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The Type of Corporate Announcements and Its Implication on Trading Behavior

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ABSTRACT

I report the empirical evidence to show how firms' expected and unexpected announcements affect investors' trading behavior. I find that trading volume decreases before expected announcements, either scheduled or unscheduled, consistent with models that predict that discretionary liquidity traders may postpone their trading until after an anticipated news release. I also find that the magnitude of pre-announcement trading reactions is negatively associated with the level of pre-disclosure information asymmetry. I further find that trading volume is boosted before unexpected announcements, and the relation between the magnitude of pre-announcement trading reactions and the pre-disclosure information asymmetry is weakly significant or insignificant.

Key words: Expected and unexpected announcements; Trading behavior; Information asymmetry

JEL Classification: G12, G14

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1. Introduction

Trading volume plays an important role in reflecting different trading behaviors, which may be a more powerful indicator of investor response to public disclosure than price reactions (Cready and Hurtt, 2002). Existing studies, which are theoretically initiated by Kyle (1985) and Glosten and Milgrom (1985), largely focus on the boosted trading volume. Boosted volume prior to public announcements is typically explained as informed traders building on positions with private information (e.g., Aktas et al., 2007; Kaniel et al., 2012; and Baruch et al., 2017). In contrast, the exploration of the reduced volume response remains limited; this, shares equivalent importance to the boosted volume (Gervais et al., 2001). In this paper, I show that firms experience both reduced and boosted trading volumes prior to their corporate announcements, while the direction of volume reactions depends on the type of announcement.

The idea of separating corporate announcements is formalized from the theoretical models of Admati and Pfleiderer (1988), and Foster and Viswanathan (1990). According to researchers' models, discretionary liquidity traders may choose to postpone their trades when they believe the adverse selection costs are high, which typically occurs prior to the public announcement. The key element regarding the empirical application of their models is the timing of the announcement. Liquidity traders are capable of choosing to wait until the information asymmetry is resolved when they know a public announcement is imminent. Therefore, trading volume can decrease prior to the anticipated announcement. In contrast, liquidity traders have no base to adjust their trades if the timing is unknown.

Based on whether the timing information is anticipated in advance, I divide corporate announcements into two types, expected or unexpected events. First, I use the mandatory earnings announcement as a proxy of the expected announcement as it is fully scheduled with a fixed time frame. Chae (2005) has emphasized the importance of separating corporate announcements in a trading volume study, where he divides events into scheduled (proxied by mandatory earnings announcements) and

unscheduled (proxied by acquisition and target announcements) events. However, he neglects that, among unscheduled events, some announcements are easier to anticipate with a visible releasing pattern than others. For example, compared to takeover announcements, the frequency of issuing voluntary earnings guidance is much higher, and the pattern is easier to capture.

Thus, it is necessary to distinguish those events which can be anticipated from the unscheduled group. I use voluntary earnings guidance as a proxy of unscheduled but expected announcements. Firms voluntarily choose to issue their management earnings forecasts to reduce earnings surprises and information asymmetry before the actual earnings announcement. Firms normally announce such a forecast via their conference calls. Although the release is volunteered by the firm and not fully guaranteed, conference attendees continue to expect to receive such information. Therefore, when the timing of the next conference calls is being posted publicly in advance¹, investors will anticipate the potential release of an earnings guidance.

For the unexpected events, I use changes of dividend, seasoned equity offering, and share repurchases as proxies. My results in pre-announcement price responses confirm that these three events are unanticipated in advance as there is no price run-up during the pre-announcement period.

For my main test, I calculate the abnormal trading volume prior to both types of corporate announcements. My result provides empirical evidence to distinguish ambiguous predictions from the various theoretical models. When the potential timing of information can be anticipated in advance, theoretical models from Admati and Pfleiderer (1988) and Foster and Viswanathan (1990) can hold. Consistent with their model prediction, I observe that firms experience abnormal low volume prior to expected announcements. This finding indicates that liquidity traders remain silent when they expect a flow of information will be released shortly. I further find that such silence in trading volume is more significant when the level of information asymmetry is high. This phenomenon not only applies to fully

¹ See the web link: <http://biz.yahoo.com/cc/>

scheduled earnings announcements but also appears among unscheduled but expected earnings guidance. Hence, compared to Chae's (2005) classification, I believe that separating corporate announcements based on whether the timing information is expected or not serves the model better.

Conversely, when the announcement comes as a surprise to the public, models from Kyle (1985) and Glosten and Milgrom (1985) apply². Allied with their model prediction, I observe abnormally high volume prior to all types of unexpected announcements. This observation can be explained by informed traders taking advantage of their private information before the public disclosure and increasing the difference in expectations.

In conjunction with the volume response, I further investigate the price reaction prior to the various types of events. Changes in trading volume on the announcement reflect differences among investors', while changes in price movement reflect investors' average expectations (Beaver, 1968; Karpoff, 1986). I find a significant price run-up prior to expected announcements, which indicates the anticipation of the expected events. This finding is also consistent with the prediction that liquidity traders remain on the side before expected announcements as decreased liquidity trading will lead to informed trading being less concealed. Therefore, private information is more likely to be instantaneously reflected in the price. An observed positive relation between the price run-up and the value of the information, measured by price movements and earnings surprise during announcement days, confirms this explanation. For unexpected announcements, I do not observe such a significant ex ante price anticipation. This finding verifies that those unexpected announcements are not anticipated in advance. Furthermore, the finding is also consistent with the prediction that a higher level of camouflage of informed trades thanks to normal liquidity trading prior to unexpected events prevents private information from being revealed efficiently.

² In their model, liquidity traders are assumed to be 'random noise traders' whose trades are exogenous and inelastic to price.

My study contributes to the literature on pre-announcement trading behaviors, which tends to focus on boosted informed trading, trades by insiders (Meulbroek, 1992; Ravina and Sapienza, 2010; Cohen et al., 2012), and trades beyond insiders (Aktas et al., 2007; Christophe et al., 2010; Kaniel et al., 2012; Baruch et al., 2017). Few studies have addressed the reduced response in trading behaviors, and they are mainly concentrated on insider silence (Marin and Olivier, 2008; Lei and Wang, 2014; Akbas, 2016), and investor inattention (Loh, 2010; Louis and Sun, 2010; Michaely et al., 2016). Discussions on the behavior of liquidity traders are limited and, in most cases, they are being treated as noise traders. My study emphasizes the role of liquidity traders in the aggregate volume responses that are associated with various types of corporate announcements.

A key feature of my research is that I contrast expected and unexpected corporate announcements based on the predictability of timing information, while most of the existing literature either focuses on individual types of events or on a pooled setting. Papers that have investigated the impact of various types of events on market reactions primarily focus on the comparison between good and bad news (Chan, 2003; Kothari et al., 2009; Korczak et al., 2010; Galil and Soffer, 2011). However, it is difficult to recognize the impact of liquidity trading in a setting of good versus bad news, as liquidity traders are uninformed about the value of the news.

