Institutional Investor Trading Around Auditor's Going Concern Modified Opinions: An Analysis of Mutual Funds and Pension Funds

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SYNOPSIS: Whether the auditor's going concern modified opinion (GCMO) provides information to the market remains an important and unresolved empirical issue. We contribute to this literature by examining trading behavior of mutual and pension funds around first-time GCMOs. We find that mutual funds increase their net selling in the period just prior to the GCMO, but not at the GCMO announcement; however, they significantly increase trading volume at the announcement. In contrast, pension funds appear to be less active in the pre-GCMO period and then significantly increase their net selling, but not trading volume, at the GCMO announcement. Both fund types engage in higher net selling of subsequently bankrupt firms in the year preceding the GCMO and in the period after the GCMO announcement compared to subsequently viable firms. Our results are robust to a battery of additional tests, including examining only GCMOs announced after earnings announcements, and controlling for the severity of GCMOs as well as other news events during our announcement period. Our examination of trading behavior provides evidence on differences between these two groups in their pre-GCMO trading and their response to the GCMO, and enables us to provide a robust assessment of any information content of GCMOs.

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INTRODUCTION

The important issue of whether the auditor's going concern modified opinion (GCMO) provides information to the market has spawned a considerable amount of debate and research over the past several decades (Carson, Fargher, Geiger, Lennox, Raghunandan, and Willekens 2013; DeFond and Zhang 2014). Researchers investigating this issue have typically assessed the information content of GCMOs by examining the market's share price reaction to the announcement of the GCMO, and the inferences drawn from these studies have been surprisingly diverse. A number of studies conclude that first-time GCMOs provide information to the market as they are associated with a significant negative stock price reaction (Dopouch, Holthausen, and Leftwich 1986; Loudder, Khurana, Sawyers, Cordery, Johnson, Lowe, and Wunderle 1992; Fleak and Wilson 1994; Blay and Geiger 2001; Kausar, Taffler, and Tan 2006, 2009; Menon and Williams 2010) . Other studies, however, suggest that any negative market response to first-time GCMOs is due to the simultaneous release of other negative information about the firm and conclude that first-time GCMOs generally do not contain any incremental information to the market (Banks and Kinney 1982; Davis 1982; Elliott 1982; Dodd, Dopuch, Holthausen, and Leftwich 1984; Myers, Shipman, Swanquist, and Whited 2017).

We investigate this important and unresolved issue by examining trading behavior surrounding GCMOs of mutual funds and pension funds, two very distinct and important institutional investor groups. Institutional investors are sophisticated and knowledgeable investors that are able to spend considerable resources on gathering firm-specific information and performing more complex and complete analyses of the information they obtain (Sias and Starks 1997; Collins, Gong, and Hribar 2003; Irvine, Lipson, and Puckett 2007; Boehmer and Kelley 2009; Green, Hand, and Soliman 2011). We argue that institutional investors will engage

in actively analyzing available information to assess a firm's financial condition simultaneously but independent of the firm's external auditor. Thus, in many cases of financial stress, we expect institutional investors to be able to identify the distress and increase their net selling of distressed firms in the pre-GCMO period, which is also the period assessed by auditors that leads them to issue a first-time GCMO. Accordingly, announcements of first-time GCMOs may contain little or no new information to institutional investors if these sophisticated investors have access to all relevant information available to the firm's auditors and can analyze the information as effectively as auditors when assessing firm financial distress. However, institutional investors and auditors may differ in their access to and analysis of information when assessing a firm's distress. If so, we would expect the announcement of a first-time GCMO to contain new information that would cause investors to adjust prior beliefs, which would be manifest by changes in trading behavior.

Examining trading behavior has the potential to yield unique insights regarding the nature and information content of firm announcements and how they affect specific market participants that cannot be captured in overall share price response tests (Beaver 1968; Bamber, Barron and Stevens 2011). In addition, not all investors, even institutional investors, are homogeneous. Prior research has documented considerable differences between mutual funds and pension funds in terms of type of their clientele, characteristics of their money managers, level of fiduciary responsibility, risk taking behavior, and investment horizon (Chevalier and Ellison 1997; Bushee 2001; Del Guerico and Tkac 2002; Ke and Petroni 2004; Yan and Zhang 2009; Ramalingegowda 2014). Therefore, in order to extend prior research on the trading differences across different types of institutional investors, we separately examine the trading behavior of mutual funds and pension funds in the periods surrounding a first-time GCMO.

Mutual funds are considered more transient and active investors that are likely to gather and analyze corporate information and to trade on short-term news and turn over their investment portfolios significantly more often compared to pension funds (Yan and Zhang 2009). Thus, we expect that mutual funds, as more active traders, would be more likely than pension funds to engage in actively assessing firm financial distress and to sell their shares in distressed firms in the period leading to the GCMO announcement. Pension funds, however, are more dedicated investors that invest for the long-term and turn over their portfolios much less often compared to mutual funds (Bushee 2001; Ramalingegowda 2014). Because they are generally less active information searchers, we expect pension funds to be less active sellers in the period leading to the first-time GCMO and therefore exhibit a stronger reaction to the GCMO announcement compared to mutual funds. In order to provide a more robust analysis of trading behavior around first-time GCMOs, we also consider the possibility that institutional investors have a delayed response to the information in the GCMO. Accordingly, we assess the information content of first-time GCMOs by examining changes in trading patterns over the pre-GCMO period, announcement of a first-time GCMO, and the immediate post-GCMO period.

We utilize a detailed database of pension and mutual fund transactions from *Ancerno Ltd* to examine trading behavior surrounding GCMOs.[1] We create average daily trading metrics and analyze daily net trading activity (i.e., purchases minus sales) and daily trading volume activity (i.e., purchases plus sales) for both fund types.[2] Using trading data from 2002 through 2010, we find that mutual funds and pension funds have very different trading behavior around first-time GCMOs. Specifically, we find that mutual funds appear able to identify a firm's financial stress and engage in increased net selling in the period leading to the first-time GCMO, but not at the

[1] *Ancerno Ltd*. provides transaction cost analysis services to institutional investor clients and data representatives at *Ancerno Ltd*. confirm that their clients submit all their trades to *Ancerno Ltd* for transaction cost analysis. Thus, the database we utilize includes data on all transactions of these institutional investor clients.

[2] As described more fully in the Research Sample and Method section, we scale these metrics by the number of firm shares outstanding during the year.

GCMO announcement. In contrast, pension funds significantly increase their net selling at the first-time GCMO announcement. Compared to mutual funds, the announcement of a first-time GCMO appears to have significant information content for pension funds who substantially reduce their holdings at the announcement of this negative corporate event. Further, we find that neither mutual funds nor pension funds engage in increased net selling in the immediate post-GCMO period, suggesting that there is no delayed response to the negative information in first-time GCMOs. In fact, we find that mutual and pension funds engage in significant reductions in net selling of first-time GCMO firms in the post-GCMO period. Partitioning our sample firms based on subsequent viability reveals that the decreased net selling for both types of investors is concentrated on subsequently viable firms, but not subsequently bankrupt firms. Our findings are consistent with those of Blay and Geiger (2001) and Ramalingegowda (2014) and suggest that institutional investors are able to distinguish first-time GCMO firms that will go bankrupt from those that will remain viable.

Prior research has also shown that trading volume increases with new information (see Bamber et al. 2011 for a review). Our analysis of average daily trading volume indicates that mutual funds significantly increase trading volume at a first-time GCMO announcement. Thus, while we do not find a significant change in net holdings for mutual funds at the GCMO announcement, the increase in their trading volume suggests that the first-time GCMO conveys information relevant for this investor group (Beaver 1968; Bamber, Barron and Stober 1997; Bamber et al. 2011). Further, our joint trading results suggest a general lack of consensus among mutual funds regarding valuation of the subsequently viable firms receiving first-time GCMOs. Specifically, the increase in their trading activity yet no change in overall holdings suggests that first-time GCMO announcements lead to general lack of consensus among mutual funds

regarding valuation of the first-time GCMO firms, causing some mutual funds to buy while the others to sell a similar amount.

In sum, we find that the first-time GCMO announcement has information content for both mutual funds and pension funds. We further find that the information content of first-time GCMOs differs between these two groups consistent with the differences in their capacity to gather and actively process information to assess a firm's distress in the pre-GCMO period. Our findings are robust to a battery of additional sensitivity tests, including examining only GCMOs released after earnings announcements and controlling for the severity of GCMOs as well as other news events during our GCMO announcement period.

Our findings should be of interest to institutional investors, audit firms, audit and security market regulators, and researchers. Our study extends the literature in several important ways. First, instead of assessing the information content of GCMOs by the market's overall share price response, we examine actual trading behavior of mutual funds and pension funds around GCMOs as differences in their trading behavior can reveal individual market effects that are not captured by aggregate market share price responses (Beaver 1968; Kandel and Pearson 1995; Rees and Twedt 2017). While Menon and Williams (2010) conclude that the negative share price response they find to the GCMO is present only when institutional investor ownership is high, they do not provide an examination of whether and when institutional investors actually react to the information in GCMOs. We directly address this in our study.

Second, we answer a call by Bamber et al. (2011) regarding a lack of research on the trading behavior of specific investor types around announcements of important corporate events. Specifically, not only do we present an examination of institutional investor trading behavior, we separately examine the trading behavior of mutual funds and pension funds, as two distinct and important institutional investor groups. Accordingly, our study provides a more nuanced

examination of institutional investor trading behavior than performed by prior research. Our separate analyses allow us to address the specific questions of whether information content of first-time GCMOs vary across institutional investor types, and whether there are differences in trading behavior leading up to and after the GCMO announcement based on institutional investor type.

Third, Frino, Jones, Lepone and Wong (2014) note that there are several studies examining trading behavior of institutional investors, yet there is minimal research that investigates the relationship between institutional investors and financially distressed firms. We contribute to the sparse literature in this space by providing a detailed examination of institutional trading behavior of distressed firms that receive GCMOs. Our findings suggest that the first-time GCMOs contain information that helps certain institutional investors in their assessment of financially distressed firms.

Lastly, financial reporting standard-setters in the U.S. have made recent changes to management's role in reporting on going concern issues (FASB 2014), and auditing standard-setters are currently re-assessing the auditor's role and reporting responsibility with respect to going concern (AICPA 2016; PCAOB 2016). Accordingly, information regarding trading activity surrounding the auditor's GCMO should be of interest as regulators evaluate the impact and appropriateness of the newly revised financial reporting requirements, and standard-setters contemplate changes in auditor reporting.

The remainder of the paper proceeds as follows. The next section provides some background, discusses the prior literature and presents our research questions. We then discuss our institutional investor trading data followed by a discussion of our research methodology. We then present the results of our main analyses and additional tests, and the final section concludes the study.

