Article

Can Transient Institutions Correctly Interpret Small Negative Earnings Surprises in the Absence of Access to Management's Private Information?

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Abstract

Using a proprietary database of institutional investors' daily stock trading records in the post–Regulation Fair Disclosure (FD) period, this study examines whether transient institutions have the independent ability to correctly process small negative earnings surprise announcements, which management claims transient institutions have difficulty in interpreting. We find economically significant abnormal selling by transient institutions in response to small negative earnings surprises. Transient institutions' selling in response to small negative earnings surprises is also associated with significant contemporaneous stock price declines. However, we find no evidence that transient institutions' trading in response to small negative earnings surprises is an overreaction as there is no reversal of stock prices subsequent to transient institutions' trading. More importantly, we show that transient institutions' trading in response to small negative earnings surprises helps improve the informational efficiency of share prices.

Introduction

Transient institutions (i.e., institutions that trade frequently to maximize short-term profits) are not only a major consumer of financial information but also a dominant force in many financial markets whose trading significantly affects stock prices.[1] Thus, it is important to understand transient institutions' trading behavior in reaction to publicly released financial information. In this study, we examine the degree of efficiency with which transient

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institutions react to announcements of small negative earnings surprises in the post–Regulation Fair Disclosure (FD) period during which management is prohibited from disclosing private information to selected investors, including institutional investors and sell-side analysts.

Our study is motivated by the long-standing debate on transient institutions' independent information acquisition and processing ability.[2] The myopic investor view argues that transient institutions often misinterpret accounting information, resulting in the destabilization of stock prices and reduced stock market efficiency. In contrast, the sophisticated investor view posits that transient institutions are smart traders who know how to interpret accounting information and their trading helps increase the informational efficiency of stock prices.

Prior research examining transient institutions' trading behavior has found mixed evidence (see the ''Literature on Transient Institutions' Use of Accounting Information'' section for a detailed review). More importantly, there is little direct evidence on transient institutions' independent information acquisition and processing ability, because most prior studies do not distinguish between transient institutions' two sources of information: superior access to management's private information versus independent information acquisition and processing ability. Notable exceptions are studies examining transient institutions' trading behavior prior to important events such as a break in a string of consecutive earnings increases (e.g., Ke & Petroni, 2004; Ke, Petroni, & Yu, 2008) and announcements of accounting restatements (e.g., Li, Radhakrishnan, Shin, & Zhang, 2011). These studies generally find that transient institutions can predict the events in the pre–Regulation FD period but not in the post–Regulation FD period, suggesting that transient institutions' information on the future events stems from their privileged access to management's private information. Similarly, after analyzing the returns and stock holdings of institutional investors over 1980-2007, Lewellen (2011) concludes that institutional investors possess little stock picking skills, especially in the period after 2000, which coincides with the passage of Regulation FD. Therefore, these studies suggest that transient institutions may not have an independent information acquisition and processing ability, and they may not be able to correctly interpret public financial disclosures after Regulation FD eliminates their access to management's private information.

Direct evidence on transient institutions' independent information acquisition and processing ability is scarce also because institutional investors' detailed trading records are not publicly available. For example, the most commonly used database to study institutional investors' trading behavior, Spectrum, contains only institutional investors' quarterly ownership changes. Hence, it is fairly difficult for prior researchers (e.g., Ke et al., 2008) to design convincing research experiments to test the degree of sophistication in transient institutions' independent information acquisition and processing.

In this study, we utilize a proprietary database of institutional investors' daily stock trading records to examine the degree of efficiency with which transient institutions react to announcements of small negative earnings surprises, defined as quarterly earnings per share that fall short of analysts' consensus forecasts by one penny, in the post–Regulation FD period. For benchmarking purposes, we also test transient institutions' trading reactions to earnings surprises adjacent to the small negative earnings surprise: -2 cents, 0 cent, $+1$ cent, and $+2$ cents. Because Regulation FD prohibits management of U.S. firms from disclosing nonpublic information to select investors including institutions and financial analysts (see, for example, Gintschel & Markov, 2004; Ke et al., 2008), we deliberately limit our sample period to the post–Regulation FD period to ensure that our results are not

driven by transient institutions obtaining management's private information directly or indirectly (e.g., via sell-side analysts).[3]

We focus on small negative surprises because the extant academic literature (see, for example, Bhojraj, Hribar, Picconi, & McInnis, 2009; Donelson et al., 2009; Graham, Harvey, & Rajgopal, 2005; Grundfest & Malenko, 2009) and business press (see, for example, Opdyke, 2001) document that many CEOs of publicly traded U.S. firms are willing to sacrifice long-term firm value to avoid reporting small negative earnings surprises. One frequently cited explanation for management's avoidance of small negative earnings surprises is the concern that transient institutions would misinterpret even an innocuous small negative earnings surprise as a sign of bad news (e.g., Fox, 1997; Frankel et al., 2010; Graham et al., 2005). Many CEOs fear that transient institutions' indiscriminant selling upon small negative earnings surprises would cause unwarranted stock price drops and increased stock return volatility (Graham et al., 2005; Opdyke, 2001). Our study directly tests the validity of this common managerial allegation.

To determine the degree of sophistication with which transient institutions react to announcements of small negative earnings surprises, we examine three interrelated research questions. Our first question examines how transient institutions trade in reaction to announcements of small negative earnings surprises. To mitigate the effects of confounding events on institutional investors' trading, we focus on transient institutions' trading on the day immediately following the quarterly earnings announcement (denoted as Event Day 0).[4]

Our second question examines whether transient institutions' trading in reaction to small negative earnings surprises is positively associated with the abnormal stock return on Event Day 0. While it is difficult to directly demonstrate the causal impact of transient institutions' trading on stock prices, a positive contemporaneous association between transient institutions' trading and the abnormal return is a necessary condition for transient institutions' trading to move stock prices.

Our third question examines whether transient institutions' trading on Event Day 0 represents an overreaction or a rational response to announcements of small negative earnings surprises. If transient institutions' trading on Event Day 0 is an overreaction that results in short-term stock undervaluation, future stock prices would reverse, and thus we should expect transient institutions' trading on Event Day 0 to be negatively correlated with the subsequent abnormal stock return. However, if transient institutions' trading on Event Day 0 represents a rational response, it should not be negatively correlated with the subsequent abnormal stock return. Furthermore, to the extent that contemporaneous stock prices do not fully reflect the private information contained in transient institutions' stock trades on Event Day 0, transient institutions' stock trading should be positively correlated with the subsequent abnormal stock return. This is because transient institutions' private information should be gradually reflected in stock prices through future information revelation.

With regard to our first research question, we find the following main results. First, transient institutions do sell intensively in reaction to announcements of small negative earnings surprises. Second, transient institutions' selling in response to small negative earnings surprises is almost twice as large as their selling in response to −2-cent earnings surprises. This finding is consistent with management's allegation that transient institutions overreact to small negative earnings surprises. Third, transient institutions' selling in reaction to small negative earnings surprises is primarily driven by growth (i.e., low book-to-market) firms. We find no evidence that transient institutions sell significantly in reaction to

announcements of value firms' small negative earnings surprises. Therefore, we focus on growth firms in the following tests of our second and third research questions.[5]

With regard to our second research question, we find that transient institutions' trading in reaction to small negative earnings surprises is positively correlated with contemporaneous abnormal stock returns. This evidence is consistent with the management's perception that transient institutions' trading has a material impact on contemporaneous stock prices.

With regard to our third research question, we find no evidence that transient institutions' selling in reaction to small negative earnings surprises is an overreaction. Specifically, transient institutions' trading on Event Day 0 is not negatively correlated with future abnormal stock returns in the 3 or 6 months subsequent to the earnings announcement dates. To the contrary, we find that transient institutions' trading in reaction to small negative earnings surprises is *positively* associated with the subsequent abnormal returns, suggesting that transient institutions' selling on Event Day 0 is informed, and stock prices on Event Day 0 do not fully incorporate the private information contained in transient institutions' stock trades.[6] Overall, our results suggest that transient institutions have an independent information acquisition and processing ability and know how to correctly interpret small negative earnings surprises.

As part of our third research question, we assess the impact of transient institutions' stock trading on Event Day 0 on the speed with which stock prices reflect the value implications of small negative earnings surprises. Specifically, for each small negative earnings surprise observation, we compute the ratio of abnormal return on Event Day 0 to the abnormal return from Event Day 0 up to 3 months subsequent to the earnings announcement date (denoted as *RATIO*). For the top (i.e., buy) and bottom (i.e., sell) deciles of transient institutions' trading on Event Day 0 in reaction to small negative surprises, the median *RATIO* is 22% and 44%, respectively. In contrast, for the remaining deciles, the median *RATIO* is only 8%, significantly smaller than the median *RATIO* for the top and bottom deciles. This evidence suggests that transient institutions' trading on Event Day 0 helps improve the efficiency of stock prices with regard to small negative earnings surprises.[7] Taken together, our findings suggest that transient institutions' trading behavior in response to public financial disclosures plays an important role in improving market efficiency.