Three studies claim to include the timing information. Graham et al. (2006) focus on dividend announcements and group them into anticipated and unanticipated dividend announcements but do not verify whether an anticipated dividend announcement is informational or not (as an announcement with an unchanged dividend may contain no incremental information) which may affect informed traders' trading interests. Chae (2005) and Lei and Wang (2014) classify corporate announcements into scheduled and unscheduled events, but do not consider the various predictability of unscheduled events, as some are easier to predict than others. My study contributes to optimizing the researchers' classification method by distinguishing the events which can be anticipated from the unscheduled group, as liquidity traders can continue to choose to wait for the news if the news is

predictable. In addition, Chae (2005) and Lei and Wang (2014) use merge and acquisition announcements as their proxies of unscheduled events. One cannot say whether the difference in market reactions is due to the value of the information (as the takeover events generally associate with a significantly greater price premium and price run-up than non-takeover events) or the timing factor. I use unexpected non-takeover events to avoid this issue.³

The remainder of this paper is organized as follows. In section 2, I develop my hypotheses, followed by a description of the data and the methodology in section 3. Empirical results are reported in section 4, and section 5 concludes.

2. Theoretical Background and Hypothesis

Early research on trading volume reactions initially began with the test of the price-volume relation, where a positive relation between trading volume and stock returns has been uncovered empirically (Crouch, 1970; Grammatikos and Saunders, 1986; Lee and Rui, 2002; Ofek and Richardson, 2003). Stock returns are used as a measure of market average expectations, while volume reactions are used as a measure of differences among individual traders or of different interpretations of the news (Beaver, 1968; Karpoff, 1986; Kim and Verrechia, 1991; Atiase and Bamber, 1994).

Various motivations behind trades generate the differences in the market. In general, traders can be classified into two types based on their trading motives: informed traders, who trade due to their superior information about stocks' future price movements (either through public or non-public channels); and liquidity traders, who trade due to their liquidity needs, which are unrelated to future price movements (sources from only public channels, also called uninformed traders). Each type of trades is concealed by the other and difficult to distinguish empirically.

Theoretical models from Kyle (1985) and Glosten and Milgrom (1985) suggest that informed trading dominates the move of total trading volume. Based on this scenario, trading volume is expected to

³ I am grateful to the referee for suggesting non-takeover proxies.

increase before public announcements, as informed traders are attempting to exploit profits optimally before the information asymmetry is reduced. Empirical studies have shown supporting evidence of boosted trading behavior by focusing on the performance of informed trading (Jayaraman, et al., 2001; Ke et al., 2003; Piotroski and Roulstone, 2005; and Spyrou et al., 2011). In these studies, liquidity traders are assumed to be 'random noise traders' whose trades are exogenous and inelastic to price.

However, the role of liquidity traders should not be neglected as argued by Admati and Pfleiderer (1988) and Foster and Viswanathan (1990). The researchers' theoretical models demonstrate that discretionary liquidity traders who have the flexibility of allocating their trading demands across time will hold their trades to avoid high trading costs. Models by Milgrom and Stokey (1982), Black (1986), and Wang (1994) also suggest that uninformed traders will participate less when the possibility of informed trading is high. Based on this scenario, trading volume is expected to decrease before public announcements as uninformed traders may postpone their trading demands when the information asymmetry is relatively high and concentrate their trades after the asymmetry is resolved.

As liquidity traders are uninformed, no such adjustment in their trading would be made if they do not realize that the disadvantage of being uninformed is great, which normally occurs before news is released to the public. Only if the timing of the news announcement is anticipated publicly in advance will liquidity traders then be able to postpone their trading demands accordingly. Chae (2005) proposes that liquidity traders will choose to wait when the forthcoming announcement is fully scheduled within a clear time frame. However, as argued in the introduction, liquidity traders will make the same adjustment if an unscheduled announcement can be expected following previous patterns. Therefore, I predict that the evidence of postponed trading should be observed before not only scheduled but also expected announcements.

Hypothesis 1:

a) There is evidence of postponed trading before scheduled and expected announcements.

b) This evidence should also exist before unscheduled but expected announcements

c) No such evidence exists before unscheduled and unexpected announcements.

If, as predicted, liquidity traders will wait for the public disclosure to avoid high adverse selection costs, they are more likely to do so when the level of information asymmetry is high. Therefore, I predict a negative relation between pre-announcement trading volume and information asymmetry should be observed among expected announcements. Furthermore, the anticipation level of an unscheduled but expected announcement will be less significant than a scheduled event; thus, the above-proposed volume and information asymmetry relation should be less significant among unscheduled but expected events.

Hypothesis 2:

a) The evidence of postponed trading is stronger when the level of information asymmetry is high.

b) This relationship should be stronger among scheduled and expected announcements than unscheduled but expected announcements.

Given that liquidity trading is held to prevent the disadvantage of not being informed about the news, the trading demands should eventually be fulfilled after the news is being released (George et al., 1994). This finding leads to increases in trading volume after the announcement. Furthermore, the more delayed trades that are attributed to the greater information asymmetry should be followed by higher volume during the post-announcement periods.

Hypothesis 3:

a) The postponed trades should eventually proceed once expected announcements are released.

b) More postponed trades that are associated with high information asymmetry before expected announcements should lead to more trading demands after the announcements.

It is worth noting that the different levels of belief revisions across individual traders in accordance with their differences in pre-announcement expectations will also lead to increases in trading volume after the announcement (Kim and Verrecchia, 1991). Although Kim and Verrecchia's and George's et al. models suggest different explanations of high trading volume on/after announcements, both indicate that the increased trading volume following the announcements should be more significant when the level of pre-announcement information asymmetry is high.

A further verification of whether the announcement is being anticipated by the market before its public disclosure via testing pre-announcement price responses helps to complete the picture of market reactions in a different dimension. If, as predicted, liquidity traders remain on the side before the expected announcements, private information is more likely to be instantaneously reflected in the price, as informed trading becomes less concealed by liquidity trading. A higher level of camouflage of informed trades among the normal liquidity trading prior to unexpected events may prevent private information from being revealed efficiently. Therefore, I predict the observation of a more significant price run-up before expected announcements than before unexpected announcements. The price run-up should be positively associated with the value of the information as the incentive to trade on the private information before its public disclosure is high when the value of the information is great.

Hypothesis 4:

a) There is evidence of price run-up before expected announcements.

b) The pre-announcement price run-up is more significant if the value of the information is greater.

3. Data and Methodology

I examine five different types of corporate announcements issued by NYSE, NASDAQ and Amex companies: mandatory annual earnings announcements, voluntary earnings guidance, changes of dividend, seasoned equity offering, and share repurchases. I classified those five types of announcements into two categories based on whether the timing of the announcement is expected:

mandatory earnings announcements and voluntary earnings guidance are in the group of expected announcements, while changes of dividend, seasoned equity offering, and share repurchases are in the group of unexpected announcements.

The sample of companies' voluntary earnings guidance is collected from *Briefing.com*⁴. Samples of mandatory annual earnings announcements and changes of dividend are collected from *COMPUSTAT*. Samples of seasoned equity offering and share repurchases are collected from the Securities Data Company (SDC) database. My sample period begins from January 2001 to December 2010; thus, I can provide an out-of-sample test for Chae's (2005) work, which ends by 2000. Furthermore, Chae only finds evidence of delayed trading among the quarterly earnings announcements by using the pre-2000 sample period and no such evidence among the annual one. This finding may be due to the delayed trading behavior from liquidity traders being outweighed by a large quantity of informed trades prior to Reg FD. It is worthwhile to note that the information environment after 2000 has experienced dramatic changes (Lee et al., 2014).

Table 1 shows the number of observations in each type of announcement with sufficient firm-level data. I observe that the frequency of earnings guidance is approximately half the number of mandatory earnings announcements. This observation is reasonable because the earnings guidance is voluntarily disclosed with no fixed schedules. Furthermore, more voluntary earnings guidance contains large earnings surprises than actual earnings as firms attempt to warm the market via the management guidance before their fiscal earnings announcements.

