

Contents lists available at [ScienceDirect](#)

Journal of Financial Markets

journal homepage: www.elsevier.com/locate/finmar

Institutional trading before dividend reduction announcements [☆]

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ARTICLE INFO

Article history:

Received 18 May 2016

Received in revised form

12 July 2017

Accepted 20 July 2017

Available online 21 July 2017

JEL classification:

G14

G29

G35

Keywords:

Dividend reduction announcements

Institutional trading

ABSTRACT

Using a large proprietary database of transaction-level institutional trades for the 1997–2011 period, we find that institutional investors are net sellers in dividend reduction firms during the two quarters prior to the announcements. They also trade more intensively in firms that do not prepare the market for dividend cuts or that have greater information asymmetry. Trading by both pension plan sponsors and money managers affects the market's reaction to the dividend reduction announcements. Finally, all institutional investors earn significant profits by trading in the two quarters prior to the announcements, and money managers outperform pension plan sponsors.

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1. Introduction

We examine the trading behavior of institutional investors prior to dividend reduction announcements. According to the dividend signaling theories (e.g., [Bhattacharya, 1979](#); [John and Williams, 1985](#)), a dividend reduction announcement occurs only when management is extremely pessimistic about the probability that future cash flows will be sufficient to continue dividends at the present rate; hence, such an announcement conveys negative information about management's assessment of the firm's prospects. Because institutional shareholders are sophisticated and better informed investors (e.g., [Puckett and Yan, 2011](#)), a natural question that arises is what role do they play in this important corporate event? Due to data unavailability, much of the prior work on the behavior of institutional investors around dividend reduction events is heavily dependent on the use of low-frequency data, such as quarterly institutional ownership (e.g., [Amihud and Li, 2006](#); [Amin et al., 2015](#)). Accordingly, a thorough understanding of institutional investors' behavior prior to dividend reduction events, and especially trading activity, still remains lacking. In this paper, we attempt to narrow this gap in the literature.

Using a large proprietary database of high-frequency, transaction-level institutional trades from Ancerno Ltd. and a sample U.S. firms with 353 dividend reduction events during the period from 1997 to 2011, we address the following

[☆] We thank Gideon Saar (the editor) and an anonymous referee for their valuable comments and suggestions that have helped improve our paper significantly. We acknowledge helpful comments from Petko Kalev, Peter Swan, and other participants at the 28th Australasian Finance and Banking Conference, the 2016 Research Symposium at La Trobe University. We thank Hoang Luong for excellent research assistance with the Ancerno database. Nguyen gratefully acknowledges the financial support from the Australian Research Council (Project ID: DP140102918). All errors remain our own.

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research questions. First, do institutional investors have private information about upcoming dividend reduction events, which is reflected in their trading behavior and, if they do, which type of institutional investor (e.g., money managers, pension plan sponsors) has superior information? Second, do institutional investors trade differently in firms that prepare the market for dividend cuts vis-à-vis those that do not, as well as in those firms that possess differential information asymmetry? Third, does institutional trading explain the information content of dividend reduction announcements? Finally, do institutional investors earn significant profits by trading prior to dividend reduction announcements?

We document several new findings regarding our four research questions. First, because dividend reduction events convey negative signals to investors (e.g., Lie, 2005; Jensen et al., 2010) and institutional investors are sophisticated and better informed investors (e.g., Puckett and Yan, 2011), we expect that institutional investors trade ahead of dividend reduction announcements. We follow the literature (e.g., Chemmanur et al., 2009), to construct a net buy variable, which equals the total number of shares bought minus the total shares sold by institutional investors all divided by the total number of shares outstanding, as a measure of institutional trading. We find that this net buy variable is negative and statistically significant for the one-quarter and two-quarter periods prior to dividend reduction announcements for all types of institutions. This finding suggests that institutional investors have superior information about dividend reductions and take advantage of this information to trade prior to these events.

Second, Chemmanur and Tian (2012) propose a theoretical model that preparing the market for a possible dividend cut is the mechanism through which medium intrinsic value firms separate themselves from low intrinsic value firms. In a subsequent study, Chemmanur and Tian (2014) find that firms with poorer current profitability, but higher long-term growth opportunities, are more likely to signal their higher quality by preparing the market for dividend reductions. They also find that institutional investors increase in both their number and their level of equity ownership in firms that prepare the market for dividend reductions (i.e., higher quality firms) in the subsequent years following the dividend reduction announcements.

We therefore argue that institutional investors will trade differently in firms that prepare the market versus those that do not prepare the market for dividend reductions. We follow Chemmanur and Tian (2014) to classify the dividend reduction sample into two groups: firms that prepare and those that do not prepare the market for dividend reductions. A firm that prepares (does not prepare) the market for a dividend reduction is a firm whose insiders release (do not release) information to the market about the possibility of a dividend cut prior to the official announcement. We find evidence that the net buy of institutional investors is more negative for those firms that do not prepare the market for dividend reductions than for those that prepare. This evidence suggests that institutional investors view the former as lower quality and sell more in these firms, which is consistent with Allen et al. (2000) and Chemmanur and Tian (2014), who find that institutions are able to differentiate high quality firms from low quality firms. In addition, we find that institutions trade more intensively in firms that reduce dividends and exhibit greater information asymmetry, such as young and risky firms.

Third, Fuller (2003) provides a theoretical model of how informed trading of various investors impacts the market's reaction to a dividend signal. The model predicts that the more informed trading in a firm's stock prior to a dividend increase announcement (i.e., the greater the buy demand relative to the sell demand), the weaker, or the less positive, the market reacts to the announcement because part of the private information is revealed in the stock prices during the informed trading process. In the spirit of Fuller (2003), we expect that the more informed trading by institutional investors in a firm's stock prior to its dividend reduction announcement (i.e., the greater the sell demand relative to the buy demand), the weaker, or the less negative, will be the market's reaction. This is because, as the amount of institutional trading increases, more private information about the dividend reduction event is reflected in the equilibrium price of the stock, pushing it closer to its intrinsic value, and thus, there is less new information that the dividend reduction announcement signals. Indeed, we find some support that the net buy of institutions is negatively associated with the announcement returns, suggesting that the more institutions sell prior to dividend reduction announcements, the weaker the market reacts to the announcements.

Finally, and for the last research question, we find, for the first time, that during the two quarters prior to dividend reduction announcements, institutional investors generally earn positive profits, measured by either raw returns or risk-adjusted returns, by trading in the firms that reduce dividends. Moreover, money managers earn higher profits than pension plan sponsors. These findings support the view that institutional investors exploit their informational advantage to trade actively ahead of news releases so as to earn a profit on the trade.

Our study contributes to two strands of the literature. First, our work is closely related to the literature on institutional trading around corporate events. Institutional investors possess private information and use their informational advantage to trade ahead of corporate news events, such as seasoned equity offerings (Chemmanur et al., 2009), initial public offerings (Chemmanur et al., 2010), takeover announcements (Jegadeesh and Tang, 2010), earnings announcements (Berkman and McKenzie, 2012), stock split announcements (Chemmanur et al., 2015), CEO turnovers (Chemmanur et al., 2017), open market share repurchases (Chemmanur et al., 2016), and media coverage (Hendershott et al., 2015). Despite extensive empirical evidence on the existence of information-based institutional trading, however, there is little insight into institutional trading prior to dividend reduction announcements. We attempt to narrow this gap in the literature.

Second, our paper contributes to the literature on the link between institutional investors and the information content of dividend announcements. Fuller (2003) theoretically shows that the more informed trading by various investors, the weaker the market reacts to a dividend signal because part of the private information is already incorporated into the stock prices during the informed trading process. Amihud and Li (2006) document that the reduction in the information content of dividend surprise announcements is associated with the rise in the equity ownership of institutional investors. Similarly,

Amin et al. (2015) show that institutional ownership negatively affects the cumulative abnormal returns around dividend surprise announcement periods, indicating that institutional ownership reduces the information content of dividend surprise announcements. Adding to this strand of the literature, our study provides evidence that trading by both pension plan sponsors and money managers conveys information about the upcoming dividend reduction announcements.

