Macro Announcement and Heterogeneous Investor Trading in Chinese Stock Market

Calvin Dun Jia, Lin Tan, Xiaoyan Zhang and Xinran Zhang*

First version: October 20th, 2023
This version: November 26th, 2023

Abstract

Using a proprietary granular database of a major Chinese stock exchange, we examine heterogenous investors' trading dynamics around one of the most important macro announcements of the Chinese central bank, the monthly release of monetary aggregates data. Exploiting the trading heterogeneity across assets and across investor types, we find that before announcements, institutional investors reduce their aggregate stock exposure while over-weighing riskier stocks of smaller caps, whereas retail investors provide liquidity by increasing their aggregate stock exposure and avoiding the riskier stocks. Large retail and institutional investors become more informed before announcements and trade in correct directions consistent with the news surprises after announcements, while smaller retail investors trade in opposite directions. While the institutional investors accumulate positive returns with risk compensated, the market realizes sizable pre-announcement equity premium.

Keywords: Stock trading, heterogeneous investors, monetary policy, macroeconomic announcements, equity premium
JEL codes: E52, G12, G14

* Calvin Dun Jia is at the HSBC Business School at Peking University (dun.jia@phbs.pku.edu.cn), Lin Tan is at the PBC School of Finance at Tsinghua University (tanl.19@pbcsf.tsinghua.edu.cn), Xiaoyan Zhang is at the PBC School of Finance at Tsinghua University (zhangxiaoyan@pbcsf.tsinghua.edu.cn), and Xinran Zhang is at Central University of Economics and Finance (zhangxinran@cufe.edu.cn). Xiaoyan Zhang acknowledges the financial support from the National Natural Science Foundation of China [Grant No. 72350710220]. Xinran Zhang acknowledges the financial support from the National Natural Science Foundation of China [Grant No. 72303268]. All remaining errors are our own.

Macro Announcement and Heterogeneous Investor Trading in Chinese Stock Market

Abstract

Using a proprietary granular database of a major Chinese stock exchange, we examine heterogenous investors' trading dynamics around one of the most important macro announcements of the Chinese central bank, the monthly release of monetary aggregates data. Exploiting the trading heterogeneity across assets and across investor types, we find that before announcements, institutional investors reduce their aggregate stock exposure while over-weighing riskier stocks of smaller caps, whereas retail investors provide liquidity by increasing their aggregate stock exposure and avoiding the riskier stocks. Large retail and institutional investors become more informed before announcements and trade in correct directions consistent with the news surprises after announcements, while smaller retail investors trade in opposite directions. While the institutional investors accumulate positive returns with risk compensated, the market realizes sizable pre-announcement equity premium.

Keywords: Stock trading, heterogeneous investors, monetary policy, macroeconomic announcements, equity premium
JEL codes: E52, G12, G14

1. Introduction

Informative asset prices matter for the efficient allocation of capital. Efficient Market Hypothesis predicts that upon the arrival of new information, prices would quickly adjust through trading to incorporate the information. Nonetheless, the empirics suggest that equity prices may well respond to incoming macroeconomic news before the announcement arrivals.[1] Rationalizing the puzzling fact, existing theories often resort to investors' discounted preferences, perceived tail risk, and information acquisition efforts, featuring reduction in uncertainty and disagreement and implicating informed trading.[2] Yet most supportive evidence they provide is only at the aggregate market-level, and not related to investors' trading activity. Theoretically, trading activity may well be spurred by announcements signaling policy stances, as investors may prioritize seeking policy information to guide investment decisions when government has profound impact on the market (Brunnermeier, Sockin and Xiong, 2022). Our paper innovatively examines the micro-level trading dynamics of heterogeneous investors surrounding one of the most important monetary policy-related announcements of China's central bank, the monthly releases of the key monetary aggregates statistics, i.e. the M2 growth. We document novel patterns of asset reallocation and risk redistribution across heterogeneous investors in windows of macroeconomic announcements. Our micro-level evidence not only helps explain the process of macro information incorporation via trading activity, but also sheds light on the effectiveness of policy transmission. Fundamentally,

[1] See, for instance, Savor and Wilson (2013), Lucca and Moench (2015), Cieslak, Morse and Vissing-Jorgensen (2019), Brusa, Savor and Wilson (2020), Neuhierl and Weber (2020), Guo, Jia and Sun (2022), Hu, Pan, Wang and Zhu (2022), and Liu, Tang and Zhou (2022).