The percentage of earnings surprises is calculated by the difference between mandatory announced earnings per share, hereafter EPS, or voluntary announced EPS guidance and the forecasted EPS from analyst expectations (analyst forecasts are collected from I/B/E/S) before the corporate announcement scaled by the forecasted EPS. From Table 1, I observe that downside profit warnings

⁴ *Briefing.com* is a professional online platform that provides up-to-date firms' releases, conference call, analysts' recommendations, and historical data. The EPS guidance on *Briefing.com* is provided freely to the public.

(defined as earnings guidance with negative earnings surprises) are being issued more than upside guidance (defined as earnings guidance with positive earnings surprises), including after excluding two recession periods (years 2001 and 2008). This finding may be due to companies' disclosure strategy of preventing litigation issues (Skinner, 1997), as bad news would normally lead to more lawsuit troubles than good news.

[Insert Table 1 around here]

The hypothesis tests are conducted following two steps: first, running an event study to capture abnormal trading volume before and after the corporate announcements, and then, employing cross-sectional panel regression analysis to investigate the relationship between abnormal trading volume and pre-disclosure information asymmetry.

For the event study portion, a conventional method (see, for example, Bamber, 1986; Ajinka et al., 1991; Atiase and Bamer, 1994, Tkac, 1999) to work with volume data is employed. I use daily turnover as the measure of trading volume. The daily turnover of firm i is defined as the percentage of outstanding shares traded on day t :

$$V_{it} = (V_{it}^* \times 100) / S_{it} \quad (1)$$

where V_{it}^* is the total number of shares of firm i traded on day t , and S_{it} is firm i 's total number of outstanding shares on day t . Ajinkya and Jain (1989) argue that log-transformation yields trading volume measures that are approximately normally distributed, where the distribution of raw trading volume may be skewed. Thus, I use the natural log of the daily turnover plus 0.000255, to avoid zero-trading days, and calculate the log-transformed abnormal turnover by using the log-transformed turnover of firm i on day t minus the average log-transformed turnover of firm i over the estimation period:

$$Abnormal\ Turnover_{it} = V_{it} - \bar{V}_i \quad (2)$$

where

$$\bar{V}_i = \frac{1}{T} \sum_{t=t_1}^{t=t_2} V_{it}$$

T is the length of the estimation period, and t_1 and t_2 are the first and last day of the estimation period, respectively. Specifically, a 65-day estimation period prior to the event window is employed in this study. For example, suppose day 0 is the event date, and the event window is 21 days; a 65-day estimation period would be (-75, -11). I use the average turnover of firm i over the estimation period as the benchmark for each sample firm to control for cross-sectional differences at the firm-specific level.

I further use four alternative methods for the calculation of abnormal trading volume as robustness checks. First, I extend the estimation period from 65-day to 130-day. Second, I use raw turnover instead of using log-transformed turnover to calculate abnormal turnover. Third, I replace the average turnover by using the value-weighted market volume index as a benchmark. One-factor OLS regression is employed for the estimation of the coefficient of market turnover during the 65-day estimation period for firm i , which is applied to calculate the expected turnover. The abnormal turnover is calculated by the daily turnover of firm i on day t minus the expected turnover of firm i on day t . Finally, I run sub-sample tests over different periods to check the stability over years.

I further control for the effects of the direction of the news with concern for managerial asymmetric preference for good or bad news (Kothari et al., 2009). I divide the earnings-related announcements into two sub-samples based on the sign of earnings surprises and separate dividend changes announcements based on the direction of the changes. For each sub-sample, I further divide the announcements into two extra sub-samples based on the magnitude of the surprises: large earnings surprise events/large dividend changes, where the absolute percentage changes are greater than 25%, and small surprise events, where the absolute percentage changes are less than 5%. Certain firms may occasionally release unexpected profit warnings through the media when they realize the earnings

surprises are overly large to hold. Therefore, extra tests for the voluntary earnings guidance group with only small earnings surprises could help to avoid the effect from those unexpected profit warnings.

For the cross-sectional regression portion, I test the relationship between the abnormal turnover and the level of pre-disclosure information asymmetry by estimating equation (3) in accordance with Chae's (2005) model:

$$CATV_i = b_0 + b_1 InfoAsym_i + b_2 Risk_i + b_3 PrcChg_i + \varepsilon_i \quad (3)$$

where the dependent variable, $CATV_i$, is the cumulative abnormal turnover during a specific event window, such as $CATV_i$ in the pre-announcement period (-10, -1). For testing the volume and asymmetric information relation, a set of proxies of information asymmetry ($InfoAsym_i$) is used as an explanatory variable.

I use companies' size, and numbers of analyst forecasts as proxies of information asymmetry. All firm-level data are obtained from the Center for Research in Security Prices (CRSP) database. Size is widely used as a proxy of information asymmetry (Bamber, 1987; Tkac, 1999; Llorente et al., 2002; Chae, 2005), and generally, a larger size reflects less pre-disclosure information asymmetry. I use the logarithm of the market value of equity as firm size, which is calculated by the closing price per share multiplied by the number of outstanding shares. The use of analyst forecast factors, collected from by I/B/E/S, could be referring to Ajinkya et al. (1991), Atiase and Bamber (1994), and Hong et al. (2000). The concept is that fewer analysts providing their forecasts implies higher information asymmetry, as uninformed investors would have fewer opportunities/channels to obtain independent analysis or information.

I further include $Risk_i$ to control for the level of risk, which may affect trading volume if market participants have various risk aversion. I use changes of beta and price volatility as a measurement of

systematic and non-systematic risk, respectively. The change of beta is calculated by using the percentage change of beta between pre- (-70, -1) and post-announcements (+1, +70) periods, where the beta is estimated by using the one-factor market model. I use the standard deviation of monthly stock returns from the previous year of the announcement date as price volatility. I also include $PrcChg_i$ to control for the same days price change which may associate with changes of volume (e.g., Kim and Verrecchia, 1991; Wang, 1994). I use the absolute cumulative abnormal returns (CARs) to capture the price change over the same period as the abnormal turnover.

The daily abnormal return (AR) is calculated following the market-adjusted model and equals to company i 's daily return mins the benchmark portfolio's daily return. I use size decile portfolios in accordance with Fama and French (1992)⁵ as benchmark portfolios for the calculation. All sample events are matched to an appropriate size decile portfolio for the preceding 1st of July, based on their market value after the announcement day (on day $t+2$). This finding is to acknowledge that certain firms issue announcements after the closure of the markets; therefore, there would be a substantial change in the value of event companies on the announcement day and the day after (Bulkley and Herrerias, 2005; Berkman and Truong, 2009).

I also control for industries by using industry dummies based on the Fama and French 12 industry classification⁶. Stocks are sorted into 12 industry categories based on four-digit Standard Industrial Classification (SIC) codes as provided by CRSP. Year dummies are also included to control for time-varying of the trading volume. Chae implements Fama and MacBeth (1973) type regressions to control time-series variation. I run pooling OLS regressions controlling year dummies for my main results and run Fama and MacBeth (1973) type regressions as an alternative robustness check.