The rest of the article is organized as follows. The ''Literature on Transient Institutions' Use of Accounting Information'' section provides a review of the literature on transient institutions' use of accounting information. The ''Data Sources, Sample Selection Procedures, and Descriptive Statistics'' section discusses the data sources, sample selection procedures, and descriptive statistics. The ''Transient Institutions' Trading Reactions to Small Negative Earnings Surprises'' section presents the analysis of transient institutions' trading in reaction to small negative earnings surprises. ''The Contemporaneous Association Between Transient Institutions' Trading in Reaction to Small Negative Earnings Surprises and Abnormal Stock Returns on Event Day 0'' section shows the results on the contemporaneous association between transient institutions' trading and the abnormal stock returns on Event Day 0. ''The Association Between Transient Institutions' Trading in Reaction to Small Negative Earnings Surprises and Future Abnormal Returns'' section discusses the results on the association between transient institutions' trading in reaction to small negative earnings surprises and the abnormal stock returns subsequent to the earnings announcement dates. The ''Further Analyses of Transient Institutions' Trading Behavior'' section reports transient institutions' regression results using alternative

definitions of transient institutions' trading response to small negative earnings surprises. The ''Conclusion'' section concludes.

Literature on Transient Institutions' Use of Accounting Information

As noted in the ''Introduction'' section, there are two contrasting views on transient institutions in the extant literature, referred to as the sophisticated investor view and myopic investor view, respectively. While the sophisticated investor view is fairly easy to understand, the myopic investor view deserves more explanations because it is contrary to the common perception of institutional investors.

The existing literature offers several nonmutually exclusive explanations for the alleged myopic trading behavior of transient institutions. One explanation is that many transient institutions are simply naïve traders who do not know how to interpret accounting information, and therefore they would always interpret all small negative earnings surprises as bad news. While strong, this view is shared by a significant number of corporate executives surveyed by Graham et al. (2005). Barras, Scaillet, and Wermers (2010) also find that a large percentage of the managers for actively managed U.S. domestic equity mutual funds are unskilled as evidenced by their funds' significant underperformance even before considering fund management fees.

Another explanation for transient institutions' myopic trading behavior is herding.[8] The extant literature suggests at least two nonmutually exclusive reasons why transient institutions herd. The first reason is transient institutions' reputation concerns arising from the uncertainty about their investment skills (see Scharfstein & Stein, 1990). Because making a bold investment decision that turns out to be bad is costly to the reputation of transient institutions, especially those who are young and inexperienced (see, for example, Chevalier & Ellison, 1999), transient institutions have an incentive to herd to preserve the uncertainty about their investment skills and avoid being fired or adversely affected in annual performance evaluations. The second reason for transient institutions' herding is lack of private information. Both Bikhchandani, Hirshleifer, and Welch (1992) and Graham (1999) show that herding decreases with the precision of a decision maker's private information. The extant literature (e.g., Chevalier & Ellison, 1999; Choi & Sias, 2009; Graham, 1999; Sias, 2004; Wermers, 1999) finds that institutional investors herd, especially those who actively manage their investment portfolios (e.g., mutual fund managers). However, there is no clear consensus on whether institutional investors' herding increases or decreases stock market efficiency (see, for example, Brown, Wei, & Wermers, 2013; Puckett & Yan, 2008; Wermers, 1999).

A third explanation for transient institutions' myopic trading behavior is the destabilizing rational speculation hypothesis proposed by De Long, Shleifer, Summers, and Waldmann (1990). According to this hypothesis, transient institutions are sophisticated investors who know how to interpret publicly available financial information such as small negative earnings surprises. However, there are some noise traders (e.g., individuals) who overreact to publicly available financial information. Due to limits to arbitrage, transient institutions may find it costly to trade against the noise traders. Instead, they may find it optimal to jump on the bandwagon and sell ahead of the noise traders. Transient institutions' early selling could create a stock price momentum that would trigger noise traders' positive-feedback trading, thereby amplifying the stock price's initial decline and subsequent reversal in reaction to the financial information. Brunnermeier and Nagel (2004) find

evidence consistent with the destabilizing rational speculation hypothesis for a sample of hedge funds during the technology bubble in the later 1990s.

The extant literature provides mixed evidence on whether institutional investors help move stock prices toward fundamental value as predicted by the sophisticated investor view or drive stock prices away from fundamental value as predicted by the myopic investor view. Papers supporting the sophisticated investor view include Walther (1997); Wermers (1999); Bartov, Radhakrishnan, and Krinsky (2000); Ali, Durtschi, Lev, and Trombley (2004); Sias (2004); Ke and Petroni (2004); and Ke and Ramalingegowda (2005); among others. Papers supporting the myopic investor view of institutional investors include Harris and Gurel (1986); Bushee (2001); Dennis and Strickland (2002); Brunnermeier and Nagel (2004); Puckett and Yan (2008); Gutierrez and Kelley (2009); Dasgupta, Prat, and Verardo (2011); and Lewellen (2011); among others. Dasgupta et al. find that the myopic behavior of institutional investors appears to have become more severe in the second half of their sample period (1994-2004) than in the first half (1983-1993). They attribute this result to the unprecedented growth in the delegated portfolio management industry during their sample period. Similarly, after analyzing the returns and stock holdings of institutional investors over 1980-2007, Lewellen concludes that institutional investors possess little stock picking skills, in particular in the period after 2000, which coincides with the passage of Regulation FD.

With regard to earnings announcements, the extant literature (e.g., Hand, 2002; Kinney, Burgstahler, & Martin, 2002; Skinner & Sloan, 2002) finds no evidence that on average stock prices overreact to small negative earnings surprises. However, the sample periods considered in these earlier studies predate the passage of Regulation FD. It is possible that transient institutions are no longer able to correctly interpret small negative earnings surprises in the post–Regulation FD period when they lost access to management's private information (Ke et al., 2008). In addition, these studies do not condition their analyses on transient institutions' trades, which is important in assessing the price impact of transient institutions because transient institutions do not invest in all firms and may not always sell in reaction to small negative earnings surprises. Hence, we believe that it is an open question whether stock prices would overreact to small negative earnings surprises when there is significant selling by transient institutions.

One important limitation of the extant institutional investor literature is that most studies do not distinguish between two sources of transient institutions' sophistication: superior access to management's private information versus independent information acquisition and processing ability. Notable exceptions are Ke and Petroni (2004) and Ke et al. (2008). Using a sample period prior to the effective date of Regulation FD, Ke and Petroni show that transient institutions have the ability to predict a break in a string of consecutive quarterly earnings increases at least one quarter in advance of the break quarter. They further show that transient institutions' predictive ability is limited to firms that hold regular conference calls with analysts and institutions. As conference calls are a common channel through which management communicate their private information to select investors such as analysts and institutions in the pre–Regulation FD period, their evidence suggests that transient institutions' predictive ability is due to their access to management's private information. Ke et al. use the same setting of earnings string breaks but investigate transient institutions' predictive ability before versus after Regulation FD. While they find similar results to Ke and Petroni in the pre–Regulation FD period, they fail to document similar findings in the post–Regulation FD period. Ke et al.'s findings imply that Regulation FD

has been effective in curtailing transient institutions' access to management's private information.

However, it is difficult to infer from Ke and Petroni (2004) and Ke et al. (2008) whether transient institutions possess an independent information acquisition and processing ability. This is because most prior studies including Ke and Petroni and Ke et al. only have access to the quarterly institutional ownership data from Spectrum.[9] As noted by Chen (2007) and Campbell et al. (2009), using the quarterly institutional ownership change as a proxy for institutional investors' trading reactions to earnings announcements is problematic for two reasons. First, earnings announcement is not the only news event during a quarter, and thus any contemporaneous relation between quarterly earnings surprises and quarterly institutional ownership changes could be driven by institutional investors' reaction to other correlated omitted events. Second and more importantly, the quarterly institutional ownership change does not distinguish institutional investors' trading prior to an earnings announcement from their trading subsequent to the earnings announcement. While institutional investors' selling subsequent to the announcement of a small negative earnings surprise may be an overreaction that could result in short-term mispricing, institutional investors' trading prior to the earnings announcement could be due to their superior private information about the forthcoming earnings announcement and thus should not be viewed as an overreaction. We show in the "Further Analyses of Transient Institutions' Trading Behavior" section that using transient institutions' ownership change over the entire quarter of the earnings announcement as a proxy for their trading reactions to earnings announcements would lead to significantly different conclusions.

Data Sources, Sample Selection Procedures, and Descriptive Statistics

Data Sources and Sample Selection Procedures

Our initial sample of institutional investors' stock trading records is provided by the Abel/Noser Corporation, a leading equity trading execution quality measurement service provider for institutional investors, for the period January 1, 1999, to December 31, 2005.[10] The Abel/Noser database includes all the trades of the included money managers. For each stock trade made by an institution, the Abel/Noser database discloses the clientcode (a numeric ID for the institution), date of execution, stock traded, number of shares executed, execution price, and whether the trade is a buy or sell. Although the Abel/Noser database contains the time stamps of the institutional stock trades, they are not reliable and thus not used to construct our institutional trading variable.

As the Abel/Noser database does not contain institutions' stock holding data, we cannot rely on the Abel/Noser database alone to identify transient institutions. Hence, we use Bushee's (1998, 2001) institutional investor classifications which are available for all institutions in Spectrum. Bushee (1998, 2001) classifies all institutional investors in Spectrum into three types, denoted as transient, dedicated, and quasi-indexing institutions. Transient institutions have high-portfolio turnover and a diversified portfolio. Dedicated institutions have low turnover and more concentrated portfolio holdings, whereas quasi-indexing institutions have low turnover and diversified portfolio holdings. By construction, transient institutions are expected to trade on short-term earnings news more frequently than the other two types of institutions (see Ke & Petroni, 2004), but this fact does not necessarily imply that transient institutions would misreact to earnings news. Bushee performs the

institutional investor classification annually, but each institution's classification is highly stable over time with a year-to-year correlation of greater than .80. Therefore, we assign each institution to the type that is the most frequent over the maximum available sample period 1979-2005 in Spectrum.