[2] See, for instance, Ai and Bansal (2018), Laarits (2019), Watcher and Zhu (2020), Ying (2020), Ai, Bansal and Han (2022), and Cocoma (2023).

our micro insights bridge macro announcement effects with underlying investor behaviors essential for efficient market and functional policy signaling.

We frame our empirical explorations within windows when the People's Bank of China (PBOC) monthly announces the M2 data, for the following three reasons. First, the pre-FOMC announcement equity premium in the U.S. has critically important asset pricing implications (Savor and Wilson, 2013, 2014; Lucca and Moench, 2015; Ai and Bansal, 2018; Liu, Tang and Zhou, 2022). It is newly documented that the market performances in China during the pre-M2 announcement windows share a lot in common with the U.S. counterpart, and the unique environment of quasi-scheduled M2 announcements in China gives the additional leverage to explore the driving forces behind the pre-announcement premium (Ai, Bansal and Han, 2022; Guo, Jia and Sun, 2022; Han, Hu and Jia, 2023). Second, the announcements of monetary aggregates statistics are associated with regular data releases on the monthly basis for a reasonably long time in history, by which market investors form regular expectations every month. On the contrary, the announcements of important monetary policy operations including changes in the policy interest rates and reserve requirement ratios, are largely unscheduled, and investors are therefore less likely to form expectations regularly on when there would be interest rate changes. Third, despite the PBOC has pronounced that it works very hard to work with interest rate-based policy instruments, money aggregates such as the broad measure of M2 growth remain to be important gauges of the tightness of credit condition in the market, which will be very important information for investment decisions in the stock market (Chen, Zha and Ren, 2018).

We first start by revisiting the previously documented market reactions in windows of the

monthly M2 announcements. We find strong evidence of a sizable pre-announcement equity premium, with daily market returns increased by approximately 0.3% (75% by annualization) one day before the announcement day, relative to days outside the announcement windows. This result holds across various specifications. In addition, the realized market volatility declines notably when an announcement is still pending. These market performances used to be rationalized by the learning channel driven by enhanced information acquisition, which results in early resolution of uncertainty as perceived by investors anticipating the event (Ai, Bansal and Han, 2022; Guo, Jia and Sun, 2022).

However, instead of continuing relying on inferences from the aggregate and market level data, our paper focuses on the micro-level trading dynamics featuring the stock and investor heterogeneity for additional insights. With proprietary access to a major stock exchange in China which contains every listed stock's daily trading volume in CNY during the sample period from January 2014 to May 2020, we are able to identify stock trading of five groups of retail investors and six groups of institutional investors. Retail investors are stratified based on their account sizes at the beginning of each year, which is the average portfolio value (including equity holdings in all A-share listed firms, plus cash balance) over the previous twelve months: below 100k CNY (RT1), 100k-500k CNY (RT2), 500k-3 million CNY (RT3), 3 million-10 million CNY (RT4), and above 10 million CNY (RT5). Institutional investors include mutual fund (MF), hedge fund (HF), Qualified Foreign Institutional Investors (QFII), RMB Qualified Foreign Institutional Investors (RQFII), Hong Kong Connect program (HKC), and others. These granular datasets enable us to track down each investor group's trading dynamics. In specific, we find that the institutional

investors significantly cut their aggregate stock exposure by increasing net selling in advance of M2 announcements, for instance, with mutual funds' net selling climbing by 0.0367 one-day prior to announcement (around 50% of their average net selling scale of 0.0731 in non-window days). In stark contrast, retail investors across all stratified groups ramp up net buying before announcements. The retail buyers of the smallest account size lift net buying by 0.0126 (around 20% of their average net selling magnitude of 0.0626 in non-window days) while the largest retail investors raise their net buying by 0.0190 right before the announcements (more than one-third of their average net buying magnitude of 0.0540 in non-window days). Our paper therefore is the first that documents strong heterogeneities in trading directions between retail and institutional investors ahead of major macroeconomic announcements, which reflect their differed portfolio rebalancing and liquidity needs.