⁵ The construction of breakpoints of size deciles is obtained from Kenneth R. French's online data library: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

⁶ The Fama-French 12 industry classification is available from French's online data library: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

4. Empirical Results

4.1. Abnormal Turnover before Corporate Announcements

I report daily average abnormal turnover as much as ten days before each type of announcements in Table 2. For scheduled and expected actual earnings announcements, I observe evidence of postponed trading where the cumulative abnormal turnover during pre-announcement (-10, -1) period is significantly negative. Chae's (2005) story regarding the postponed trades is only supported by the result of decreased trading volume before quarterly earnings announcements. Unfortunately, he does not observe the same trading pattern among annual earnings announcements. He argues that the disappearance of decreases in trading volume before annual announcements is because of the great availability of information during the first quarter of the year. My results based on the investigation during the post-2000 sample period⁷ find supportive evidence of delayed trading before the annual announcements as well as Chae's evidence among quarterly announcements. I argue that the implementation of a series of regulations after 2000 have changed the information environment dramatically (Lee et al., 2014), which may be one of the reasons that the pre-announcement total trading volume after 2000 is dominated by delayed trading as selective informed trading may have been largely reduced.

For unscheduled but expected earnings guidance, I observe a similar delayed trading pattern in Table 2 where the abnormal turnover is more negative during the (-10, -1) period. Although voluntary earnings guidance is unscheduled, the evidence of postponed trading continues being detected. This finding suggests that discretionary liquidity traders will choose to wait for the potential news as long as the news is expected, and not necessarily scheduled in a fixed time interval.

For unexpected announcements, in Table 2, I observe no evidence of delayed trading but boosted volume up to ten days before all three types of events. This finding confirms my argument that

⁷ I also test the pre-2000 sample period and find the same result (no such decreased trading volume before annual earnings announcement) as Chae does.

liquidity traders are not able to optimize their trading decision to avoid high adverse selection costs if they do not expect to receive any news in the near future. Although informed traders normally conduct their trades intensely before their private information is released to the public, liquidity traders are not able to predict high trading demands from informed traders prior to unforeseen news. The evidence of boosted trading suggests that the total trading volume contains a certain level of informed trades taking advantage of private information prior to the public disclosure.

[Insert Table 2 around here]

4.1.1. Robustness Checks for Pre-announcement Abnormal Turnover

In Table 3, I conduct four alternative methods to calculate pre-announcement abnormal turnover as robustness checks. The first robustness check (in panel A, Table 3) uses an extended estimation period for the calculation of average turnover, which starts from day -140 to day -11, where the initial estimation period is 65 days. The results are similar to the main results in Table 2 where I find a significant decrease of trading volume before both types of expected announcements and an increase of trading volume before unexpected announcements.

The second robustness check (in panel B, Table 3) uses raw turnover instead of log-transformed turnover, with the same estimation window (65-day) as the main test in Table 2. Once again, I observe similar results, where the average cumulative raw abnormal turnover is negative before both types of expected announcements and positive before unexpected announcements.

With a concern that the total market volume may have a systematic effect on individual stocks' daily trading volume, I run a third robustness check (in panel C, Table 3) by using a value-weighted market volume index as the benchmark turnover instead of using individual stocks' past turnover. The results are similar, and evidence of delayed trading before both types of expected announcements is stronger than the main results in Table 2. For unexpected announcements, I find a significant increase in pre-announcement trading volume before seasoned equity offering and share repurchases announcements; however, the volume reaction is insignificant before changes of dividend.

To check the stability across years, I further run two sub-period (2001-2005, 2006-2010) tests based on the announcement dates (in panel D, Table 3). The results across different periods are consistent. Furthermore, the negative abnormal turnover before both types of expected announcements is more significant in the second sub-period (2006-2010).

[Insert Table 3 around here]

4.1.2. Controlling for Information Surprises

To control for asymmetric volume reactions with regards to the direction of the news, I divide the sample of actual earnings announcements and earnings guidance into positive and negative news, based on the sign of earnings surprises. I also divide the sample of changes of dividend into dividend increases and dividend decreases' announcements. Panel A of Table 4 shows that the evidence of delayed trading before both types of expected announcements can be observed across all four sub-samples and there is no significant difference in pre-announcement delayed trading reactions between positive and negative news. Both increased and decreased dividend announcements are associated with similar boosted volume reactions during (-10, -1) periods.

I further test two extra sub-samples in terms of the magnitude of the information surprises within each positive/negative group. Panel B of Table 4 shows that there is decreased trading volume before both types of expected announcements across all extra sub-groups regardless of the size of earnings surprises, except the downside actual earnings group with a small surprise. I also observe that announcements with large surprises encounter more reductions in pre-announcement trading volume than those with small surprises, particularly among bad news. This observation is reasonable because large earnings surprises normally associate with greater pre-disclosure uncertainty, which would increase liquidity traders' willingness to wait for the expected public announcements. For unexpected changes of dividend, there is no significant difference in volume reaction from the groups with large and small dividend changes.

[Insert Table 4 around here]

4.2. Abnormal Turnover and Information Asymmetry before Corporate Announcements

The inspection of the pre-announcement abnormal turnover in Table 2 suggests that there is evidence of delayed trading before both scheduled and unscheduled expected announcements. If such a delayed trading pattern reflects discretionary liquidity traders postponing their trade to minimize adverse selection costs, I would expect to observe more delayed trading if the level of information asymmetry is high. Although earnings guidance is expected as the timing of hosting a conference call is normally being released to the public in advance, it is a voluntary disclosure and much less scheduled than the actual earnings announcement. Therefore, I would expect the relationship between pre-announcement trading reactions and information asymmetry among unscheduled earnings guidance should be less significant than the relationship among scheduled actual earnings announcements.

I employ cross-sectional regressions to test the relationship between the pre-announcement abnormal turnover and the level of information asymmetry. Proxies of information asymmetry, size and the number of analyst forecasts, have been applied. If the delayed trading is more significant in response to the level of information asymmetry, I should expect to observe negative relationships between volume and information asymmetry, which could be reflected by estimated positive signs for the variable of firm size and numbers of analyst forecasts.

The regression results in Table 5 (a) are consistent with my expectations. For example, I observe that small firms that reflect higher information asymmetry are associated with higher decreased volume before scheduled and expected actual earnings announcements (0.432 with a t-statistic of 25.326). For unscheduled but expected earnings guidance, such a positive relationship between size and volume continues to be observed but is slightly less significant in terms of the magnitude (0.293 with a t-statistic of 15.199). I further observe similar negative relationships between volume and information asymmetry by using the number of analyst forecasts as an alternative proxy. The estimated positive coefficients among both types of expected announcements indicate that the pre-

announcement trading volume decreases more when there are fewer analyst forecasts. Once again, the negative relationship is less significant among the less scheduled earnings guidance.

For unexpected announcements, I expect no such negative pre-announcement volume, and information asymmetry relation should be detected as there is no evidence of delayed trading in accordance with Table 2. My regression results in Table 5 (a) confirms that for the announcement of unexpected seasoned equity offering. For unexpected dividend changes and share repurchases, I observe weak evidence of a negative pre-announcement volume and information asymmetry relation.

Although the pre-announcement volume and information asymmetry relationship continues to hold for unexpected dividend changes and share repurchases, the estimated coefficients of information asymmetry factors are statistically less strong than the results from both types of expected announcements (see the results of the Wald test in Table 5 (b)). To enrich Chae's (2005) story about different trading patterns between scheduled and unscheduled announcements, my results added that the unscheduled but expected earnings guidance also experience a significantly different trading pattern with unexpected announcements. This finding indicates that the expectation of timing information plays a crucial role in the pre-announcement volume reactions.

