0.431)	0.080 (0.125)
QTR4 x ZEROEQ	0.091 [0.161]	0.300 (0.599)	0.446 (0.583)	-0.616 (0.974)	-0.267 (0.386)	0.110 (0.173)
BKPROB	0.678 (0.443)	-13.650 (0.418)	-2.101 (1.014)	172.754 (4.194)***	2.750 (1.454)	139.573 (3.368)***
MOM1	-0.037 (0.173)	-0.460 (2.235)**	1.422 (4.866)***	1.268 (4.877)***	0.218 (0.808)	-0.645 (2.450)**
MOM2_4	-0.091 (0.758)	-0.120 (1.103)	0.289 (1.753)*	0.417 (3.022)***	-0.038 (0.256)	-0.194 (1.384)
TVOL	-0.035	0.335	-0.073	-4.420	-0.120	0.558

	(0.648)	(0.518)	(1.011)	(5.432)***	(1.842)*	(0.682)
ln(PRICE)	0.374 (2.329)**	0.122 (0.673)	2.013 (9.268)***	2.195 (9.584)***	1.086 (5.517)***	1.291 (5.633)***
ln(MV)	-0.097 (0.593)	-0.018 (0.095)	-1.334 (5.885)***	-0.635 (2.570)**	0.650 (2.993)***	0.526 (2.126)**
BM	-0.013 (0.918)	-0.017 (0.092)	-0.004 (0.232)	-0.159 (0.667)	-0.016 (0.910)	-0.050 (0.209)
UE	-0.073 (0.078)	0.533 (0.671)	1.387 (1.093)	1.136 (1.134)	-0.014 (0.013)	-0.183 (0.182)
YIELD	-3.181 (1.066)	0.196 (0.241)	-4.608 (1.138)	-0.080 (0.078)	-6.669 (1.816)*	0.752 (0.681)
SPRANK	0.057 (1.070)	0.058 (1.189)	-0.006 (0.085)	0.204 (3.335)***	-0.009 (0.140)	0.067 (1.067)
OWN _{t-1}	-0.214 (13.805)***	-0.128 (9.795)***	-0.211 (12.983)***	-0.212 (13.663)***	-0.198 (12.938)***	-0.216 (13.070)***
PW _{t-1}	16.878 (0.398)	-33.388 (1.755)*	-37.037 (0.429)	-186.759 (2.199)**	-100.383 (0.243)	-49.817 (0.124)
Constant	1.009 (0.273)	0.209 (0.054)	21.311 (4.196)***	7.475 (1.460)	-13.828 (2.953)***	-12.229 (2.429)**
Observations	1715	1675	1715	1675	1715	1675
Adjusted R-sq	0.120	0.018	0.143	0.148	0.136	0.091
Fixed effects included	Firm and calendar qtr	Firm and calendar qtr	Firm and calendar qtr	Firm and calendar qtr	Firm and calendar qtr	Firm and calendar qtr
QTR1+QTR2+QTR3+QTR4	-1.506	0.518	-0.358	1.024	-0.454	-1.222
F test	1.99	0.32	0.06	0.78	0.120	1.12
Prob>F	[0.079]	0.571	0.804	0.376	0.728	0.291

(QTR1+QTR2+QTR3+QTR4) x	-4.529	2.089	1.264	0.171	-0.976	0.529
ZEROEQ	11.998	3.370	0.515	0.014	0.374	0.135
F test	[0.000]	0.067	0.473	0.905	0.541	0.714
Prob>F						

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). QTR x equals one if the institutional ownership measurement quarter is the x^{th} quarter prior to the bankruptcy filing quarter, zero otherwise. ZEROEQ equals one for bankrupt firms that ultimately are liquidated or reorganized with zero equity to pre-petition shareholders and zero for bankrupt firms that ultimately are liquidated or reorganized with positive equity to pre-petition shareholders. BKPROB is the ex ante probability of bankruptcy, in percentage, using Shumway (2001, Table 6 Panel b); see the text for a description of the model. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking ($7=A+\dots 0=$ if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV. OWN $_{t-1}$ is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 5: Descriptive statistics on 321,718 quarterly observations over 1981 to 2002

Variable	Mean	Std Dev	25%	Median	75%
Δ DEDICATED	0.137	2.198	-0.182	0.000	0.445
Δ TRANSIENT	0.064	3.106	-0.534	0.000	0.642
Δ QINDEX	0.178	2.981	-0.556	0.008	0.908
DEDICATED _{t-1}	7.218	8.133	1.418	4.839	10.356
TRANSIENT _{t-1}	7.859	9.305	0.721	4.698	11.636
QINDEX _{t-1}	16.494	14.336	3.896	12.861	26.555
PW_DEDICATED _{t-1}	0.081	0.534	0.002	0.011	0.049
PW_TRANSIENT _{t-1}	0.076	0.435	0.003	0.021	0.073
PW_QINDEX _{t-1}	0.041	0.140	0.001	0.006	0.029
RET _{t+1,t+8}	0.116	1.354	-0.504	-0.062	0.423
RET _{t+1,t+2}	0.022	0.466	-0.205	-0.023	0.164
RET _{t+3,t+8}	0.106	1.113	-0.402	-0.035	0.355
MOM1	0.039	0.315	-0.115	0.015	0.149
MOM2_4	0.139	0.652	-0.177	0.057	0.310
TVOL	0.200	17.474	0.016	0.039	0.089
PRICE	19.392	98.560	5.875	13.875	25.750
MV	1347.129	8497.647	35.838	126.030	555.431
BM	0.682	2.871	0.341	0.588	0.913
UE	0.001	0.179	-0.006	0.001	0.008
SPRANK	2.721	2.895	0.000	3.000	5.000
YIELD	0.034	0.204	0.000	0.000	0.036

Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001), and DEDICATED_{t-1}, TRANSIENT_{t-1}, and QINDEX_{t-1} are the percentage of ownership at the beginning of the calendar quarter. PW_DEDICATED, PW_TRANSIENT, and PW_QINDEX are the weighted mean portfolio weights (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of transient, dedicated, and quasi-indexing institutions respectively (see the text for formula to compute this variable). RET_{it+1,t+8} is buy-and-hold market adjusted returns computed over calendar quarters t+1 to t+8, where calendar quarter t is the institutional ownership change measurement quarter. RET_{it+1,t+2} is buy-and-hold market adjusted returns computed over calendar quarters t+1 and t+2, where calendar quarter t is the institutional ownership change measurement quarter. RET_{it+3,t+8} is buy-and-hold market adjusted returns computed over quarters t+3 to t+8, where calendar quarter t is the institutional ownership change measurement quarter. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV.

Table 6: Fixed effects regression of ΔOWN (by trading type) on decile rank of price changes over a long term and control variables.

	Dependent variable=		
	$\Delta\text{DEDICATED}$ (1)	$\Delta\text{TRANSIENT}$ (2)	ΔQINDEX (3)
$\text{RRET}_{t+1,t+8}$	0.071 [4.540]***	-0.262 (12.275)***	-0.071 (3.398)***
MOM1	-0.115 (8.454)***	0.900 (48.583)***	0.018 (0.997)
MOM2_4	-0.069 (10.114)***	0.080 (8.628)***	0.011 (1.246)
TVOL	0.000 (0.270)	0.000 (0.008)	-0.000 (0.278)
$\ln(\text{PRICE})$	0.125 (12.499)***	1.432 (105.056)***	0.514 (38.524)***
$\ln(\text{MV})$	0.029 (3.383)***	-0.623 (52.099)***	0.348 (29.072)***
BM	0.004 (2.910)***	0.001 (0.401)	-0.002 (0.937)
UE	-0.008 (0.374)	0.076 (2.475)**	0.050 (1.670)*
YIELD	0.242 (4.969)***	-0.514 (7.773)***	0.190 (2.916)***
SPRANK	-0.000 (0.125)	-0.007 (1.903)*	0.016 (4.497)***
OWN_{t-1}	-0.104 (126.269)***	-0.174 (174.155)***	-0.129 (148.611)***
PW_{t-1}	0.012 (1.399)	-0.032 (2.445)**	-0.251 (3.729)***
Constant	-0.514 (3.301)***	8.264 (38.341)***	-6.475 (30.247)***
Observations	321718	321718	321718
Adjusted R^2	0.014	0.092	0.044
Fixed effects included	Firm and calendar quarter	Firm and calendar quarter	Firm and calendar quarter

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

$\Delta\text{DEDICATED}$, $\Delta\text{TRANSIENT}$, and ΔQINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). $\text{RRET}_{it+1,t+8}$ is the decile

rank of buy-and-hold market adjusted returns computed over calendar quarters $t+1$ to $t+8$, where calendar quarter t is the institutional ownership change measurement quarter. $MOM1$ ($MOM2_4$) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. $TVOL$ is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. $PRICE$ is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. $YIELD$ is the dividend for the past year divided by MV . $SPRANK$ is the S&P common stock ranking ($7=A+...0=$ if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. OWN_{t-1} is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 7: Fixed effects regression of ΔDOWN (i.e., $\Delta\text{DEDICATED}-\Delta\text{TRANSIENT}$) and ΔOWN on decile rank of price changes in the short term, decile rank of price changes in the long term, and control variables

	$\Delta\text{DEDICATED}-$ $\Delta\text{TRANSIENT}$	$\Delta\text{DEDICATED}-$ $\Delta\text{TRANSIENT}$	$\Delta\text{DEDICATED}$		$\Delta\text{TRANSIENT}$	
	(1)	(2)	(3)	(4)	(5)	(6)
$\text{RRET}_{t+1,t+2}$	-0.039 [1.643]*		0.005 (0.411)		0.015 [0.831]	
RRET_{t+1}		-0.059 [2.606]***		-0.005 (0.384)		0.035 [2.012]**
$\text{RRET}_{t+3,t+8}$	0.266 [10.349]***		0.061 [4.173]***		-0.223 (11.140)***	
$\text{RRET}_{t+2,t+8}$		0.288 [10.882]***		0.065 [4.254]***		-0.252 (12.216)***
MOM1	-0.885 (39.327)***	-0.885 (39.358)***	-0.115 (8.396)***	-0.115 (8.392)***	0.896 (48.372)***	0.896 (48.387)***
MOM2_4	-0.125 (10.838)***	-0.124 (10.830)***	-0.068 (10.074)***	-0.069 (10.082)***	0.079 (8.516)***	0.079 (8.506)***
TVOL	0.000 (0.176)	0.000 (0.215)	0.000 (0.264)	0.000 (0.275)	0.000 (0.029)	-0.000 (0.009)
$\ln(\text{PRICE})$	-1.116 (69.506)***	-1.114 (69.305)***	0.124 (12.395)***	0.124 (12.405)***	1.437 (105.459)***	1.436 (105.350)***
$\ln(\text{MV})$	0.539 (41.401)***	0.544 (41.784)***	0.027 (3.086)***	0.027 (3.152)***	-0.610 (51.034)***	-0.617 (51.603)***
BM	0.003 (1.197)	0.003 (1.176)	0.004 (2.924)***	0.004 (2.921)***	0.001 (0.351)	0.001 (0.377)
UE	-0.091 (2.289)**	-0.092 (2.312)**	-0.008 (0.357)	-0.008 (0.359)	0.074 (2.414)**	0.075 (2.434)**
YIELD	0.967 (11.629)***	0.972 (11.684)***	0.242 (4.961)***	0.242 (4.964)***	-0.513 (7.752)***	-0.514 (7.765)***
SPRANK	-0.014 (3.254)***	-0.014 (3.349)***	-0.000 (0.116)	-0.000 (0.113)	-0.007 (1.939)*	-0.007 (1.923)*
DOWN_{t-1}	-0.144 (155.178)***	-0.144 (155.256)***	-0.104 (126.257)***	-0.104 (126.282)***	-0.174 (174.101)***	-0.174 (174.146)***
DPW_{t-1}	0.032 (2.828)***	0.032 (2.820)***	0.012 (1.409)	0.012 (1.400)	-0.032 (2.443)**	-0.032 (2.448)**
Constant	-7.507 (32.643)***	-7.602 (33.119)***	-0.464 (2.963)***	-0.466 (2.982)***	7.999 (36.918)***	8.123 (37.547)***
Observations	321718	321649	321718	321649	321718	321649