Zooming into this trading asymmetry of different directions, we further delve into the stock heterogeneity and examine if directional trading is related to investors' risk-taking and portfolio rebalance. We find that institutional investors tend to rebalance towards smaller-cap stocks with greater risk, which exhibit substantially greater return volatility bearing larger systematic as well as idiosyncratic risk around announcements. On the contrary, retail investors on average tilt towards net buying larger-cap stocks of both lower systematic and idiosyncratic risk. While the smaller cap stocks accumulate great price appreciations during days before M2 announcements, it is testable that these riskier assets exhibit increasingly higher information ratio before announcements, by which the pre-announcement premium is accrued and compensates the holding risk of institutional investors. Our evidence therefore suggests that institutional investors cut the

stock exposure while simultaneously over weigh on smaller but riskier stocks that deliver a pre-announcement risk premium. Hence, our paper is the first that highlights that the micro-level stock trading dynamics are closely tied to the pre-announcement equity premium observed at the market level.

To better understand the trading informativeness of heterogeneous investors ahead of the announcement, we relate different investors' pre-announcement trading at stock-level to the eventual stock return on announcement day. We find further micro-level evidence that while small retail investors' trading directions before announcements more negatively predict subsequent stock returns than usual, large retail and institutional investors possess higher return predictability then. Results suggest that large retail and institutional investors may better acquire/process information and exhibit informed trading behaviors when the announcement is pending. Overall, our paper provides deep insights into how monetary condition information gets incorporated into prices via heterogeneous investor trading.

Conditional on news released, our paper proceeds to examine the trading behaviors after the announcement is made. During the post-announcement days, asset valuations are well affected the ex-post news surprises perceived by the market investors. We therefore first categorize each announcement into good or bad news according to the post-announcement market returns, with positive (negative) returns by the end of the announcement day indicating good (bad) news. We show that large retail investors and the institutional investors respond to news by trading in the correction direction ex-post, by which they increase net buying upon good news and net selling on bad news. Conversely, smaller retail investors consistently do the opposite and incorrectly buying

more upon bad news. For instance, the domestic hedge fund investors significantly enlarge their net buying (selling) by 0.0668 (0.0742) on the M2 announcement days with good (bad) news, both around 1.5 times their average net buying magnitude of 0.0461 in non-window days; foreign QFII investors significantly increase their net buying (selling) by 0.1047 (0.1810) upon good (bad) news, which is over 1.8 times (3 times) their average net buying magnitude of 0.0575 in non-window days. Our paper therefore documents that conditional on the news surprises after the announcements, smaller retail investors are still trading in opposite directions against institutional investors. Given that larger retail investors and institutional investors are able to correctly interpret the news in M2 announcements, our empirical evidence suggests that larger investors are maintaining greater sophistication for the correct investment decisions throughout the announcement windows. By contrast, the smaller retail investors serve as liquidity providers by avoiding the risk before announcements and trading at the wrong margins ex-post.

Our paper provides additional results of robustness across different specifications and for a good set of control variables. First, extending the event window's day length would not change our basic conclusions. Second, controlling for overlapping announcements of other monetary policies and releases of other major economic indicators does not affect our baseline pre-announcement results. Third, by exploiting the quasi-scheduled nature of M2 announcement, we find that our baseline results are more pronounced when the announcement is a late one. Fourth, additional robustness checks on alternatively defining the good and bad news still confirm our benchmark post-announcement findings. Overall, our granular analysis provides pivotal micro-level evidence on the link between the pre-announcement premium and the risk-taking institutional

rebalancing. These results offer important insights suggesting the trading heterogeneity across investor types differed by sophistication.