Unlike Spectrum, Abel/Noser does not disclose institutional investors' stock holdings at any time. In addition, to protect the privacy of the firm's clients, Abel/Noser does not disclose the names of its institution clients nor provide a link between the clientcode and mgrnum (the institution ID used in Spectrum). Therefore, we use a self-created algorithm to link the institution ID in the Abel/Noser database with the institution ID in Spectrum (see the Online Appendix for the details). As shown in Table 1, we are able to find matches for 103 institutions in the Abel/Noser database, representing approximately 70% of the Abel/Noser database in terms of either the dollar value of shares traded or the number of shares traded over 1999-2005.

Among the 103 matched institutions, 35 are transient, eight dedicated, and 51 quasi-indexing (see Table 1). Nine of the 103 institutions do not have Bushee's classifications and thus will be dropped in subsequent analyses. As shown in Table 1, the nine dropped institutions represent a negligent portion of our sample in terms of trading volume.[11]

We obtain the quarterly earnings announcements over the same time period 1999-2005 (including the fourth fiscal quarter) from the Institutional Brokers' Estimate System (IBES). We limit the sample to U.S. common stocks only (Center for Research in Security Prices [CRSP] share code = 10 or 11) that have made timely earnings announcements (i.e., within 45 days after the fiscal quarter-end for Fiscal Quarters 1 to 3 and within 90 days after the fiscal year-end for the fourth fiscal quarter), and have nonmissing analysts' consensus (i.e., mean) earnings forecasts issued no later than approximately 1 calendar month prior to the earnings announcement date. We exclude non-U.S. firms because they are not subject to Regulation FD (though some foreign firms may be subject to similar rules in their home countries). We exclude delayed earnings announcements to avoid potential complications associated with such delays. Those restrictions result in a sample of 78,576 quarterly earnings announcements over 1999-2005.

Because we do not have reliable time stamps of institutional investors' stock trades, we cannot determine the timing of institutional trades relative to the timing of the earnings announcements that occurred during the normal trading hours. Hence, we further require all the earnings announcements to occur either before the market opening or after the market closing. We obtain the time stamps of the earnings announcements from Thomson Financial's StreetEvents database, which is also used by the *Wall Street Journal*.[12] We retained 44,665 (56.8%) out of the 78,576 earnings announcements from IBES after this sample restriction. We lost 31,708 earnings announcements due to missing earnings announcement time stamps from StreetEvents and 2,203 (about 4.7% of all earnings announcements with valid time stamps) earnings announcements that are made during normal trading hours. Although we lost almost half of the earnings announcements, our final sample does not appear to be severely biased because the distribution of the earnings surprises is similar for the retained observations and the lost observations (untabulated).

The Final Sample

We merge the institutional investor stock transaction data (the unit of observation is a firm–institution–day) with the earnings announcements (the unit of observation is a firm quarter) to create the final sample used to calculate institutional investors' trading in

Table 1. Descriptive Statistics of the 103 Matched Institutions by the Institution Types Over the Period 1999-2005.

Institution classification	Number of institutions	M (Mdn) number of months of trading data in Abel/Noser	M (Mdn) dollar value of trades (in billions) per institution	The dollar value of trades (in billions) by all institutions	The dollar value of trades as a percentage of the total dollar value of trades in Abel/Noser	Total number of shares traded (in billions) by all institutions	Total number of shares traded as a percentage of the total shares traded in Abel/Noser
Transient	35	33 (25)	84 (20)	2,951	14.8%	96	14.7%
Dedicated	8	44 (52)	888 (10)	7,106	35.6%	224	34.2%
Quasi-indexing	51	36 (36)	79 (11)	4,016	20.1%	134	20.5%
Unclassified	9	15 (11)	9 (6)	78	0.4%	2	0.4%
All institutions matched with Spectrum	103	34 (29)	137 (12)	14,151	70.9%	458	69.7%
All Abel/Noser institutions	840	33 (23)	24 (1)	19,945	100%	656	100%

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response to earnings announcements. Specifically, we link each earnings announcement to *each* of the 103 institutions, including the institutions that have no trading records around the firm's earnings announcement per Abel/Noser. That is, if an institution has no trading records around the earnings announcement in a firm quarter, we create new observations for the days around the earnings announcement and temporarily code the value of the stock trade to be missing for the new observations. The unit of observation in the merged sample is a firm–institution–day.

There are several reasons why not all of the 103 institutions have trading observations in the days around all the earnings announcements. First, some institutions entered the Abel/Noser database after 1999 (the first year of our sample) or exited the database before 2005 (the last year of our sample). Thus, these institutions' trades prior to the entry or subsequent to the exit, even if they exist, are not recorded in the database. Clearly, it is incorrect to assume that there are no trades around the earnings announcements for those institutions. To control for this data truncation problem, we require each of the 103 institutions to have nonmissing trading observations in at least one firm in each of the 5 months centered around the earnings announcement month. The 5-month cutoff is arbitrarily selected, but we have no reason to believe that our inferences are sensitive to this cutoff.

Second, some firms are not on the radar screens of the 103 institutions, and thus we observe no stock trading records by the institutions in the days around those firms' earnings announcements. Given the nature of our research questions, we believe that it is more appropriate to exclude such firm-quarter-institution observations from our analysis. As it is difficult to determine which firms are on an institution's radar screen, we use the following sample restrictions as an approximation:

1. Delete the firm-quarter-institution trading observations associated with the earnings announcements whose total institutional ownership at the beginning of the earnings announcement quarter reported in Spectrum is less than 10% of the common shares outstanding. We assume that firms with low total institutional ownership are less likely to be watched by institutional investors.
2. Delete the firm-quarter-institution trading observations if the institutions never traded in the firm during our sample period per Abel/Noser. We assume that the firms that an institution never traded on during our entire sample period 1999-2005 are less likely to be on the watch list of that institution.

Third, for the remaining institutions whose stock trade values are missing for the days around the earnings announcements, we assume that the missing trading values are due to the institutions' conscious decision not to trade and therefore are recoded as 0.

These additional sample restrictions reduce the sample from 44,665 to 42,779 earnings announcements. For firms that report negative earnings surprises, we further require each institution to have a nonzero stock ownership at the beginning of the earnings announcement quarter. We impose this restriction to mitigate the concern that institutions do not sell upon announcements of negative earnings surprises simply because they own no shares in those firms. This results in a final sample of 42,632 earnings announcements over the period January 1, 1999, to December 31, 2005, about 31,774 of which are announcements of nonnegative earnings surprises.

As the subsequent regression analyses will focus on transient institutions' trading reactions to announcements of small negative earnings surprises in the post–Regulation FD period, we limit our regression sample of earnings announcements to the period January 1,

2001, to December 31, 2005, and exclude earnings surprises that are larger than 2 cents in magnitude.[13] The final sample used in later regression analyses contains 17,487 earnings announcements, 14,690 of which are announcements of nonnegative earnings surprises.[14]

Descriptive Statistics of Institutional Ownership in Spectrum

Recall that the 103 institutions included in Table 1 represent only a portion of the institution population in Spectrum. To gain a sense of the economic significance of the institution population for our sample firms, Table 2 reports the descriptive statistics on the number of institutions (N), the stock ownership by all institutions (IO), and the average stock ownership per institution (AVE_IO) in Spectrum for our final regression sample of 17,487 earnings announcements over the period January 1, 2001, to December 31, 2005. The median number of institutions at the quarter-end is 41, 4, and 70 for transient, dedicated, and quasi-indexing institutions, respectively. The median total institutional ownership at the quarter-end is 14.94%, 6.79%, and 33.16% for transient, dedicated, and quasi-indexing institutions, respectively. The median of the average institutional ownership per institution is 0.38%, 1.36%, and 0.42% for transient, dedicated, and quasi-indexing institutions, respectively. These descriptive statistics suggest that both the number of institutions and total institutional stock ownership in a typical firm quarter in our sample are economically significant for transient institutions and quasi-indexing institutions. In addition, consistent with Bushee's (2001) institution-type classification, the average quarter-end stock ownership per institution is lower for transient and quasi-indexing institutions than for dedicated institutions.

Transient Institutions' Trading Reactions to Small Negative Earnings Surprises

We first examine transient institutions' trading on Event Day 0 (AVE_NETBUY) in reaction to announcements of small negative earnings surprises during the post–Regulation FD period (see the appendix for all variable definitions, including Event Day 0).[15] For benchmarking purposes, we also examine transient institutions' trading responses to the following four adjacent earnings surprise categories: -2, 0, $+1$, and $+2$ cents. We do not consider the earnings surprises greater than $+2$ or less than -2 cents (referred to as large earnings surprises) because it is less meaningful to compare transient institutions' trading reactions to small negative earnings surprises with their trading reactions to large earnings surprises. However, inferences are similar if we include the large earnings surprises in the analysis.

Panel A of Table 3 provides a univariate analysis of transient institutions' average stock trading on Event Day 0 (AVE_NETBUY) across the five earnings surprise categories. To increase the readability of the descriptive statistics, AVE_NETBUY is multiplied by 1,000 in Table 3. We find that the mean AVE_NETBUY is significantly negative for both the -2-cent earnings surprises and small negative earnings surprises, and insignificantly different from 0 for the other three categories of earnings surprises. More importantly, the mean AVE_NETBUY is significantly more negative for the small negative earnings surprises than for the -2-cent earnings surprises (t test's two-tailed $p = .027$). These univariate statistics are consistent with management's allegation that transient institutions sell intensively in reaction to announcements of small negative earnings surprises.