BACKGROUND, PRIOR RESEARCH AND RESEARCH QUESTIONS

Prior Research on Market Reaction to GCMOs

Several early studies examining the market reaction to a GCMO in the U.S. found large negative abnormal returns in the period leading up to the issuance of the GCMO, but no significant negative response at the announcement of the GCMO (Banks and Kinney 1982; Davis 1982; Elliott 1982; Dodd et al. 1984). Thus, these researchers concluded that the GCMO did not present any incremental information to the market that was not already impounded into share prices prior to its release. However, Dopuch et al. (1986) find a negative price reaction to media announcements of first-time GCMOs, suggesting GCMOs do provide additional information to the market beyond what is already impounded into share prices. Building on the findings in Dopuch et al. (1986), several subsequent studies attempt to identify situations in which the GCMO would be "unexpected" by the market, and generally find significant negative share price reactions to the issuance of unexpected GCMOs (e.g., Loudder et al. 1992; Fleak and Wilson 1994; Jones 1996; Blay and Geiger 2001).

In contrast, a recent study by Myers et al. (2017) critically examines the timing of GCMO announcements and whether they are released independently, or concurrent with earnings announcements (EAs).[3] They find that the majority of GCMOs are released with EAs and that EAs in the year of first-time GCMOs elicit significant negative cumulative abnormal returns (CARs). However, they also find that CARs are significantly more negative when GCMOs are announced with EAs than when they are announced after EAs. Their collective results suggest that the effect of the GCMO on market prices is substantially lower than previous research suggests and that the market is reacting to management's negative disclosures in the EA and not to the GCMO.

Institutional Investors and GCMOs

[3] Earnings announcements also include 10-K filings and annual reports since these contain earnings information.

Prior studies on market response to GCMOs have typically addressed aggregate share price response and have not examined the reaction of different types of investors. An exception to this is Kausar, Taffler and Tan (2006). Using Form 13F data, they find that, overall, institutional investors significantly reduce holdings of first-time GCMOs in the four quarters prior to the first-time GCMO quarter, and then maintain relatively stable holdings over the subsequent four quarters. However, for firms that delist or file for bankruptcy, subsequent quarterly holdings of institutions continue to decline after the GCMO. Similarly, Menon and Williams (2010) document significant reductions in overall institutional ownership of GCMO firms from the quarter before to the first full quarter following the GCMO. They conclude that institutional investors facilitate the market's ability to evaluate the negative information provided by the auditor's GCMO and thereby drive the negative share price reaction to GCMOs.

Building on these earlier studies, our study sheds additional light on the effects of GCMOs on the market by presenting an examination of institutional investors' daily trading surrounding first-time GCMOs, rather than using quarterly changes in their holdings of GCMO firms. First noted by Beaver (1968), and later extended and amplified by numerous researchers (Ross 1989; Cready and Hurtt 2002; Bamber et al. 2011; Landsman, Maydew and Thorock 2012), examining investor's trading activity has the potential to yield unique insights regarding the nature of firm announcements and how they affect market participants. Examining trading patterns enables the research to identify changes in the expectations of the market, as well as individual investors or groups of investors, while share price reactions can only reflect aggregate changes in the expectations of the market as a whole (Bamber et al. 2011; Landsman et al. 2012). Accordingly, we examine trading behavior using a unique daily trading data in order to provide an alternative approach to assessing the information content of first-time GCMOs.

Institutional investors own more than 60 percent of all publicly traded stocks in the U.S., and account for an even greater proportion of trading volume, making them one of the most important and active participants in the equity market.[4] Institutional investors are considered sophisticated or knowledgeable investors that are able to spend resources on gathering firm information and performing more complex and complete analyses of the information they obtain (Sias and Starks 1997; Boehmer and Kelley 2009). For example, Baker, Litov, Wachter, and Wurgler (2010) find that the large mutual funds are able to profit from their trades by more accurately estimating the earnings fundamentals released in earnings announcements. In sum, prior research suggests that institutional investors are able to accurately assess a firm's financial condition by gathering and analyzing information about price-relevant corporate events.

Based on prior evidence, we consider the possibility that institutional investors utilize available information to assess a firm's distress and reduce their holdings of GCMO firms in the pre-GCMO period. If first-time GCMOs contain any information content, we would expect the new information to cause institutional investors to increase their trading activity at the announcements of GCMOs. Conversely, if GCMOs contain no new information and essentially confirm information institutional investors already possess, we would expect the GCMOs to have no significant effect on their trading at the time of the announcement. We also consider the possibility that first-time GCMOs contain information that institutional investors respond with a delay (e.g., Kausar, Taffler and Tan 2009). If so, we expect to find an increase in the trading activity in the post-GCMO period. Thus, our first research question is:

> **RQ1**: *Do institutional investors engage in net trading activity in the pre-GCMO period, at the announcement of the first-time GCMO, and in the post-GCMO period?*

Differences Within Institutional Investors: Mutual Funds and Pension Funds

[4] Source: Securities Industry and Financial Markets Association (2015).

Prior research documents that institutional investors are not all homogeneous. As two of the largest and most influential types of institutional investors, mutual funds and pension funds are significantly different market participants. Prior studies find considerable differences between these two groups in terms of type of their clientele, characteristics of their money managers, level of fiduciary responsibility, risk taking behavior, and investment horizon (Chevalier and Ellison 1997; Bushee 2001; Del Guerico and Tkac 2002; Ke and Petroni 2004; Yan and Zhang 2009; Ramalingegowda 2014). Prior studies also document that these two types of institutional investors engage in heterogeneous trading and follow different trading strategies (Bushee 2001; Bushee and Goodman 2007). Specifically, mutual funds are more transient and active investors that are likely to trade on short-term news and turn over their investment portfolios significantly more often compared to pension funds (Yan and Zhang 2009). Pension funds are more dedicated investors that invest for the long-term and turn over their portfolios much less often compared to mutual funds (Bushee 2001; Ramalingegowda 2014).

In the context of trading on distressed firms, we expect that mutual funds, as active traders, would be more likely than pension funds to gather and analyze all available firm information and therefore be more likely to identify distressed firms that the external auditor will also conclude that there is substantial doubt regarding their ability to continuing as a going concern. Therefore, in cases of firm financial distress, we expect mutual funds to be able to identify the distress and to increase their net selling of these firms during the fiscal year on which the auditor will render the first-time GCMO. Accordingly, we expect mutual funds to sell their shares in distressed firms even before the first-time GCMO announcement, and to react less to the eventual GCMO announcement compared to pension funds. Compared to mutual funds, pension funds are less active information searchers and churn their portfolios less and, therefore, may be less active sellers in the period leading to the first-time GCMO in order to hold on to

firms. Accordingly, we separately examine the trading behavior of mutual funds and pension funds in the periods surrounding a GCMO. We expect these two groups to vary with respect to their utilization of available information to assess a firm's distress in the pre-GCMO period. If so, we would expect to find differences in their trading activity surrounding first-time GCMOs. Thus, our second research question:

> **RQ2**: *Are there significant trading differences between mutual funds and pension funds in the periods surrounding a firm's receipt of a first-time GCMO?*

Trading and Subsequent Viability of GCMO Firms

Blay and Geiger (2001) show that market reaction to first-time GCMOs is conditioned on the ex-post viability of the distressed firm. They find that firms remaining viable for the next year have significantly larger share price declines upon the receipt of a first-time GCMO than firms that file for bankruptcy in the subsequent year. They conclude that the market had already assessed a greater level of financial distress for the subsequently bankrupt firms and had already impounded that expectation into share prices prior to the public release of the audit report, but that the market had not done so for the subsequently viable first-time GCMO firms. Thus, subsequent viability status may serve as a naïve partition for assessing trading behavior of mutual funds and pension funds surrounding the announcement of a firm's first-time GCMO.

If institutional investors are accurate at assessing firm financial stress and thereby accurately identify eventual bankruptcy, then they may have already eliminated or substantially reduced the subsequently bankrupt firms from their portfolios in earlier periods. If institutional investors sell shares of the subsequently bankrupt firms in earlier periods, this would be consistent with the Menon and Williams (2010) finding of no significant share price reaction due to low levels of institutional investor holdings. This argument is also consistent with Blay and Geiger's (2001) finding of significant negative CARs for first-time GCMO announcements for

subsequently viable firms but not for subsequently bankrupt firms, and Ramalingegowda's (2014) finding of long horizon investors greater selling of subsequently bankrupt firms. In contrast, Frino et al. (2014) find that institutional investors in Australia hold financially distressed firms all the way through to bankruptcy, which suggests a lack of selling behavior prior to bankruptcy. However, Blay and Geiger (2001) do not consider institutional investors in their analyses, and both Frino et al. (2014) and Ramalingegowda (2014) examine institutional investor behavior prior to bankruptcy announcements and not first-time GCMOs, and prior research indicates that these are two related, but different events.[5] Therefore, it is an empirical question as to whether trading surrounding a first-time GCMO is different based on ex-post viability. Accordingly, our third research question:

> ***RQ3***: *Do mutual (pension) funds trade differently around first-time GCMOs for subsequently bankrupt firms compared to subsequently viable firms?*

RESEARCH SAMPLE AND METHOD

Unlike prior research, we do not rely on Form 13F filings to obtain institutional holdings and then infer trading activity based on quarterly changes. As noted by Puckett and Yan (2011), there are several methodological issues afflicting such an approach.[6, 7] To overcome this

[5] As evidence of this disparity, Carson et al. (2013) report that prior GCMO studies find that only approximately 10-15% of first-time GCMO firms file for bankruptcy in the subsequent year, and only roughly 50% of companies filing for bankruptcy receive a GCMO in the year preceding bankruptcy.

[6] First, changes in quarterly holdings data do not capture intra-quarter transactions where funds purchase and sell (or sell and repurchase) the same stock within the same quarter. Second, since quarterly holdings data cannot identify the exact timing or execution details of trades, most studies that use quarterly data either do not purport to examine intra-quarter trading activity, or commonly assume that all trading activity occurs at the end of the quarter, when in fact trading likely occurs at any time within the quarter. Further, the extant research on institutional investors and GCMOs compare institutional investor holdings from quarter to quarter to make inferences regarding the effect of the GCMO on institutional investor holdings. However, this approach is unable to provide accurate information regarding whether the GCMO may be the cause of the change in quarterly holdings or whether the change occurred prior to, or well after the GCMO announcement.

[7] For example, if institutional investor holdings of company X are 100 shares at Q-1 to the GCMO quarter and then are 80 shares at Q+1, prior research has assumed that the GCMO is associated with a 20 share reduction in holdings of company X. However, under this approach we are not able to determine if the 20 share reduction over the span of 6 months came prior to or after the GCMO, or is a combination the two. It could have been the result of selling 80

limitation, we utilize a daily trading database for the period January 1, 2002 to December 31, 2010 from *Ancerno Ltd.* The *Ancerno* database does not provide the name or holdings of the institutional investors; however, each institution is identified with a unique investor code. All the institutional investors are pension or mutual funds, and Puckett and Yan (2011) conclude that trading captured in the *Ancerno* database accounts for around 10 percent of all CRSP trading activity.