Our research is closely related to the following strands of studies. First, a growing body of research examines how monetary policy announcements influence asset prices and trading behavior in the US stock market, both ex-post and ex-ante. From an ex-post point of view, to start with, event studies find significant stock market reactions to FOMC surprise, with easing leading to equity price increases (Bernanke and Kuttner, 2005). Analyses also document spikes in stock volatility after policy releases, particularly for less flexible firms (Bomfim, 2003; Gorodnichenko and Weber, 2016). More relatedly, from an ex-ante point of view, the pre-announcement drifts in equity returns ahead of scheduled FOMC meetings have been empirically established in US stock market (Savor and Wilson, 2013; Lucca and Moench, 2015; Cieslak, Morse and Vissing-Jorgensen, 2019; Brusa, Savor and Wilson, 2020; Hu, Pan, Wang and Zhu, 2022; Liu, Tang and Zhou, 2022). Return predictability is shown to depend on whether policy easing or tightening is expected (Neuhierl and Weber, 2020). However, there has been a long-standing debate over the mechanisms for such pre-announcement drifts. Theoretical work featuring uncertainty reduction and disagreement settlement either highlight the role of investors' information acquisition (Ai and Bansal, 2018; Laarits, 2019; Ying, 2020; Ai, Bansal and Han, 2022; Cocoma, 2023), or information leakage through certain communication channels like Fed official calendars (Morse and Vissing-Jorgensen, 2020). Second, turning to China, evidence suggests significant return premiums before major Chinese monetary announcements, which compensate investors for resolving policy uncertainty (Guo, Jia and Sun, 2022). However, data limitations in previous studies all preclude

micro-level analyses of how heterogeneous investors trade around China's monetary policy announcements.

Our paper makes three key contributions to the literature. First, by utilizing proprietary investor trading order flow data from a major stock exchange in China, we provide pivotal granular evidence on trading dynamics around major Chinese monetary announcements absent in the literature. Second, our analysis may help to link the trading heterogeneity and risk reallocation to the equity return premium observed before macro announcements. This offers a micro-foundation for asset pricing dynamics around macro news releases. Finally, studying how different investors process monetary policy news enhances our understanding of how asset prices transmit monetary policy information, with profound implications for the efficacy of signaling monetary policies to the real economy. Overall, our results offer crucial implications for price efficiency, policy transmission, and financial stability in Chinese stock market.

The rest of this paper is structured as follows. In Section 2, we detail the institutional background and provide a data summary. In Section 3, we explicitly lay out our main hypotheses to be tested against the data. We then provide empirical evidence along with our detailed descriptions in Section 4, and finally conclude in Section 5.

2. Institutional Background and Data

In Section 2.1, we provide institutional background of China's monetary policy and the monthly announcements of monetary aggregates data. We then describe our data source in Section 2.2 and provide summary statistics for our data in Section 2.3.

2.1 Monetary Policy in China and the Announcements of Monetary Aggregates Data

China's central bank, the People's Bank of China (PBOC), assumed its role in 1984 and began regulating monetary policy through strict control of credit and cash supply to target inflation and economic growth. In the 1990s, China launched new financial markets, necessitating reforms to the PBOC's rigid framework. Money supply aggregates like M2 (a broad measure of monetary aggregates, compared with a narrower measure of M1 and cash in circulation measured by M0) became key policy tools since 1996, and the credit quotas no longer remained after 1998. Since then, the PBOC has been targeting money growth, while starting to rely on a set of standard monetary policy tools including open market operations, reserve requirement management, interest rate adjustments, and other indirect tools.

Entering the 2010s, in need of providing stimulus to the real sector and reinforcing stability of the credit market, the PBOC carried out more innovative monetary policies. For instance, short-term and medium-term lending facilities (SLF/MLF), special-purpose loan programs, bank note swaps can be used to optimize market liquidity. Interest rates channel management and liberalization process enable the 7-day repo rate (DR007) and loan prime rate (LPR) to become important policy targets alongside M2 growth. The PBOC also started to focus more on communication tools like monthly M2 data releases, quarterly reports, and press conferences to guide investor expectations and increase information transparency. Nevertheless, although the PBOC has evolved towards more market-based policies and transparency initiatives to ensure economic stability and policy effectiveness, money aggregates of M2 growth still remains one of the most critical gauges (Chen, Zha and Ren, 2018). Together with the narrower measures of M0 and M1, these metrics on the total money supply are critical indicators of the stance of China's

monetary policy and overall credit conditions.

