

# INSTITUTIONAL TRADE SIZE PREFERENCE AROUND CORPORATE ANNOUNCEMENTS

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## ABSTRACT

Stealth trading through round, medium size trades may be the size preference of informed traders on a day-to-day basis, but around corporate news releases they appear to have a different strategy. Institutional investors use more round lot transactions around corporate announcements that occur more frequently and have predictable timing. Trade sizes cluster around 100-share multiples with more than 60% of the institutional trades at exactly 100 shares. This strategy appears to be less costly as the bid-ask spread is lower for trades around 100-share multiples compared to the 500, 1,000, and 5,000-share multiples.

**Key Words:** Intermarket sweep orders, trade size clustering, institutional investors

## INTRODUCTION

Armed with superior research skills, informed and sophisticated institutional investors are able to acquire private information and swiftly profit from such information. To do so these traders must be strategic with their trades. In the context of our study, we are particularly interested in institutional size preference. Does one size fit all when it comes to informed trading? Barclay and Warner (1993) find that informed investors tend to use medium-size trades and these trades have the highest cumulative price changes [2]. Chakravarty (2001) provides further evidence that these informed, medium-size trades from 500 to 9,999 shares have abnormal price impact [3]. Consistent with the stealth trading hypothesis, these medium-size trades are not large enough to attract unwarranted attention and not small enough that they are too expensive. Extending this line of research, Alexander and Peterson (2007) find evidence that these trades cluster on multiples of 500, 1,000, and 5,000 shares [1]. Yet, there are times when trades are not clustered. When pressed for specific quantity demand at the end of the quarter, Moulton (2005) explains that investors shy away from trade size clustering [8]. More recently, Garvey and Wu (2014) show that trade size clustering is less common towards the end of the trading day [6]. They also explain that specific size trades are less informed and are costlier.

From the prior research, the answer to our initial question seems to be a resounding yes. It appears that informed traders prefer using medium-size trades, or at least that was the preference. We argue that data selection has an important role in understanding size preference. Barclay and Warner (1993) use data from 1981 to 1984 [2]. Chakravarty (2001) uses 63 days of trading data from November 1990 to January 1991 [3]. Both of these papers use data before decimalization, which is a major structural change and it can affect the size selection process. Alexander and Peterson (2007) use randomly chosen stock data in 1990, 1991, 1995, 1998, and 2002 [1]. Moulton (2005) uses foreign exchange data from 2001 to 2002 [8]. While their data include 2002 post-decimalization data, the samples are only for one year after the conversion and it was more than a decade ago. We believe that the older data may accurately reflect strategies of the past, but traders evolve and their strategies do too. Finally, the latest paper, Garvey and Wu (2014) use

more recent data from October 1999 to May 2006, but the data come from a singular broker/deal firm [6]. For our research, we use TAQ data from September 2007 to December 2013. The data sample is naturally more recent and is more encompassing as it includes more market participants than the broker/dealer firm data. The TAQ data provide the exact timestamp, price, and round, mixed, and odd lot quantity of each trade. The data also provide a trader indicator to separate institutional from non-institutional transactions. Beyond the difference in data selection, we explore how institutional size preference differs around corporate announcements, providing evidence that one size does not fit all. We examine two different corporate news events—share repurchase and earnings announcements. The first happens infrequently, and investors are not able to predict in advance if or when the firm will make the announcement. The second occurs frequently and, in fact, institutions are very aware of the timing of earnings season, and they often perform their own analysis in advance of the event. This paper empirically tests the theories laid out in Verrecchia (2001) [9]. The author explains that investors have more incentives to seek private information when they anticipate a news release. Doing so inherently will create an environment with higher information asymmetry. Furthermore, as the frequency of the news release increases, the intensity of information acquisition will grow. Since round lots and trade size clustering are associated with informed trading, we hypothesize that there is a difference in how institutional investors trade on the earnings announcement day compared to the share repurchase announcement day. The difference can highlight the point that institutions seek private information when they expect the arrival of new information as in earnings announcements.