Our study is also closely related to Chemmanur and Tian (2012; 2014). Chemmanur and Tian (2012) develop a model that preparing the market for a possible dividend reduction is the mechanism for signaling higher firm quality. Chemmanur and Tian (2014) show that the number and the equity ownership of institutional investors in firms that prepare the market for dividend reductions are significantly larger in the years after the dividend reductions, which supports their model of signaling through preparation because institutional investors are better at detecting and differentiating higher quality firms from lower quality firms (Allen et al., 2000). Our finding that institutional investors sell more in firms that do not prepare the market (i.e., lower quality firms) prior to the dividend reduction announcements provides support for Chemmanur and Tian's (2012) model, and is consistent with Allen et al. (2000) and Chemmanur and Tian (2014). However, our study provides specific and compelling evidence based on trading by institutions.

The rest of the paper is organized as follows. In Section 2, we provide the literature review and develop the hypotheses. We describe the data and variable construction in Section 3. In Section 4, we present the results and discussions. We conclude in Section 5.

2. Literature review and hypotheses development

Our paper lies at the intersection of two strands of the literature: (1) the trading behavior of institutional investors around corporate events; and (2) the role of institutional investors in explaining the information content of dividend reduction announcements. According to the first strand of literature, institutional investors trade ahead of corporate news events to exploit their informational advantages owing to their superior skills in processing and producing information, or their special contacts with firm management, financial analysts, and brokerages. For instance, Chemmanur et al. (2009) document that institutional investors have private information about seasoned equity offerings (SEOs) and engage in costly information production about firms undertaking SEOs. Institutional investors also have the ability to generate superior information about initial public offerings (IPOs) and their trading activities have predictive power for long-run stock performance (Chemmanur et al., 2010). Jegadeesh and Tang (2010) find that institutional investors, who are skilled at gathering private information, are active traders prior to takeover announcements. Berkman and McKenzie (2012) show that institutional investors have private information and their trades could predict earnings news. Chemmanur et al. (2015) document that trading by institutions immediately after stock split announcements has predictive power for firms' long-term stock returns. Chemmanur et al. (2016) find that institutional trading affects the announcement returns and the amount of actual buying by repurchasing firms. Chemmanur et al. (2017) document that institutional investors play a role as information producers around CEO turnovers. As such, institutional trading can be predictive of the nature of a CEO turnover. Based on these studies, we expect that institutional investors are informed about important corporate news such as dividend reduction announcements.

Our study is also related to the second strand of literature on the role of institutional investors in corporate dividend policy. The literature has put forward a number of explanations for the link between institutional investors and the information content of dividend announcements. Amin et al. (2015) organize these explanations under three arguments: (i) the dividend relevance argument, (ii) the dividend preference argument, and (iii) the informational advantage and informed trading argument. In this study, we discuss these arguments and link them to our first hypothesis that institutions have information advantages and trade prior to dividend reduction announcements.

First, the dividend relevance argument is based on the signaling theories which suggest that firms can convey important signals to their investors, including institutional shareholders, through their dividend policy (e.g., Bhattacharya, 1979; John and Williams, 1985; Guttman et al., 2010). Although some studies question the relevance of dividend policy and the use of dividends as a costly, but effective, means of signaling (e.g., Fama and French, 2001), most studies generally agree that dividend policy still matters (e.g., Andres et al., 2009; Balachandran et al., 2012; Karpavičius, 2014). Dividend changes signal insiders' information about the firm's future cash flows. A dividend reduction announcement conveys negative information to the investors, such as a drop in unexpected accounting earnings (e.g., Aharony and Dotan, 1994), or a drop in the value of a firm's growth options (Jensen et al., 2010). In sum, this argument suggests that dividends matter and dividend reduction announcements convey negative signals to all investors, including institutional investors.

Second, the dividend preference argument focuses on institutional investors' preferences for dividends and dividend changes. Institutional investors' preferences for dividends may be due to a number of factors. For instance, institutions prefer firms to pay dividends in order to mitigate free cash flow problems (Jensen, 1986; Denis, 2011). Institutional investors prefer dividends because dividends are viewed as good quality signals and institutions have dividend tax advantages (e.g., Allen et al., 2000). However, Grinstein and Michaely (2005) do not find any definitive preference when they document that institutions prefer dividends in general but dividend levels do not matter. Nevertheless, in a more recent study, Crane et al. (2016) find that institutional investors cause firms to pay dividends.

In terms of institutional investors' preferences for dividend changes, Amihud and Li (2006) document that they are less likely to prefer a dividend change due to two reasons. First, institutional investors are better informed, so they are less

inclined to learn about a firm's future prospects through dividend change signals given that dividends are a costly means of signaling (e.g., [Ofer and Thakor, 1987](#)). Second, dividend surprises are likely to compel long-horizon institutional investors to rebalance their portfolios, which can be costly and conflict with their trading strategies such as indexation of a large portion of their portfolios ([Lewellen, 2011](#)). In a related study, [Allen et al. \(2000\)](#) theoretically predict that firms are reluctant to cut dividends, especially those firms with more dividend tax-clientele institutional shareholders, which implies that firms omitting or decreasing their dividends will lose these institutional investors (i.e., these institutions sell their shares in these firms). In sum, this argument suggests that while institutional investors prefer dividends, they do not prefer dividend changes.

Third, the informational advantage and informed trading argument focuses on institutional investors' informational advantage and trading around dividend announcements. This argument is also in line with the first strand of the literature we discussed earlier that institutional investors trade ahead of corporate news events to exploit their informational advantages. In terms of dividend events, [Fuller \(2003\)](#), [Amihud and Li \(2006\)](#), and [Amin et al. \(2015\)](#) document that institutional investors have access to superior information and like to trade on this information prior to dividend announcements. However, almost all studies have to rely largely on institutional ownership of all types of institutions ([Amihud and Li, 2006](#)), or short-term institutions ([Amin et al., 2015](#)), as a proxy for informed trading of institutional investors. Thus, there is little evidence on how institutional investors actually trade prior to dividend reduction events. Using high-frequency institutional trading data, we attempt to narrow this gap in the literature.

Overall, a dividend reduction event conveys negative signals about the future prospects of the firm and institutional investors do not prefer dividend reductions. Thus, institutional investors are expected to act on their private information about these negative signals (i.e., sell their shares of the stock prior to the dividend reduction announcement). Accordingly, institutional investors' net buy, defined as the number of shares bought by institutional investors minus the number of shares sold, all divided by the number of shares outstanding, should be negative. We, thus, propose the following hypothesis:

Hypothesis 1 (H1). *The net buy of institutional investors prior to dividend reduction announcements is negative.*

A dividend reduction can be classified into whether the firm prepares or does not prepare the market for a possible dividend cut. In a theoretical study, [Chemmanur and Tian \(2012\)](#) model the choice of firms regarding whether to release private information to the market in advance of a possible dividend cut, i.e., prepare the market. In their model, firm managers receive private information about a potential decline in future earnings or that the current level of dividend is unsustainable, and face the choice of whether they should release the information to the market that they are reviewing the firm's dividend policy and indicating that there is a possibility of a dividend cut or they should wait until they decide to actually cut their dividends before making an announcement. Their model predicts that firms with temporary financial difficulties, but with better long-term prospects, optimally signal their status to the market by preparing the market for a possible dividend cut. In a subsequent empirical study, [Chemmanur and Tian \(2014\)](#) classify dividend reduction firms into two groups: firms that prepare and those that do not prepare the market for dividend reductions. They find strong evidence supporting their model prediction that firms with poorer current profitability, but higher long-term growth opportunities, are more likely to signal their higher quality by preparing the market. They also find that the number and the equity ownership of institutional investors subsequent to the dividend reductions are significantly larger in firms that prepare the market for dividend reductions, which is consistent with [Chemmanur and Tian's \(2012\)](#) model. Their finding is also consistent with [Allen et al. \(2000\)](#) theoretical prediction that institutional investors are better at differentiating higher quality firms, e.g., firms that prepare the market for a possible dividend cut, from lower quality firms, e.g., firms that do not prepare the market for a possible dividend cut.