The focus of this study is exactly the monthly announcement of the growth rate of broad monetary aggregates data, M2. Every month, the latest M2 data is released by the PBOC on its website, together with other narrower money metrics like M0 and M1, and with other relevant financial statistics like loan balances, interest rates, and interbank activity, all in a single statement. For simplicity, throughout this paper, we refer to these comprehensive monthly statements that contain the most up-to-date monetary aggregates data as M2 announcements. These M2 announcements provide valuable perspectives regarding the PBOC's assessment of current monetary conditions and direction of policy. Analyzing market reactions around these statement releases can provide novel insights into how new macroeconomic information on China's money supply and credit environment may influence investor expectations and trading behavior.

2.2 Data Source

Our sample period is from January 2014 to May 2020. We obtain three datasets under daily frequency regarding the announcement's timing from Bloomberg, return and stock characteristics from WIND and CSMAR, and proprietary investor group level trading data from a major stock exchange in China.

Specifically, to start with, we extract the timing of PBOC's monthly monetary aggregates announcement from the Bloomberg Economic Calendar (BEC) database. The M2 announcements are quasi-scheduled, meaning that the exact dates can only be known for sure ex-post rather than ex-ante, yet investors may infer a range of dates in the middle of the month for the announcement to happen. We double-check the timing to be consistent with the PBOC's website record. During

our sample period of 77 months, there are 77 M2 announcements in total. Moreover, we also extract the timing of a list of other monetary policy announcements (including CBS, CTCM, LPR, OMO-MLF, RRR, and SLF/MLF/PSL) and major economic indicator releases (top ranked popularity on Bloomberg, including CAIXIN, BOP, CPI/PPI, GDP, IP, PI, PMI, SWIFT, and TRADE) from BEC, to be used in robustness checks.

Stock-level return and characteristics, market-level return and open/close price data are from WIND. We use Wind A-Share Index to measure market raw return (*MktRet*), which incorporates the A-shares of all firms listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange. Excess market return (*ExMktRet*) is computed as market raw return minus the 1-year bank time deposit rate series as the benchmark risk-free rate. All the market index series and the risk-free rate data are downloaded from Wind Data Feed Services.

We are fortunate to have access to a proprietary dataset from a major stock exchange in China, which contains every listed stock's daily trading volume in CNY of various groups of investors, including retail and institutional investors. To be specific, retail investors are stratified into five groups based on their account sizes at the beginning of each year, which is the average portfolio value (including equity holdings in all A-share listed firms, plus cash balance) over the previous twelve months.[3] As mentioned in the introduction, there are five subgroups: below 100,000 CNY (RT1), 100,000-500,000 CNY (RT2), 500,000-3 million CNY (RT3), 3 million-10 million CNY (RT4), and above 10 million CNY (RT5). Institutional investors include mutual fund (MF), hedge

[3] The annual calculation of account balances is designed by the exchange. The cutoff thresholds to separate retail investors are also chosen by the exchange to comply with exchange regulations. There is possibility that investors might migrate to different groups after the initial grouping. However, as the grouping is redone every year, the concern may partially be eased.

fund (HF), Qualified Foreign Institutional Investors (QFII), RMB Qualified Foreign Institutional Investors (RQFII), Hong Kong Connect program (HKC) and other domestic institutions (Other INST). For every group of investors, we construct an aggregate daily-level order imbalance time-series, $OibGroup_t$, by cross-sectionally value weighting stock-day level order imbalances for that investor group, where the stock-day level order imbalance for each investor group is computed as the investor group's buy CNY volume minus sell CNY volume divided by buy CNY volume plus sell CNY volume: $StockOibGroup_{i,t} = \frac{BuyGroup_{i,t} - SellGroup_{i,t}}{BuyGroup_{i,t} + SellGroup_{i,t}}$. Throughout our study, except for Section 4.4, our focus is on the aggregated time series of each investor group's order imbalances, rather than stock-level order imbalances.