To make sure that the differences in AVE_NETBUY between small negative earnings surprises and the other earnings surprise categories are due to the earnings announcement

Table 2. Descriptive Statistics of Institutional Ownership in Spectrum for the Firm Quarters in Our Final Sample Over 2001-2005 (N = 17,487).

	M	Mdn	SD
N_TRANSIENT	51.87	41.00	42.44
IO_TRANSIENT (%)	16.75	14.94	10.55
AVE_IO_TRANSIENT (%)	0.51	0.38	0.54
N_DEDICATED	5.14	4.00	3.68
IO_DEDICATED (%)	8.60	6.79	7.95
AVE_IO_DEDICATED (%)	1.98	1.36	2.18
N_INDEX	109.93	70.00	127.19
IO_INDEX (%)	32.40	33.16	14.23
AVE_IO_INDEX (%)	0.49	0.42	0.35

Note. All the variables shown in this table are defined using the institutional investor data from Spectrum. *N_TRANSIENT* is the number of transient institutions at the end of a calendar quarter. *IO_TRANSIENT* is the stock ownership by all transient institutions at the end of a calendar quarter. *AVE_IO_TRANSIENT* is *IO_TRANSIENT* divided by *N_TRANSIENT* at the end of a calendar quarter. The other variables are defined in a similar fashion for dedicated institutions and quasi-indexing institutions, respectively.

per se rather than other determinants of institutional trading, we also estimate the following ordinary least squares (OLS) regression model (firm and time subscripts are omitted for brevity):

$$AVE\_NETBUY = \beta_1 MINUS2\_SUR + \beta_2 SMALLNEG\_SUR$$
$$+ \beta_3 ZERO\_SUR + \beta_4 SMALLPOS\_SUR + \beta_5 PLUS2\_SUR \qquad (1)$$
$$+ CONTROLS + \varepsilon.$$

We omit the intercept from Model 1 to avoid multicollinearity because the model includes all five earnings surprise categories. Following Ke and Petroni (2004), *CONTROLS* include *LNSIZE, BM,* and *MOM, BEGOWN, PORTWT, RETQ1,* and *RETQ24* (see the appendix for detailed variable definitions). Following Easton and Zmijewski (1989), we also include *RET_PRE_EA* to control for the potential arrival of new information between analysts' consensus forecast date and the earnings announcement date. All the continuous variables are winsorized at the top and bottom 1% to reduce the influence of outliers.

Panel B of Table 3 shows the regression results of Model 1.[16] The reported standard errors in this and subsequent tables allow heteroscedasticity and any type of correlation for observations of the same firm but assume independence for observations across different firms (Rogers, 1994). We also compute the standard errors and *p* values using the Fama and MacBeth (1973) method and obtain similar conclusion (untabulated).

Before discussing the regression results, we would like to note that the stand-alone coefficients on the five earnings surprise dummies are not meaningful to interpret because they represent the average transient institution selling for a very unique case (i.e., when all the control variables are set to 0). However, the coefficient difference between any two earnings surprise dummies can be easily interpreted. For example, the coefficient difference between *SMALLNEG_SUR* and *MINUS2_SUR* represents the difference in *AVE_NETBUY* between the two earnings surprise dummies after controlling for the other determinants of

Table 3. Regression Results of Transient Institutions' Trading in Reaction to Announcements of Small Earnings Surprises.

Panel A: Descriptive Statistics.

	Earnings surprises				
	−2 cents	−1 cent	0 cent	+1 cent	+2 cents
	M (Mdn) [SD] {n}				
AVE_NETBUY × 1,000	−1.1923** (0.0000) [28.4000] {1,039}	−3.6096*** (0.0000) [27.5575] {1,758}	−0.1547 (0.0000) [16.1003] {5,768}	−0.3999 (0.0000) [16.3207] {5,204}	0.1457 (0.0000) [14.7993] {3,718}

Panel B: Regression Result.

	Dependent variable = *AVE_NETBUY*
	Coefficient (*SE*)
MINUS2_SUR	−0.0026** (0.0012)
SMALLNEG_SUR	−0.0048*** (0.0011)
ZERO_SUR	−0.0016* (0.0008)
SMALLPOS_SUR	−0.0018** (0.0008)
PLUS2_SUR	−0.0013 (0.0008)
LNSIZE	0.0000 (0.0001)
BM	0.0027*** (0.0004)
RETQ24	−0.0004 (0.0003)
RETQ1	0.0010 (0.0007)
RET_PRE_EA	−0.0016 (0.0019)
BEGOWN	−0.0003 (0.0004)
PORTWT	0.0660 (0.1077)
N	17,487
Adjusted R^2	.01

Two-tailed *p* value for the null hypothesis	
SMALLNEG_SUR = MINUS2_SUR	.033
SMALLNEG_SUR = ZERO_SUR	<.001
SMALLNEG_SUR = SMALLPOS_SUR	<.001
SMALLNEG_SUR = PLUS2_SUR	<.001

Note. The sample contains only earnings announcements during the period January 1, 2001, to December 31, 2005, whose earnings surprises are no greater than 2 cents in magnitude. See the appendix for variable definitions. All continuous variables are winsorized at the top and bottom 1% to reduce the influence of outliers. The reported standard errors allow heteroscedasticity and any type of correlation for observations of the same firm but assume independence for observations across different firms (Rogers, 1994).
*p < .1. **p < .05. ***p < .01 (two-tailed).

AVE_NETBUY. For this reason, we focus on the differences between the coefficient on *SMALLNEG_SUR* and the coefficients on the other earnings surprise dummies in the following discussion.

Consistent with the univariate results in Panel A of Table 3, the coefficient on *SMALLNEG_SUR* in Panel B of Table 3 is significantly more negative than the coefficients

on the other four earnings surprise categories (two-tailed p = .033 or lower), suggesting that transient institutions sell significantly more in reaction to small negative earnings surprises than in reaction to the other four adjacent earnings surprises.[17] With the exception of the coefficient on *BM*, none of the coefficients on the control variables are significant.

Prior research shows that the stock market's reactions to earnings surprises are stronger for growth firms than for value firms (see, for example, Skinner & Sloan, 2002). Hence, we also estimate Regression Model 1 for growth firms and value firms separately by dividing our sample into two halves based on the median BM. As shown in Table 4, transient institutions' intensive selling in reaction to small negative earnings surprises in Table 3 is driven by growth firms. For growth firms, the differences in the coefficient on *SMALLNEG_SUR* and the coefficients on the other four earnings surprise dummies continue to be significant (two-tailed p < .001). For value firms, however, the differences are never significantly different from 0 (two-tailed p = .359 or higher). For this reason, we limit our subsequent empirical analyses to growth firms only, though inferences are similar if we use the full sample.

Prior research suggests that transient institutions often have advance knowledge of forthcoming earnings surprises and trade accordingly even prior to the earnings announcement date. Hence, there is a possibility that the differences in transient institutions' trading response to small negative earnings surprises versus the other earnings surprise categories in Table 4 are due to the fact that transient institutions obtain private information about the other earnings surprises earlier and thus have traded prior to the earnings announcement date. To check this possibility, we run a model similar to Model 1 except that the dependent variable is transient institutions' mean *AVE_NETBUY* over the calendar month prior to the earnings announcement date. As shown in Table 5, the coefficient on *SMALLNEG_SUR* is not significantly different from the coefficients on the other earnings surprise dummies. Therefore, there is no evidence that transient institutions learn of the news about the other four earnings surprises earlier than the news of the small negative earnings surprises.[18]

How economically significant is the selling by the population of transient institutions (including those not included in the Abel/Noser database) in reaction to small negative earnings surprises for growth firms in Table 4? To answer this question, we use two different benchmarks. First, for each transient institution included in the Abel/Noser database, we compute the institution's net stock purchase in reaction to a small negative earnings surprise on Event Day 0 as a percentage of its stock ownership in the firm at the beginning of the quarter (denoted as *NETBUY_PERCENTAGE*). As a firm could be owned by multiple transient institutions, we compute the average *NETBUY_PERCENTAGE* across all transient institutions in the same firm quarter (denoted as *AVE_NETBUY_PERCENTAGE*). We assume that the distribution of *AVE_NETBUY_PERCENTAGE* based on the transient institutions included in the Abel/Noser database only is representative of the distribution of *AVE_NETBUY_PERCENTAGE* for the population of transient institutions who traded in these small negative earnings surprise quarters.

Second, for each of the growth firms' small negative earnings surprise firm quarters in our sample, we directly estimate the total trading volume by the entire population of transient institutions (including those not in the Abel/Noser database) in reaction to a small negative earnings surprise as a percentage of the firm's total trading volume on Event Day 0 (denoted as *VOL_PERCENTAGE*). Specifically, *VOL_PERCENTAGE* for a firm quarter is defined as the average daily trading volume of all the transient institutions included in the Abel/Noser database multiplied by the number of transient institutions in Spectrum (i.e.,

Table 4. Regression Results of Transient Institutions' Trading in Reaction to Announcements of Small Earnings Surprises: Growth Firms Versus Value Firms.