Consistent with the theory set by Verrecchia (2001), we observe a difference in informed trading in the two event types [9]. Using TAQ intermarket sweep order data, which has the exact price, quantity, timestamp, and trade indicator, we find that institutional investors use more round lots around earnings announcements than in share repurchase announcements. While it is expected that informed institutions would use round lots, they appear to use significantly more round lots during earnings announcements than in share repurchase announcements. To the best of our knowledge, this is the only study comparing the variability in institutional round lot trading around corporate events with different frequencies and announcement time predictabilities. Additionally, we observe a change in common trade sizes. While Alexander and Peterson (2007) observe clustering on multiples of 500, 1,000, and 5,000 shares, we find that institutions prefer a smaller 100-share multiple and the most commonly traded size is 100 shares, which is significantly smaller than the medium-size of 500 to 9,999 shares [1]. Finally, the change in common trade size multiples to 100 shares has an economic impact. We find that trades in 100-share multiples rather than 500x, 1000x, or 5000x are associated with lower bid-ask spreads. We believe the reduction in trading cost could be a compensation for the information acquisition process.

## **LITERATURE REVIEW**

Trade size has important implications because it has been linked to private information. Barclay and Warner (1993) find that medium-size trades between 500 and 9,900 shares are linked to informed trading and have the highest cumulative effects on prices [2]. Their stealth trading hypothesis explains that these profit-maximizing traders camouflage their true quantity demand by spreading the trades over time. Chakravarty (2001) extends the stealth trading hypothesis by providing evidence that medium-size trades have the largest price impact and that informed institutions have a preference for breaking up large orders especially when trading stocks of large firms [3]. Alexander and Peterson (2007) provide additional details on how these stealth traders break up larger trades [1]. They slice the total quantity into round, medium size order clustering around multiples of 500, 1,000, and 5,000 shares. These round lots appear to have more price impact and suggest that stealth traders may want to consider using less costly methods. Consistent with previous research, we also find size clustering and institutional preference for round lots. However, our findings show that clustering is in a much smaller size in multiples of 100 shares. In fact,

trade size of 100 shares makes up at least 60 percent of all institutional trades. Additionally, we also find evidence of intraday differences in clustering. Similar to Garvey and Wu (2014), we observe less clustering towards the end of the trading day [6].

Our research extends the current literature further by examining the how clustering is affected by the frequency and predictability of corporate news releases. We believe that clustering is affected by how asymmetrically informed investors trade around material events. There are two schools of thoughts on news releases and information asymmetry. Kim and Verrecchia (1991) explains that the more information is released to the public the more opportunities investors have to readjust their positions [7]. Uninformed investors will have the opportunity to attain a more optimal portfolio. As the frequency of news releases increases, information asymmetry decreases. Fu, Kraft, and Zhang (2012) provides empirical evidence by showing that increased financial disclosure from semiannually to quarterly reduces information asymmetry and cost of equity [5]. Conversely, in Verrecchia (2001), by assuming that the information acquisition process is endogenously endowed, the frequency of disclosure is positively associated with information asymmetry [9]. Because institutions have the resources and skills to acquire information, higher frequency of disclosures provides more opportunities for these traders to benefit from the announcements. The incentive to acquire private information, in turn, creates higher information asymmetry.

In our research, we use share repurchase and earnings announcements as the two event types that might affect clustering. The first happens infrequently and investors are not able to predict the timing of the announcements with certainty. The latter occurs quarterly and investors know ahead of time when the announcement is coming. By examining trade size clustering around these announcement types, we find that the informed traders use more round lots when they expect the news is coming and have time to prepare for the announcement. The biggest difference in round lots between the two event types occurs during post market hours when most corporate announcements are made.

## **HYPOTHESES**

Our main research question centers around the impact of news disclosure frequency on institutional investor's trade size and clustering preference. The dataset on ISO allows me to separate institutional and non-institutional trades to evaluate the effects of information asymmetry. Following Verrecchia (2001) theory that information acquisition is endogenous, we believe that the frequency of earnings announcements creates an environment that incentivizes institutions to acquire information so they can optimally rebalance their portfolio every quarter [9]. Conversely, if the institutional investors do not know when or if the firm will announce like with share repurchase announcements, there is little incentive to acquire private information. Hence, we hypothesize that institutional investors will exhibit greater round lot trades on the day of the earnings announcement than on the day of share repurchase announcement (H1). We also believe that the trades will cluster around certain sizes. We think that clustering will be around much smaller share multiples than the previously found multiples of 500, 1,000, and 5,000 shares (H2). Research has shown that medium and large trades are costly proven by their large price impact, so smaller size trades could be a better choice for informed traders. Therefore, we believe that the smaller size multiples are less costly than the larger size multiples (H3). It is possible that the market has figured out the camouflage strategy of the medium size trades. Stealth trading may not be so hidden anymore particularly around corporate announcements.