Based on these studies, we expect that institutional investors should sell more in firms that do not prepare the market for dividend reductions than in those firms that prepare the market. The reasons are that the former are viewed as lower quality than the latter ([Chemmanur and Tian, 2012, 2014](#)), and that institutional investors are better at detecting low versus high quality firms (e.g., [Allen et al., 2000](#)). In addition, institutional investors should have a greater information advantage about firms that do not prepare the market for dividend reductions than those that prepare the market because the information released by firm insiders about the possibility of a dividend cut prior to the official announcements has removed some information asymmetry about the upcoming dividend reduction events for those firms that prepare the market. Therefore, the net buy of institutional investors should be more negative for those firms that do not prepare the market than for those that do. Accordingly, we propose the following hypothesis:

Hypothesis 2 (H2). *The net buy of institutional investors is more negative for the firms that do not prepare the market for dividend reductions than for those that prepare the market.*

A dividend reduction event can also be categorized according to the firm's overall information environment. Prior studies have documented that informed trading increases in more opaque information environments because such environments encourage the gathering of private information which brings a potential advantage to those incurring such information gathering costs (e.g., [Verrecchia, 1982](#); [Diamond, 1985](#)). Using cross-country data on trading by international mutual funds, [Maffett \(2012\)](#) finds that firms with more opaque information environments experience more privately-informed trading by institutional investors.

In the spirit of these studies, we expect that institutional trading is more pronounced in firms that reduce dividends and have higher levels of information asymmetry because they should have more informational advantages for these firms than other investors. Accordingly, we propose the following hypothesis:

Hypothesis 3 (H3). *The net buy of institutional investors is more negative for firms having greater information asymmetry than those having lesser information asymmetry.*

If institutional investors do indeed have private information about a firm's dividend reduction event, their trading activity prior to the dividend reduction announcement could convey part of their information to the market. Fuller (2003) develops a theoretical model that incorporates the effect of informed trading on dividend signaling. In his model, informed traders have private knowledge about the firm's intrinsic value while uninformed and liquidity traders do not. This private knowledge is not reflected perfectly in the stock price through the informed traders' demands due to the noise created by liquidity traders. However, as the amount of informed trading increases, more private information is reflected in the equilibrium price of the stock, pushing it closer to its intrinsic value. The model predicts that the greater is the amount of informed trading, the less new information a dividend change signals.

Empirical studies provide support for Fuller's (2003) model. Specifically, Fuller (2003) also finds that the more informed trading in a firm's stock prior to a dividend increase announcement (i.e., the greater the buy demand relative to the sell demand), the weaker (the less positive) the price reaction to the announcement. Amihud and Li (2006) find that the information content of dividend change announcements has been decreasing over time. They also attribute this phenomenon to the informed trading by institutional shareholders prior to public dividend announcements: if institutional investors trade on their information about the firm's value, then, by the time that a dividend increase is announced, part of this information is already incorporated into the stock price and there is less additional information conveyed by the dividend increase announcement, which is consistent with Fuller (2003). Similarly, Amin et al. (2015) show that institutional ownership negatively affects the cumulative abnormal returns around dividend surprise announcement periods, indicating that institutional ownership reduces the information content of dividend surprise announcements.

Following these studies, we argue that the more informed trading by institutional investors in a firm's stock prior to a dividend reduction announcement (i.e., the greater the sell demand relative to the buy demand), the weaker (the less negative) the market reacts to the announcement. In other words, there is a negative relation between institutional trading prior to a dividend reduction announcement and the market reaction to the announcement. This is because, as the amount of institutional trading increases, more private information about the dividend reduction event is reflected in the equilibrium price of the stock, pushing it closer to its intrinsic value, and thus less new information is signaled by the dividend reduction announcement. Accordingly, we propose the following hypothesis:

Hypothesis 4 (H4). *Institutional trading before dividend reduction announcements should be negatively related to stock returns around the announcement dates.*

Institutions could make profits from their trading prior to several corporate events, such as SEOs announcements (Chemmanur et al., 2009) and CEO turnovers (Chemmanur et al., 2017). Following these studies, we expect that, if we find evidence that institutional investors possess private information about dividend reduction events, they could make profits from their trading in the dividend reduction stocks. We, thus, propose the following hypothesis:

Hypothesis 5 (H5). *Institutional investors earn positive profits from trading in dividend reduction stocks.*

3. Data, variable construction, and descriptive statistics

3.1. Data and sample selection

We collect quarterly dividend announcements and stock returns from the Center for Research in Security Prices (CRSP), institutional trading information from Ancerno Ltd., and accounting data from Compustat. We focus on the period from 1997 to 2015 because institutional trading data are available from 1997 only.

To determine our dividend reduction sample, we follow the process outlined by Chemmanur and Tian (2014) to obtain a clean sample of dividend reduction events, as follows:

- (i) Our sample includes firms that pay ordinary quarterly dividends. Thus, firms that pay semi-annual or annual dividends are excluded. Firms that belong to the financial (SIC codes 6000 to 6999) and regulated utilities (SIC codes 4900 to 4949) industries are also removed because they are heavily regulated. Firms that have stock splits or other cash distributions occurring between the previous and the current (and lower) dividend payment, or firms that do not have earnings data in Compustat during the quarter prior to the event, are also excluded.
- (ii) A dividend announcement is considered to be a dividend reduction announcement if the quarterly dividend amount is reduced after the firm has paid a positive, non-decreasing dividend for at least one year or four consecutive quarters. This requirement ensures that the firm has an established dividend policy.

- (iii) We include only dividend reduction announcements where the regular quarterly dividend is reduced by 12.5% or more. This allows us to ensure that only observations with economically meaningful dividend reductions remain in the sample (Chemmanur and Tian, 2014). The sample includes both dividend reductions and omissions.
- (iv) For a dividend omission, we use the Factiva and SEC EDGAR databases to confirm that a firm fails to pay a dividend and to identify the announcement date of each omission. Since the CRSP tape does not report information for dividend omissions, we must first identify omissions based on a lapse in the dividend payments recorded in the CRSP tape and then confirm them with information from Factiva or SEC EDGAR database.
- (v) To ascertain the most accurate information for dividend reduction and omission announcement dates, we require that all announcement dates are also reported by the media via Factiva in order to remain in our final sample.¹
- (vi) We require that all dividend reduction events have non-missing data for control variables.

We obtain institutional trading data from Ancerno Ltd., a comprehensive institutional trading data provider. According to Puckett and Yan (2011), trading volume by institutional investors in this database accounts for around 8% of the dollar value of CRSP trading volume for the period from 1999 to 2005.

Our trading data cover daily stock transactions of institutional investors from 1997 to 2011. Each transaction includes an investor identification code, the date of the transaction, the stock traded, the number of shares traded, the traded price, and the type of the order transaction, such as a buy or a sell order. Institutional investors are classified in the database as money managers or mutual funds, pension plan sponsors, and brokers. Following prior studies, such as Chemmanur et al. (2009) and Chemmanur et al. (2010), we focus on trading activities by money managers and pension plan sponsors.

3.2. Variable definitions

3.2.1. Institutional trading

To measure institutional trading in a stock during a trading period, we follow the literature (e.g., Chemmanur et al., 2009) to construct a net buy (*NB*) variable. This variable is computed, as in Eq. (1), as the total number of shares bought minus the total number of shares sold by institutional investors during a certain trading period prior to a dividend reduction announcement, normalized by the total number of shares outstanding in the financial year prior to dividend reduction announcements:

$$NB = \frac{\text{Number of shares bought} - \text{Number of shares sold}}{\text{Total shares outstanding}} \quad (1)$$

For the ease of presentation and comparison, we follow Chemmanur et al. (2016) to report *NB* in basis points of the total number of shares outstanding (1 basis point = 0.01%).