	(1)	(2)
	Growth firms	Value firms
	Dependent variable = *AVE_NETBUY*	
	Coefficient (*SE*)	
MINUS2_SUR	−0.0036* (0.0020)	0.0001 (0.0015)
SMALLNEG_SUR	−0.0096*** (0.0016)	0.0012 (0.0013)
ZERO_SUR	−0.0036*** (0.0013)	0.0018* (0.0010)
SMALLPOS_SUR	−0.0037*** (0.0013)	0.0015 (0.0011)
PLUS2_SUR	−0.0026** (0.0013)	0.0014 (0.0011)
LNSIZE	0.0003** (0.0002)	−0.0003** (0.0001)
BM	0.0017 (0.0019)	0.0009 (0.0006)
RETQ24	−0.0003 (0.0005)	−0.0006 (0.0005)
RETQ1	0.0016 (0.0011)	0.0005 (0.0009)
RET_PRE_EA	−0.0075** (0.0031)	0.0047** (0.0024)
BEGOWN	−0.0008 (0.0007)	−0.0001 (0.0004)
PORTWT	−0.0983 (0.1377)	0.2220 (0.1938)
n	8,743	8,744
Adjusted R^2	.01	.00
Two-tailed p value for the null hypothesis		
SMALLNEG_SUR = MINUS2_SUR	<.001	.359
SMALLNEG_SUR = ZERO_SUR	<.001	.479
SMALLNEG_SUR = SMALLPOS_SUR	<.001	.757
SMALLNEG_SUR = PLUS2_SUR	<.001	.851

Note. The sample contains only earnings announcements during the period January 1, 2001, to December 31, 2005, whose earnings surprises are no greater than 2 cents in magnitude. Growth (value) firms refer to firms whose *BM* is less (greater) than the sample median. See the appendix for the other variable definitions. All continuous variables are winsorized at the top and bottom 1% to reduce the influence of outliers. The reported standard errors allow heteroscedasticity and any type of correlation for observations of the same firm but assume independence for observations across different firms (Rogers, 1994).
*$p < .1$. **$p < .05$. ***$p < .01$ (two-tailed).

the population) divided by the firm's entire daily trading volume. As we do not have the trading volumes of all transient institutions in the Spectrum population, we use transient institutions' average daily trading volume in the Abel/Noser database as a proxy for the average daily trading volume for the transient institutions in Spectrum.

For all the growth firms' small negative earnings surprise firm quarters, the mean *AVE_NETBUY_PERCENTAGE* is 13.3%. As a benchmark, the mean *AVE_NETBUY_PERCENTAGE* is 9.99% for the −2-cent earnings surprises. The mean *VOL_PERCENTAGE* is 22% for the growth firms' small negative earnings surprise firm quarters. As a comparison, the mean *VOL_PERCENTAGE* on Event Day 0 is only 17% for the growth firms' −2-cent earnings surprises. Overall, these two different comparisons suggest that transient institutions' selling in reaction to growth firms' small negative earnings surprises is economically significant.

Table 5. Replication of Transient Institutions' Regression in Column 1 of Table 4 Using *AVE_NETBUY* Defined Over the Month Prior to Event Day 0.

	Dependent variable = *AVE_NETBUY* over the month prior to Event Day 0
	Coefficient (*SE*)
MINUS2_SUR	−0.0000 (0.0097)
SMALLNEG_SUR	0.0017 (0.0084)
ZERO_SUR	0.0028 (0.0071)
SMALLPOS_SUR	0.0010 (0.0070)
PLUS2_SUR	0.0051 (0.0072)
LNSIZE	−0.0009 (0.0007)
BM	−0.0382*** (0.0088)
RETQ24	−0.0003 (0.0019)
RETQ1	0.0121*** (0.0043)
RET_PRE_EA	0.0110 (0.0121)
BEGOWN	−0.0003 (0.0034)
PORTWT	−0.8621 (0.6846)
n	8,743
Adjusted R^2	.00

Two-tailed *p* value for the null hypothesis	
SMALLNEG_SUR = MINUS2_SUR	.839
SMALLNEG_SUR = ZERO_SUR	.814
SMALLNEG_SUR = SMALLPOS_SUR	.886
SMALLNEG_SUR = PLUS2_SUR	.497

Note. The sample contains only growth firms' earnings announcements during the period January 1, 2001, to December 31, 2005, whose earnings surprises are no greater than 2 cents in magnitude. All the control variables are defined as in the appendix except for the following: (a) *LNSIZE, BM, BEGOWN*, and *PORTWT* are measured at the fiscal quarter-end prior to the earnings announcement date; and (b) *RETQ24* (*RETQ1*) is measured over the 4 to 12 months (3 months) prior to the dependent variable's measurement window. All the continuous variables are winsorized at the top and bottom 1% to reduce the influence of outliers. The reported standard errors allow heteroscedasticity and any type of correlation for observations of the same firm but assume independence for observations across different firms (Rogers, 1994).
*$p < .1$. **$p < .05$. ***$p < .01$ (two-tailed).

The Contemporaneous Association Between Transient Institutions' Trading in Reaction to Small Negative Earnings Surprises and Abnormal Stock Returns on Event Day 0

We use the following OLS regression model to test our second research question: whether transient institutions' trading in reaction to small negative earnings surprises (*AVE_NETBUY*) is positively associated with the contemporaneous abnormal stock return on Event Day 0 (*AR0*):

$$AR0 = (\beta_1 MINUS2\_SUR + \beta_2 SMALLNEG\_SUR + \beta_3 ZERO\_SUR$$
$$+ \beta_4 SMALLPOS\_SUR + \beta_5 PLUS2\_SUR) \times (1 + \beta_6 AVE\_NETBUY) \qquad (2)$$
$$+ CONTROLS + \varepsilon.$$

See the appendix for all variable definitions. Consistent with Model 1, Regression Model 2 includes all five earnings surprise categories.[19] Accordingly, we omit the intercept to avoid perfect multicollinearity. The control variables in *CONTROLS* are the same as those for Model 1. All continuous variables are winsorized at the top and bottom 1% to reduce the influence of outliers.

As cautioned in the ''Introduction'' section, Regression Model 2 cannot be used to directly establish causality from transient institutions' trading (*AVE_NETBUY*) to contemporaneous stock prices (*AR0*). However, if there is a causal effect of transient institutions' trading on contemporaneous stock prices, we should observe a positive association between the two variables for each of the five earnings surprise categories. It is important to note that we do not expect the effect of transient institutions' trading on contemporaneous stock prices to be different across the five earnings surprise categories, even though we focus on the coefficient on *SMALLNEG_SUR × AVE_NETBUY* in this article.

Panel A of Table 6 reports the descriptive statistics of *AR0* by the earnings surprise categories. The mean *AR0* is significantly positive ($+0.93\%$) for the $+2$-cent earnings surprise category and significantly negative (-1.93%) for the -2-cent earnings surprise category. More importantly, the mean *AR0* for the small negative earnings surprise category is also an economically significant -1.85%, comparable with the mean *AR0* for the -2-cent earnings surprise category. The large negative *AR0* for small negative earnings surprises may explain corporate managers' belief that investors overreact to small negative earnings surprises. It is interesting to note that the mean *AR0* is a significant -1.11% for the zero earnings surprise category. This finding is consistent with Hotchkiss and Strickland (2003) and Keung et al. (2010), and suggests that the stock market on average does not interpret meeting analysts' consensus earnings forecasts as good news.

Panel B of Table 6 shows the regression result of Model 2 for growth firms only. We cluster the standard errors by firm (Rogers, 1994). We also compute standard errors and p values using the Fama and MacBeth (1973) method and obtain similar conclusions (untabulated). Consistent with the hypothesis that transient institutions' trading has a significant impact on stock prices, transient institutions' trading on Event Day 0 is significantly positively associated with the contemporaneous abnormal return for all five earnings surprise categories. These results are consistent with management's perception that transient institutions' trading in reaction to earnings surprises (including small negative earnings surprises) moves contemporaneous stock prices.

The Association Between Transient Institutions' Trading in Reaction to Small Negative Earnings Surprises and Future Abnormal Returns

We use the following OLS regression model to test our third research question: whether transient institutions' selling in reaction to growth firms' small negative earnings surprises on Event Day 0 represents an overreaction that would result in a reversal in future stock prices:

$$FUTURE\_AR = (\beta_1 MINUS2\_SUR + \beta_2 SMALLNEG\_SUR + \beta_3 ZERO\_SUR$$
$$+ \beta_4 SMALLPOS\_SUR + \beta_5 PLUS2\_SUR) \times (1 + \gamma AVE\_NETBUY) \qquad (3)$$
$$+ CONTROLS + \varepsilon.$$

Table 6. The Contemporaneous Association Between Transient Institutions' Trading and the Abnormal Return on Event Day 0.

Panel A: Descriptive Statistics.

| | Earnings surprises | | | | |
	−2 cents	−1 cent	0 cent	+1 cent	+2 cents
			M (Mdn) [SD] {n}		
AR0	−0.0193***	−0.0185***	−0.0111***	0.0016	0.0093***
	(−0.0119)	(−0.0112)	(−0.0054)	(0.0021)	(0.0077)
	[0.0682]	[0.0680]	[0.0665]	[0.0679]	[0.0662]
	{1,039}	{1,758}	{5,768}	{5,204}	{3,718}

Panel B. Regression Result.