For trade information, *Ancerno* reports the investor code and firm identifiers (CUSIP and TICKER symbol), along with trade date, execution volume, execution price, and whether the trade is a buy or sell. We include firms with trading data from *Ancerno* that also have stock price, earnings before extraordinary items, market value of equity, book value of equity, return and total assets data in *Compustat.* We use the *Audit Analytics* database and identify firms with a GCMO from the period 2003 to 2010. Following prior research, we classify a firm as receiving a first-time GCMO if it gets a GCMO in the current year, but did not get a GCMO in the previous year.[8] We use the filing date (*FILE_DATE*) from *Audit Analytics* as the announcement date of the GCMO. In order to focus on firms most likely to have shares held by institutional investors, we eliminate firms with less than $50 million of market value from our analyses. Since we control for earnings surprise in our regression models, we remove three firms with earnings announced after GCMO *FILE_DATE*. In order to ensure the accuracy of our first-time GCMO identification procedures, we manually verify that each firm received a GCMO in the current year and did not receive a GCMO in the previous year.

shares in the month prior to the GCMO and reacquiring 60 shares two months after the GCMO, or any one of a multitude of possible trading combinations.

[8] Based on this definition of "first-time" GCMOs, firms could appear in our data more than once. We find that seven firms appear in our first-time GCMO sample more than once. As noted in our Additional Tests section, removing the multiple observations and performing analyses only on the first observation of each firm produces results that are substantially the same as those reported in our main analyses.

In order to examine RQ3 regarding trading behavior based on subsequent viability, we partition our sample of first-time GCMOs into those that remained viable and those that filed for bankruptcy in the subsequent year. We obtain bankruptcy information from *Compustat* and *BankruptcyData.com*. In addition, we manually verify all non-bankrupt firms by ensuring that they filed a 10-K in the subsequent year that did not indicate a bankruptcy filing during the year. Firms that we were not able to unequivocally determine subsequent viability status were removed from the analysis. After merging the *Audit Analytics*, *Compustat*, and *Ancerno* databases, and after eliminating firms with unknown subsequent viability, our sample consists of 230 firms receiving first-time GCMOs.[9] Of these 230 firms, 34 were bankrupt within 12 months of the financial statement reporting date, and 196 firms remained viable through the subsequent fiscal year.

RESEARCH DESIGN

We begin our examination of trading activity by forming two trading metrics, $NET\_TRADE[t_1,t_2]$ and $VOL\_TRADE[t_1,t_2]$ representing average daily net trading activity, and average daily trading volume, respectively, from days t_1 through t_2 relative to the GCMO date. Our event period, $[-1,+1]$, represents the 3-days centered around GCMO announcement date. To measure $NET\_TRADE[t_1,t_2]$ ($VOL\_TRADE[t_1,t_2]$) we calculate the total number of firm shares purchased minus (plus) the number of shares sold by institutional investors from t_1 through t_2. We then divide by total number of firm shares outstanding for the period and average the result over the number of days in the period.

Thus, $NET\_TRADE[t_1,t_2]$, is calculated as:

[9] Our sample of first-time GCMO firms is smaller than many prior GCMO studies because an institutional investor included in the *Ancerno* database must hold and also trade a first-time GCMO firm to be included in our study, including during the benchmark period of the year prior to the GCMO. However, as noted subsequently, our analyses include the trading activity of 2,518 institutional investor trading-years containing trades of a first-time GCMO firm.

$$\sum_{t=t1}^{t2} \left(\frac{BUY_{it} - SELL_{it}}{SHO_i}\right) \Big/ (|t2 - t1| + 1) \qquad (1)$$

And *VOL_TRADE*$[t_1,t_2]$, is calculated as:

$$\sum_{t=t1}^{t2} \left(\frac{BUY_{it} + SELL_{it}}{SHO_i}\right) \Big/ (|t2 - t1| + 1) \qquad (2)$$

where BUY_{it} *(*$SELL_{it}$*)* represents total number of firm shares purchased (sold) by the *Ancerno* investors in firm *i* on day *t*, and SHO_i is the total number of shares outstanding (in 000s) for firm *i* at the end of the period. In computing the trading activity by mutual and pension funds, we repeat the above steps for each of these investor types separately. We identify three time periods surrounding the GCMO announcement for examination, representing the pre-GCMO event (*[-11, -2])*, the GCMO announcement event ([-1, +1]), and the post-GCMO event ([*+2, +11*]) periods, as well as a benchmark period representing average trading for the year preceding the GCMO (*[-253, -12]).*

We first conduct a univariate analysis to examine whether the average trading behavior of institutional investors differ during the pre-GCMO, GCMO announcement, and post-GCMO event periods compared to the benchmark period. We present an analysis of the full sample of institutional investors and then perform separate analyses on the mutual and pension funds. We then use OLS regressions to answer our research questions and run separate regressions for the mutual funds and pension funds. We follow the empirical model from Menon and Williams (2010) by controlling for several factors that potentially explain investor trading reaction to GCMOs and estimate the following general model:

$$NET\_TRADE \,/\, VOL\_TRADE = \beta_0 + \beta_1 PRE_i + \beta_2 EVENT_i + \beta_3 POST_i + \beta_4 MVE_i + \beta_5 MTB_i + \beta_6 MOMENTUM_i + \beta_7 ESURPRISE_i + \beta_8 ZSCORE_i + \varepsilon \qquad (3)$$

where PRE_i is a dummy variable equal to 1 if the trading activity in firm *i* occurred during the pre-event period *[-11, -2*], 0 otherwise; $EVENT_i$ is a dummy variable equal to 1 if the trading activity in firm *i* occurred during the GCMO event window [*-1, +1*], 0 otherwise; $POST_i$ is a dummy variable equal to 1 if the trading activity in firm *i* occurred during the post-event period [*+2, +11*], 0 otherwise. MVE_i is the market value of equity of firm *i* at the end of the fiscal year of the GCMO date, MTB_i is the market-to-book ratio and measured as market value of equity scaled by the book value of equity of firm *i* at the fiscal year of the GCMO date, $MOMENTUM_i$ represents the return momentum computed as the cumulative abnormal return of firm *i* during the control period, [*-253,-11*], where daily abnormal return is computed as the buy-and-hold return minus the value-weighted daily CRSP index return, $ESURPRISE_i$ is the annual earnings surprise measured as annual earnings before extraordinary items from the fiscal year of the GCMO minus the prior year's annual earnings before extraordinary items scaled by the market value of equity from the prior year, $ZSCORE_i$ is a measure of financial distress, computed using the Zmijewski (1984) distress score metric where higher scores indicate higher levels of financial distress. Variable definitions are summarized in Appendix A.

In our regression analyses, we include average daily trading for each of the three periods surrounding the GCMO, as well as the benchmark period.[10] Year dummies are also included in all regression models to control for time period effects and we cluster robust standard errors at the firm level. Following the rationale from prior research, we include controls for firm size (*MVE*) and momentum (*MOMENTUM*), both of which are expected to be positively associated with trading activity (Ramalingegowda 2014). We include control for the market's perceived growth opportunities for the firm (*MTB*), and expect it to be negatively associated with trading activity for the distressed GCMO firms in our sample. We also include control for earnings

[10] We lose some observations (3 subsequently bankrupt and 33 subsequently viable firms) due to missing control data in the benchmark period. We use all observations with available data to estimate our regression models. Our univariate results are substantially unchanged if we examine only those firms with full control variable data.

surprises (*ESURPRISE*) in order to address concerns raised by Myers et al. (2017) and others regarding the market's reaction to the earnings surprise and not the GCMO.[11] We expect *ESUPRISE* to be positively associated with net trading, but do not have an *a priori* expected sign for the association with trading volume because we expect both reduced and increased earnings to be associated with greater trading activity. Lastly, we include control for the overall level of financial stress (*ZSCORE*) and, in general, expect it to be negatively associated with net trading and positively associated with trading volume. The main variables of interest in model (3) are *PRE*, *EVENT* and *POST* where, for the *NET_TRADE* analyses, a significantly negative (positive) coefficient on any of these time period variables suggests higher net selling (buying) activity for the period compared to the benchmark period. For the *VOL_TRADE* analyses, a significantly positive (negative) coefficient on any of the time period variables suggests higher (lower) trading volume for the period compared to the benchmark period.

RESULTS

Descriptive Statistics

Panel A of Table 1 reports descriptive statistics for our sample of 230 first-time GCMO firms. The GCMO firms in our study have mean assets (*ASSETS*) of $1,655.3 million, mean market value of equity (*MVE*) of $249.2 million over the years 2002-2010. They also report mean market-to-book ratios (*MTB*) of 0.568 and a mean share price of $4.91. In terms of financial performance, the mean earnings surprise (*ESURPRISE*) is -0.093 and the mean cumulative abnormal returns (*MOMENTUM*) in the GCMO benchmark period [*-253, -12*] is -0.464 percent, and mean of the overall distress measure (*ZSCORE)* is 1.335. All control variable means reported in Panel A are significantly different than 0 ($p < .05$).

[11] In our Additional Tests section, we provide separate analyses of only firms announcing GCMOs after earnings announcements. Results of those tests are substantively the same as those of the full sample reported in our main analyses and all of our inferences remain unchanged.

Insert Table 1 Here

Panels B and C of Table 1 present descriptive statistics of our sample firms partitioned on subsequent viability. As noted in Panel C, the group of subsequently bankrupt firms are significantly larger in terms of asset size (*ASSETS*; $p < .05$), have greater negative share price momentum (*MOMENTUM*; $p < .01$), and higher overall levels of financial distress (*ZSCORE*; $p < .05$) compared to the subsequently viable firms.

Panel D of Table 1 reports descriptive statistics for the *Ancerno* mutual funds and pension funds in our study. The 999 mutual fund-years, on average, exchanged $24,725 million of shares during our study period of 2002 to 2010 compared to a mean of $3,538 million for the 1,519 pension fund-years. The differences in trading magnitude between these two investor groups is statistically significant ($p < .01$), and is consistent with mutual funds being more active traders compared to pension funds.[12]

Univariate Tests

Net Trading

Table 2 reports the mean values for *NET_TRADE* for our sample of institutional investors trading firms that received a first-time GCMO. Columns 1 and 2 in Panel A of Table 2 report that for our full sample of institutional investors, *NET_TRADE* is negative and significantly different from 0 ($p < .01$) across all first-time GCMO firms in the benchmark period [*-253, -12*], and in the period right before release of the GCMO [*-11, -2*]. We also find that, in the aggregate, *NET_TRADE* is negative and significant ($p < .05$) during our 3-day GCMO announcement period [*-1, +1*], but not for the post-announcement period [*+2, +11*]. The results suggest that, on average, institutional investors are net sellers of first-time GCMO firms in the benchmark period

[12] A limitation to our study is that we do not have data on portfolio holdings of the *Ancerno* investors and, therefore, cannot determine the proportion of the respective holdings traded.

and significantly increase their net selling in the period immediately before the GCMO announcement [*-11, -2*]. Their net selling remains fairly constant at the GCMO announcement [*-1, +1*], and then significantly declines ($p < .05$) in the post-GCMO period [*+2, +11*].