3.2.2. Cumulative abnormal returns

To measure stock price reactions to dividend reduction announcements, we use a standard event study methodology to estimate cumulative abnormal returns (*CARs*) around the event days. This method is introduced by Fama et al. (1969) and improved by Brown and Warner (1980). Armitage (1995) suggests that the market model is commonly used in detecting abnormal returns. Thus, we estimate the market model as follows:

$$r_{it} = \alpha_i + \beta_i r_{mt} + \varepsilon_{it}, \quad (2)$$

where r_{it} is the stock return and r_{mt} is the value-weighted market return on day t .

The daily abnormal return for each stock is computed as:

$$AR_{it} = r_{i,t} - (\hat{\alpha}_i + \hat{\beta}_i r_{mt}) \quad (3)$$

The cumulative abnormal return for an event window from day t_1 to day t_2 is:

$$CAR_{i(t_1; t_2)} = \sum_{t=t_1}^{t_2} AR_{it} \quad (4)$$

The dividend announcement date is defined as day 0. The estimation window to estimate parameters for the market model is 208 days, which is from day -252 to day -44 . The event window is from day -2 to day $+5$.

¹ To check the news related to dividend reductions, we search Factiva using the following keywords: "dividend reduction," "reduced its quarterly dividend," "reduced dividend," "cut its quarterly dividend," "cut dividend," "dividend cut," "slashed its quarterly dividend," "slashed its dividend," "slashed dividend," "lowered its quarterly dividend," "lowered dividend," "lowered its dividend," "lowered quarterly dividend," "scrapped dividend," "scrapped its quarterly dividend," "decreased its quarterly dividend," "decreased dividend," "decrease dividend," "reduce dividend," "slashes dividend," "lower dividend," "To retrieve the news related to dividend omissions, we search Factiva using the following keywords: "dividend suspension," "suspended dividend," "suspend dividend," "suspend its quarterly dividend," "suspends quarterly dividend," "suspended payment," "omit dividend," "omit its quarterly dividend," "omitted its quarterly dividend," "dividend omission," "discontinued dividend," "eliminated dividend," "eliminate dividend," "eliminated its dividend," "do not pay dividend," "suspended its quarterly dividend," "will not pay dividend," "not pay its quarterly dividend," "discontinued its quarterly dividend," "discontinued dividend," "discontinues quarterly dividend," "discontinues dividend," "stop cash payout".

Table 1

Summary statistics of the dividend reduction sample.

This table reports the summary statistics of the dividend reduction sample. Panel A shows the dividend reduction announcements by year. Panel B displays the dividend reduction announcements by industry. Panel C presents the summary statistics of control variables. All the variables are defined in the [Appendix](#).

Panel A: Dividend reduction announcements by year					
Year	(1) All dividend reductions	(2) Dividend omissions	(3) Dividend cuts	(4) Initial reductions	(5) Subsequent reductions
1997	17	7	10	17	0
1998	29	16	13	28	1
1999	25	11	14	24	1
2000	22	11	11	21	1
2001	34	10	24	33	1
2002	25	9	16	21	4
2003	18	6	12	17	1
2004	9	3	6	8	1
2005	11	6	5	5	6
2006	9	4	5	7	2
2007	6	3	3	4	2
2008	49	28	21	45	4
2009	82	20	62	75	7
2010	7	1	6	5	2
2011	10	7	3	7	3
Total	353	142	211	317	36

Panel B: Dividend reduction announcements by industry		
Industry	# of events	(%)
Agriculture, forestry, and fishing	3	0.85
Mining	18	5.1
Construction	5	1.42
Manufacturing	205	58.07
Transportation and communication	45	12.75
Wholesale trade	13	3.68
Retail trade	32	9.07
Service	32	9.07
Total	353	100

Panel C: Control variables						
Variables	# of obs.	Mean	STD	P25	Median	P75
<i>DIV_CHANGE</i>	353	-74.646	25.434	-100.000	-75.000	-50.000
<i>ROA</i>	353	0.102	0.086	0.063	0.098	0.138
<i>MTB</i>	353	1.777	1.654	0.818	1.284	1.945
<i>SIZE</i>	353	6.947	1.908	5.759	6.826	8.196
<i>PAYOUTRATIO</i>	353	0.808	3.274	-0.109	0.280	0.963
<i>DIV_YIELD</i>	353	0.051	0.049	0.024	0.041	0.060
<i>LEVERAGE</i>	353	0.297	0.192	0.151	0.311	0.428
<i>ASSET_TAN</i>	353	0.353	0.216	0.184	0.296	0.493

3.2.3. Other variables

We follow the dividend announcement literature to control for a vector of firm characteristics that are related to announcement returns (e.g., [Chemmanur and Tian, 2014](#)), as follows: a prepare dummy (*PREPARED*), which equals 1 if a dividend reduction firm prepares the market for a possible dividend reduction, and 0 otherwise. Dividend change (*DIV_CHANGE*) is defined as the percentage change in the quarterly dividend payment compared with the dividend payment in the previous quarter; return on assets (*ROA*) is the operating income before depreciation divided by total assets; market-to-book value (*MTB*) equals the market value of equity divided by the book value of equity; firm size (*SIZE*) equals the natural logarithm of the book value of total assets at the end of the financial year prior to the dividend announcement date; firm leverage (*LEVERAGE*) equals the sum of long-term debt and debt in current liabilities divided by total assets; payout ratio (*PAYOUTRATIO*), which equals cash dividends divided by net income before extraordinary items; dividend yield (*DIV_YIELD*), which equals cash dividends divided by market value of equity; asset tangibility (*ASSET_TAN*), which equals plant, property, and equipment divided by the book value of firm assets. These variables are constructed at the end of the fiscal year prior to the dividend announcement date. We winsorize all variables at the 1st and 99th percentiles to minimize the effects of outliers. Detailed variable definitions are provided in the [Appendix](#).

3.3. Descriptive statistics

Table 1 presents the summary statistics of the dividend reduction sample. Panel A of **Table 1** presents the yearly distribution of the sample. The total number of dividend reduction events is 353. The years that have the largest number of dividend reductions are 2009 (82 events) and 2008 (49 events), while the year that has the lowest number of dividend reductions is 2007 (6 events). The number of dividend reduction events in both 2008 and 2009 is correlated with the timing of the global financial crisis (GFC). When partitioning our sample into different subsamples, we have 142 dividend omissions and 211 dividend cuts, and 317 initial reductions and 36 subsequent reductions.

Panel B of **Table 1** shows the sample distribution by industry. The results show that the manufacturing industry accounts for the largest number of dividend reduction announcements (58.07%), while the agriculture, forestry, and fishing industry represents the lowest proportion of the sample (0.85%).

Panel C of **Table 1** provides the summary statistics of the control variables. For an average firm that has dividend reductions, the return on total assets ratio has a mean of 10.2% and a median of 9.8%. The market-to-book ratio has a mean of 1.77 and a median of 1.28. Firm size has a mean of 6.947 and a median of 6.826. The payout ratio has a mean of 80.08% and a median of 28.00%. Dividend yield has a mean of 5.1% and a median of 4.10%. The firm leverage ratio has a mean of 29.70% and a median of 31.10%. The asset tangibility ratio has a mean of 35.30% and a median of 29.60%. The quarterly dividend change (*DIV_CHANGE*) equals, on average, -74.65% of the dividend payment in the previous quarter.²

Table 2 provides the summary statistics on institutional trading in the two quarters prior to dividend reduction announcements. There are 742 institutional investors, including 534 pension plan sponsors and 208 money managers, trading in the two quarters prior to the 353 dividend reduction announcements during the sample period. During the two quarters prior to dividend reduction announcements, on average, institutional investors' trading has a total value of \$257.575 million. Money managers are more active in trading with a total trading value of \$221.968 million, which is approximately four times higher than that of pension plan sponsors. The average commission expense for all institutions is \$0.369 million, where money managers and pension plan sponsors contribute \$0.314 million and \$0.05 million, respectively.

4. Empirical results and discussion

4.1. Market reactions to dividend reduction announcements

Before addressing our main research questions, we re-examine the market reactions to dividend reduction announcements through an event study. Following the literature (e.g., [Michaely et al., 1995](#)), we calculate *CARs* using event windows from two days before to five days after the announcement day and an estimation window from day -252 to day -44 before the event date.