	Dependent variable = AR0
	Coefficient (SE)
MINUS2_SUR	−0.0316*** (0.0056)
SMALLNEG_SUR	−0.0314*** (0.0051)
ZERO_SUR	−0.0261*** (0.0045)
SMALLPOS_SUR	−0.0102** (0.0045)
PLUS2_SUR	−0.0006 (0.0045)
LNSIZE	0.0011** (0.0004)
BM	0.0188*** (0.0071)
RETQ24	−0.0061*** (0.0017)
RETQ1	−0.0219*** (0.0045)
RET_PRE_EA	−0.0621*** (0.0115)
MINUS2_SUR × AVE_NETBUY	0.5420*** (0.1474)
SMALLNEG_SUR × AVE_NETBUY	0.7157*** (0.1120)
ZERO_SUR × AVE_NETBUY	0.5152*** (0.1297)
SMALLPOS_SUR × AVE_NETBUY	0.5365*** (0.1258)
PLUS2_SUR × AVE_NETBUY	0.6307*** (0.1508)
n	8,743
Adjusted R^2	.07

Note. The sample contains only growth firms' earnings announcements during the period January 1, 1999, to December 31, 2005, whose earnings surprises are no greater than 2 cents in magnitude. See the appendix for variable definitions. All continuous variables are winsorized at the top and bottom 1% to reduce the influence of outliers. The reported standard errors allow heteroscedasticity and any type of correlation for observations of the same firm but assume independence for observations across different firms (Rogers, 1994).
*$p < .1$. **$p < .05$. ***$p < .01$ (two-tailed).

See the appendix for all the variable definitions. *AVE_NETBUY* refers to transient institutions' net stock purchase on Event Day 0. The control variables are identical to those in Model 1. Again the intercept is omitted to avoid perfect multicollinearity. All continuous variables are winsorized at the top and bottom 1% to reduce the influence of outliers.

We measure *FUTURE_AR* over a 3-calendar month period starting 1 day after the earnings announcement date (i.e., Event Day 0) for two reasons. First, if there is a stock price overreaction on Event Day 0 that results in a subsequent reversal, we expect a significant portion (if not all) of the reversal to occur within 3 months. This is because U.S. companies

are required to report earnings quarterly, and the arrival of new information should help correct the past overreaction. Second, if transient institutions' trades on Event Day 0 contain private information that is not immediately reflected in stock prices on Event Day 0, the private information should be reflected (at least partially) in stock prices by the time of the next earnings announcement date. This is because prior research (e.g., Ali et al., 2004) shows that transient institutions' private information is often short lived (e.g., next-quarter's earnings). However, our inferences are robust to defining *FUTURE_AR* over 10-trading days or 6 calendar months (untabulated).

Our primary variable of interest is the coefficient on *SMALLNEG_SUR* × *AVE_NETBUY*. If transient institutions have the independent ability to acquire and process private information regarding the quality of small negative earnings surprises, the coefficient on *SMALLNEG_SUR* × *AVE_NETBUY* should be either insignificant if contemporaneous stock prices fully reflect the private information contained in transient institutions' *AVE_NETBUY* or significantly positive if contemporaneous stock prices do not fully reflect the private information contained in transient institutions' *AVE_NETBUY*. However, if transient institutions' trading on event day is an overreaction to small negative earnings surprises that results in short-term mispricing on Event Day 0, future stock prices would reverse, and thus the coefficient on *SMALLNEG_SUR* × *AVE_NETBUY* should be significantly negative.[20]

Panel A of Table 7 reports the descriptive statistics of *FUTURE_AR* by the earnings surprise categories. To the extent that the mean *AR0* reported in Panel A of Table 6 represents an overreaction, we should expect a significant reversal of the mean *FUTURE_AR*. Because the mean *FUTURE_AR* is never significantly different from 0 for any of the earnings surprise categories, we conclude that there is no evidence that stock prices on average overreact to small negative earnings surprises. As transient institutions do not always sell shares in response to all small negative earnings surprises, the mean *FUTURE_AR* may fail to detect transient institutions' overreaction in some small negative earnings surprise cases where they sell significantly. Our Regression Model 3 directly addresses this concern by examining the association between transient institutions' *AVE_NETBUY* and *FUTURE_AR* for the small negative earnings surprise category.

Panel B of Table 7 shows the results of Regression Model 3 for growth firms only. We cluster the standard errors by firms (Rogers, 1994). We also compute standard errors and *p* values using the Fama and MacBeth (1973) method, and obtain similar conclusions (untabulated). There are three interesting findings. First, the coefficient on *SMALLNEG_SUR* × *AVE_NETBUY* is significantly positive, suggesting that transient institutions' trading in reaction to small negative earnings surprises does not represent an overreaction as alleged by management. Rather, the positive coefficient on *SMALLNEG_SUR* × *AVE_NETBUY* suggests that transient institutions' trades on Event Day 0 contain private information that is not fully reflected in the stock prices on Event Day 0. As noted before, such private information is unlikely to come from firm management because post–Regulation FD management of U.S. firms is barred from making selective disclosure.[21] In terms of economic significance, transient institutions' 3-month mean buy-and-hold abnormal return weighted by the dollar value of *AVE_NETBUY* in reaction to small negative earnings surprises is a positive 2.6% (or approximately 10.2% annualized).

Second, the coefficient on *ZERO_SUR* × *AVE_NETBUY* is also significantly positive, suggesting that stock prices on Event Day 0 fail to fully reflect the private information contained in transient institutions' stock trades on Event Day 0. The results for *SMALLNEG_SUR* × *AVE_NETBUY* and *ZERO_SUR* × *AVE_NETBUY* suggest that

Table 7. The Association Between Transient Institutions' Trading Reactions to Small Negative Earnings Surprises on Event Day 0 and Future Abnormal Returns.

Panel A: Descriptive Statistics.

	Earnings surprises				
	−2 cents	−1 cent	0 cent	+1 cent	+2 cents
	M (Mdn) [SD] {n}				
FUTURE_AR	−0.0015	0.0005	0.0031	−0.0012	0.0021
	(−0.0089)	(−0.0052)	(−0.0062)	(−0.0051)	(−0.0039)
	[0.1880]	[0.1952]	[0.1952]	[0.1952]	[0.2024]
	{1,039}	{1,758}	{5,768}	{5,204}	{3,718}

Panel B: Regression Result.

	Dependent variable = FUTURE_AR
	Coefficient (SE)
MINUS2_SUR	−0.0327** (0.0161)
SMALLNEG_SUR	−0.0333** (0.0154)
ZERO_SUR	−0.0301** (0.0143)
SMALLPOS_SUR	−0.0331** (0.0144)
PLUS2_SUR	−0.0271* (0.0146)
LNSIZE	0.0019 (0.0014)
BM	0.0409* (0.0225)
RETQ24	−0.0119** (0.0049)
RETQ1	0.0012 (0.0129)
RET_PRE_EA	0.0250 (0.0334)
MINUS2_SUR × AVE_NETBUY	0.0789 (0.3314)
SMALLNEG_SUR × AVE_NETBUY	0.5055** (0.2292)
ZERO_SUR × AVE_NETBUY	0.4891** (0.2234)
SMALLPOS_SUR × AVE_NETBUY	−0.1030 (0.2274)
PLUS2_SUR × AVE_NETBUY	0.0929 (0.3260)
n	8,743
Adjusted R^2	.00

Note. The sample contains only growth firms' earnings announcements during the period January 1, 1999, to December 31, 2005, whose earnings surprises are no greater than 2 cents in magnitude. See the appendix for variable definitions. All continuous variables are winsorized at the top and bottom 1% to reduce the influence of outliers. The reported standard errors allow heteroscedasticity and any type of correlation for observations of the same firm but assume independence for observations across different firms (Rogers, 1994).
*$p < .1$. **$p < .05$. ***$p < .01$ (two-tailed).

transient institutions carefully scrutinize both small negative and zero earnings surprises, and reply on their own independent information acquisition and processing ability to differentiate the quality of small negative and zero earnings surprises.

Third, the coefficients on the interactions between *AVE_NETBUY* and the remaining earnings surprise dummies are insignificant. Therefore, there is also no evidence that transient institutions' trading in reaction to these earnings surprise categories is an overreaction. In addition, the evidence appears to suggest that stock prices fully reflect the private information (if any) contained in transient institutions' *AVE_NETBUY* because there is no return drift subsequent to transient institutions' trading.

Table 8. The Effect of Transient Institutions' Trading on Event Day 0 on the Speed With Which Contemporaneous Stock Prices Reflect the Value Implications of Small Negative Earnings Surprise Announcements.

	AVE_NETBUY		RATIO
Deciles of AVE_NETBUY		M (Mdn)	
Top decile (buy)	0.027 (0.017)		0.36 (0.22)
Deciles 2-9	−0.002 (0.000)		0.27 (0.08)
Bottom decile (sell)	−0.085 (−0.099)		0.43 (0.44)
Two-tailed p value of the null hypothesis using a rank sum test			
Top decile = Deciles 2-9	—		<.001
Bottom decile = Deciles 2-9	—		<.001

Note. The sample is limited to growth firms' small negative earnings surprises in the period January 1, 1999, to December 31, 2005 ($n = 818$ earnings announcements). For each small negative earnings surprise observation, *RATIO* is defined as the ratio of abnormal return on Event Day 0 (i.e., AR0) to the abnormal return from Event Day 0 up to 3 months subsequent to the earnings announcement date (i.e., the sum of AR0 and *FUTURE_AR*). To limit the influence of extreme values, we limit the values of *RATIO* to be between 0 and 1. See the appendix for the other variable definitions.

The results in Table 7 suggest that transient institutions' stock trading on Event Day 0 in reaction to small negative earnings surprises helps accelerate the speed with which stock prices reflect the value implications of small negative earnings surprise announcements. To directly quantify the impact of transient institutions' trading reactions to small negative earnings surprises on stock price efficiency, we compute the ratio of abnormal return on Event Day 0 to the abnormal return from Event Day 0 up to 3 months subsequent to the earnings announcement date (denoted as *RATIO*) for each small negative earnings surprise observation. To limit the influence of extreme values, the values of *RATIO* are winsorized at 0 and 1.[22] The results are shown in Table 8 by the deciles of transient institutions' trading on Event Day 0 (i.e., *AVE_NETBUY*). We combine the Deciles 2 and 9 into one because both the mean and median *AVE_NETBUY* is essentially 0 for the small negative earnings surprise observations in these combined Deciles 2 to 9. As the means could be influenced by outliers, we focus on the medians in the following discussions.