Adjusted R ²	0.050	0.051	0.014	0.014	0.092	0.092
Fixed effects included	Firm	Firm	Firm and calendar quarter	Firm and calendar quarter	Firm and calendar quarter	Firm and calendar quarter

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

The prefix “D” in front of a variable indicates difference between Dedicated institutions and Transient institutions. Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). $RRET_{it+1,t+2}$ is the decile rank of buy-and-hold market adjusted returns computed over calendar quarters $t+1$ and $t+2$, where calendar quarter t is the institutional ownership change measurement quarter. $RRET_{it+3,t+8}$ is the decile rank of buy-and-hold market adjusted returns computed over quarters $t+3$ to $t+8$, where calendar quarter t is the institutional ownership change measurement quarter. $RRET_{it+1}$ is the decile rank of buy-and-hold market adjusted returns computed over calendar quarter $t+1$, where calendar quarter t is the institutional ownership change measurement quarter. $RRET_{it+2,t+8}$ is the decile rank of buy-and-hold market adjusted returns computed over quarters $t+2$ to $t+8$, where calendar quarter t is the institutional ownership change measurement quarter. $MOM1$ ($MOM2_4$) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. $TVOL$ is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. $PRICE$ is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. $SPRANK$ is the S&P common stock ranking ($7=A+...0=$ if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. $YIELD$ is the dividend for the past year divided by MV . OWN_{t-1} is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 8: Fixed effects Stacked regression of ΔOWN (by Trading Type) on variables denoting the time between the observation quarter and the bankruptcy quarter and control variables

	Dependent variable=		
	$\Delta\text{DEDICATED}$ (1)	$\Delta\text{TRANSIENT}$ (2)	ΔQINDEX (3)
QTR1	0.239 (0.946)	0.033 (0.097)	-0.183 (0.575)
QTR2	0.031 (0.124)	0.525 (1.561)	0.147 (0.471)
QTR3	0.440 (1.817)*	-0.172 (0.520)	-0.116 (0.379)
QTR4	-0.025 (0.106)	0.475 (1.453)	0.075 (0.247)
BKFIRM*QTR1	-1.198 [3.508]***	-0.074 (0.157)	-0.473 (1.095)
BKFIRM*QTR2	-0.317 [0.963]	-0.318 (0.707)	-0.233 (0.560)
BKFIRM*QTR3	-0.958 [2.951]***	-0.029 (0.065)	-0.260 (0.633)
BKFIRM*QTR4	-0.416 [1.288]*	-0.469 (1.060)	-0.179 (0.438)
BKFIRM	0.261 (0.208)	-1.035 (0.574)	3.132 (1.667)*
BKPROB	-1.726 (0.764)	0.519 (0.167)	-1.575 (0.551)
MOM1	-0.267 (1.592)	1.057 (4.603)***	-0.083 (0.387)
MOM2_4	-0.127 (1.395)	0.230 (1.843)*	0.108 (0.927)
TVOL	0.083 (0.484)	0.017 (0.071)	0.043 (0.198)
ln(PRICE)	0.144 (1.370)	0.817 (5.696)***	0.663 (4.939)***
ln(MV)	0.005 (0.082)	-0.006 (0.063)	0.280 (2.946)***
BM	-0.111 (1.131)	0.118 (0.895)	0.041 (0.338)
UE	-0.069 (0.143)	0.753 (1.135)	0.237 (0.387)
YIELD	0.057 (0.121)	-1.455 (2.212)**	-0.097 (0.141)