Table 3 provides the mean of the cumulative abnormal returns for a five-day window ($CAR(-2; +2)$), a three-day window ($CAR(-1; +1)$), and a six-day window ($CAR(0; +5)$) for all types of dividend reductions. Column 1 shows that the *CARs* for the entire sample are all negative and statistically significant at the 1% level. Specifically, the mean $CAR(-2; +2)$ is -6.184% , the mean $CAR(-1; +1)$ is -5.688% , and the mean $CAR(0; +5)$ is -5.491% . Consistent with the literature (e.g., [Michaely et al., 1995](#)), these results show that the market reacts negatively to dividend reduction announcements.

When partitioning our sample into subsamples, namely, dividend omissions (column (2)) and dividend cuts (column (3)), or initial reductions (column (4)) and subsequent reductions (column (5)), we find that all types of *CARs* remain negative and statistically significant, despite the weaker significance for subsequent reductions. This is consistent with the literature.

Overall, this section shows that a dividend reduction announcement is perceived by investors to be bad news, which is consistent with the literature and, thus, the market reacts negatively to this type of information.

4.2. Institutional trading before dividend reduction announcements

To investigate the trading patterns of institutional investors around dividend reduction events, we examine whether the net buy (*NB*) variables, which are calculated for different trading periods prior the event date, are negative and statistically different from zero. **Table 4** presents the average of *NBs* for windows between one trading day and two trading quarters prior to dividend reduction announcement dates. The corresponding *t*-statistics for the tests of the difference from zero for *NBs* are reported in parentheses. Panel A provides the results for all institutional investors, while Panel B reports the results for pension plan sponsors and money managers.

Column (1) in Panel A of **Table 4** shows that *NBs* are uniformly negative for the daily, monthly, and quarterly trading horizons, which suggests that institutions sell more than they buy before dividend reduction events. *NBs* are statistically

² When we compare the average of a key variable, *DIV_CHANGE*, of [Chemmanur and Tian \(2014\)](#) with our sample, their two subsample means are around -38% and -45% , respectively, while the mean of *DIV_CHANGE* of our sample is -74.65% . One possibility for this difference is the difference between the study period of [Chemmanur and Tian \(2014\)](#) (1982–2006) and ours (1997–2010). We find that the number of dividend omission events (e.g., $DIV_CHANGE = 100\%$) during the 2008–2009 crisis period is large (33 events in 2008, 20 events in 2009), which accounts for 33% of all dividend omission events (142) and could partly explain the high average of the *DIV_CHANGE* variable for our sample.

Table 2

Summary statistics of the institutional trading data prior to dividend reductions.

This table reports the summary statistics of institutional trading data during the two quarters prior to dividend reduction announcements. The average aggregated principal traded is calculated as total dollar trading value bought and sold in the two quarters prior to each dividend reduction announcements. The average commission expense is calculated as the total dollar commission spent by all institutional investors in the two quarters prior to each dividend reduction announcement.

	(1) All Institutions	(2) Pension Plan Sponsors	(3) Money Managers
Number of institutions	742	534	208
Number of dividend reductions	353	353	353
Average principal traded (\$million)	257.575	35.557	221.968
Average commission expense (\$million)	0.369	0.055	0.314

Table 3

Stock price reactions to dividend reduction announcements.

This table presents the mean cumulative abnormal returns (CARs) around dividend reduction announcements. Daily abnormal returns are estimated using the market model where the market beta is estimated based on returns from day -252 to day -44 prior to the announcement day. CARs over a three-day window ($CAR(-1; +1)$), a five-day window ($CAR(-2; +2)$), and a five-day post announcement period ($CAR(0; +5)$) are reported. The t -tests for the significance of difference from zero for CARs are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

	(1) All Dividend Reductions	(2) Dividend Omissions	(3) Dividend Cuts	(4) Initial Reductions	(5) Subsequent Reductions
$CAR(-2; +2)$	-6.184*** (-7.894)	-7.735*** (-5.121)	-5.139*** (-6.247)	-6.512*** (-7.869)	-3.288 (-1.367)
$CAR(-1; +1)$	-5.688*** (-8.671)	-7.368*** (-5.975)	-4.557*** (-6.417)	-5.800*** (-8.356)	-4.695** (-2.322)
$CAR(0; +5)$	-5.491*** (-7.003)	-6.448*** (-4.376)	-4.847*** (-5.641)	-5.574*** (-6.615)	-4.761** (-2.329)
# of events	353	142	211	317	36

significantly different from zero for all trading horizons, except day 1 prior to the announcements. These results show that institutional investors generally are net sellers prior to dividend reduction announcements, thus, providing strong support for *H1* that the net buy of institutional investors is negative in the period prior to firm dividend reduction announcements.

When we partition the entire sample into dividend omissions (column (2)) and dividend cuts (column (3)), or initial dividend reductions (column 4) and subsequent dividend reductions (column (5)), we find that, in general, NBs are negative. However, NBs for all of the trading horizons are not statistically different from zero for subsequent dividend reductions. These results suggest that institutional investors have greater information advantages prior to initial dividend reductions than subsequent dividend reductions.

Panel B of *Table 4* provides the net buy information for pension plan sponsors and money managers. The results show that both pension plan sponsors and money managers are net sellers in the two quarters before dividend reduction announcements. In particular, the NBs of pension plan sponsors and money managers are both consistently negative and statistically significant for the all preceding trading horizons, except day -1 prior to announcement days.

Overall, this subsection suggests that institutional investors have private information about dividend reduction events and are net sellers prior to dividend reduction events. These results support *H1*.

4.3. Institutional trading in prepared and non-prepared markets for dividend reductions

To examine whether institutional investors trade differently in firms that prepare markets for dividend cuts vis-à-vis those that do not, we follow *Chemmanur and Tian (2014)* to classify dividend reduction firms into those firms that prepare markets and those that do not. We manually search for information released by the insiders from the Factiva database. We run the search for all news articles which carry information related to the dividend reduction firms, using the following key words: “dividend cuts,” “restructuring,” “financial strategy,” “conserve cash,” “dividend omissions,” “spokesman (spokeswoman),” and “customer relations.” Based on these keyword conditions, we extract only the news related to the dividend reduction firms from one year to 30 days before dividend reduction announcement dates. A firm that prepares (does not prepare) the market for a dividend reduction is a firm that has at least one news article (no news article) released by the firm about a potential dividend reduction during the period before the dividend reduction announcement date.

To examine whether the trading patterns of institutional investors in firms that prepare the market for dividend reductions are different from those that do not, we first report the CARs in Panel A of *Table 5*. Evidently, the market reacts

Table 4

Institutional trading patterns prior to dividend reduction announcements.