## **DATA**

To test our hypotheses, we gather data from several sources. The repurchase announcement data are from SDC, and our earnings announcement data are from Compustat. Our main source of institutional data is from TAQ intermarket sweep order (ISO) trades. Fully integrated in September 2007, ISOs are limit orders that can sweep multiple markets of their liquidity. These orders automatically execute in designated markets while simultaneously submitting orders in the market quoting the best prices in order to fulfill Regulation NMS Order Protect Rule. By prioritizing execution speed and order fulfillment over price, ISO traders have more opportunities to trade profitably before stock prices adjust to new information. ISOs are also associated with more information and are mainly used by institutional traders (Chakravarty, Jain, Upson, and Wood 2012) [4]. Moreover, we utilize ISO because it provides the exact timestamp, price and round, mixed, or odd lot quantity of each institutional trade to determine if institutional investors have a size preference. Our sample consists of repurchase and earnings announcements of 2,437 firms from September 2007 when ISOs were fully instated to December 2013. The trades are matched based on the firm, year, quarter, and time traded. In total, we examine approximately 17.9 million trades for each announcement type.

## FINDINGS

In our exploration of trade size clustering around corporate announcements, we focus on the preference of informed traders by examining the trades of ISO institutional investors. We look at approximately 17.9 million trades executed by these institutions in both earnings and share repurchase announcements. We observe that ISO traders on average use smaller trade sizes. The average trade size around earnings announcements is 835 shares, and the average for share repurchase announcements is 1,027 shares. When we examine the trade size used in buy and sell trades, we see a similar trend—smaller sizes for earnings announcements and larger sizes for share repurchase announcements. It also appears that institutional investors prefer using more round lots around earnings announcements than around share repurchase announcements. 94.67% of the 17.9 million trades executed on the earnings announcement day are round lots. Compared to share repurchase announcements, this is approximately 1.87% more round lot or 335,174 more round lot trades. Furthermore, these round lots appear to be in multiples of 100 shares. We also see that the spread is higher around earnings announcement hinting at the possibility that traders could be more asymmetrically informed around this type of events. Even before examining the matched samples, we already observe key differences between earnings and share repurchase events. We believe that these differences can be attributed to the frequency and predictability of the announcement time. The use of round lots is associated with informed trading (Alexander and Peterson 2007) and we believe that institutions use more round lots around earnings announcements because they are able to obtain private information ahead of the scheduled events.

We also analyze the differences in round lots for ISO trades between earnings and share repurchase announcements. Trades are matched by the firm, year, quarter, and time traded. We divide the sample into several time segments—pre-market time, fifteen-minute intervals, and post-market time—to show the intraday round lot pattern and to highlight the significant difference during the non-market hours when most earnings and share repurchase announcements are made. When we rank the differences in round lots between earnings and share repurchase announcements from largest to smallest, we see that the post-market and pre-market time segments have the larger differences. The differences are 14.32%\*\*\* and 4.60%\*\*\* in the post- and pre-market time segments. These differences not only are statistically significant, but they are also economically significant. These numbers suggest that institutional investors are more informed around earnings announcements than they are around share repurchase announcements. Their ability to trade so confidently may come from the fact that they are able to utilize their superior research skills ahead of the planned announcements. Conversely, when the institutional investors do not

know if and when an announcement will be made, they are unable to utilize their skills to obtain private information.

When we turn our attention to the liquidity traders, we see that they use fewer round lots around earnings announcements. Unlike the differences observed in the ISO trades, we do not see economically significant differences in round lot trading from the liquidity traders. All of the differences are less than a half percent. Even more evident is the NISO, round lot differences in the pre- and post-market times. They are -0.15%\*\*\* and -0.03%, respectively. The first is statistically significant but is not significant economically. The latter, during the post-market time, is insignificant. These findings suggest that even when the timing of the announcements is predictable liquidity traders appear to be less informed. They appear to be more informed during share repurchase announcements albeit not that much more informed. The differences do not appear to be noteworthy.