Insert Table 2 Here

To examine whether mutual funds and pension funds trade first-time GCMO firms differently, we analyze these two investor groups separately. Aggregate *NET_TRADE* means for mutual funds (pension funds) are presented in columns 3 and 4 (columns 5 and 6) in Panel A of Table 2. Similar to the combined sample results, both mutual funds and pension funds exhibit significant ($p < .01$) net selling in the benchmark [*-253, -12*] and pre-GCMO [*-11, -2*] periods. While our data does not allow us to determine holdings, we find that magnitude of net selling in the benchmark and pre-GCMO period by mutual funds (-0.069 and -0.118, respectively) is three to four times that of pension funds. Importantly, as initial evidence of the differential trading of mutual funds and pension funds, we find that pension funds exhibit significant ($p < .01$) net selling in the GCMO announcement [*-1, +1*] period, while mutual funds are not significant net sellers ($p = .36$) during this period. Both mutual and pension funds are not significant net sellers or buyers in the post-event [*+2, +11*] period ($p = .55$ and .30, respectively), consistent with the combined fund results. A comparison of the mutual and pension fund trading clearly evidences the differences between these two types of funds with respect to net selling (i.e., negative *NET_TRADE*) around the GCMO date, as well as the reaction to the GCMO by the pension funds but not the mutual funds in terms of increases in net selling. Figure 1 graphically presents the *NET_TRADE* results for the mutual and pension funds for the periods around the GCMO compared to their respective benchmarks.

Insert Figure 1 Here

These univariate results suggest that mutual funds are active net sellers in the year prior to the GCMO (*NET_TRADE* = -0.069), particularly right before the GCMO announcement (*NET_TRADE* = -0.119), but are neither net sellers nor buyers when the GCMO is announced (*NET_TRADE* = -0.031), or in the immediate subsequent period (*NET_TRADE* = -0.019). Thus, mutual funds appear to have identified the financial stress of the first-time GCMO firms and have already significantly reduced their portfolios of these firms prior to the GCMO announcement, leading to little additional net selling when it is announced. In contrast, pension funds are net sellers in the year prior to the GCMO (*NET_TRADE* = -0.020) and right before the GCMO is announced (*NET_TRADE* = -0.029), but more than double their net selling when the GCMO is announced (*NET_TRADE* = -0.052; $p < .05$) compared to the benchmark period. Based on the univariate pattern of *NET_TRADE*, the first-time GCMO announcement appears to have informational value to pension funds (doubling net selling), but not mutual funds.

In order to examine differences in trading based on subsequent viability, we partition our sample into subsequently viable (n=196) and bankrupt (n=34) firms and present the results in Panels B and C, respectively, of Table 2 for both funds combined and separately for mutual funds and pension funds. As reported in Panel B, the trading pattern as well as the levels of *NET_TRADE* are very similar between the non-bankrupt firms and the aggregate sample results, for both mutual funds and pension funds. However, the results in Panel C indicate that *NET_TRADE* for the subsequently bankrupt firms are negative and significantly larger in magnitude than *NET_TRADE* for non-bankrupt firms in Panel B, for both mutual and pension funds. For example, mutual funds exhibit significantly greater net selling of the subsequently bankrupt firms in the benchmark period [*-253, -12*] with an average daily *NET_TRADE* of -0.170 compared to -0.051 for the subsequently viable firms ($p < .01$). Similarly, the average *NET_TRADE* in the post-event period [*+2, +11*] is -0.217 and 0.015 for the subsequently

bankrupt and viable firms, respectively, and the difference is statistically significant ($p < .01$). We also find that net selling activity of pension funds is significantly larger for subsequently bankrupt firms than viable firms in the benchmark period, at the announcement period, and the post-GCMO period. Thus, we find significantly different net trading behavior conditioned on subsequent viability. Our findings suggest that both mutual funds and pension funds have already assessed a greater level of financial distress for the subsequently bankrupt firms well before the announcement of GCMOs and continue to actively monitor these firms and reduce their holdings after the GCMOs..

Trading Volume

We next assess whether the GCMO has information content by examining trading volume around the first-time GCMO announcement date. Table 3 presents the results of our *VOL_TRADE* measure for all institutional investors combined as well as separately for mutual funds and pension funds. As reported in Panel A, for the combined group of investors on all first-time GCMOs, trading volume increases from 0.502 in the benchmark period [*-253, -12*] to 0.823 when the GCMO is announced [*-1, +1*]. The increase in trading volume is both economically large (about 65%) and statistically significant ($p < .05$). As illustrated in Figure 2, we find that the increase in trading volume at the GCMO announcement is largely driven by the increase in trading volume of the mutual funds. In addition, consistent with the *NET_TRADE* analyses, we find a significant increase in trading volume is due to trading of subsequently viable GCMO firms ($p < .05$), and not the subsequently bankrupt firms. Thus, combined with the *NET_TRADE* analyses, our *VOL_TRADE* analyses suggest that the GCMO announcement conveys new information to both mutual funds and pension funds. Specifically, we find that GCMO announcement presents a negative news to pension funds causing them to significantly reduce

their holdings in these firms while it causes an increase in disagreement among mutual funds about the value of GCMO firms, leading some mutual funds to sell while other to buy.

Insert Table 3 and Figure 2 Here

In sum, our univariate results provide preliminary evidence on trading activity by institutional investors in the pre-GCMO period and at the announcement of GCMOs (RQ1), differences in trading patterns between mutual funds and pension funds in the periods around first-time GCMO announcements (RQ2), and differences in trading based on subsequent firm viability (RQ3). However, in order to provide a more vigorous assessment of these trading patterns, we perform regression analyses that allow us to control for other trading related factors and report the results in the next section.

Multivariate Tests

Net Trading

In order to control for other factors potentially associated with trading activity, we estimate the coefficients in equation (3). Our analysis includes average daily *NET_TRADE* metrics for the institutional investor trading of our sample of GCMO firms for the benchmark period and the three periods surrounding the GCMO announcement (i.e., *PRE*, *EVENT*, and *POST*). We find evidence of significant trading differences between mutual funds and pension funds in our univariate analyses, and, accordingly, we estimate equation (3) separately on mutual funds and pension funds and report the results in Table 4.

Insert Table 4 Here

Consistent with the univariate results, after controlling for other trade and financial stress related factors, the coefficient on the constant term is negative and significant ($p < .05$) for

mutual funds, indicating that they are, on average, net sellers of GCMO firms during our examination periods. The regression results also reveal a pattern fairly consistent with the univariate results for our three time-period variables of interest. Specifically, when compared to the benchmark period *[-253, -12*], a significant *NET_TRADE* difference occurs in the pre-GCMO period *[-11, -2]* where the *PRE* coefficient is negative and significant ($p < .05$). Thus, mutual funds appear to accelerate their net selling in the period just before the GCMO announcement. However, we find no significant net trading difference in our GCMO announcement period, suggesting that the GCMO does not provide mutual funds with any substantial additional information.

Examination of the regression results in Table 4 for the pension funds, however, reveals a very different trading pattern compared to the mutual funds. In contrast to mutual funds, pension funds do not significantly increase net selling activity in the pre-GCMO period *[-11, -2]* relative to the benchmark period. Importantly, unlike mutual funds, pension funds exhibit significant ($p < .05$) increases in net selling coinciding with the GCMO announcement *[-1, +1]*. Thus, even after controlling for other trading related factors, we continue to find that pension funds significantly increase their net selling with the release of the GCMO, suggesting the first-time GCMO has information content for pension funds.

In addition, we find significant ($p < .10$) positive coefficients for the post-GCMO *[+2, +11]* period, consistent with the univariate results, indicating both mutual and pension funds significantly reduce the magnitude of net selling in the post-GCMO period compared to benchmark period. As discussed further in the next section, the reduced net selling for both fund types in the POST period is attributable to reduced net selling on the subsequently viable firms, but not the subsequently bankrupt firms.

In sum, these full sample *NET_TRADE* regression results in Table 4 suggest that the first-time GCMO has new information content for pension funds, but acts as a confirmatory signal for mutual funds, who have already engaged in significant net selling in the benchmark and the pre-GCMO announcement periods. Thus, our investigation of RQ1 finds that institutional investors trade differently in the periods surrounding the GCMO, and investigating RQ2 we find substantial differences in trading behavior between mutual funds and pension funds.

To examine RQ3, we re-estimate our *NET_TRADE* regression model for subsequently viable (i.e., non-bankrupt) firms and bankrupt firms separately for both mutual funds and pension funds. As reported in Panel A of Table 5, *NET_TRADE* regression results for the subsequently viable first-time GCMO firms is substantially the same as the combined sample results presented in Table 4 for both mutual funds and pension funds. In contrast, the regression results for the subsequently bankrupt firms in Panel B of Table 5 indicate that, after controlling for other trade-related factors, there are no significant changes in *NET_TRADE* activity for the subsequently bankrupt firms in the periods surrounding the GCMO announcement compared to the benchmark period. Our viability-portioned results also reveal that the reduced net selling of the subsequently viable firms, but not the subsequently bankrupt firms drives the significant positive coefficient on POST in Table 4 for both mutual funds and pension funds. Accordingly, both mutual funds and pension funds appear to have accurately identified the firms that will subsequently fail versus those that will survive the next year and continue to sell those that will fail within a year but reduce selling those that will survive.[13]

Thus, we find additional support for substantial trading differences based on subsequent viability (RQ3) of our first-time GCMO firms. Our net trading results are consistent with those of Blay and Geiger (2001) who find significant share price reaction for first-time GCMO

[13] In fact, mutual funds, on average, are net buyers of subsequently viable firms in the *POST* period.

recipients that remained viable through the next year, but not for recipients that filed for bankruptcy in the subsequent year.