[Insert Table 5 around here]

I also run the Fama and MacBeth type regressions as Chae (2005) does to test the volume and information asymmetry relationship, where the reported coefficients in Appendix A are time series averages from cross-sectional regressions using annual data. The results are consistent. Furthermore, my results are not sensitive to the choice of event windows, as I find similar evidence when replacing the dependent variable, cumulative abnormal turnover over window (-10, -1) in Table 5, with cumulative abnormal turnover over window (-10, -3). I also run sub-sample tests based on the direction of the news and the level of earnings surprises for both types of expected announcements.

The negative relationship between pre-announcement abnormal turnover and information asymmetry consistently holds for all sub-groups⁸.

4.3. Abnormal Turnover following Corporate Announcements

Following the decreased volume among pre-announcement windows, Table 2 further shows that the trading volume increases as much as ten days after both types of expected announcements. For unexpected announcements, the increased volume remains from the pre- to post-event periods. It is important to note that trading volume boosted to the peak on the announcements day and one day after for both expected and unexpected announcements. This finding could be due to announcements that are made after market closure (Berkman and Truong, 2009). Hence, the announcement dates are adjusted to include both day 0 and day +1.

The observed increases in trading volume following the expected announcements may be explained by liquidity traders eventually fulfilling their trading demands. Alternatively, the increases in trading volume could be due to the different levels of belief revisions across individual traders following their differences in pre-announcement expectations. It is difficult to distinguish these two explanations for the expected announcements. However, both explanations indicate that the increased trading volume following the announcements should be more significant when the level of pre-announcement information asymmetry is high.

Table 6 (a) reports the regression results by replacing the dependent variable, CATV (-10, -1) as reported in Table 5, with the abnormal turnover during the announcement (0, +1) and post-announcement (+2, +10) periods. I further provide the Wald tests in Table 6(b) to compare the differences in the estimated coefficients between pre-announcement periods and post-announcement periods. As predicted, the estimated coefficients of information asymmetry factors either change sign or are at least reduced in magnitude when compared with regressions for pre-

⁸ Regression results based on alternative events windows and sub-samples are available upon request.

announcement periods among scheduled actual earnings. This finding suggests that the negative relationship between abnormal turnover and information asymmetry changes dramatically from the pre-announcement periods to post-announcement periods.

For the newly added unscheduled but expected earnings guidance, the changes of the relationship in volume and information asymmetry are also significant; refer to Table 6 (a) for regression results and Table 6 (b) for the comparison of the estimated coefficients between pre- and post-announcement periods. For example, the estimated coefficient of firm size changes from a positive sign (0.293, with a t-statistic of 15.199) during the pre-announcement period to negative signs in the tests of announcement dates (-0.001, with a t-statistic of -0.249) and post-announcement periods (-0.046, with a t-statistic of -2.207). Similar changes of signs occur on the estimated coefficients for the analyst forecast numbers.

[Insert Table 6 around here]

4.4. Price responses associate with Corporate Announcements

I further conduct event studies on price reactions by calculating cumulative abnormal returns over the 21-day event windows across various types of corporate announcements. In Table 7, I observe significant CARs (0, +1) among all types of events, which indicates that all these five types of corporate announcements are informational.

I further observe that the pre-CARs during (-10, -1) periods are statistically significant before both expected actual earnings and earning guidance. The price movement prior to the expected events is also consistent with the direction of the news. For example, downside earnings guidance with an average CAR (0, +1) of -5.75% experiences price decrease prior to the announcements, evidenced by a significant ex ante price anticipation with a negative average CARs (-10, -1) of -1.49%. Clearly, the announcement of the expected event is no to the market. This finding can be due to informed traders taking positions on their private information before the news is released publicly. As liquidity trading

decreases prior to the expected events, private information is more likely to be revealed as informed trading is now being less concealed.

Furthermore, informed traders have greater incentive to trade when the potential value of the information is great. Therefore, a further investigation is conducted to test whether the price run-up before expected announcements is associated with the value of the information, measured by both earnings surprises and absolute price changes during the announcement dates. I sort both types of expected announcements into quintiles based on earnings surprises and absCAR (0, +1). The comparison of pre-CAR (-10, -1) between high-value (Q5) and low-value (Q1) groups is reported in Table 8. As expected, I observe that the price run-up for the high-value quintile is significantly higher than for the low-value quintile for both types of expected announcements.

In contrast, the price run-up has not been observed before the unexpected events, where the ex ante CARs (-10, -1) in Table 7 are either insignificant or inconsistent with the direction of the news, except for the case of dividend increases⁹. Given that informed traders are indifferent in receiving private information between expected and unexpected events, a lower price anticipation before unexpected announcements indicates that the private information is not being reflected in the price before the public disclosures. Combining the increased volume reactions with the unanticipated price reactions, a possible explanation may be that informed trading is hidden behind non-decreased normal liquidity trading.

[Insert Table 7 around here]

[Insert Table 8 around here]

5. Conclusion

⁹ The significant positive price reactions corresponding to the dividend increases might be associated with markets' faith in strong future earnings as firms normally stick to a stable dividend payout policy where an increasing dividend indicates an upward long-term commitment.

In this paper, I examine the dynamic trading behavior around various types of corporate announcements. I find that trading volume not only decreases before scheduled announcements but also decreases before unscheduled but expected announcements. The decreased trading is significantly stronger when the level of information asymmetry is high. I find no similar decreases but do find increases in volume before unexpected announcements. The relation between pre-announcement volume reactions and the information asymmetry among unexpected announcements is weakly significant or insignificant. I further uncover that trading volume increases following the announcements, and the negative volume and the information asymmetry relationship during pre-announcement periods change significantly after the announcement is made.

My findings have implications for theoretical models explaining dynamic volume reactions around corporate announcements. In particular, the expectation of the arrival of a public announcement could be a useful point to distinguish different models. For example, in the models by Admati and Pfleiderer (1988), and Foster and Viswanathan (1990), liquidity traders play a crucial role in the behavior of trading volume. Given that liquidity traders have discretion over when to trade, they may delay their trades to avoid high adverse selection costs. The timing information of a public announcement provides a hint for discretionary liquidity traders to judge when the adverse selection problem is most concentrated. My results are consistent with the models that predict that discretionary liquidity traders may postpone their trades before expected announcements to avoid high trading costs. For future research, one may consider distinguishing empirically between two explanations (liquidity traders eventually fulfill their trading demands or revisions following different pre-announcement briefs) for boosted trading following the announcements.

Appendix

Appendix A Results of Fama/MacBeth Type Regressions for Abnormal Turnover during (-10, -1)

This table reports the results of regressing abnormal turnover during period (-10, -1) on information asymmetry proxies and other control variables across five different types of announcements, respectively. All results are from Fama/MacBeth type regressions. The coefficients are the time-series averages of the coefficients from cross-sectional regressions from each annual data. *Firm Size* represents the firm's size which is measured by the logarithm of the market value of equity. *Number of Analysts* represents the number of analysts' forecasts following the firm one-month prior to the event release. *Volatility* represents the volatility of share price by using standard deviation of monthly stock returns from the previous year of the announcement date. *Beta* represents the change of beta which is calculated by using the percentage change of beta between pre- (-70, -1) and post-announcements (+1, +70) periods, where the beta is estimated by using one-factor market model. *AbsCAR(-10, -1)* represents the change of share price by using the absolute CARs in period (-10, -1). Conventional t-statistics reported in brackets are applied with significance levels of 10%, 5% and 1%, which are represented by *, **, and ***, respectively.