This table shows institutional trading patterns, measured by the net buy (NB), prior to dividend reduction announcements. Day 0 is the announcement date. Panel A displays trading patterns of all institutions. Panel B exhibits trading patterns of pension plan sponsors and money managers. NB is reported in basis points of the total number of shares outstanding (1 basis point = 0.01%). The *t*-tests for the significance of difference from zero for net buy are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Net buy of all institutional investors					
	(1) All dividend Reductions	(2) Dividend Omissions	(3) Dividend Cuts	(4) Initial Reductions	(5) Subsequent Reductions
NB(<i>Day-1</i>)	0.253 (0.522)	0.057 (0.068)	0.386 (0.651)	0.273 (0.509)	0.084 (0.126)
NB(<i>Day-2</i>)	-1.611*** (-2.840)	-2.258*** (-2.846)	-1.176 (-1.498)	-1.368** (-2.375)	-3.753 (-1.645)
NB(<i>Week-1</i>)	-7.310*** (-3.054)	-10.630*** (-2.789)	-5.075 (-1.652)	-7.029*** (-2.763)	-9.782 (-1.381)
NB(<i>Month-1</i>)	-16.923** (-2.490)	-27.980** (-2.592)	-9.482 (-1.086)	-17.021** (-2.321)	-16.067 (-0.959)
NB(<i>Month-2</i>)	-12.374** (-2.089)	-18.162** (-2.143)	-8.479 (-1.045)	-11.293* (-1.834)	-21.887 (-1.038)
NB(<i>Month-3</i>)	-28.718*** (-5.170)	-33.453*** (-3.669)	-25.531*** (-3.653)	-30.309*** (-5.077)	-14.706 (-1.030)
NB(<i>Quarter-1</i>)	-60.921*** (-5.129)	-78.120*** (-4.167)	-49.346*** (-3.217)	-60.996*** (-4.974)	-60.262 (-1.363)
NB(<i>Quarter-2</i>)	-32.102*** (-2.823)	-36.531* (-1.864)	-29.121** (-2.120)	-34.382*** (-2.892)	-12.021 (-0.310)
NB(-2 <i>Quaters</i>)	-90.931*** (-5.167)	-110.551*** (-3.765)	-77.253*** (-3.560)	-92.365*** (-4.954)	-78.296 (-1.456)
# of events	353	142	211	317	36
Panel B: Net buy of pension plan sponsors and money managers					
	(1) Pension Plan Sponsors	(2) Money Managers			
NB(<i>Day-1</i>)	0.110 (0.844)	-0.011 (-0.025)			
NB(<i>Day-2</i>)	-0.231** (-2.201)	-1.252*** (-2.619)			
NB(<i>Week-1</i>)	-1.548** (-2.193)	-6.488*** (-2.800)			
NB(<i>Month-1</i>)	-4.390** (-2.295)	-13.080** (-2.150)			
NB(<i>Month-2</i>)	-0.225 (-0.153)	-12.708** (-2.260)			
NB(<i>Month-3</i>)	-3.302** (-2.033)	-24.543*** (-4.529)			
NB(<i>Quarter-1</i>)	-7.618** (-2.426)	-53.634*** (-4.821)			
NB(<i>Quarter-2</i>)	-7.296*** (-3.376)	-23.728** (-2.205)			
NB(-2 <i>Quaters</i>)	-14.463*** (-3.587)	-79.233*** (-4.813)			
# of events	353	353			

more negatively to firms that do not prepared the market than to those that prepare the market. For example, the average $CAR(-2; +2)$ for market non-preparing firms (column 2) is -6.549%, which is statistically significant at the 1% level, compared with a $CAR(-2; +2)$ for market-preparing firms of -0.683%. These results are consistent with [Chemmanur and Tian \(2014\)](#), and suggest that preparing the market for dividend reduction events has removed some degree of information asymmetry surrounding the events.

We then report in Panel B of [Table 5](#) the net buys of institutional investors in these two groups. We find that the net buys of institutional investors during quarter 1, quarter 2, and the combined 2 quarters before dividend reduction announcements in firms not preparing the market are negative and statistically significant at the 1% level, while the net buys of institutional investors in firms preparing the market are negative but not statistically significant. The combined results from Panels A and B indicate that the private information, or informative advantage, enjoyed by institutional investors is “market sensitive”, or influences share returns, and that institutional investors appear to have a smaller relative information

Table 5

Institutional trading in prepared and non-prepared markets.

This table reports institutional trading patterns in prepared and non-prepared markets for dividend reductions. Panel A presents stock price reactions to prepared and non-prepared markets for dividend reductions for different event windows. Panel B reports the net buy (*NB*) of institutional investors in prepared and non-prepared markets for dividend reductions over the preceding one quarter, second-last quarter, and six months. The *t*-tests for the significance of difference from zero for the net buy are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Stock price reaction to prepared and non-prepared markets		
	(1) Prepared	(2) Non-prepared
<i>CAR</i> (−2; +2)	−0.683 (−0.630)	−6.549*** (−7.904)
<i>CAR</i> (−1; +1)	0.815 (0.946)	−6.120*** (−8.859)
<i>CAR</i> (−0; +5)	−1.561 (−1.128)	−5.753*** (−6.935)
# of events	22	331
Panel B: Net buy of institutional investors in prepared and non-prepared markets		
	(1) Prepared	(2) Non-prepared
<i>NB</i> (Quarter-1)	6.417 (0.186)	−65.397*** (−5.261)
<i>NB</i> (Quarter-2)	−2.498 (−0.093)	−34.070*** (−2.841)
<i>NB</i> (−2Quarters)	3.920 (0.088)	−97.234*** (−5.258)
# of events	22	331

advantage in those firms that prepare the market for dividend reduction announcements. Importantly, these findings suggest that institutional investors view firms that do not prepare the market for dividend reductions as lower quality and sell more in these firms, which is consistent with [Chemmanur and Tian \(2012; 2014\)](#), and that institutions are able to detect high versus low quality firms, as suggested by [Allen et al. \(2000\)](#).

Overall, we find evidence supporting *H2* that the net buy of institutional investors is more negative in firms that do not prepare for dividend reductions than those that do, with the net buy of institutional investors actually indistinguishable from zero for the latter firm group.

4.4. Institutional trading in high versus low information asymmetry stocks

To examine the trading patterns of institutional investors in firms with different levels of information asymmetry, we use firm idiosyncratic risk and age as proxies for information asymmetry. Following the prior literature (e.g., [Dierkens, 1991](#); [Krishnaswami and Subramaniam, 1999](#); [D'Mello et al., 2003](#); [Booth and Chang, 2011](#)), we measure idiosyncratic risk as the standard deviation of the residuals from the market model regression, using daily stock returns against the value-weighted market return for the period from days −252 to −44. Firms with high idiosyncratic risk are expected to have a higher level of information asymmetry. Firm age is defined as the number of years prior to the dividend reduction announcement date that the firm's return first appeared in CRSP. Mature firms are considered to have a lower level of information asymmetry than younger firms.

[Table 6](#) presents the trading patterns of institutional investors in firms that reduce dividends and have different levels of information asymmetry. We classify firms into four groups according to the level of information asymmetry. [Panel A of Table 6](#) shows that *NBs* of institutions in firms having a higher level of idiosyncratic risk (column (4)) are more negative than those in firms having a lower level of idiosyncratic risk (column (1)), and there is a consistent trend of greater negative *NB* values as the level of idiosyncratic risk increases. These results suggest that institutional investors have information advantages and trade more intensively in firms that reduce dividends and have higher levels of information asymmetry than in those that have lower levels of information asymmetry.

We classify firms into four groups according to firm age and present the results in [Panel B of Table 6](#). The results in columns (2)–(3) generally show that the net buy ratios become more negative for younger firms, which again suggests that institutional investors have information advantages and trade more intensively in dividend reduction firms that are younger (i.e., firms with have higher levels of information asymmetry).

Overall, the results provide some support for *H3* that the net buy of institutional investors is more negative for firms having higher levels of information asymmetry than for firms with lower information asymmetry. These results suggest that institutions have information advantages in firms that have greater information asymmetry.

Table 6

Institutional trading and information asymmetry.