For the top (i.e., buy) and bottom (i.e., sell) deciles of transient institutions' trading on Event Day 0, the median *RATIO* is 22% and 44%, respectively. The median *RATIO* for the bottom decile is particularly striking, implying that transient institutions' selling in reaction to small negative earnings surprises moves stock prices closer to fundamental value fairly quickly. In contrast, for the remaining combined Deciles 2 to 9 where there is little transient institutional trading, the median *RATIO* is only 8%, significantly smaller than the median *RATIO* for the top and bottom deciles. This evidence suggests that transient institutions' trading on Event Day 0 helps accelerate the speed with which stock prices reflect the value implications of small negative earnings surprise announcements.

Further Analyses of Transient Institutions' Trading Behavior

To reduce potential confounding events, our primary regression models focus on transient institutions' trading on Event Day 0. As a robustness check, we replicate transient

Table 9. Replication of Regression Models 1, 2, and 3 for Growth Firms Using *AVE_NETBUY* Defined Over the Trading Days [0, +4] Around the Earnings Announcement Date.

Panel A: Replication of Model 1.

	Dependent variable = AVE_NETBUY defined over the trading days [0, +4] around the earnings announcement date
	Coefficient (*SE*)
MINUS2_SUR	−0.0108** (0.0046)
SMALLNEG_SUR	−0.0196*** (0.0036)
ZERO_SUR	−0.0082*** (0.0030)
SMALLPOS_SUR	−0.0061** (0.0030)
PLUS2_SUR	−0.0033 (0.0030)
LNSIZE	0.0006* (0.0004)
BM	0.0066 (0.0045)
RETQ24	0.0003 (0.0010)
RETQ1	0.0041* (0.0024)
RET_PRE_EA	−0.0076 (0.0071)
BEGOWN	−0.0053*** (0.0017)
PORTWT	−0.1239 (0.3410)
n	8,743
Adjusted R^2	.02

Two-tailed *p* value for the null hypothesis	
SMALLNEG_SUR = MINUS2_SUR	.036
SMALLNEG_SUR = ZERO_SUR	<.001
SMALLNEG_SUR = SMALLPOS_SUR	<.001
SMALLNEG_SUR = PLUS2_SUR	<.001

Panel B: Replication of Regression Model 2.

	Dependent variable = AR0 defined over the trading days [0, +4] around the earnings announcement date
	Coefficient (*SE*)
MINUS2_SUR	−0.0418*** (0.0074)
SMALLNEG_SUR	−0.0380*** (0.0068)
ZERO_SUR	−0.0314*** (0.0061)
SMALLPOS_SUR	−0.0129** (0.0061)
PLUS2_SUR	0.0015 (0.0062)
LNSIZE	0.0018*** (0.0006)
BM	0.0137 (0.0100)
RETQ24	−0.0106*** (0.0023)
RETQ1	−0.0281*** (0.0060)
RET_PRE_EA	−0.0697*** (0.0149)
MINUS2_SUR × *AVE_NETBUY*	0.2226*** (0.0703)
SMALLNEG_SUR × *AVE_NETBUY*	0.2713*** (0.0609)
ZERO_SUR × *AVE_NETBUY*	0.2339*** (0.0753)
SMALLPOS_SUR × *AVE_NETBUY*	0.3403*** (0.0687)
PLUS2_SUR × *AVE_NETBUY*	0.3019*** (0.0787)
n	8,743
Adjusted R^2	.06

Table 9. (continued)

Panel C: Replication of Regression Model 3.

	Dependent variable = FUTURE_AR defined over a 3-month period that starts on trading day +5 after the earnings announcement date
	Coefficient (SE)
MINUS2_SUR	−0.0209 (0.0153)
SMALLNEG_SUR	−0.0248* (0.0148)
ZERO_SUR	−0.0269* (0.0138)
SMALLPOS_SUR	−0.0293** (0.0139)
PLUS2_SUR	−0.0291** (0.0141)
LNSIZE	0.0012 (0.0013)
BM	0.0425* (0.0218)
RETQ24	0.0053 (0.0048)
RETQ1	0.0128 (0.0128)
RET_PRE_EA	−0.0191 (0.0333)
MINUS2_SUR × AVE_NETBUY	0.0725 (0.1308)
SMALLNEG_SUR × AVE_NETBUY	0.2482** (0.0983)
ZERO_SUR × AVE_NETBUY	0.2338** (0.0958)
SMALLPOS_SUR × AVE_NETBUY	−0.1160 (0.0997)
PLUS2_SUR × AVE_NETBUY	−0.1017 (0.1216)
n	8,743
Adjusted R^2	.01

Note. The sample contains only growth firms' earnings announcements during the period January 1, 1999, to December 31, 2005, whose earnings surprises are no greater than 2 cents in magnitude. See the appendix for variable definitions. All continuous variables are winsorized at the top and bottom 1% to reduce the influence of outliers. The reported standard errors allow heteroscedasticity and any type of correlation for observations of the same firm but assume independence for observations across different firms (Rogers, 1994).
*$p < .1$. **$p < .05$. ***$p < .01$ (two-tailed).

institutions' regression results in Tables 4, 6, and 7 by redefining *AVE_NETBUY* over a 5-trading day window that starts from Event Day 0. As shown in Table 9, all of our inferences are qualitatively similar using this alternative *AVE_NETBUY*.

We argue in the "Introduction" section that a key strength of this study is the availability of institutional investors' daily stock transactions. Hence, a natural question one may ask is whether we can replicate transient institutions' result for growth firms in Table 4 using *AVE_NETBUY* defined over the entire calendar quarter of the earnings announcement. As shown in Table 10, the coefficient on *SMALLNEG_SUR* using this alternative *AVE_NETBUY* definition is not significantly different from the coefficients on the other four earnings surprise dummies (two-tailed $p = .342$ or higher). These results are opposite to what we find in Table 4. Overall, the evidence in Table 10 suggests that using the quarterly transient institutional ownership change to measure transient institutions' trading reactions to earnings surprise announcements is noisy at best and even leads to significantly different conclusions.

Conclusion

The objective of this study is to use a proprietary database of transient institutions' daily stock trading records to examine whether transient institutions have the independent ability

Table 10. Replication of Regression Model 1 for Growth Firms Using *AVE_NETBUY* Defined Over the Calendar Quarter of the Earnings Announcement.

	Dependent variable = *AVE_NETBUY* defined over the calendar quarter of the earnings announcement
	Regression coefficient (*SE*)
MINUS2_SUR	0.0129 (0.0253)
SMALLNEG_SUR	0.0263 (0.0184)
ZERO_SUR	0.0241 (0.0163)
SMALLPOS_SUR	0.0164 (0.0164)
PLUS2_SUR	0.0302* (0.0167)
LNSIZE	−0.0001 (0.0015)
BM	−0.0804*** (0.0200)
RETQ24	0.0033 (0.0046)
RETQ1	0.0087 (0.0101)
RET_PRE_EA	0.0081 (0.0280)
BEGOWN	−0.0482*** (0.0089)
PORTWT	−4.1171** (1.6413)
n	8,743
Adjusted R^2	.02

Two-tailed p value for the null hypothesis:	
SMALLNEG_SUR = MINUS2_SUR	.542
SMALLNEG_SUR = ZERO_SUR	.837
SMALLNEG_SUR = SMALLPOS_SUR	.342
SMALLNEG_SUR = PLUS2_SUR	.719

Note. The sample contains only growth firms' earnings announcements during the period January 1, 1999, to December 31, 2005, whose earnings surprises are no greater than 2 cents in magnitude. See the appendix for variable definitions. All continuous variables are winsorized at the top and bottom 1% to reduce the influence of outliers. The reported standard errors allow heteroscedasticity and any type of correlation for observations of the same firm but assume independence for observations across different firms (Rogers, 1994).
*$p < .1$. **$p < .05$. ***$p < .01$ (two-tailed).

to correctly interpret announcements of small negative earnings surprises in the post–Regulation FD period, during which firm management is prohibited from revealing nonpublic information to select investors such as analysts and institutions. Our research question is motivated by the conflicting views on transient institutions' degree of sophistication, the lack of research on the extent of transient institutions' independent ability to acquire and process financial information, and the common managerial allegation that transient institutions would dump a firm's shares indiscriminatingly whenever there is a *small* shortfall of reported earnings versus analysts' consensus forecasts, resulting in an increased risk of temporary stock undervaluation. Transient institutions' alleged myopic trading behavior is often used by corporate management to justify sacrificing long-term firm value to avoid reporting small negative earnings surprises.

Our main findings are as follows. First, consistent with the common managerial allegation, transient institutions' selling in response to small negative earnings surprises is significantly different from 0 and is greater than transient institutions' selling in response to the −2 cent-earnings surprises, but the results are limited to growth firms only. Second, transient institutions' trading in response to growth firms' small negative earnings surprises is

positively associated with the contemporaneous abnormal stock return, consistent with the managerial perception that transient institutions' trading has a material impact on contemporaneous stock prices. Third, transient institutions' trading in response to growth firms' small negative earnings surprises is positively associated with the abnormal returns in the 3 and 6 months subsequent to the earnings announcements, suggesting that transient institutions' trading response to small negative earnings surprises does not represent an overreaction that results in temporary stock mispricing. To the contrary, we show that transient institutions' trading reactions to small negative earnings surprises accelerate the speed with which contemporaneous stock prices reflect the value implications of small negative earnings surprise announcements.