SPRANK	-0.033 (1.232)	-0.053 (1.423)	0.022 (0.622)
OWN _{t-1}	-0.052 (6.391)***	-0.114 (9.644)***	-0.092 (10.716)***
PW _{t-1}	-0.092 (0.516)	-0.539 (0.637)	-0.128 (0.094)
BKFIRM*BKPROB	3.960 (1.575)	0.750 (0.218)	2.974 (0.936)
BKFIRM*MOM1	0.287 (1.311)	0.008 (0.028)	0.647 (2.313)**
BKFIRM*MOM2_4	0.046 (0.375)	-0.309 (1.838)*	0.139 (0.883)
BKFIRM*TVOL	-0.113 (0.642)	0.073 (0.300)	-0.007 (0.030)
BKFIRM*ln(PRICE)	0.108 (0.822)	-0.018 (0.100)	-0.032 (0.192)
BKFIRM*ln(MV)	-0.024 (0.313)	0.086 (0.776)	-0.175 (1.523)
BKFIRM*BM	0.108 (1.099)	-0.118 (0.893)	-0.041 (0.330)
BKFIRM*UE	0.613 (0.755)	0.414 (0.372)	-0.309 (0.301)
BKFIRM*YIELD	-1.722 (0.836)	-2.853 (1.014)	-4.384 (1.578)
BKFIRM*SPRANK	0.018 (0.470)	0.001 (0.024)	-0.029 (0.591)
BKFIRM*OWN _{t-1}	-0.015 (1.464)	-0.047 (3.050)***	0.008 (0.746)
BKFIRM*PW _{t-1}	0.062 (0.156)	0.090 (0.097)	0.900 (0.449)
Constant	-0.528 (0.273)	-0.690 (0.254)	-7.580 (2.941)***
Observations	4596	4596	4596
Adjusted R ²	0.027	0.092	0.068
Fixed effects included	Firm and calendar qtr	Firm and calendar qtr	Firm and calendar qtr
BKFIRM*(QTR1+QTR2+QTR3+QTR4)	-2.889	-0.890	-1.145
F test	14.501	0.731	1.423
Prob>F	[0.000]	(0.393)	(0.233)

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). QTRx equals one if the institutional ownership measurement quarter is the x^{th} quarter prior to the bankruptcy filing quarter, zero otherwise. BKFIRM is indicator which equals one if firm is bankrupt firm, zero is matched firm. BKPROB is the ex ante probability of bankruptcy, in percentage, using Shumway (2001, Table 6 Panel b); see the text for a description of the model. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV. OWN_{t-1} is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 9: Fixed effects stacked regression of ΔOWN (by Trading Type) on decile rank of price changes in the short term, decile rank of price changes in the long term, and control variables.

	Dependent variable=	
	ΔOWN (1)	ΔOWN (2)
$\text{RRET}_{t+1,t+2}$	0.067 (4.336)***	0.125 (8.121)***
$\text{DEDICATED}*\text{RRET}_{t+1,t+2}$	-0.126 (6.012)***	-0.149 (7.165)***
$\text{RRET}_{t+3,t+8}$	-0.186 (11.308)***	-0.085 (5.198)***
$\text{DEDICATED}*\text{RRET}_{t+3,t+8}$	0.184 (8.804)***	0.127 (6.114)***
MOM0		1.761 (101.088)***
MOM1	0.915 (58.245)***	1.063 (67.891)***
MOM2_4	0.058 (7.460)***	0.123 (15.889)***
TVOL	0.000 (0.326)	0.000 (0.040)
$\ln(\text{PRICE})$	0.899 (92.560)***	0.469 (42.499)***
$\ln(\text{MV})$	-0.353 (44.133)***	-0.061 (6.859)***
BM	0.001 (0.402)	-0.000 (0.257)
UE	0.094 (3.535)***	0.002 (0.062)
YIELD	-0.354 (7.912)***	-0.123 (2.755)***
SPRANK	-0.028 (10.637)***	-0.026 (10.129)***
OWN_{t-1}	-0.110 (160.703)***	-0.108 (159.287)***
PW_{t-1}	-3.873 (3.459)***	-4.367 (3.935)***
DEDICATED	0.958 (11.080)***	2.569 (29.323)***
DEDICATED*MOM0		-1.958 (90.382)***

DEDICATED*MOM1	-1.021 (48.691)***	-1.152 (55.294)***
DEDICATED*MOM2_4	-0.154 (14.955)***	-0.215 (20.971)***
DEDICATED*TVOL	-0.000 (0.238)	-0.000 (0.316)
DEDICATED*ln(PRICE)	-0.341 (37.680)***	-0.079 (8.365)***
DEDICATED*ln(MV)	-0.030 (5.507)***	-0.141 (25.831)***
DEDICATED*BM	0.004 (1.611)	0.005 (2.089)**
DEDICATED*UE	-0.136 (3.746)***	-0.018 (0.511)
DEDICATED*YIELD	0.147 (4.566)***	0.111 (3.475)***
DEDICATED*SPRANK	0.046 (18.335)***	0.043 (16.956)***
DEDICATED*OWN _{t-1}	0.044 (47.774)***	0.043 (46.142)***
DEDICATED*PW _{t-1}	11.448 (7.855)***	11.636 (8.055)***
Constant	4.681 (32.757)***	0.273 (1.761)*
Observations	643436	643436
Adjusted R ²	0.047	0.064
Fixed effects included	Firm and calendar qtr	Firm and calendar qtr
RRET _{t+1,t+2} + DEDICATED*RRET _{t+1,t+2}	-0.059	-0.024
F test	14.20	2.32
Prob>F	(0.0002)	(0.1274)
RRET _{t+3,t+8} + DEDICATED*RRET _{t+3,t+8}	-0.002	0.042
F test	0.01	6.66
Prob>F	(0.9419)	(0.0098)

Absolute values of *t*-statistics are reported below coefficient estimates. One-tail *p*-values are in brackets. Two-tail *p*-values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