This table presents the trading patterns of institutional investors prior to dividend reduction announcements in firms sorted by information asymmetry levels, which are measured by firm idiosyncratic risk and firm age. Panel A and B report the net buy (*NB*) over the preceding six months for all institutional investors, where stocks are sorted into four groups from low (1) to high (4) by firm idiosyncratic risk and age, respectively. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Net buy of institutional investors for firms sorted by idiosyncratic risk				
	(1) Low	(2)	(3)	(4) High
<i>NB</i> (<i>Quarter</i> – 1)	–26.348 (–1.265)	–47.094** (–2.189)	–56.147** (–2.269)	–111.484*** (–4.262)
<i>NB</i> (<i>Quarter</i> – 2)	–3.744 (–0.291)	–20.796 (–0.998)	–30.631 (–1.177)	–73.559** (–2.622)
<i>NB</i> (– 2 <i>Quarters</i>)	–30.343 (–1.165)	–67.893** (–2.522)	–83.874** (–2.118)	–182.298*** (–4.188)
Panel B: Net buy of institutional investors for firms sorted by firm age				
	(1) Low (Old firms)	(2)	(3)	(4) High (Young firms)
<i>NB</i> (<i>Quarter</i> – 1)	–72.861*** (–2.660)	–25.659 (–1.642)	–65.838** (–2.599)	–79.084*** (–3.180)
<i>NB</i> (<i>Quarter</i> – 2)	–16.42 (–0.756)	–15.605 (–0.776)	–51.753** (–2.180)	–44.489* (–1.769)
<i>NB</i> (– 2 <i>Quarters</i>)	–80.894** (–2.243)	–45.056 (–1.533)	–112.171 (–3.006)	–125.210*** (–3.355)

4.5. Institutional trading and the announcement effect of dividend reduction events

To evaluate the impact of institutional trading on the announcement returns, we conduct a multivariate regression analysis. The dependent variable is the cumulative abnormal returns around the dividend reduction announcement day ($CAR(-1; +1)$) and the key independent variable is the net buy variable ($NB(Quarter - 1)$ or $NB(-2Quarters)$). Following Chemmanur and Tian (2014), we control for a number of characteristics that affect announcement returns. These include a prepared market dummy (*PREPARED*), dividend change (*DIV_CHANGE*), return on assets (*ROA*), the market-to-book ratio (*MTB*), firm size (*SIZE*), payout ratio (*PAYOUTRATIO*), dividend yield (*DIVIDEND_YIELD*), firm leverage (*LEVRAGE*), and asset tangibility (*ASSET_TAN*). Table 7 presents the regression results. All regressions include industry and year dummies, together with the reporting of robust *t*-statistics in parentheses. Panel A of Table 7 provides the results for all institutional investors, while Panel B of Table 7 presents the results for pension plan sponsors and money managers.

The results in Panel A of Table 7 generally show some supporting evidence that institutional trading negatively affects the announcement returns. Specifically, the coefficient estimates on the net buy (*NB*) variable are negative in both columns (1) and (2), but only statistically significant at the 1% level for $NB(-2Quarters)$ (column (2)). When we group the sample into dividend cuts (columns (3)–(4)) and dividend omissions (columns (5)–(6)), we find that the coefficients on *NB* are generally negative, but only statistically significant at the 10% level for dividend cuts (column (4)). As both net buy (*NB*) and announcement returns tend to be negative, the negative signs on the coefficient estimates of *NB* mean that the more institutions sell prior to dividend cut announcements, the less negative are the announcement returns. These results are consistent with Fuller (2003) and suggest that as the amount of informed trading by institutional investors increases prior to a dividend reduction announcement (i.e., the more institutional investors sell), the more private information that institutional investors have is incorporated into stock prices, pushing them closer to the firm's intrinsic value and, thus, less new information is signaled by the dividend reduction announcement.

In Panel B of Table 7, we present the regression results for pension plan sponsors and money managers. We find that the coefficients on the *NB* variables in both one and two pre-announcement trading quarters are negative and statistically significant at the 10% and 5% levels, respectively, for pension plan sponsors. Regarding money managers, we find that the coefficients of *NB* for the one and two-quarter periods are negative, but only the coefficient of *NB* for the two-quarter period is statistically significant at the 10% level. These results again imply that trading by both pension plan sponsors and money managers provides information about the upcoming dividend reductions.

Overall, the results presented in this section provide some support for our *H4* that institutional trading prior to dividend reduction announcements negatively affects the announcement returns, which is also consistent with our *H1* that institutional investors have private information about dividend reductions and their private information is incorporated into stock prices through their trading prior to these events.

4.6. Profitability of institutional trading around dividend reduction announcements

In this subsection, to compliment the above analysis, we examine whether institutional investors can earn positive

Table 7

Institutional trading and cumulative abnormal returns.

This table reports the results of the regression of cumulative abnormal returns (CARs) on institutional trading and control variables. Panel A reports the results for all institutions while Panel B shows the regressions for different subsamples of institutions. The dependent variable in both panels is measured as the three-day cumulative abnormal returns ($CAR(-1;1)$), where date 0 is the announcement date. The key independent variables are $NB(Quarter-1)$ and $NB(-2Quarters)$, which are the total number of shares bought minus the total number of shares sold, divided by the total number of shares outstanding during, respectively, the last quarter and the last six months prior to announcements. All variable definitions are presented in the [Appendix](#). All regressions include industry and year dummies, together with robust t -statistics reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Institutional trading and announcement effects of dividend reductions						
	All Dividend Reductions		Dividend Cuts		Dividend Omissions	
	(1)	(2)	(3)	(4)	(5)	(6)
$NB(Quarter-1)$	-0.043 (-0.583)		-0.060 (-0.778)		-0.031 (-0.254)	
$NB(-2Quarters)$		-0.160*** (-2.617)		-0.121* (-1.663)		-0.157 (-1.576)
PREPARED	0.186*** (3.262)	0.191*** (3.362)	0.160*** (2.644)	0.165*** (2.726)	0.057 (1.076)	0.060 (1.186)
DIV_CHANGE	0.132** (2.427)	0.136** (2.492)	0.095 (1.077)	0.093 (1.066)		
ROA	-0.184** (-2.010)	-0.191** (-2.101)	-0.119 (-1.252)	-0.123 (-1.284)	-0.207 (-1.355)	-0.195 (-1.272)
MTB	0.017 (0.158)	0.024 (0.223)	0.173** (2.146)	0.173** (2.178)	-0.176 (-1.368)	-0.175 (-1.397)
SIZE	0.004 (0.052)	0.009 (0.103)	0.078 (0.765)	0.082 (0.820)	-0.040 (-0.318)	-0.046 (-0.366)
PAYOUTRATIO	-0.019 (-0.304)	-0.021 (-0.330)	-0.063 (-1.164)	-0.064 (-1.173)	-0.064 (-0.797)	-0.076 (-0.967)
DIV_YIELD	-0.065 (-0.954)	-0.068 (-0.988)	0.001 (0.016)	0.008 (0.117)	-0.021 (-0.189)	-0.040 (-0.359)
LEVERAGE	0.030 (0.328)	0.044 (0.466)	-0.173 (-1.433)	-0.160 (-1.328)	0.254* (1.909)	0.251* (1.919)
ASSET_TAN	0.175* (1.749)	0.178* (1.770)	0.111 (1.156)	0.105 (1.091)	0.226* (1.665)	0.248* (1.852)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
# of obs.	353	353	211	211	142	142
R-square	0.249	0.263	0.368	0.376	0.475	0.491
Panel B: Trading by type of institutions and announcement effects of dividend reductions						
	Pension Plan Sponsors		Money Managers			
	(1)	(2)	(3)	(4)		
$NB(Quarter-1)$	-0.128* (-1.962)		0.001 (0.008)			
$NB(-2Quarters)$		-0.156** (-2.589)		-0.096* (-1.855)		
PREPARED	0.122*** (3.113)	0.123*** (3.120)	0.122*** (3.179)	0.128*** (3.327)		
DIV_CHANGE	0.159** (2.576)	0.158** (2.569)	0.149** (2.425)	0.152** (2.470)		
ROA	-0.159** (-2.030)	-0.162** (-2.072)	-0.158** (-1.983)	-0.162** (-2.055)		
MTB	0.004 (0.049)	0.013 (0.159)	0.010 (0.128)	0.015 (0.185)		
SIZE	-0.003 (-0.048)	-0.005 (-0.072)	0.006 (0.092)	0.007 (0.107)		
PAYOUTRATIO	-0.002 (-0.050)	-0.003 (-0.060)	-0.016 (-0.339)	-0.018 (-0.369)		
DIV_YIELD	-0.067 (-1.037)	-0.070 (-1.082)	-0.062 (-0.940)	-0.063 (-0.956)		
LEVERAGE	0.038 (0.475)	0.036 (0.457)	0.025 (0.315)	0.033 (0.416)		
ASSET_TAN	0.135* (1.661)	0.138* (1.696)	0.142* (1.731)	0.148* (1.786)		
Year FE	Yes	Yes	Yes	Yes		

Table 7 (continued)

Panel B: Trading by type of institutions and announcement effects of dividend reductions				
	Pension Plan Sponsors		Money Managers	
	(1)	(2)	(3)	(4)
Industry FE	Yes	Yes	Yes	Yes
# of obs.	353	353	353	353
R-square	0.260	0.267	0.248	0.255

profits from trading in dividend reduction firms prior to dividend reduction announcements. Based on the results presented in the preceding sub-section that institutional investors are net sellers in the one and two quarters prior to dividend reduction announcements, we now estimate the trading profits of institutional investors for these periods.