2.3 Summary Statistics

Table I presents summary statistics for the time series data of aggregated order imbalances for each investor group, denoted as *OibRT1*, *OibRT2*, *OibRT3*, *OibRT4*, *OibRT5*, *OibMF*, *OibHF*, *OibQFII*, *OibRQFII*, *OibHKC*, *OibOtherInst*, respectively for the five groups of retail investors and mutual fund, hedge fund, QFII, RQFII, HKC and other institutional investors. In Panel A, we present the distribution of each investor group's order imbalance time series. To start with, there are 1561 trading days in our sample period. *OibRT1* has a mean value of -0.0188 with a standard deviation of 0.1006, meaning that the smallest group of retail investor tend to net-sell on average. The mean value non-monotonically increase in retail's account value, with *OibRT2* to *OibRT5* having the mean value of 0.0008, 0.0020, 0.0014 and 0.0114, respectively, meaning that these retail investors tend to net-buy on average, especially for the largest group of retail. The standard deviation for each retail group also non-monotonically decreases, from the 0.0883 in *OibRT2* to

the 0.0643 in *OibRT5*, meaning that the larger retail investors are more stable in trading pattern. As for institutions, *OibMF*, *OibQFII* and *OibRQFII* each on average net sells with a mean value of -0.0271, -0.0206, and -0.0381, among which RQFII has the largest standard deviation of 0.3971 while mutual fund has the least of 0.1466. On the other hand, OibHF and OibHKC each on average net buys with a mean value of 0.0055 and 0.0193, with a standard deviation of 0.1451 and 0.1806 respectively.

In Panel B, from the first four columns, we notice that the first four groups of retail investors' order imbalances are decreasingly positively correlated with other groups of retail as account value increases, and negatively correlated with institutional investors' trading directions. For instance, *OibRT1* has a correlation of 0.91, 0.76, 0.47 and 0.00 with *OibRT2* to *OibRT5*, respectively, yet the correlations turn negative to -0.46, -0.46, -0.48, -0.23, -0.35 and -0.34 with mutual fund, hedge fund, QFII, RQFII, HKC and other institutional investors. However, for the largest group of retail *OibRT5*, it is different from other retail groups in terms of having relatively low correlations with them (ranging from 0.00, 0.20, 0.43 to 0.68 with *OibRT1* to *OibRT4*), and also in terms of having positive correlations with certain institutional investors, although in low magnitudes (for instance, 0.28 with *OibHF*). From the last six columns, we notice that institutions' order imbalances mostly have positive yet low correlations among themselves: the maximum correlation is 0.36 between *OibHF* and *OibQFII*, and all other institutional pairs share lower correlations. Therefore, the heterogeneity in different groups of investors' trading dynamics serves as a motivation for us to understand their trading pattern around important monetary announcements.

3 Hypotheses

In this section, based on the existing theory framework, we lay out three main hypotheses testable against the data. By exploiting the investor and stock heterogeneity, our empirical explorations are to confirm the existence of the pre-announcement equity premium and to delve into the micro-level trading dynamics in averaged monthly windows of the important M2 announcements.

First, previous empirical studies already suggest that the equity market exhibits predictable return patterns and changing volatility around important macroeconomic announcements (Ai, Bansal and Han, 2022; Guo, Jia and Sun, 2022). Theoretically, one explanation is that investors exert more efforts acquiring and analyzing public information ahead of announcements to reduce uncertainty about the impending news ex-ante. This enhanced information acquisition gets incorporated into prices, leading to rising equity valuations and declining volatility as investors become better informed. On the other hand, an alternative view is that selective leakage of the policy decision itself or related information to some investors drives pre-announcement drifts. This information asymmetry causes those with an early informational edge to trade, pushing prices in the direction of the surprise before it is publicly revealed. However, volatility increases as a result of this private information spilling into markets. Therefore, we come up with the first hypothesis:

H1a: There is a positive equity premium before announcements accompanied by decreasing volatility, due to investors acquiring and processing more public information to resolve uncertainty.

H1b: There is a positive equity premium before announcements accompanied by increasing volatility, due to asymmetric information and policy leakage ahead of the official release.

Secondly, we aim to relate the market-wise equity premium with the micro-level trading

evidence, especially in terms of how heterogeneous investors rebalance their trade-off between risks and expected returns, and how risks get redistributed among investors around announcements. If some investors seek higher expected returns, they may shift portfolios before news releases towards higher-risk assets like small-cap firms, taking on more risk to earn elevated risk premia. In contrast, investors focused on avoiding extreme losses may reduce weighting on volatile assets beforehand, passing risks to their counterparties. This brings us with the second hypothesis:

H2a: Institutions and large retail investors seek for higher expected returns over the announcement horizon, and rebalance their portfolios towards smaller-cap firms with higher systematic and idiosyncratic volatility before announcements to take up more risk. That is, risk is reallocated from small retail to large retail and institutional investors beforehand.