Δ OWN are changes in percentage ownership over a calendar quarter by dedicated or transient institutions per Bushee (2001). RRET_{it+1,t+2} is the decile rank of buy-and-hold market adjusted returns computed over calendar quarters t+1 and t+2, where calendar quarter t is the institutional ownership change measurement quarter. RRET_{it+3,t+8} is the decile rank of buy-and-hold market adjusted returns computed over quarters t+3 to t+8, where

calendar quarter t is the institutional ownership change measurement quarter. DEDICATED equals one if ΔOWN is by dedicated institutions, zero if ΔOWN is by transient institutions. RRET_{it+1} is the decile rank of buy-and-hold market adjusted returns computed over calendar quarter $t+1$, where calendar quarter t is the institutional ownership change measurement quarter. $\text{RRET}_{it+2,t+8}$ is the decile rank of buy-and-hold market adjusted returns computed over quarters $t+2$ to $t+8$, where calendar quarter t is the institutional ownership change measurement quarter. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV . OWN_{t-1} is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 10: Fixed effects regression of $d\Delta OWN$ (by Trading Type) on variables denoting the time between the observation quarter and the bankruptcy quarter where time is up to two years before bankruptcy quarter.

	Dependent variable=		
	$d\Delta DEDICATED$ (1)	$d\Delta TRANSIENT$ (2)	$d\Delta QINDEX$ (3)
QTR1	-1.414 [3.838]***	0.487 (0.985)	0.041 (0.087)
QTR2	-0.510 [1.492]*	-0.062 (0.136)	-0.008 (0.018)
QTR3	-1.030 [3.115]***	0.146 (0.328)	-0.119 (0.286)
QTR4	-0.420 [1.294]*	-0.350 (0.804)	-0.142 (0.348)
QTR5_8	0.082 (0.464)	0.062 (0.262)	-0.108 (0.487)
dBKPROB	1.812 (1.289)	-0.333 (0.176)	1.113 (0.630)
dMOM1	-0.007 (0.040)	0.827 (3.490)***	-0.427 (1.911)*
dMOM2_4	-0.110 (1.142)	0.259 (1.997)**	-0.193 (1.572)
dTVOL	-0.026 (0.384)	-0.042 (0.462)	-0.098 (1.164)
dln(PRICE)	0.322 (2.248)**	1.727 (9.014)***	1.171 (6.534)***
dln(MV)	-0.116 (0.801)	-0.674 (3.359)***	0.611 (3.192)***
dBM	-0.013 (0.730)	-0.014 (0.589)	-0.011 (0.486)
dUE	-0.053 (0.098)	-0.436 (0.607)	0.346 (0.514)
dYIELD	1.967 (1.877)*	-0.924 (0.657)	1.201 (0.878)
dSPRANK	0.023 (0.528)	0.095 (1.642)	0.047 (0.875)
$dOWN_{t-1}$	-0.168 (14.026)***	-0.214 (16.036)***	-0.201 (15.318)***
dPW_{t-1}	-0.144 (0.578)	-0.594 (1.150)	1.789 (0.460)
Constant	0.338 (2.647)***	0.741 (4.360)***	-0.182 (1.130)

Observations	2298	2298	2298
Adjusted R-squared	0.049	0.108	0.092
Fixed effects included	Matched pair	Matched pair	Matched pair
QTR1+QTR2+QTR3+QTR4	-3.337	0.221	-0.228
F-test	15.901	0.038	0.046
Prob>F	[0.000]	(0.846)	(0.831)
QTR1+QTR2+QTR3+QTR4+ QTR5_8	-3.292	0.283	-0.336
F-test	13.07	0.09	0.05
Prob>F	(0.0003)	(0.7700)	(0.8172)

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%. The prefix 'd' in front of a variable indicates the difference between the bankrupt firm and the matched firm variable. Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). QTR x equals one if the institutional ownership measurement quarter is the x^{th} quarter prior to the bankruptcy filing quarter, zero otherwise. QTR5_8 equals 1 if the institutional ownership measurement is over quarters 5 to 8 prior to the bankruptcy filing quarter, 0 otherwise. BKPROB is the ex ante probability of bankruptcy, in percentage, using Shumway (2001, Table 6 Panel b); see the text for a description of the model. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV. OWN $_{t-1}$ is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 11: Fixed effects regression of $d\Delta OWN$ (by Trading Type) on variables denoting the time between the observation quarter and the bankruptcy quarter and control variables including current quarter returns (MOM0).

	Dependent variable=		
	d Δ DEDICATED (1)	d Δ TRANSIENT (2)	d Δ QINDEX (3)
QTR1	-1.455 [4.023]***	0.507 (1.052)	0.084 (0.184)
QTR2	-0.558 [1.657]**	0.009 (0.020)	0.031 (0.072)
QTR3	-1.074 [3.293]***	0.207 (0.477)	-0.083 (0.202)
QTR4	-0.460 [1.435]*	-0.298 (0.698)	-0.109 (0.270)
dBKPROB	1.927 (1.371)	-0.860 (0.459)	1.095 (0.619)
dMOM0	-0.416 (1.858)*	1.817 (6.075)***	0.046 (0.163)
dMOM1	-0.044 (0.251)	1.008 (4.254)***	-0.423 (1.881)*
dMOM2_4	-0.128 (1.321)	0.336 (2.606)***	-0.191 (1.544)
dTVOL	-0.017 (0.254)	-0.079 (0.886)	-0.099 (1.171)
dln(PRICE)	0.548 (2.882)***	0.692 (2.738)***	1.157 (4.861)***
dln(MV)	-0.324 (1.764)*	0.238 (0.957)	0.629 (2.631)***
dBM	-0.011 (0.610)	-0.022 (0.934)	-0.011 (0.505)
dUE	-0.122 (0.227)	-0.174 (0.243)	0.362 (0.538)
dYIELD	1.895 (1.810)*	-0.554 (0.397)	1.190 (0.871)
dSPRANK	0.024 (0.560)	0.085 (1.495)	0.048 (0.882)
dOWN _{t-1}	-0.168 (14.021)***	-0.211 (15.876)***	-0.201 (15.297)***
dPW _{t-1}	-0.157 (0.630)	-0.836 (1.630)	1.855 (0.477)
Constant	0.463 (3.424)***	0.283 (1.581)	-0.216 (1.252)