Insert Table 5 Here

Trading Volume

Similar to our directional net trading analyses (*NET_TRADE*) reported in Table 5, we estimate equation (3) for trading volume (*VOL_TRADE*) partitioned by subsequent viability and separately estimate regression models for mutual funds and pension funds and report the results in Table 6.[14] Results of our *VOL_TRADE* regression models reinforce our univariate findings. Specifically, Panel A of Table 6 reports that, compared to the average daily trading volume in the benchmark period for subsequently viable firms, mutual funds significantly ($p < .10$) increase trading volume in the EVENT period, suggesting the GCMO has information content, even after controlling for other trade-related factors. We find a similar positive coefficient on *EVENT* for the pension funds in Panel A, however, it is not significant. In sum, our trading volume results suggest that the first-time GCMO has significant information content for mutual funds, particularly when it is issued to a distressed but subsequently viable firm.

Insert Table 6 Here

Panel B of Table 6 reports that, consistent with the *NET_TRADE* results, *VOL_TRADE* does not change significantly for mutual funds or pension funds in the periods surrounding the GCMO with respect to subsequently bankrupt firms. The coefficients on all three time period variables (*PRE*, *EVENT*, and *POST*) are not significant at conventional levels ($p > .10$).

[14] Untabulated regression results for the combined samples of subsequently bankrupt and viable firms is similar to the subsequently viable firm results reported in Panel A of Table 6, except that the positive coefficient on the *EVENT* variable for the mutual funds is significant at $p < .10$ for one-tail test and not two-tail.

In addition, our collective *NET_TRADE* and *VOL_TRADE* results for mutual funds suggest significant future share price uncertainty regarding subsequently viable GCMO firms on the part of these investors. Aggregate trading volume on subsequently viable GCMO firms significantly increases; however, overall net holdings do not significantly change. Thus, mutual funds, as a group, essentially increase their trading volume but buy as many shares as they sell, suggesting considerable disparity in expectations of future firm performance for the subsequently viable firms by the mutual funds (Bamber and Cheon 1995; Bamber et al. 1997).[15]

In sum, our examination of institutional investors reveals that mutual funds and pension funds are significant net sellers of firms in the year prior to the first-time GCMO. This result is consistent with Dodd et al. (1984) who find negative share prices prior to the GCMO, but not coinciding with the GCMO announcement. Further, we find that pension funds significantly increase their net selling around the GCMO announcement, but mutual funds do not. However, mutual funds have significantly increased daily trading volume in the days surrounding the GCMO, particularly for subsequently viable firms, while pension funds do not. Collectively, our results provide evidence in support of the first-time GCMO containing additional information leading to changes in trading behavior for both mutual funds and pension funds (RQ1). We also find strong evidence of differences between mutual funds and pension funds in their trading behavior surrounding, and their reaction to, first-time GCMOs (RQ2). Consistent with prior research, we also find differences in trading based on subsequent firm viability (RQ3) for both mutual funds and pension funds. In the next section, we provide additional tests to ensure that our results are robust to alternative explanations and research design choices.

Additional Tests - Sensitivity and Robustness

[15] These results also suggest possible heightened contrarian trading around the GCMO announcement by mutual funds for the subsequently viable GCMO firms.

Although we control for earnings surprise and momentum in our regression models, in order to address concerns that institutional investors might be reacting to earnings information released along with the GCMO and not the GCMO itself (Li and Ramesh 2009; Myers et al. 2017), we identify 97 firms that announce GCMOs after announcing earnings. Separately analyzing these firms reveals a very similar trading pattern as presented in our main tests. Specifically, re-performing our univariate and regression analyses, we continue to find that *NET_TRADE* is negative in the periods prior to the first-time GCMO ([-*253, -12*], [-*11, -2*]) for these 97 firms for both mutual and pension funds, and that it increases significantly ($p < .10$) for the pension funds at the GCMO announcement [-*1, +1*], but not for the mutual funds. Similarly, *VOL_TRADE* increases significantly ($p < .10$) for the mutual funds around the GCMO announcement [-*1, +1*], but not for the pension funds. The signs and significance levels of all other time period variables in all re-estimated regressions are similar to those reported for our main analyses. Accordingly, we find that the trading behavior of mutual and pension funds around first-time GCMOs portrayed in our main analyses are not due to the concurrent release of earnings information.

In order to address whether institutional investors exhibit differential trading behavior based on the severity of the GCMO, we follow Menon and Williams (2010) and Chen, He, Ma, and Stice (2016) and use the data provided by *Audit Analytics* to categorize the reasons mentioned in the GCMO that caused the auditor to issue the GCMO. We adopt the definition used by Menon and Williams (2010) and identify GCMOs as severe (*SEVERE*) if the auditor mentioned difficulties obtaining future financing in the GCMO. Based on this definition, we classify 29 firms as having a severe GCMO.[16] We then add a *SEVERE* indicator variable to our

[16] Of these 29 firms, 21% (6 out of 29 firms) filed for bankruptcy in the subsequent year. This bankruptcy rate is higher than the non-severe bankruptcy rate of 14% (28 out of 201), suggesting a positive association between severe GCMOs and bankruptcy filing. However, the bankruptcy rates for companies with severe GCMOs is not significantly different than the rate for non-severe GCMO companies (chi-sq test $p > .10$).

regression model, and also interact *SEVERE* with *PRE*, *EVENT*, and *POST*, our three time period variables. Results of the re-estimated *NET_TRADE* regressions separately for mutual funds and pension funds produces results substantively the same as reported in Table 5. Specifically, the *SEVERE* indicator, and the three *SEVERE* by time period interaction terms are all not significant ($p > .10$), and the significance on the time period variables retain the same signs and level of significance for both the mutual funds and pension funds as reported. Results of the re-estimated *VOL_TRADE* analyses in Table 6 indicate that the *SEVERE*PRE* interaction term is significant ($p < .10$) as is the *SEVERE*EVENT* interaction term ($p < .05$) for the mutual fund subsequently viable firm analysis; yet, the coefficient on *EVENT* retains its significance ($p < .10$) as originally reported. We find no significant direct or interaction associations of *SEVERE* with *VOL_TRADE* for the pension funds in either analysis. In sum, we find some evidence that severity of the first–time GCMO is associated with higher trading volume for mutual funds; however, it does not appear to be substantially influencing the *NET_TRADE* or *VOL_TRADE* results reported in our main analyses.

In order to determine that our changes in trading behavior are not due to reaction to other firm-specific information released along with the GCMO, we review all 8-Ks filed during our [-1, +1] GCMO *EVENT* period for each firm in our sample by using EDGAR. We retain in our sample firms without 8-Ks in the *EVENT* period and firms with 8-Ks announcing previously released earnings and GCMO information, and drop 29 firms with 8-Ks reporting other firm-specific events. The most frequently disclosed events for the dropped firms were financing and debt covenant issues (defaults, waived defaults), issues involving stock exchange listing requirements, and manager and board member appointments. We then re-estimate our *NET_TRADE* and *VOL_TRADE* regression models with the reduced sample and obtain results substantially the same as those reported in Tables 5 and 6. Specifically, we find that the

coefficients on the regression terms *PRE, EVENT* and *POST* have the same signs and significance levels, suggesting that our trading results are not significantly influenced by other information released during the first-time GCMO *EVENT* period.

We identify "first-time" GCMO firms as those that received a GCMO in the current year but did not receive a GCMO in the previous year. Thus, firms could appear in our sample more than once over the course of our multi-year analysis. In order to determine if our results are influenced by these multiple firm occurrences, we remove the second observation on the seven firms included in our sample more than once and re-perform our analyses. Excluding these observations produces results substantially the same as reported in our main tests, and all of our inferences are unaffected.

Since we are examining changes in trading behavior, we re-estimate our regression models by replacing our control variables *MVE, MTB* and *ZSCORE* calculated using year-end levels with changes in these control variables from the previous quarter. Using changes in levels of the control variables reduces our sample size to 197 firms. The re-estimated control variable coefficients and coefficients on our *PRE, EVENT* and *POST* variables of interest are essentially unchanged. Specifically, we find that the coefficients on the regression terms *PRE, EVENT* and *POST* have the same signs and significance levels as reported in Tables 5 and 6 in the modified regressions. Thus, our results do not appear overly sensitive to using year-end levels or changes in levels of our control variables.

In order to determine that our assessment of trading activity for subsequently failed and viable firms is not driven by our definition of failure, following Willenborg and McKeown (2000), we expand our definition of failure to include filing for bankruptcy or firms delisting their shares from the stock exchange (*BKTDL*). Further, in order to address the "15 month" problem associated with lag between fiscal year end and the date of the auditor's report

identified in earlier GCMO research (Raghunandan and Rama 1995), we extend the subsequent time period assessed from 12 months to 15 months from the date of the audited financial statements (*BKT15, BKTDL15*). Re-estimating equation (3) using these three expanded definition of firm failure produces results, untabulated, that are substantially the same as those reported in the paper. Specifically, we find that the coefficients on the regression terms *PRE, EVENT* and *POST* have the same signs and significance levels as reported in Tables 5 and 6 in each of the modified regressions. Thus, our results do not appear to be overly sensitive to the definition of firm failure or limiting the subsequent reporting period to 12 months from the date of the audited financial statements.

SUMMARY AND CONCLUSIONS

Whether the first-time GCMO provides incremental information to the securities market has long been a subject of research and regulatory interest. Our study provides information on this unresolved question, and by examining the trading behavior of mutual funds and pension funds, we also addresses a call for more examinations of trading behavior of specific investor groups around announcements of important corporate events (Bamber et al. 2011). We utilize actual daily trading behavior and present the first targeted examination of changes in net trading (i.e., buys minus sells) and trading volume (i.e., buys plus sells) for the periods surrounding the announcement of a first-time GCMO separately for mutual funds and pension funds. Accordingly, our study extends research on the effect of GCMO announcements on institutional investors by utilizing actual trading activity and not relying on quarterly 13F institutional investor holdings data, as has historically been the practice in GCMO research. If the first-time GCMO has information content, we would expect it to elicit changes in trading behavior after its announcement.

In sum, our findings reveal that mutual funds exhibit significant negative net trading (i.e., are significant net sellers) in the periods prior to the first-time GCMO, and then exhibit no significant overall changes in holdings at the GCMO announcement. In contrast, pension funds significantly increase their net selling at the announcement of the first-time GCMO. However, our trading volume results indicate that mutual funds exhibit significantly increased trading volume at the GCMO announcement date, while pension funds do not. Thus, our analysis of net trading and trading volume suggest that the first-time GCMO has information content to both mutual funds and pension funds, and that these groups employ this information differently in their trading behavior.

When we partition our sample firms based on ex-post viability, we find significant trading differences on firms that fail versus those that remain viable through the subsequent year. Compared to subsequently viable firms, both mutual funds and pension funds have substantially higher net selling of subsequently bankrupt firms in the benchmark period that continues through the periods surrounding the GCMO. In contrast, net selling activity for the subsequently viable firms for both mutual funds and pension funds exhibit GCMO announcement effects, similar to the overall sample trading results. Accordingly, consistent with prior research (Blay and Geiger 2001), both these investor groups appear to have already anticipated a GCMO for the firms that subsequently fail, but not for those that survive.