	Expected Announcements				Unexpected Announcements					
	Actual Earnings		Earnings Guidance		Dividend Changes		SEO		Share Repurchases	
Firm Size	0.435*** (6.778)		0.300*** (8.338)		0.117*** (2.689)		0.086 (0.609)		0.104*** (2.608)	
Number of Analysts	0.080*** (6.034)		0.036*** (5.187)		0.0289** (2.062)		-0.047 (-1.520)		0.017 (1.082)	
Volatility	-0.046*** (-4.246)	-0.046*** (-4.229)	-0.042 (-1.407)	-0.048 (-1.585)	-4.666* (-1.815)	-5.570** (-2.080)	-2.204 (-1.094)	-2.766 (-1.366)	-6.890*** (-3.959)	-7.721*** (-4.142)
Beta	0.021 (1.532)	-0.006 (-0.442)	0.005 (0.052)	-0.032 (-0.326)	-0.008 (-0.097)	-0.016 (-0.192)	0.213* (1.868)	0.194* (1.806)	0.134 (1.405)	0.113 (1.217)
AbsCAR(-10,-1)	19.509*** (9.019)	18.144*** (-8.022)	19.406*** (8.213)	18.038*** (7.521)	25.233*** (11.692)	24.930*** (11.346)	20.327*** (7.336)	20.156*** (7.211)	23.159*** (8.463)	22.992*** (8.515)
Intercept	-7.174*** (-7.235)	-1.712*** (-5.276)	-6.254*** (-14.477)	-2.17*** (-8.935)	-1.554*** (-2.806)	-0.890 (-1.443)	1.66 (0.932)	0.950035 (0.728)	-0.410 (-0.753)	0.013 (0.026)
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-sq	0.107	0.090	0.098	0.084	0.086	0.087	0.160	0.157	0.112	0.114
N	22149	22149	13398	13398	6482	6482	1745	1745	3613	3613

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Tables

Table 1 Summary of Total Numbers of Observations across Different Announcements

This table reports the total number of observations for five different types of announcements from January 2001 to December 2010. Panel A presents the sample of expected events, while, panel B presents the sample of unexpected events. An earnings announcement with negative earnings surprise is classified as downside guidance or actual earnings, vice versa. A dividend announcement with dividend decreases (increases) compared to the previously paid dividend is classified as downside (upside) dividend changes. The percentage of observations with large earnings surprises/dividend changes is reported in parentheses. An earnings announcement with more than 25% earnings surprise is classified as large surprise news, while a change of dividend with more than 25% compared to its previous level is defined as large dividend change.

<i>Panel A: Expected Announcements</i>			
Actual Earnings		Earnings Guidance	
Downside Actual Earnings	Upside Actual Earnings	Downside Guidance	Upside Guidance
8923	13226	7469	5929
(23.76%)	(10.25%)	(37.35%)	(44.48%)
<i>Panel B: Unexpected Announcements</i>			
Dividend Changes		SEO	Share Repurchases
Downside Dividend Changes	Upside Dividend Changes		
1111	5371	1745	3613
(86.86%)	(23.48%)		

Table 2 Abnormal Turnover around Different Announcements

This table contains the daily (Panel A) and cumulative (Panel B) abnormal turnover around five types of corporate announcements from 2001 to 2010. The abnormal turnover is measured as the difference between the log-transformed turnover and the average log-transformed turnover estimated from a 65-day estimation period before the event window. The percentage of outstanding shares trades on day t is used as the turnover on day t. Conventional t-statistics are applied with significance levels of 10%, 5% and 1%, which are represented by *, **, and ***, respectively.

Panel A: Daily Mean Abnormal Turnover										
Day	Expected Announcements				Unexpected Announcements					
	Actual Earnings		Earnings Guidance		Dividend Changes		SEO		Share Repurchases	
-10	-2.09%	***	-4.08%	***	2.30%	***	11.38%	***	5.31%	***
-9	-2.88%	***	-3.92%	***	1.92%	**	9.47%	***	4.31%	***
-8	-4.33%	***	-6.43%	***	2.63%	***	9.11%	***	4.60%	***
-7	-4.79%	***	-7.63%	***	-0.15%		9.96%	***	3.00%	***
-6	-4.21%	***	-5.95%	***	3.52%	***	15.13%	***	5.86%	***
-5	-2.42%	***	-2.92%	***	3.81%	***	17.95%	***	8.63%	***
-4	-2.58%	***	-2.27%	***	2.99%	***	21.08%	***	9.05%	***
-3	-3.43%	***	-2.29%	***	2.97%	***	22.15%	***	8.84%	***
-2	-0.29%		0.71%		5.75%	***	30.35%	***	10.26%	***
-1	9.24%	***	11.41%	***	7.90%	***	41.20%	***	13.14%	***
0	52.48%	***	74.28%	***	22.35%	***	111.67%	***	39.56%	***
+1	71.72%	***	93.25%	***	26.62%	***	185.92%	***	43.29%	***
+2	38.38%	***	44.82%	***	18.83%	***	88.83%	***	23.38%	***
+3	25.92%	***	29.03%	***	14.76%	***	63.89%	***	16.15%	***
+4	19.59%	***	20.88%	***	13.18%	***	52.55%	***	14.06%	***
+5	15.31%	***	16.62%	***	11.41%	***	48.01%	***	11.63%	***
+6	11.33%	***	12.89%	***	8.78%	***	44.02%	***	9.34%	***
+7	9.47%	***	10.34%	***	8.31%	***	41.78%	***	7.36%	***
+8	7.51%	***	8.82%	***	7.37%	***	38.60%	***	6.20%	***
+9	6.64%	***	7.42%	***	5.78%	***	36.96%	***	4.35%	***
+10	5.08%	***	7.73%	***	4.54%	***	33.37%	***	3.71%	***
Panel B: Cumulative Mean Abnormal Turnover										
(-10, -1)	-17.78%	***	-23.37%	***	33.64%	***	187.78%	***	73.00%	***
(0, +1)	124.20%	***	167.53%	***	48.97%	***	297.59%	***	82.85%	***
(+2, +10)	139.23%	***	158.55%	***	92.95%	***	448.01%	***	96.18%	***

Table 3 Robustness Check on Alternative Measurements

This table reports alternative measurements of abnormal turnover for robustness check. Panel A uses an extended estimation window of 130 days before the event window; Panel B applies raw turnover; Panel C employs market model by using market volume index as benchmark; and Panel D present sub-period results. Conventional t-statistics are applied with significance levels of 10%, 5% and 1%, which are represented by *, **, and ***, respectively.