Observations	2298	2298	2298
Adjusted R-squared	0.051	0.123	0.091
Fixed effects included	Matched pair	Matched pair	Matched pair
QTR1+QTR2+QTR3+QTR4	-3.547	0.425	-0.077
F-test	18.999	0.154	0.006
Prob>F	[0.000]	(0.695)	(0.940)

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

The prefix 'd' in front of a variable indicates the difference between the bankrupt firm and the matched firm variable. Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). QTR x equals one if the institutional ownership measurement quarter is the x^{th} quarter prior to the bankruptcy filing quarter, zero otherwise. BKPROB is the ex ante probability of bankruptcy, in percentage, using Shumway (2001, Table 6 Panel b); see the text for a description of the model. MOM0 is the buy-and-hold raw return for the calendar quarter in which institutional ownership is measured. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV. OWN $_{t-1}$ is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 12: Fixed effects regression of ΔOWN (by trading type) on decile rank of price changes over a long term and control variables including current quarter returns (MOM0)

	Dependent variable=		
	$\Delta\text{DEDICATED}$ (1)	$\Delta\text{TRANSIENT}$ (2)	ΔQINDEX (3)
$\text{RRET}_{t+1,t+8}$	0.058 [3.675]***	-0.084 (3.962)***	-0.073 (3.481)***
MOM0	-0.118 (7.335)***	1.576 (72.932)***	-0.020 (0.915)
MOM1	-0.128 (9.292)***	1.066 (57.621)***	0.016 (0.874)
MOM2_4	-0.074 (10.843)***	0.148 (15.974)***	0.010 (1.137)
TVOL	0.000 (0.323)	-0.000 (0.509)	-0.000 (0.271)
$\ln(\text{PRICE})$	0.170 (14.491)***	0.827 (52.157)***	0.522 (33.327)***
$\ln(\text{MV})$	-0.007 (0.661)	-0.153 (11.336)***	0.342 (25.155)***
BM	0.004 (2.973)***	-0.000 (0.184)	-0.002 (0.929)
UE	-0.003 (0.154)	0.008 (0.257)	0.051 (1.697)*
YIELD	0.210 (4.293)***	-0.090 (1.370)	0.184 (2.823)***
SPRANK	-0.000 (0.094)	-0.008 (2.111)**	0.016 (4.500)***
OWN_{t-1}	-0.104 (126.430)***	-0.170 (171.027)***	-0.129 (148.529)***
PW_{t-1}	0.013 (1.497)	-0.035 (2.719)***	-0.250 (3.691)***
Constant	0.032 (0.186)	1.127 (4.796)***	-6.385 (27.110)***
Observations	321718	321718	321718
Adjusted R-sq	0.014	0.108	0.044
Fixed effects included	Firm and calendar qtr	Firm and calendar qtr	Firm and calendar qtr

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

$\Delta\text{DEDICATED}$, $\Delta\text{TRANSIENT}$, and ΔQINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). $\text{RRET}_{it+1,t+8}$ is the decile

rank of buy-and-hold market adjusted returns computed over calendar quarters $t+1$ to $t+8$, where calendar quarter t is the institutional ownership change measurement quarter. MOM_0 is the buy-and-hold raw return for the calendar quarter in which institutional ownership is measured. MOM_1 (MOM_{2-4}) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. $TVOL$ is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. $PRICE$ is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. $YIELD$ is the dividend for the past year divided by MV . $SPRANK$ is the S&P common stock ranking ($7=A+\dots 0=$ if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. OWN_{t-1} is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 13: Fixed effects regression of ΔDOWN (i.e., $\Delta\text{DEDICATED}-\Delta\text{TRANSIENT}$) and ΔOWN on decile rank of price changes in the short term, decile rank of price changes in the long term, and control variables including current quarter returns (MOM0).

	$\Delta\text{DEDICATED}-$ $\Delta\text{TRANSIENT}$ (1)	$\Delta\text{DEDICATED}$ (2)	$\Delta\text{TRANSIENT}$ (3)
$\text{RRET}_{t+1,t+2}$	-0.113 [4.847]***	-0.002 (0.119)	0.109 [6.043]***
$\text{RRET}_{t+3,t+8}$	0.151 [5.902]***	0.050 [3.410]***	-0.077 (3.871)***
MOM0	-1.612 (62.476)***	-0.119 (7.452)***	1.586 (73.383)***
MOM1	-1.088 (48.179)***	-0.127 (9.248)***	1.063 (57.456)***
MOM2_4	-0.216 (18.767)***	-0.074 (10.820)***	0.147 (15.961)***
TVOL	0.000 (0.488)	0.000 (0.318)	-0.000 (0.494)
$\ln(\text{PRICE})$	-0.537 (29.079)***	0.169 (14.463)***	0.828 (52.238)***
$\ln(\text{MV})$	0.138 (9.585)***	-0.010 (0.977)	-0.138 (10.195)***
BM	0.004 (1.820)*	0.004 (2.988)***	-0.000 (0.240)
UE	-0.013 (0.323)	-0.003 (0.133)	0.006 (0.182)
YIELD	0.313 (3.751)***	0.209 (4.274)***	-0.086 (1.313)
SPRANK	0.013 (3.212)***	-0.000 (0.085)	-0.008 (2.143)**
DOWN_{t-1}	-0.141 (152.239)***	-0.104 (126.422)***	-0.170 (171.018)***
DPW_{t-1}	0.029 (2.592)***	0.013 (1.509)	-0.035 (2.715)***
Constant	-1.253 (5.023)***	0.093 (0.537)	0.791 (3.350)***
Observations	321718	321718	321718
Adjusted R-sq	0.062	0.014	0.108
Fixed effects included	Firm	Firm and cal qtr	Firm and cal qtr