H2b: Institutions and large retail investors reduce positions in high-risk assets before announcements to avoid extreme losses, passing risks to less informed small retail investors. That is, risk is reallocated from large retail and institutional investors to small retail investors beforehand.

Third, analyzing trading responses conditional on the announcement content (good or bad news) can help diagnose whether investors are sophisticated enough to correctly interpret the content and intention of monetary policy announcement. It could be that more sophisticated investors, including institutional investors and large retail investors, may accurately understand the policy's impacts and trade accordingly, while others fail to respond rationally. It could also be that bounded rationality may as well limit the ability of even savvy investors to deduce consequences from monetary policy news. Therefore, we derive our third hypothesis as followed.

H3a: More sophisticated investors with higher understanding and processing ability of monetary policy news may interpret news content correctly and trade in correct directions, while less sophisticated ones do not.

H3b: Even the most sophisticated investors in China may fail to trade appropriately according to announcement content due to cognitive limitations.

Testing these hypotheses will provide empirical evidence on how exactly investors are forming expectations, rebalancing portfolio, reallocating risks, and responding to macroeconomic news. Our empirical results would deliver important implications for asset pricing in response to public announcements and for better understanding the asset pricing channel of the monetary policy transmission through the lens of investors trading.

4 Empirical Results

In this section, we present empirical results for the dynamics of market return, volatility, and heterogeneous investors' trading both before and after the announcement to provide insights into how different investors re-allocate risk under macroeconomic uncertainty and whether they react to and interpret the announcement in the correct direction. In Section 4.1, we revisit the basic pattern of pre-announcement premium and volatility reduction. We focus on the trading direction of various groups of investors ahead of the announcement in Section 4.2, and examine the risk re-allocation among subgroups of stocks in Section 4.3. We also examine the pre-announcement trading informativeness of heterogeneous investors in Section 4.4. In Section 4.5, we separate each announcement into good and bad news and examine the conditional reaction of different investors. Finally, in Section 4.6, we provide robustness check by controlling for overlapping news and

considering alternative news separation.

4.1 Pre-announcement Return and Volatility

We start by revisiting two stylized facts on the drift of return and volatility ahead of announcement, which was first documented in Guo, Jia and Sun (2022). Theoretically, the pre-announcement return premium reflects early resolution of uncertainty which could either be attributed to information acquisition or information leakage (Ai, Bansal and Han, 2022). If it is information acquisition, which means that investors, especially the less sophisticated ones, initiate more effort to acquire and process public information, then we expect to see a decline in volatility ahead of announcement. However, if it is information leakage, which means that there is new arrival of information that is both correlated with the forthcoming announcement and un-incorporated in prices, then we expect to see an increase in volatility when such new information arrives.

In Table II, we examine the change in market return and volatility in the announcement window by estimating a baseline specification given by:

$$Y_t = \gamma + \sum_{i=-T}^{T} \beta_i D_i + \beta_x X_t + \epsilon_t \,, \tag{1}$$

where *t* denotes a trading day. Dependent variable is a variety of market return measures, starting from the close-to-close excess market return constructed from the Wind A-Share Index (*ExMktRet*) in column (1), to the close-to-close raw market return from the Wind A-Share Index (*MktRet*) in column (2), and to the open-to-close component of raw market return (*OpenCloseMktRet*) in column (3). We choose Wind A-Share Index to proxy for market return as it incorporates the A-shares of all firms listed on the Shanghai Stock Exchange and Shenzhen Stock Exchange and can

be considered the most comprehensive measure of the stock performance of China's equity market. *Di* is a dummy variable indicating the i^{th} day relative to the announcement. For control variables, we include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses.