Panel A: Using 130-day as Estimation Length (t=-140 to -11)										
Day	Actual Earnings		Earnings Guidance		Dividend Changes		SEO		Share Repurchases	
(-10, -1)	-17.94%	***	-18.35%	***	52.05%	***	255.09%	***	86.55%	***
(0, +1)	124.14%	***	168.55%	***	52.65%	***	311.05%	***	85.56%	***
(+2, +10)	139.13%	***	163.22%	***	109.51%	***	508.59%	***	108.37%	***
Panel B: Using Raw Turnover										
Day	Actual Earnings		Earnings Guidance		Dividend Changes		SEO		Share Repurchases	
(-10, -1)	-24.60%	**	-43.98%	***	27.57%	***	305.53%	***	106.40%	***
(0, +1)	223.52%	***	411.60%	***	58.73%	***	912.92%	***	135.10%	***
(+2, +10)	108.64%	***	156.02%	***	68.62%	***	443.44%	***	73.43%	***
Panel C: Using Market Volume Index										
Day	Actual Earnings		Earnings Guidance		Dividend Changes		SEO		Share Repurchases	
(-10, -1)	-86.60%	***	-59.01%	***	-3.90%		183.38%	***	27.89%	***
(0, +1)	107.22%	***	153.11%	***	36.53%	***	293.25%	***	70.14%	***
(+2, +10)	95.96%	***	126.88%	***	71.77%	***	457.04%	***	75.12%	***
Panel D: Using Sub-periods										
Day	Actual Earnings				Earnings Guidance					
	2001-2005		2006-2010		2001-2005		2006-2010			
(-10, -1)	-18.10%	***	-17.52%	***	-19.32%	***	-26.59%	***		
(0, +1)	114.33%	***	131.83%	***	170.71%	***	165.00%	***		
(+2, +10)	104.17%	***	166.41%	***	147.80%	***	167.06%	***		
Day	Dividend Changes				SEO					
	2001-2005		2006-2010		2001-2005		2006-2010			
(-10, -1)	25.31%	***	41.13%	***	211.80%	***	166.69%	***		
(0, +1)	41.20%	***	55.94%	***	322.53%	***	275.68%	***		
(+2, +10)	72.68%	***	111.14%	***	494.73%	***	406.98%	***		
Day	Share Repurchases									
	2001-2005		2006-2010							
(-10, -1)	62.03%	***	80.71%	***						
(0, +1)	77.43%	***	86.66%	***						
(+2, +10)	82.83%	***	105.56%	***						

Table 4 Further Robustness Check on Information Surprises

This table presents sub-sample results for earnings-related announcements and changes of dividend based on the sign/magnitude of information surprises. Panel A reports sub-sample results among downside and upside surprise groups. Panel B and C report further sub-sample results among large and small surprise in each downside/upside surprise group. An earnings announcement with negative earnings surprise is classified as downside guidance or actual earnings, vice versa. A dividend announcement with dividend decreases (increases) compared to the previously paid dividend is classified as downside (upside) dividend changes. An earnings or dividend announcement with more than 25% (less than 5%) surprise is classified as large (small) surprise news. Conventional t-statistics are applied with significance levels of 10%, 5% and 1%, which are represented by *, **, and ***, respectively.

Panel A: Downside Vs Upside												
Day	Actual Earnings					Earnings Guidance						
	Downside		Upside		Difference	Downside		Upside		Difference		
CATV (-10, -1)	-20.40%	***	-16.00%	***	-4.40%	-24.03%	***	-22.56%	***	-1.48%		
CATV (0, +1)	115.95%	***	129.75%	***	-13.81%	173.49%	***	160.00%	***	13.49%	***	
CATV (+2, +10)	129.61%	***	145.75%	***	-16.14%	160.51%	***	156.09%	***	4.43%		
Day	Dividend Changes											
	Downside		Upside		Difference							
CATV (-10, -1)	32.09%	***	33.96%	***	-1.87%							
CATV (0, +1)	65.25%	***	45.60%	***	19.65%	***						
CATV (+2, +10)	102.86%	***	90.90%	***	11.97%							
Panel B: Large Surprise Vs Small Surprise												
Day	Downside Actual Earnings					Upside Actual Earnings						
	Large Surprise		Small Surprise		Difference	Large Surprise		Small Surprise		Difference		
CATV (-10, -1)	-64.49%	***	7.47%		-71.96%	***	-33.49%	**	-9.69%	**	-23.80%	*
CATV (0, +1)	107.28%	***	119.35%	***	-12.07%	***	142.81%	***	123.73%	***	19.08%	***
CATV (+2, +10)	82.54%	***	156.64%	***	-74.10%	***	180.83%	***	137.27%	***	43.56%	***
Day	Downside Guidance					Upside Guidance						
	Large Surprise		Small Surprise		Difference	Large Surprise		Small Surprise		Difference		
CATV (-10, -1)	-41.45%	***	-12.61%	*	-28.84%	***	-13.09%	*	-7.16%		-5.93%	
CATV (0, +1)	176.16%	***	154.05%	***	22.11%	***	168.50%	***	138.44%	***	30.06%	***
CATV (+2, +10)	144.72%	***	138.47%	***	6.26%	***	183.89%	***	107.39%	***	76.50%	***
Day	Downside Dividend Changes					Upside Dividend Changes						
	Large Surprise		Small Surprise		Difference	Large Surprise		Small Surprise		Difference		
CATV (-10, -1)	32.05%	**	-11.37%		43.41%	***	36.17%	***	36.99%	***	-0.82%	
CATV (0, +1)	66.82%	***	19.30%		47.52%	*	67.28%	***	37.34%	***	29.95%	***
CATV (+2, +10)	107.74%	***	138.60%	**	-30.85%	***	128.84%	***	78.10%	***	50.74%	***

Table 5 (a) Regression Results for Abnormal Turnover during (-10, -1)

This table reports the results of regressing abnormal turnover during period (-10, -1) on information asymmetry proxies and other control variables across five different types of announcements, respectively. All results are from OLS pooling regressions. *Firm Size* represents the firm's size which is measured by the logarithm of the market value of equity. *Number of Analysts* represents the number of analysts' forecasts following the firm one-month prior to the event release. *Volatility* represents the volatility of share price by using standard deviation of monthly stock returns from the previous year of the announcement date. *Beta* represents the change of beta which is calculated by using the percentage change of beta between pre- (-70, -1) and post-announcements (+1, +70) periods, where the beta is estimated by using one-factor market model. *AbsCAR(-10, -1)* represents the change of share price by using the absolute CARs in period (-10, -1). Conventional t-statistics reported in brackets are applied with significance levels of 10%, 5% and 1%, which are represented by *, **, and ***, respectively.

	Expected Announcements				Unexpected Announcements					
	Actual Earnings		Earnings Guidance		Dividend Changes		SEO		Share Repurchases	
Firm Size	0.432***		0.293***		0.133***		-0.101		0.100**	
	(25.326)		(15.199)		(4.674)		(-1.189)		(2.479)	
Number of Analysts	0.076***		0.032***		0.027***		-0.059**		0.017*	
	(16.214)		(6.849)		(3.555)		(-2.553)		(1.692)	
Volatility	-0.043***	-0.044***	-0.005	-0.008	-4.961***	-5.582***	-0.936	-1.034	-6.644***	-7.268***
	(-3.921)	(-3.957)	(-0.343)	(-0.635)	(-4.158)	(-4.740)	(-0.783)	(-0.870)	(-5.283)	(-5.997)
Beta	0.007	-0.012	0.060***	0.054***	-0.008	-0.014	0.030	0.03	0.077**	0.070*
	(0.691)	(-1.249)	(4.352)	(3.875)	(-0.373)	(-0.691)	(1.567)	(1.506)	(1.989)	(1.821)
AbsCAR(-10,-1)	14.971***	13.601***	14.706***	13.472***	21.200***	20.861***	15.021***	15.040***	18.754***	18.491***
	(38.975)	(35.674)	(31.384)	(29.093)	(21.862)	(21.589)	(17.200)	(17.281)	(19.785)	(19.704)
Intercept	-6.774***	-1.303***	-5.433***	-1.403***	-2.279***	-1.397***	0.577	0.304	-1.381*	-0.609
	(-21.284)	(-6.124)	(-13.750)	(-5.093)	(-5.091)	(-3.668)	(0.431)	(0.261)	(-1.899)	(-0.965)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-sq	0.091	0.076	0.085	0.072	0.077	0.076	0.156	0.159	0.103	0.103
N	22149	22149	13398	13398	6482	6482	1745	1745	3613	3613

Table 5 (b) Comparison of Coefficients between Expected and Unexpected Announcements

This table reports the Wald statistic for the comparison of coefficients for information asymmetry proxies between expected and unexpected announcements following Table 5 (a). The critical value of 95% in the Chi-square distribution with degree of freedom = 1 is 3.84.