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

The prefix “D” in front of a variable indicates difference between Dedicated institutions and Transient institutions. Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). $RRET_{it+1,t+2}$ is the decile rank of buy-and-hold market adjusted returns computed over calendar quarters $t+1$ and $t+2$, where calendar quarter t is the institutional ownership change measurement quarter. $RRET_{it+3,t+8}$ is the decile rank of buy-and-hold market adjusted returns computed over quarters $t+3$ to $t+8$, where calendar quarter t is the institutional ownership change measurement quarter. $RRET_{it+1}$ is the decile rank of buy-and-hold market adjusted returns computed over calendar quarter $t+1$, where calendar quarter t is the institutional ownership change measurement quarter. $RRET_{it+2,t+8}$ is the decile rank of buy-and-hold market adjusted returns computed over quarters $t+2$ to $t+8$, where calendar quarter t is the institutional ownership change measurement quarter. MOM0 is the buy-and-hold raw return for the calendar quarter in which institutional ownership is measured. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV. OWN_{t-1} is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Table 14: Fixed effects regression of $d\Delta OWN$ (by Trading Type) on variables denoting the time between the observation quarter and the bankruptcy quarter and control variables including Going Concern opinion.

	Dependent variable=		
	$d\Delta DEDICATED$ (1)	$d\Delta TRANSIENT$ (2)	$d\Delta QINDEX$ (3)
QTR1	-1.436 [3.965]***	0.450 (0.926)	0.107 (0.236)
QTR2	-0.528 [1.568]*	-0.095 (0.210)	0.051 (0.120)
QTR3	-1.045 [3.204]***	0.113 (0.258)	-0.061 (0.150)
QTR4	-0.433 [1.348]*	-0.383 (0.890)	-0.085 (0.210)
dBKPROB	2.025 (1.417)	-0.617 (0.321)	1.585 (0.882)
dMOM1	-0.004 (0.025)	0.826 (3.483)***	-0.421 (1.886)*
dMOM2_4	-0.109 (1.132)	0.258 (1.988)**	-0.191 (1.550)
dTVOL	-0.029 (0.429)	-0.037 (0.416)	-0.104 (1.242)
dln(PRICE)	0.305 (2.150)**	1.730 (9.106)***	1.168 (6.576)***
dln(MV)	-0.108 (0.748)	-0.678 (3.380)***	0.615 (3.220)***
dBM	-0.014 (0.780)	-0.012 (0.520)	-0.013 (0.604)
dUE	-0.029 (0.054)	-0.484 (0.673)	0.426 (0.633)
dYIELD	1.984 (1.896)*	-0.906 (0.644)	1.153 (0.844)
dSPRANK	0.022 (0.523)	0.094 (1.629)	0.048 (0.897)
dOWN _{t-1}	-0.168 (14.041)***	-0.214 (16.047)***	-0.200 (15.225)***
dPW _{t-1}	-0.146 (0.587)	-0.597 (1.158)	1.661 (0.428)
dGC	-0.534 (0.805)	0.722 (0.811)	-1.210 (1.450)
Constant	0.355 (2.901)***	0.754 (4.644)***	-0.207 (1.330)

Observations	2298	2298	2298
Adjusted R ²	0.049	0.108	0.092
Fixed effects included	Matched pair	Matched pair	Matched pair
QTR1+QTR2+QTR3+QTR4	-3.442	0.085	0.012
F test	17.840	0.006	0.000
Prob>F	[0.000]	(0.938)	(0.991)

Absolute values of *t*-statistics are reported below coefficient estimates. One-tail *p*-values are in brackets. Two-tail *p*-values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

The prefix 'd' in front of a variable indicates the difference between the bankrupt firm and the matched firm variable. Δ DEDICATED, Δ TRANSIENT, and Δ QINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). QTR_x equals one if the institutional ownership measurement quarter is the *x*th quarter prior to the bankruptcy filing quarter, zero otherwise. BKPROB is the ex ante probability of bankruptcy, in percentage, using Shumway (2001, Table 6 Panel b); see the text for a description of the model. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. SPRANK is the S&P common stock ranking (7=A+...0= if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV. OWN_{t-1} is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable). GC is one if the firm received a going concern opinion from the auditor in the current quarter, zero otherwise.