Our results are robust to a battery of additional tests, including examining only GCMOs released after earnings announcements, controlling for the severity of GCMOs, as well as other news events during our GCMO announcement period. A limitation of our study is that we examine a sample of trades of mutual and pension funds, who themselves represent only a subset of the population of institutional investors. Accordingly, our findings may not generalize beyond our sample of institutional investors. However, we have no evidence that our sample of investors

differ from the populations of mutual funds and pension funds in any systemic way that would cause us to believe they are not representative of the underlying populations. Additionally, as noted by Cready, Kumas, and Subasi (2014), investors in our study account for roughly 10 percent of all U.S. market trading volume, and compared to individual investors who account for under five percent of NYSE volume, trading patterns of these investors would seem to be no less consequential for understanding market trading and the information content of GCMOs than the examination of individual trading behavior.

Collectively, our results suggest that the first-time GCMO has information content for both mutual funds and pension funds, and that these groups differ in their trading reactions to that information. Our findings should be of interest to researchers, investors, auditors and regulators concerned with market behavior and institutional trading surrounding the release of important corporate information in the form of a first-time GCMO from the firm's external auditor.

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Table 1

Descriptive Statistics

Panel A: First-Time GCMO Sample

Variable	*Mean*	*Median*	*Std*	*P1*	*P25*	*P75*	*P99*	*N*
ASSETS (Millions)	1,655.25***	272.3	4006.6	4.0	61.3	953.6	21801.0	230
MVE (Millions)	249.16***	117.8	529.8	51.3	78.9	225.3	1665.1	230
MTB	0.568***	0.910	11.908	-57.278	-0.214	2.676	40.466	230
PRICE	4.91***	3.1	6.6	0.3	1.6	5.8	29.1	230
ESURPRISE	-0.093**	-0.073	0.804	-1.592	-0.309	0.004	3.289	230
MOMENTUM	-0.464***	-0.566	0.439	-0.970	-0.794	-0.223	0.935	229
ZSCORE	1.335***	0.080	7.503	-7.376	-1.640	2.828	36.318	230

*,**,*** Significantly different than zero at *p*-values of .10, .05, and .01, respectively (two-tail).

Panel A of Table 1 reports summary statistics relating to our full sample of 230 firms receiving a first-time going concern audit reports between January 1, 2003 and December 31, 2010. Variable definitions are provided in Appendix A.

Panel B: Subsequently Viable First-Time GCMO Sample

Variable	*Mean*	*Median*	*Std*	*P1*	*P25*	*P75*	*P99*	*N*
ASSETS (Millions)	1,348.67***	148.683	3,750.280	2.616	50.226	689.915	23,274.720	196
MVE (Millions)	256.77***	117.784	564.006	50.119	79.213	225.001	3,804.740	196
MTB	0.380	1.150	12.517	-57.278	-0.192	3.155	42.697	196
PRICE	5.02***	3.345	6.586	0.334	1.650	6.320	29.070	196
ESURPRISE	-0.089**	-0.061	0.610	-1.139	-0.226	0.007	3.278	196
MOMENTUM	-0.422***	-0.517	0.429	-0.951	-0.760	-0.183	0.935	195
ZSCORE	0.885*	-0.241	7.342	-7.376	-2.112	1.943	42.080	196

*,**,*** Significantly different than zero at p-values of .10, .05, and .01, respectively (two-tail).

Panel B of Table 1 reports summary statistics relating to our sample of 196 firms receiving a first-time going concern audit report between January 1, 2003 and December 31, 2010 that remained viable through the subsequent fiscal year.

Panel C: Subsequently Bankrupt First-Time GCMO Sample

Variable	*Mean*	*Median*	*Std*	*P1*	*P25*	*P75*	*P99*	*N*
ASSETS (Millions)	††3,422.58***	1,485.290	4,950.690	27.370	352.268	4,244.000	21,801.000	34
MVE (Millions)	205.29***	117.846	255.935	52.679	71.101	225.254	1,080.590	34
MTB	1.651	-0.030	7.540	-8.118	-0.296	0.901	40.466	34
PRICE	4.30***	1.975	6.621	0.255	0.830	4.520	32.800	34
ESURPRISE	-0.115	-0.376	1.513	-1.921	-0.596	-0.031	6.500	34
MOMENTUM	†††-0.703***	-0.833	0.424	-0.994	-0.946	-0.671	1.230	34
ZSCORE	††3.928***	1.777	8.004	-7.376	0.476	4.182	30.229	34

*,**,*** Significantly different than zero at *p*-values of .10, .05, and .01, respectively (two-tail).

†,††,††† Significantly different than the non-bankrupt firms at *p*-values of .10, .05, and .01, respectively (two-tail).

Panel C of Table 1 reports summary statistics relating to our sample of 34 firms receiving a first-time going concern audit report between January 1, 2003 and December 31, 2010 that filed for bankruptcy in the subsequent fiscal year.

Panel D: Description of Institutional Investor Trading Activity in the *Ancerno* Database

Total Dollar Volume of Shares Executed ($Millions)

	Mean	*Median*	*Std*	*P25*	*P75*	*Min*	*Max*	*N*
Type of the Fund-Years:								
Mutual Funds	24,725	3,628	90,818	872	13,708	0.061	1,480,741	999
Pension Funds	†††3,538	370	35,519	115	1,185	0.030	1,308,001	1,519

†,††,††† Significantly different than themutual funds at *p*-values of .10, .05, and .01, respectively (two-tail).

Panel D presents summary information on the trading activity of 2,518 fund-years in the *Ancerno* data set for the 2002–2010 period. Institutional investors' mutual fund and pension fund categorization is provided by *Ancerno*.

Table 2
Net Trading Activity by Institutional Investors Around First-time GCMO Firms

	All Funds		***Mutual Funds (MF)***		***Pension Funds (PF)***	
	Mean	*p-value*	*Mean*	*p-value*	*Mean*	*p-value*
Panel A: First-time GCMO firms (N=230)						
NET_TRADE[-253, -12]	-0.090	<.0001	-0.069	<.0001	-0.020	<.0001
NET_TRADE[-11,-2]	-0.133*	<.0001	-0.118**	<.0001	-0.029*	<.0001
NET_TRADE[-1,+1]	-0.099	0.034	-0.031**	0.360	-0.052**	<.0001
NET_TRADE[+2,+11]	-0.0137**	0.717	-0.019***	0.553	-0.006***	0.304
Panel B: First-time Non-bankrupt GCMO firms (N=196)						
NET_TRADE[-253, -12]	-0.067	<.0001	-0.051	<.0001	-0.016	<.0001
NET_TRADE[-11,-2]	-0.126**	<.0001	-0.113**	<.0001	-0.027*	0.000
NET_TRADE[-1,+1]	-0.079	0.115	-0.024**	0.521	-0.047**	0.000
NET_TRADE[+2,+11]	0.0356***	0.352	0.015***	0.638	-0.001***	0.792
Panel C: First-time Bankrupt GCMO firms (N=34)						
NET_TRADE[-253, -12]	-0.221†††	<.0001	-0.170†††	0.000	-0.047†††	0.001
NET_TRADE[-11,-2]	-0.175	0.063	-0.151	0.058	-0.040	0.041
NET_TRADE[-1,+1]	-0.217	0.099	-0.073	0.373	-0.079†	0.053
NET_TRADE[+2,+11]	-0.291†††	0.020	-0.217†††	0.058	-0.032†††	0.095

p-value column is for tests of differences from 0.

*,**,*** Significantly different than the benchark period [-253, -12] at *p*-values of .10, .05, and .01, respectively (two-tail).

†,††,††† Significantly greater net selling than non-bankrupt firms at *p*-values of .10, .05, .01, respecively (one-tail).

NET_TRADE is the average daily net trading ((BUY - SELL)/# Shares outstanding at the end of the year).

Table 3

Trading Volume By Institutional Investors Around First-Time GCMO Firms

	All Funds		***Mutual Funds (MF)***		***Pension Funds (PF)***	
	Mean	*p-value*	*Mean*	*p-value*	*Mean*	*p-value*
Panel A: First-time GCMAR firms (N=231)						
VOL_TRADE[-253-12]	0.502	<.0001	0.409	<.0001	0.092	<.0001
VOL_TRADE[-11,-2]	0.603	<.0001	0.515	<.0001	0.088	0.001
VOL_TRADE[-1,+1]	0.823**	<.0001	0.704**	<.0001	0.119	<.0001
VOL_TRADE[+2,+11]	0.627	<.0001	0.536	<.0001	0.091	<.0001
Panel B: First-time Non-bankrupt GCMO firms (N=196)						
VOL_TRADE[-253-12]	0.445	<.0001	0.368	<.0001	0.075	<.0001
VOL_TRADE[-11,-2]	0.560	<.0001	0.493	<.0001	0.065	<.0001
VOL_TRADE[-1,+1]	0.868**	<.0001	0.750**	0.000	0.114	0.001
VOL_TRADE[+2,+11]	0.585	<.0001	0.496	<.0001	0.086	<.0001
Panel C: First-time Bankrupt GCMO firms (N=34)						
VOL_TRADE[-253-12]	0.826†††	<.0001	0.634††	<.0001	0.192†††	0.000
VOL_TRADE[-11,-2]	0.848	0.013	0.627	0.007	0.220††	0.158
VOL_TRADE[-1,+1]	0.560	0.026	0.418	0.079	0.143	0.075
VOL_TRADE[+2,+11]	0.868	0.018	0.752	0.036	0.116	0.050

p-value column is for tests of differences from 0.

*,**,*** Significantly different than the benchark period [-253, -12] at *p*-values of .1, .05, and .01, respectively (two-tail).

†,††,††† Significantly larger than the non-bankrupt firms at *p*-values of .10, .05, .01, respecively (one-tail).

VOL_TRADE is the average daily trading volume ((BUY + SELL)/# Shares outstanding at the end of the year).