Hence, we focus on the trade sizes of the ISO traders. Accounting for approximately 63.7% of the sample, the most common trade size around earnings announcements is 100 shares. This finding is quite different from previous research. Garvey and Wu (2014) find that the top five order sizes are 1,000, 500, 2000, 5,000, and 200. Chakravarty (2001) find that institutions prefer trades of medium sizes from 500 to 9,999 shares. The evidence of a smaller trade size point to the need to camouflage information around informed events. Stealth trading using medium-sized trade may be the best strategy on a day-to-day basis, but around corporate announcements traders appear to prefer a trade size of 100 shares. The preference for this particular share size also differs between announcement types. Institutional investors use 11.5% fewer 100-share trades around share repurchase announcements. This decrease from earnings to share repurchase announcements is congruent with how institutions use fewer round lots around share repurchase announcements. So far, we are finding evidence that institutional investors prefer using small, round lots mostly 100 shares to trade on their private information.

Using Alexander and Peterson (2007), we provide evidence that clustering around informed events is different from the prior research. In the full sample before dividing by the different time segments, we find that trades cluster on all four multiples. However, the magnitudes of the clustering vary. In the univariate regression with only D100, we find that clustering around 100-share multiples accounts for 40.69% of the variations in trade sizes. Relative to 500-share, 1,000-share, and 5,000-share multiples, which account for only 7.56%, 5.06%, and 2.31% of the variations in size, 100-share multiples appear to have the most explanatory power. The 100-share multiples seem to have economic significance as well as explanatory power. If the trade size is in multiples of 100 shares, then the frequency of that size is increased by 1,004.67%\*\*\*.

In the multivariate regressions, again, we observe trade size clustering for all multiples. Although its economic significance is decreased, 100-share multiples are still very relevant. If the trade size is in multiples of 100 shares, then the frequency of that size is increased by 619.36%\*\*\*. For the others multiples, their economic significance is even less. For instance, if the trade size is in multiples of 500, 1,000, 5,000 shares, then the frequency of that size is increased by only 7.61%\*\*\*, 42.55%\*\*\*, and 195.47%\*\*\*, respectively. These numbers are strong evidence that the clustering trend is different around earnings announcement than around the environment of Chakravarty (2001).

When we divide the full sample into the different time segments, we see that 100-share multiples are statistically and economically significant in all of the time periods. There is also evidence that institutions are less likely to use larger sizes shown by the negative and significant  $LnSize$  coefficient. If the trade size is increased by 1%, then the frequency of that size being traded is decreased by 245.74%\*\*\*. In summary, there is strong evidence of clustering around 100-share multiples as shown in the univariate, multivariate, and time-segmented multivariate regression models.

Finally, we examine how size clustering affects the cost of trading. First, 100-share multiples appear to reduce the bid-ask spread by approximately \$0.0478\*\*\*, 500-share multiples increase the spread by \$0.0138\*\*\*, 1,000-share multiples decrease the spread by \$0.0314\*\*\*, and the 5,000-share multiples

increase the spread by \$0.1885\*\*\*. Although in the full sample the 1,000-share multiples appear to reduce the spread, we see mixed results in the time-segmented regressions. Most importantly, we see that during the post-market hours, when firms announce earnings, only trading in 100-share multiples decreases the cost of trading. Overall, it appears that clustering around 100-share multiples is a good strategy to lower trading costs.

## CONCLUSION

Assuming that the process of information acquisition is endogenously endowed, we explore how the frequency of corporate announcements affect institutional trading. By comparing earnings announcements, which occur every quarter, with share repurchase announcements, which happen non-routinely and are unpredictable, we find that institutional investors are more motivated to obtain private information around earnings announcements. Institutions use more round lot trades, which are associated with informed trading, around earnings announcements than around repurchase announcements. In contrast, the liquidity traders do not display any economic differences between the two announcement types. It appears that the information acquisition process for these NISO traders is the same for both earnings and share repurchase announcements. We believe the difference between ISO and NISO traders is due to the institution's ability to acquire private information, especially around an event that they know is coming. Furthermore, we observe a change in trade size preference around corporate announcements. The most common trade size is 100 shares, which is much smaller than the previously known medium-size preference. The shift in smaller size preference is also associated with a lower trading cost for institutional investors. These findings imply that traders have many tools in the shed. They pick and choose which tool is most appropriate for the job. In some cases, a small chisel is better than a hammer.

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