	Firm Size	Number of Analysts
Actual Earnings Vs Dividend Changes	34.36	20.26
Actual Earnings Vs SEO	31.05	33.33
Actual Earnings Vs Share Repurchases	45.25	30.23
Earnings Guidance Vs Dividend Changes	5.32	0.01
Earnings Guidance Vs SEO	16.92	16.63
Earnings Guidance Vs Share Repurchases	14.91	3.17

Table 6 (a) Regression Results for Abnormal Turnover after Corporate Announcements

This table reports the results of regressing abnormal turnover during the announcement dates (0, +1) and the post-announcement period (+2, +10) on information asymmetry proxies and other control variables across two different types of expected announcements, respectively. All results are from OLS pooling regressions. *Firm Size* represents the firm's size which is measured by the logarithm of the market value of equity. *Number of Analysts* represents the number of analysts' forecasts following the firm one-month prior to the event release. *Volatility* represents the volatility of share price by using standard deviation of monthly stock returns from the previous year of the announcement date. *Beta* represents the change of beta which is calculated by using the percentage change of beta between pre- (-70, -1) and post-announcements (+1, +70) periods, where the beta is estimated by using one-factor market model. *AbsCAR* represents the change of share price by using the absolute CARs in the same period as the dependent variable. Conventional t-statistics reported in brackets are applied with significance levels of 10%, 5% and 1%, which are represented by *, **, and ***, respectively.

	CATV (0, +1)				CATV (+2, +10)			
	Actual Earnings		Earnings Guidance		Actual Earnings		Earnings Guidance	
Firm Size	0.075*** (15.043)		-0.001 (-0.249)		0.149*** (8.352)		-0.046** (-2.207)	
Number of Analysts		0.015*** (11.369)		-0.001 (-0.948)		-0.001 (-0.207)		-0.035*** (-6.995)
Volatility	-0.007** (-2.194)	-0.007** (-2.149)	0.001 (0.266)	0.001 (0.239)	-0.036*** (-3.181)	-0.039*** (-3.426)	-0.010 (-0.707)	-0.013 (-0.901)
Beta	0.008*** (2.738)	0.005* (1.705)	0.010** (2.349)	0.010** (2.326)	0.027*** (2.711)	0.018* (1.789)	0.035** (2.372)	0.033** (2.222)
AbsCAR(-10,-1)	7.592*** (61.930)	7.389*** (60.754)	7.666*** (66.877)	7.663*** (68.553)	11.522*** (27.549)	10.709*** (26.087)	11.130*** (19.837)	11.055*** (20.228)
Intercept	-0.402*** (-4.339)	0.521*** (8.411)	0.852*** (7.235)	0.846*** (10.436)	-1.953*** (-5.864)	0.176 (0.801)	0.951** (2.225)	0.680** (2.310)
Year Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-sq	0.193	0.189	0.293	0.293	0.062	0.059	0.056	0.059
N	22149	22149	13398	13398	22149	22149	13398	13398

Table 6 (b) Comparison of Coefficients between ex ante and ex post Abnormal Turnover

This table reports the Wald statistic for the comparison of coefficients for information asymmetry proxies between regressions for ex ante abnormal turnover and ex post abnormal turnover following Table 5 (a) and Table 6 (a). The critical value of 95% in the Chi-square distribution with degree of freedom = 1 is 3.84.

<i>Panel A: Pre-announcement Vs Announcement Periods</i>		
	Firm Size	Number of Analysts
Actual Earnings	207.16	169.90
Earnings Guidance	191.11	61.55
<i>Panel B: Pre-announcement Vs Post-announcement Periods</i>		
	Firm Size	Number of Analysts
Actual Earnings	144.32	299.76
Earnings Guidance	188.39	185.36

Table 7 Cumulative Abnormal Returns around Different Announcements

This table contains cumulative abnormal returns around five types of corporate announcements from 2001 to 2010. The abnormal return is measured by using market adjusted model with size decile referencing portfolios following Fama and French (1992). Conventional t-statistics are applied with significance levels of 10%, 5% and 1%, which are represented by *, **, and ***, respectively.

Periods	Expected Announcements							
	Actual Earnings				Earnings Guidance			
	Downside		Upside		Downside		Upside	
CAR (-10, -1)	-0.63%	***	0.44%	***	-1.49%	***	1.10%	***
CAR (0, +1)	-2.30%	***	1.44%	***	-5.75%	***	5.04%	***
CAR (+2, +10)	-0.48%	***	0.22%	***	0.18%	*	0.25%	***
CAR (-10, +10)	-3.40%	***	2.10%	***	-7.06%	***	6.40%	***
Periods	Unexpected Announcements							
	Dividend Changes				SEO		Share Repurchases	
	Downside		Upside					
CAR (-10, -1)	-0.16%		0.29%	***	0.54%		-1.39%	***
CAR (0, +1)	-0.73%	***	0.50%	***	-1.59%	***	1.64%	***
CAR (+2, +10)	0.20%		0.53%	***	0.94%	***	0.73%	***
CAR (-10, +10)	-0.70%		1.32%	***	-0.11%		0.98%	***

Table 8 Pre-announcement Price Run-up on the Value of the Information

This table presents the portfolios comparison results of pre-CARs(-10, -1) on the value of the information for both types of expected announcements. The value of the information is measured by using earnings surprises and absolute value of CARs(0, +1), respectively. All stocks are sorted into quintiles based on the value of the information. Panel A reports the comparison of CAR(-10, -1) between high and low value quintiles where the value is measured by earnings surprises, while panel B reports the comparison of CAR(-10, -1) across high and low value quintiles where the value is measured by absCAR(0, +1). The abnormal return is measured by using market adjusted model with size decile referencing portfolios following Fama and French (1992). Conventional t-statistics are applied with significance levels of 10%, 5% and 1%, which are represented by *, **, and ***, respectively.

<i>Panel A: Using Earnings Surprises</i>							
	Actual Earnings				Earnings Guidance		
	Downside		Upside		Downside	Upside	
Q1 (Low)	-0.30%		-0.04%		-0.28% *	0.12%	
Q5 (High)	-1.51%	***	1.07%	***	-2.50%	***	1.49% ***
Q5-Q1	-1.21%	***	1.11%	***	-2.22%	***	1.38% ***
<i>Panel B: Using absCAR(0, +1)</i>							
	Actual Earnings				Earnings Guidance		
	Downside		Upside		Downside	Upside	
Q1 (Low)	-0.37%	*	0.36%	**	-1.27%	***	1.24% ***
Q5 (High)	-1.72%	***	0.21%		-2.38%	***	0.93% ***
Q5-Q1	-1.34%	***	-0.15%		-1.11%	***	-0.31%