Table 4

Regression Results for Mutual and Pension Fund Net Trading Around First-time GCMO

	Dependent Variable: NET_TRADE					
	Mutual Funds (MF)			***Pension Funds (PF)***		
PRE	-0.0499*	-0.0540*	-0.0594**	-0.00889	-0.00757	-0.00557
	(-1.90)	(-1.96)	(-2.04)	(-1.27)	(-1.06)	(-0.76)
EVENT	0.0372	0.0271	0.0251	-0.0317**	-0.0283**	-0.0303**
	(1.03)	(0.73)	(0.64)	(-2.51)	(-2.24)	(-2.25)
POST	0.0496	0.0433	0.0582*	0.0142**	0.0153**	0.0168**
	(1.53)	(1.30)	(1.79)	(2.09)	(2.14)	(2.25)
MVE		0.00441	0.00530		-0.00712	-0.00785
		(0.23)	(0.28)		(-1.44)	(-1.51)
MTB		-0.00971	-0.00928		-0.00102	-0.000802
		(-1.58)	(-1.45)		(-0.66)	(-0.43)
MOMENTUM		0.103**	0.0888*		0.0270**	0.0281**
		(2.33)	(1.97)		(2.15)	(2.08)
ESURPRISE		0.0211	0.0234		0.0110	0.0111
		(0.78)	(0.85)		(1.59)	(1.52)
ZSCORE			-0.00301			-0.000209
			(-0.49)			(-0.13)
Constant	-0.0907**	0.0476	0.0436	-0.0140	0.0467	0.0525
	(-1.98)	(0.40)	(0.33)	(-1.31)	(1.53)	(1.37)
N	920	872	816	920	872	816
Adj-R2	0.010	0.021	0.018	0.027	0.040	0.041
Test: Ho: PRE=EVENT		*p-value* =0.05			*p-value* =0.05	
Test: Ho: EVENT=POST		*p-value* =0.42			*p-value<0.01*	
Test: Ho: PRE=POST		*p-value<0.01*			*p-value=0.01*	

Table 4 presents coefficient estimates from model (3) $NET\_TRADE_i = \beta 0 + \beta 1PRE_i + \beta 2EVENT_i + \beta 3POST_i + \beta 4MVE_i + \beta 5MTB_i + \beta 6MOMENTEM_i + \beta 7ESURPRISE_i + \beta 8ZSCORE_i + \varepsilon$ for all GCMO firms during the benchmark, *PRE*, *EVENT*, and *POST* periods where *NET_TRADE* is the average institutional investors' daily net trading ((BUY - SELL) / # shares outstanding at the end of the year) and other variables are defined in Appendix A. Numbers in parentheses are t-statistics calculated using standard errors clustered at the firm level per White (1980). ***,** and * denote statistical significance at *p*-values of .01. .05, and .10, respectively (two-tail).

Table 5

Regression Results for Mutual and Pension Fund Net Trading around Subsequently Viable and Bankrupt First-Time GCMO Firms

	Dependent Variable: NET_TRADE											
	Panel A: *Subsequently Viable (Non-Bankrupt) Firms*						**Panel B: *Subsequently Bankrupt Firms***					
	Mutual Funds (MF)			***Pension Funds (PF)***			***Mutual Funds (MF)***			***Pension Funds (PF)***		
PRE	-0.0619**	-0.0650**	-0.0747**	-0.0116	-0.0104	-0.00782	0.0191	0.0103	0.0259	0.00696	0.00895	0.00698
	(-2.19)	(-2.20)	(-2.38)	(-1.58)	(-1.40)	(-1.02)	(0.25)	(0.13)	(0.32)	(0.31)	(0.37)	(0.28)
EVENT	0.0268	0.0172	0.0109	-0.0315**	-0.0272**	-0.0285**	0.0974	0.0845	0.105	-0.0325	-0.0347	-0.0402
	(0.68)	(0.42)	(0.25)	(-2.42)	(-2.12)	(-2.07)	(1.04)	(0.85)	(1.03)	(-0.76)	(-0.75)	(-0.84)
POST	0.0664**	0.0627*	0.0743**	0.0140**	0.0152**	0.0162**	-0.0476	-0.0695	-0.0316	0.0151	0.0158	0.0201
	(2.04)	(1.91)	(2.32)	(2.05)	(2.11)	(2.14)	(-0.40)	(-0.55)	(-0.25)	(0.61)	(0.59)	(0.74)
MVE		0.0125	0.00915		-0.00653	-0.00815		-0.0794	-0.0612		-0.0143	-0.0162
		(0.69)	(0.51)		(-1.39)	(-1.62)		(-0.84)	(-0.72)		(-0.63)	(-0.70)
MTB		-0.00816	-0.0108		-0.000936	-0.00126		-0.0435**	-0.00259		-0.0112*	-0.00254
		(-1.35)	(-1.62)		(-0.64)	(-0.69)		(-2.22)	(-0.19)		(-1.88)	(-0.46)
MOMENTUM		0.0997**	0.103**		0.0300***	0.0338***		-0.157	-0.170		-0.0719	-0.0642
		(2.60)	(2.53)		(2.67)	(2.79)		(-1.32)	(-1.65)		(-1.61)	(-1.53)
ESURPRISE		0.0488	0.0558*		0.0188***	0.0198**		-0.0731	-0.0604*		-0.0252	-0.0218
		(1.62)	(1.79)		(2.66)	(2.50)		(-1.60)	(-1.95)		(-1.62)	(-1.54)
ZSCORE			-0.00450			-0.000732			0.0564***			0.0146*
			(-0.71)			(-0.41)			(2.88)			(1.79)
Constant	-0.128**	-0.0333	0.0110	-0.0214	0.0348	0.0498	-0.0271	0.416	-0.231	-0.00261	0.0454	-0.0636
	(-2.00)	(-0.28)	(0.08)	(-1.41)	(1.11)	(1.22)	(-0.42)	(0.70)	(-0.47)	(-0.14)	(0.31)	(-0.36)
N	784	744	692	784	744	692	136	128	124	136	128	124
Adj-R2	0.021	0.033	0.039	0.031	0.055	0.056	0.076	0.125	0.105	0.007	0.050	0.072
Test: Ho: *PRE=EVENT*		*p-value* =0.05			*p-value* =0.09			*p-value* =0.05			*p-value* =0.33	
Test: Ho: *EVENT=POST*		*p-value* =0.17			*p-value<0.01*			*p-value* =0.09			*p-value=0.17*	
Test: Ho: *PRE=POST*		*p-value* <0.01			*p-value<0.01*			*p-value* =0.70			*p-value=0.60*	

Table 5 presents coefficient estimates from model (3) NET_TRADEi=$\beta 0 + \beta 1PREi + \beta 2EVENTi + \beta 3POSTi + \beta 4MVEi + \beta 5MTBi + \beta 6MOMENTEMi + \beta 7ESURPRISEi + \beta 8ZSCOREi + \varepsilon$ for all GCMO firms during the benchmark, *PRE*, *EVENT*, and *POST* periods where *NET_TRADE* is the average institutional investors' net daily trading ((BUY - SELL) / # shares outstanding at the end of the year) and other variables are defined in Appendix A. Numbers in parentheses are t-statistics calculated using standard errors clustered at the firm level per White (1980). ***, ** and * denote statistical significance at *p*- values of .01, .05, and .10, respectively (two-tail).

Table 6

Regression Results for Mutual and Pension Fund Trading Volume Around Subsequently Viable and Bankrupt First-time GCMO Firms

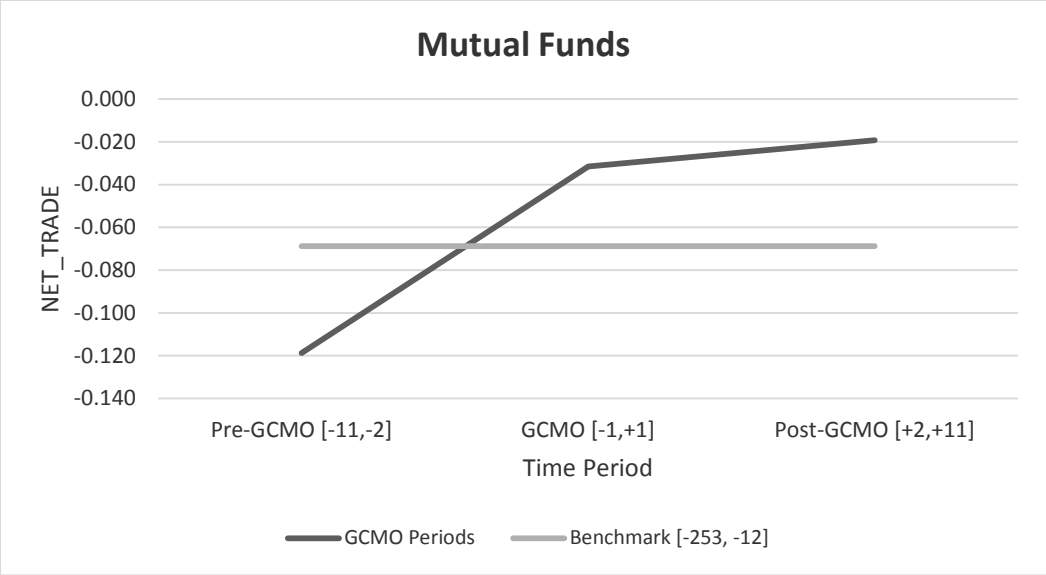
	Dependent Variable: VOL_TRADE											
	Panel A: *Subsequently Viable (Non-Bankrupt) Firms*						**Panel B: *Subsequently Bankrupt Firms***					
	Mutual Funds (MF)			***Pension Funds (PF)***			***Mutual Funds (MF)***			***Pension Funds (PF)***		
PRE	0.125	0.126	0.155	-0.00997	-0.0130	-0.0171	-0.00711	0.00821	-0.0219	0.0292	0.0303	0.0385
	(1.28)	(1.24)	(1.42)	(-0.66)	(-0.83)	(-1.04)	(-0.04)	(0.04)	(-0.10)	(0.18)	(0.18)	(0.22)
EVENT	0.383*	0.352*	0.378*	0.0398	0.0376	0.0446	-0.217	-0.205	-0.208	-0.0487	-0.0508	-0.0431
	(1.95)	(1.82)	(1.82)	(1.25)	(1.13)	(1.24)	(-0.99)	(-0.87)	(-0.85)	(-0.55)	(-0.53)	(-0.43)
POST	0.128	0.135	0.137	0.0114	0.0136	0.0105	0.118	0.150	0.0666	-0.0759	-0.0797	-0.0818
	(1.28)	(1.31)	(1.25)	(0.60)	(0.68)	(0.53)	(0.36)	(0.43)	(0.19)	(-1.05)	(-1.01)	(-1.00)
MVE		0.458**	0.472**		0.0450**	0.0471**		0.285	0.349		0.0704	0.0940
		(2.37)	(2.21)		(2.58)	(2.54)		(0.49)	(0.63)		(1.28)	(1.58)
MTB		0.0102	0.00928		0.00315	0.00442		0.0786	-0.0757		0.0000835	-0.0279
		(0.37)	(0.26)		(0.75)	(0.72)		(1.24)	(-1.39)		(0.01)	(-1.70)
MOMENTUM		-0.529*	-0.579*		-0.0985***	-0.110***		0.578	0.388		0.455**	0.399*
		(-1.92)	(-1.84)		(-3.21)	(-3.28)		(0.71)	(0.56)		(2.23)	(2.02)
ESURPRISE		-0.118	-0.138		-0.0259	-0.0281		0.117	0.0513		0.0489	0.0354
		(-0.91)	(-0.95)		(-1.14)	(-1.11)		(0.41)	(0.22)		(1.00)	(0.82)
ZSCORE			0.000389			0.00225			-0.272*			-0.0546**
			(0.01)			(0.43)			(-1.88)			(-2.10)
Constant	0.105	-2.478**	-2.584*	0.0756***	-0.215**	-0.279**	0.104	-1.124	0.727	0.0444	0.145	0.422
	(0.99)	(-2.13)	(-1.80)	(2.63)	(-2.19)	(-2.15)	(0.64)	(-0.33)	(0.19)	(0.74)	(0.38)	(0.89)
N	784	744	692	784	744	692	136	128	124	136	128	124
Adj-R2	0.001	0.063	0.062	0.020	0.058	0.061	0.078	0.110	0.174	-0.006	0.065	0.076
Test: Ho: *PRE=EVENT*		*p-value* =0.22			*p-value* =0.06			*p-value* =0.32			*p-value* =0.67	
Test: Ho: *EVENT=POST*		*p-value* =0.21			*p-value=0.36*			*p-value* =0.31			*p-value=0.47*	
Test: Ho: *PRE=POST*		*p-value=0.84*			*p-value=0.19*			*p-value* =0.75			*p-value=0.49*	