Our results provide new evidence to the ongoing debate on the role of institutional investors in improving or impeding financial market efficiency. Taken together, our results suggest that transient institutions' trading improves market efficiency in assimilating information of small negative earnings surprises. Our evidence suggests that transient institutions are sophisticated traders who know how to correctly interpret reported small negative earnings surprises even in the absence of access to management's private information. Our results should have direct implications for corporate managers and board directors who believe that transient institutions would overreact to announcements of small negative earnings surprises. Our evidence suggests that this belief is unwarranted, and therefore managers may wish to reconsider their reporting (e.g., earnings management) or other decisions (e.g., R&D investments) that aim to avoid perceived transient institutions' overreaction to small negative earnings surprises.

Appendix

Variable Definitions

Event Day 0. The first trading day immediately after the earnings announcement date if the earnings announcement occurs on a day after the market closing. If the earnings announcement occurs on a day before the market opening, Event Day 0 is the earnings announcement date if the earnings announcement date is a trading day, and the first trading day subsequent to the earnings announcement date if the earnings announcement date is not a trading day. We exclude the earnings announcements made during the normal trading hours.

AVE_NETBUY. transient institutions' average net purchase (buys minus sales) of a firm's stock per institution as a percentage of the total common shares outstanding on Event Day 0. Note that we do not use the sum of all transient institutions' net purchases, a common measure used in the existing literature (see, for example, Ke and Petroni 2004) to measure institutional trading intensity because we do not have a complete panel data set for all the institutions during our sample period, and thus the sum of institutions' net stock purchases is not comparable across firms or over time.

SURPRISE. Unadjusted actual earnings per share minus the unadjusted latest mean consensus forecast issued immediately before the earnings announcement date.

MINUS2_SUR. A dummy variable that equals 1 for *SURPRISE* equal to −2 cents.

SMALLNEG_SUR. A dummy variable that equals 1 for *SURPRISE* equal to −1 cent.

ZERO_SUR. A dummy variable that equals 1 for *SURPRISE* equal to 0.

SMALLPOS_SUR. A dummy variable that equals 1 for *SURPRISE* equal to +1 cent.

PLUS2_SUR. A dummy variable that equals 1 for *SURPRISE* equal to +2 cents.

LNSIZE. The natural logarithm of the market cap measured at the end of fiscal quarter *t*.

BM. The book-to-market ratio measured at the end of fiscal quarter *t*.

MOM. The 3-month buy-and-hold raw returns ending 1 trading day before the earnings announcement date.

AR0. The size-adjusted abnormal return on Event Day 0.

FUTURE_AR. The size-adjusted buy-and-hold abnormal return over the 3 months subsequent to Event Day 0.

RETQ1. The buy-and-hold raw return for the calendar days −90 to −1 (approximately one quarter) prior to the earnings announcement date.

RETQ24. The buy-and-hold raw return for calendar days −361 to −91 (approximately three quarters) prior to the earnings announcement date.

RET_PRE_EA. The buy-and-hold raw return from the day after the analysts' consensus earnings forecast date to the day before the earnings announcement date.

BEGOWN. Ownership at the quarter-end immediately before the announcement date.

PORTWT. The weighted mean portfolio weight (in percentage measured at the quarter-end immediately before the earnings announcement date) of a stock in the portfolios of transient institutions. The formula for the weighted mean portfolio weight of a stock is $\Sigma(W_i \times MV_i) / \Sigma(MV_i)$, where W_i is the weight of a stock in institution *i*'s portfolio and MV_i is the market value of all stocks owned by institution *i*. The portfolio weight of a stock in an institution's stock portfolio is computed as the ratio of the dollar value of the institution's ownership in the stock to the market value of all stocks owned by the institution.

Declaration of Conflicting Interests

Funding

Supplementary Material

Supplementary Material is available for this article Online.

Notes

1. For example, Boehmer and Kelley (2009) find that stocks with greater institutional ownership are priced more efficiently, and one mechanism through which prices become more efficient is institutional trading activity. Furthermore, they find that the more active institutional traders have a statistically and economically stronger effect on stock price efficiency than do the less active ones.

2. Our definition of transient institutions' independent information acquisition and processing ability is fairly broad, including not only their own independent ability to acquire and process information but also their ability to purchase private information from third parties (e.g., sell-side analysts' own research). However, our definition does not include the private information transient institutions obtain from firm management directly or indirectly (e.g., information sell-side analysts obtain from accessing firm management).

3. Management is not the only information source for transient institutions. Transient institutions can also obtain information from third parties such as sell-side analysts (e.g., Klein, Saunders, & Wong, 2014). However, because regulation Fair Disclosure (FD) prohibits private disclosure to all selected investors (including analysts), our results using post–Regulation FD data cannot be explained by transient institutions obtaining management's private information indirectly through analysts or other investors (see also Note 2).

4. Inferences are similar if we use transient institutions' trading over a 5-trading day period that starts on Event Day 0 (see the ''Further Analyses of Transient Institutions' Trading Behavior'' section).

5. However, inferences are qualitatively similar if we use the full sample for all of our empirical analyses.

6. The finding that transient institutions' stock trades do not fully impound their private information into contemporaneous stock prices is consistent with theoretically informed trading models (see, for example, Kyle, 1985).

7. Although not the primary focus of this study, we also analyze the trading behavior of long-horizon institutions in response to announcements of small negative earnings surprises (results not tabulated). We find no evidence that long-horizon institutions sell significantly on Event Day 0, their trading on Event Day 0 has either no or a smaller positive association with contemporaneous abnormal returns and are not associated with future abnormal stock returns. These results are broadly consistent with the evidence from the prior literature (see, for example, Ke & Petroni, 2004) that long-horizon institutions do not trade on short-term earnings news.

8. Note that herding is distinct from correlated trading due to the receipt of similar private information. As discussed in Bikhchandani and Sharma (2001), it is difficult to distinguish herding from correlated trading empirically.

9. Pioneered by Lee and Ready (1991), a separate empirical literature uses NYSE's (New York Stock Exchange) TAQ database to indirectly infer the buy and sell trades of institutional

investors versus individual investors (see, for example, Bhattacharya, 2001; Campbell et al., 2009; Lee, 1992). No study in this literature has examined our research question.

10. Other academic studies that have used Abel/Noser data include Puckett and Yan (2008) and Chemmanur, He, and Hu (2009). Our sample period ends in 2005 because it was the last year for which Abel/Noser provided us with institution identifying information allowing us to match and infer the identities of sample institutions. This is crucial as our study focuses on transient institutions. Details of our matching algorithm are provided in the Online Appendix.

11. Relative to the population of institutions in the Spectrum database over the same period 1999-2005, the institutions in our final sample are significantly larger as a whole or by each of the three Bushee classifications. To determine whether our empirical results are limited to large institutions only, we reestimated the primary regression models in Tables 4, 6, and 7 using only the bottom half of the 103 institutions based on each institution's median dollar value portfolio size over 1999-2005 and found similar inferences (untabulated).

12. Two recent studies (Berkman & Truong, 2009; Doyle & Magilke, 2009) verified the accuracy of the earnings announcement time stamps from the *Wall Street Journal*.

13. We do not examine the pre–Regulation FD period for two reasons. First, as discussed in the ''Introduction'' section, we analyze the post–Regulation FD period to isolate transient institutions' independent information acquisition and processing ability, which is the focus of this study. While interesting, analyzing changes in transient institutions' trading reactions to small negative earnings surprises before versus after Regulation FD is beyond the scope of this article. Second, we have a highly unbalanced sample with only 1 year in the pre–Regulation FD period, which limits our ability to detect changes around Regulation FD.

14. None of our empirical results are affected if our sample includes all earnings surprises in the post–Regulation FD period.

15. As a sensitivity check, we also subtract the mean net institutional purchase over event days -15 to -6 from *AVE_NETBUY* to obtain an abnormal *AVE_NETBUY* and find similar results (not tabulated).

16. We also allow the coefficients on the five earnings surprise dummies to vary with the earnings surprise scaled by the stock price at the fiscal quarter-end. The interaction coefficient between *SMALLNEG_SUR* and the scaled earnings surprise is insignificant. This evidence suggests that the negative coefficient on *SMALLNEG_SUR* is not driven by transient institutions' response to the magnitude of the scaled earnings surprises.

17. It is unlikely that transient institutions' trading reaction to small negative earnings surprises is due to transient institutions' exploitation of the postearnings announcement drift (see Ke & Ramalingegowda, 2005). This is because the drift is related to large earnings surprises rather than small earnings surprises.

18. Untabulated regression results of transient institutions' *AVE_NETBUY* in the 1 month prior to the earnings announcement show that transient institutions have advance knowledge of large earnings surprises greater than 2 cents in magnitude prior to the announcement date.

19. The regression results for Model 2 are robust to controlling for *AVE_NETBUY* by dedicated and quasi-indexing institutions (untabulated).

20. To allow the possibility that the initial stock market overreaction to a small negative earnings surprise could last for several days, we also define *FUTURE_AR* starting on the fifth trading day after Event Day 0 and find similar results (see Panel C of Table 9).

21. There is a possibility that transient institutions' private information with regard to small negative earnings surprises stems from their better ability to interpret management's public information disclosure at the earnings announcements. While interesting, we cannot directly test this conjecture.

22. Inferences are qualitatively similar if the values of *RATIO* are not winsorized.

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