Table 15: Fixed effects regression of ΔOWN (by trading type) on decile rank of price changes over a long term with an interaction for sign of past abnormal returns

	Dependent variable=		
	$\Delta\text{DEDICATED}$	$\Delta\text{TRANSIENT}$	ΔQINDEX
	(1)	(2)	(3)
$\text{RRET}_{t+1,t+8}$	0.022 (1.231)	-0.174 (7.092)***	-0.109 (4.530)***
$\text{PASTRET}*\text{RRET}_{t+1,t+8}$	0.090 (5.800)***	-0.150 (7.148)***	0.067 (3.248)***
MOM1	-0.097 (6.903)***	0.869 (45.689)***	0.033 (1.780)*
MOM2_4	-0.055 (7.570)***	0.056 (5.708)***	0.023 (2.348)**
TVOL	0.000 (0.277)	-0.000 (0.776)	-0.000 (0.213)
$\ln(\text{PRICE})$	0.136 (13.557)***	1.414 (103.422)***	0.517 (38.599)***
$\ln(\text{MV})$	0.027 (3.143)***	-0.614 (51.423)***	0.348 (29.119)***
BM	0.004 (2.968)***	0.001 (0.439)	-0.002 (1.004)
UE	-0.006 (0.285)	0.072 (2.346)**	0.047 (1.568)
YIELD	0.240 (4.926)***	-0.506 (7.653)***	0.189 (2.907)***
SPRANK	-0.001 (0.286)	-0.006 (1.739)*	0.016 (4.436)***
OWN_{t-1}	-0.104 (126.431)***	-0.175 (174.590)***	-0.130 (148.838)***
PW_{t-1}	0.012 (1.403)	-0.033 (2.515)**	-0.246 (3.650)***
Constant	-0.503 (3.236)***	8.152 (37.880)***	-6.479 (30.346)***
Observations	322283	322283	322283
Adjusted R^2	0.014	0.093	0.044
Fixed effects included	Firm and calendar quarter	Firm and calendar quarter	Firm and calendar quarter

Absolute values of t -statistics are reported below coefficient estimates. One-tail p -values are in brackets. Two-tail p -values are in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%.

$\Delta\text{DEDICATED}$, $\Delta\text{TRANSIENT}$, and ΔQINDEX are changes in percentage ownership over a calendar quarter by dedicated, transient, and quasi-indexing institutions, respectively, per Bushee (2001). $\text{RRET}_{it+1,t+8}$ is the decile

rank of buy-and-hold market adjusted returns computed over calendar quarters $t+1$ to $t+8$, where calendar quarter t is the institutional ownership change measurement quarter. PASTRET equals one if the past one year SP500 index adjusted returns is negative, zero otherwise. MOM1 (MOM2_4) is the buy-and-hold raw return for the calendar quarter (two to four calendar quarters) before the institutional ownership measurement quarter. TVOL is the average of monthly trading volume divided by shares outstanding for the quarter prior to the institutional ownership measurement quarter. PRICE is the price per share at the end of the institutional ownership measurement quarter. MV is the total market capitalization of the common stock computed at the end of the prior fiscal quarter. BM is the ratio of common book equity to total market capitalization computed at the end of the prior fiscal quarter. UE is the earnings surprise based on a seasonal random walk divided by total assets for the earnings reported in the institutional ownership measurement quarter. YIELD is the dividend for the past year divided by MV. SPRANK is the S&P common stock ranking ($7=A+\dots 0$ if stock is not rated or is in reorganization or liquidation) in the institutional ownership measurement quarter. OWN _{$t-1$} is the one-quarter lagged ownership of the institution specified in the dependent variable. PW is the weighted mean portfolio weight (in percentage measured at the beginning of a calendar quarter) of a stock in the portfolios of the institution specified in the dependent variable (see the text for formula to compute this variable).

Appendix A

Sample list of long term institutions along with their legal type classification according to CDA Spectrum database

LONG TERM INSTITUTION	TYPECODE IN SPECTRUM DATABASE
Ariel Capital Management, Inc.	5 Endowments and "others"
Aetna Services Inc	2 Insurance Company
American Financial Group Inc	5 Endowments and "others"
Amsouth Bancorporation	1 Bank
BNY Asset Management	1 Bank
Berkshire Hathaway Inc.	5 Endowments and "others"
Blum Capital Partners, L.P.	5 Endowments and "others"
Lasalle Inv Mgmt Secs Ltd.	5 Endowments and "others"
DDJ Capital Management, LLC	5 Endowments and "others"
Duke Endowment	5 Endowments and "others"
1st Source Bank	1 Bank
Bancorpsouth, Inc	1 Bank
White Mountains Ins Group Inc.	5 Endowments and "others"
Gabelli Asset Management Co	5 Endowments and "others"
General Atlantic Partners, LLC	5 Endowments and "others"
General Electric Company	5 Endowments and "others"
Geocapital, LLC	5 Endowments and "others"
Glenmede Trust Company	1 Bank
State Farm Mutual Automobile Ins	2 Insurance Company
Wellington Management Co, LLP	5 Endowments and "others"
William Harris Investors Inc.	5 Endowments and "others"
State Of Wisconsin Investment Board	5 Endowments and "others"
Yale University	5 Endowments and "others"

VITA

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Santhosh Ramalingegowda grew up in Bangalore, India. He performed his undergraduate studies at the University of Mysore, India, where he earned a Bachelor's degree in Commerce. He then worked for a total of three years in various accounting firms in Bangalore before coming to the U.S.A. for his graduate studies. Santhosh completed his M.B.A. at McNeese State University, LA. He earned his Ph.D. in Business Administration with a concentration in accounting at the Smeal College of Business, Pennsylvania State University. Santhosh is currently an assistant professor at the University of Georgia's Terry School of Accounting, and lives in Athens, GA with his wife, Namratha.