Table 6 presents coefficient estimates from model (3) $VOL\_TRADE_i = \beta 0 + \beta 1PRE_i + \beta 2EVENT_i + \beta 3POST_i + \beta 4MVE_i + \beta 5MTB_i + \beta 6MOMENTEM_i + \beta 7ESURPRISE_i + \beta 8ZSCORE_i + \varepsilon$ for GCMO firms during the benchmark, *PRE*, *EVENT*, and *POST* periods where *VOL_TRADE* is the average institutional investors' daily trading volume ((BUY + SELL) / # shares outstanding at the end of the year) and other variables are defined in Appendix A. Numbers in parentheses are t-statistics calculated using standard errors clustered at the firm level per White (1980). ***, ** and * denote statistical significance at *p*- values of .01, .05, and .10, respectively (two-tail).

Figure 1

Net Trading Graphic Results

PANEL A: Mutual Funds



PANEL B: Pension Funds

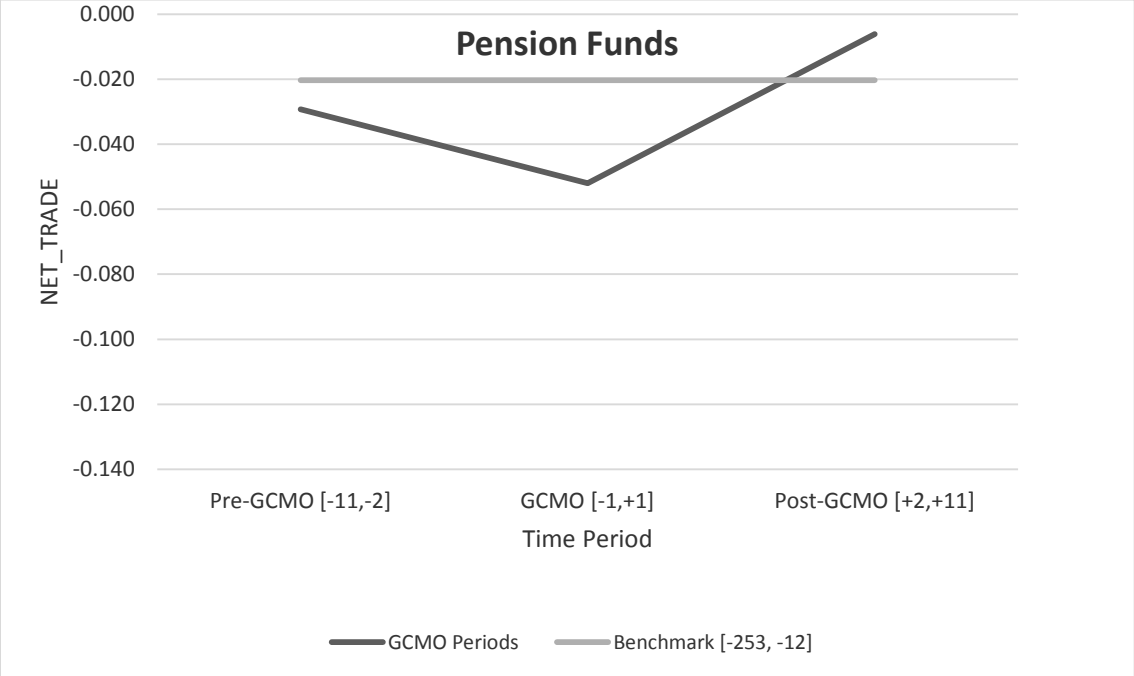
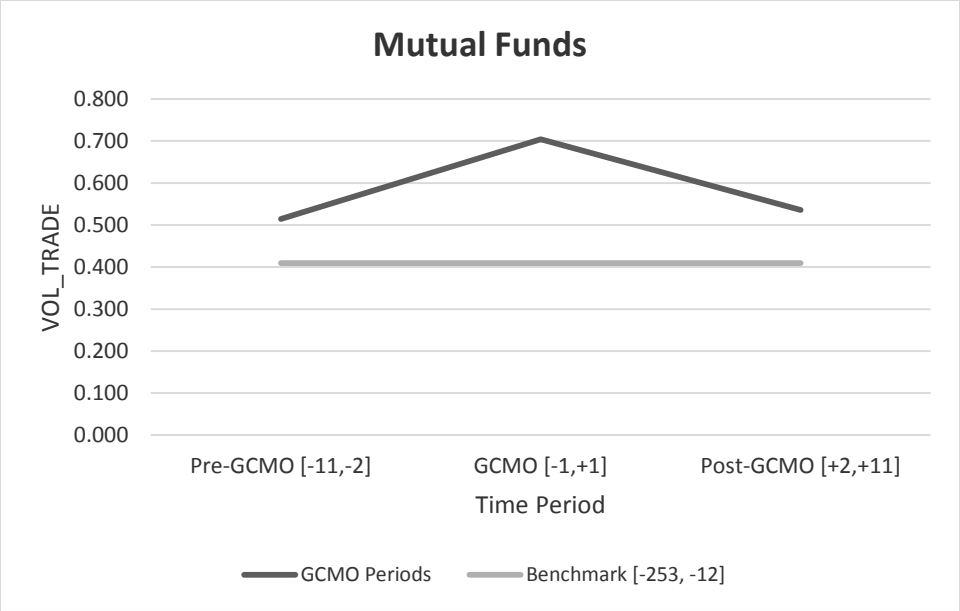


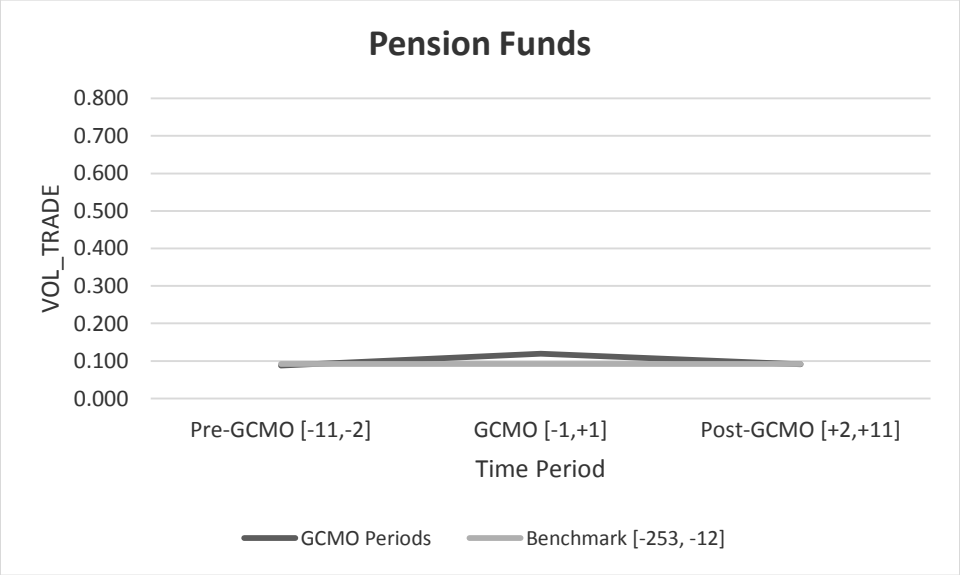
Figure 2

Trading Volume Graphic Results

PANEL A: Mutual Funds



PANEL B: Pension Funds



Appendix A	
Variable Definitions	
BUY_{it}	is the total number of firm shares purchased by the *Ancerno* investors in firm *i* on day *t*,
$SELL_{it}$	is the total number of firm shares sold by the *Ancerno* investors in firm *i* on day *t*,
SHO_{i}	is the total number of shares outstanding (in 000s) for firm *i* at the end of the year,
NET_BUY_{i}	is the number of firm shares purchased less the number of shares sold by the *Ancerno* investors in firm *i* on day *t*, divided by the number of shares outstanding (in 000s) at the end of the year, averaged over the number of days in the period,
NET_TRADE_{i}	is the number of firm shares purchased less the number of shares sold by the *Ancerno* investors in firm *i* on day *t*, divided by the number of shares outstanding (in 000s) at the end of the year, averaged over the number of days in the period,
VOL_TRADE_{i}	is the number of firm shares purchased plus the number of shares sold by the *Ancerno* investors in firm *i* on day *t*, divided by the number of shares outstanding (in 000s) at the end of the year, averaged over the number of days in the period,
MVE_{i}	is the market value of equity of firm *i* at the end of the fiscal year associated with the GCMO,
MTB_{i}	is the market-to-book computed as the market value of equity scaled by the book value of equity of firm *i* using values at the fiscal year end associated with the GCMO,
$ESURPRISE_{i}$	is the annual earnings surprise measured as annual earnings before extraordinary items from the fiscal year of the GCMO minus the previous year annual earnings before extraordinary items, scaled by the market value of equity from the previous year-end,
$MOMENTUM_{i}$	is the cumulative abnormal return of firm i during the control window [-253,-11] where daily abnormal return is computed as the buy-and-hold return minus the value-weighted daily CRSP index return,
$ASSET_{i}$	is total assets of the firm i at the fiscal year end associated with the GCMO,
$PRICE_{i}$	is the stock price in $ of firm i at the fiscal year end associated with the GCMO,
$ZSCORE_{i}$	is a measure of financial distress, computed using the Zmijewski (1984) distress score metric which includes return on assets, debt to assets, and the current ratio, calculated using values at the fiscal year end associated with the GCMO.