We follow Chemmanur et al. (2009) to construct two measures of profits: raw return on the buy principal and risk-adjusted return on the buy principal. Raw return on the buy principal is defined as the ratio of raw profit to buy principal for each institutional investor. Raw profit is total profits earned by institutional investors calculated based on actual transaction prices net of commission, where the net position is marked to market at the end of the trading period.³ The buy principal is defined as the sum of the total dollar value of buy orders plus the commission fee spent by each institutional investor. The risk-adjusted return on the buy principal is estimated as risk-adjusted raw profit divided by risk-adjusted buy principal. Risk-adjusted raw profit and risk-adjusted buy principal are calculated by discounting raw profits and the buy principal back to the first day of the estimation period, using the cumulative returns from the Fama-French 25 portfolios matched on size and book-to-market, respectively. We present institutional trading profits in Table 8. Panel A (Panel B) reports the profits in the one (two) quarters prior to dividend reduction announcements.

Panel A of Table 8 shows profits by all institutions (column (1)), pension plan sponsors (column (2)), and money managers (column (3)) in the one quarter prior to dividend reduction announcements. The *t*-tests for the significance of the difference from zero (columns (1)–(3)) and for the differences in the profits and buy principal between pension plan sponsors and money managers (columns (3)–(2)) are reported in parentheses. We find that institutional investors as a whole group realize a positive rate of return on the buy principal of 6.335%, and a positive risk-adjusted rate of return on the buy principal of 6.303%. We also find that money managers earn a higher rate of return (9.713% raw return on the buy principal) than pension plan sponsors do (3.826% raw return on the buy principal). The difference in these rates of returns between these two investor groups is statistically significant at the 1% level. This evidence is consistent with the perception that money managers are more active traders, which results in their higher trading profits, than pension plan sponsors.

In terms of the trading profits of institutional investors during the two quarters prior to dividend reduction announcements, we report the results in Panel B of Table 8. We find similar trading patterns as compared with those presented in Panel A.

Overall, we find evidence that institutional investors realize significant profits by trading prior to dividend reduction announcements, which supports our *H5*.

5. Conclusion

In this paper, we use a large proprietary institutional trading database for the period from 1997 to 2011 to tackle four research questions. First, do institutional investors have private information about upcoming dividend reduction events and, if they do, which type of institution (e.g., money managers, pension plan sponsors) has superior information? Second, do institutional investors trade differently in firms that prepare markets for dividend cuts vis-à-vis those that do not, as well as those that possess different levels of information asymmetry? Third, does institutional trading explain the information content of dividend reduction announcements? Finally, do institutional investors have the ability to earn positive profits by trading on their private information about dividend reduction events?

We find that institutional investors do indeed have private information about upcoming dividend events and are significant net sellers in dividend reduction firms during the two quarters preceding dividend reduction announcements. We find evidence that institutions trade more intensively in firms that do not prepare the market for dividend cuts (those that do not communicate with the market prior to the cuts) and those that have high levels of information asymmetry. Furthermore, we document that trading by both pension plan sponsors and money managers affects the market reactions to the announcements. Finally, we document that both pension plan sponsors and money managers earn positive profits by trading in the two quarters prior to dividend reduction announcements, and money managers

³ Mark to market estimations are split into two calculations: The calculation for transactions that took place during the trading day, adjusting for commission paid, and the calculation for positions that were open prior to the start of each trading day.

Table 8

Profitability of institutional trading around dividend reduction announcements.

This table reports the profitability of institutional trading prior to dividend reduction announcements. Panel A (B) shows the profitability of institutional trading in the one quarter (two quarters) prior to dividend reduction announcements. Raw return on buy principal is defined as the ratio of raw profit to buy principal for each institutional investor. Raw profit is the total profits earned by institutional investors calculated based on actual transaction prices net of commission, with the net position marked to market at the end of the trading period. Buy principal is the sum of all buy transaction values including commission fee by each institutional investors. Risk-adjusted return on buy principal is estimated as risk-adjusted raw profit divided by risk-adjusted buy principal. Risk-adjusted raw profit and risk-adjusted buy principal are estimated by discounting the raw profits and buy principal back to the first day of the estimation period, using the cumulative returns from the Fama-French 25 portfolios matched on size and book-to-market, respectively. The *t*-tests for the significance of difference from zero (columns (1)–(3)) and for the differences in the profits between pension plan sponsors and money managers (columns (3)–(2)) are reported in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Profitability of institutional trading during the one quarter prior to dividend reduction announcements				
	(1) All Institutions	(2) Pension Plan Sponsors	(3) Money Managers	(3)-(2) Difference
Raw return on buy principal (%)	6.335*** (8.389)	3.826*** (4.563)	9.713*** (7.122)	5.887*** (3.856)
Buy principal (\$millions)	3.086	0.771	6.189	
Risk-adjusted return on buy principal (%)	6.303*** (8.395)	3.811*** (4.573)	9.659*** (7.122)	5.848*** (3.852)
Risk-adjusted buy principal (\$millions)	3.106	0.777	6.229	
Panel B: Profitability of institutional trading during the two quarters prior to dividend reduction announcements				
	(1) All Institutions	(2) Pension Plan Sponsors	(3) Money Managers	(3)-(2) Difference
Raw return on buy principal (%)	16.115*** (16.924)	11.401*** (10.745)	23.845*** (13.215)	12.444*** (6.355)
Buy principal (\$millions)	5.082	1.103	11.491	
Risk-adjusted return on buy principal (%)	15.973*** (17.092)	11.407*** (10.933)	23.463*** (13.273)	12.056*** (6.273)
Risk-adjusted buy principal (\$millions)	5.243	1.138	11.852	

outperform pension plan sponsors. Overall, our study highlights the important role of institutional trading around dividend reduction events.

Appendix. Variable definitions and data sources

Variables	Definitions	Data source
<i>NB</i>	The total number of shares bought minus the total number of shares sold for a certain trading period prior to the event date, divided by the total number of shares outstanding at the end of the trading period.	Ancerno
<i>PREPARED</i>	The prepared dummy equals 1 if a dividend reduction firm prepares the market for a possible dividend as in Chemmanur and Tian (2014) , and 0 otherwise.	Factiva
$CAR(t_1; t_2)$	Cumulative abnormal returns from day t_1 to day t_2 around dividend reduction events where the dividend reduction announcement is day 0, and the market model with the estimation window from day -252 to day -44 before dividend reduction announcements is employed.	CRSP
<i>DIV_CHANGE</i>	The percentage change in quarterly dividend announcements compared to the dividend payment in the previous quarter.	Compustat
<i>ROA</i>	The operating income before depreciation divided by total assets	Compustat
<i>MTB</i>	The market value of equity divided by the book value of equity at the end of fiscal year.	Compustat
<i>LEVERAGE</i>	The sum of long-term debt and debt in current liabilities divided by total assets at the end of the fiscal year prior to dividend reduction announcements.	Compustat
<i>SIZE</i>	The natural logarithm of the book value of total assets at the end of the fiscal year prior to dividend reduction announcements.	Compustat
<i>PAYOUTRATIO</i>	Cash dividend divided by net income before extraordinary items.	Compustat
<i>DIV_YIELD</i>	Cash dividend divided by market value of equity.	Compustat
<i>ASSET_TAN</i>	Plant, property, and equipment divided by book value of firm assets.	Compustat
<i>IDIO_RISK</i>	Standard deviation of the residual of the market model regression using daily stock returns from the day -252 to -44	CRSP
<i>AGE</i>	The number of years prior to the announcement date that the firm's return first appeared in CRSP.	CRSP

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