In Panel A, where we adopt a three-day event window, *D-1*, *D0*, and *D1* are dummy variables indicating the day before, of, and after the announcement, respectively. The coefficient for *D-1* represents the change in dependent variable one day before announcement. We notice that each measure for market return significantly increases by 0.3131% (*t*-stat of 1.71), 0.3138% (*t*-stat of 1.72), and 0.3548% (*t*-stat of 2.05). Results are in similar magnitude if we instead adopt a seven-day window in Panel B, where *D(-3, -1)* (or *D(1,3)*) is a dummy variable indicating three days ahead of (or after) announcement. The increase in market return is still significant over the three-day horizon ahead of announcement, with a magnitude of 0.2031%, 0.2041%, and 0.2605%, respectively. Our results are consistent with the previous findings in Guo, Jia and Sun (2022).

We also utilize our proprietary dataset and explicitly look into stocks listed on a major stock exchange in China (SE hereafter). In column (4), the dependent variable is the value-weighted return for SE stocks (*ExSERet*). Although the coefficient for *D-1* is insignificant, when we further divide the stocks into three subgroups (small, medium and large) from column (5) to (7), and construct the dependent variables to be the value-weighted return for each subgroup (*ExSERet_SmallSize*, *ExSERet_MediumSize*, *ExSERet_LargeSize*), we find that the small subgroup has the most pronounced return drift of 0.5710% (*t*-stat being 2.59). The medium-size

subgroup also has significant return premium of 0.4892% (*t*-stat being 2.21). It is the large-size subgroup with insignificant coefficient of 0.0380% that drives the general result in column (4) to be statistically insignificant. However, the economic magnitude is still non-negligible, as 0.0380% daily return translates into 9.50% annualized, considering that the average non-window level of SE stock return reflected by the intercept term in column (4) is 0.0842% (21.05% annualized). In general, we find supportive evidence for the positive pre-announcement return drift.

In column (8), we examine the dynamics of volatility. We obtain realized intraday volatility for SE stocks from CSMAR, which is calculated as the sum of squared 5-minute log returns during the day (*SE_Volatility*). We find that *D-1* has a significant negative coefficient of -0.5185% with a *t*-stat of -2.96, which means that market-wide volatility already decreases when the announcement is still pending. The result is still robust in Panel B over the three-day horizon. Recalling our hypothesis, the negative result is consistent with the information acquisition, rather than the information leakage theory, which is also consistent with the evidence of peaked searching activity on Baidu search engine documented by Guo, Jia and Sun (2022). What's more, the volatility continues to decrease in the following two days, reflecting a continuation of uncertainty reduction, which is consistent with the intuition that the actual release of announcement would help market settle down what has been unknown.

Overall, we find supportive evidence for the two stylized facts: the pre-announcement premium and volatility reduction. In the following sections, we will zoom into how investors trade with granular datasets and provide insights into the behavior of heterogenous investors.

4.2 Pre-announcement Trading of Heterogeneous Investors

In this section, we separate investors into retail and institutional investors, and examine each investor group's trading direction in the announcement window, especially pre-announcement. Within the category of retail, we further separate them into five groups based on their account value, with the smallest retail group denoted as RT1 and the largest as RT5. Within the category of institutions, we further divide them into six groups: mutual fund (MF), hedge fund (HF), QFII, RQFII, HKC, and other institutions[4]. The mutual fund and hedge fund investors are commonly referred to as "domestic investors", while the QFII, RQFII and HKC groups would constitute the "foreign investors". We focus on the heterogeneity of trading dynamics and risk-taking behavior to shed light on the role of institutional investors in Chinese stock market's investor composition.

4.2.1 Baseline Pre-announcement Trading Direction

Table III provides estimation results for the change in investor order imbalances before M2 as specified in Equation (1), where the dependent variable is the aggregated time series variable of each investor group's order imbalances, calculated as the value-weighted average of each stock's order imbalance for that investor group.

In Panel A, we adopt a three-day window. From column (1) to (5), the coefficients for *D-1* are all positive and mostly significant. For the smallest group of retail, RT1, the coefficient is 0.0126, around 20% of their average net-selling magnitude of 0.0626 in normal non-window days. For the largest group of retail, RT5, the coefficient is 0.0190 (*t*-stat being 3.33), around 35% of their average net-buying magnitude of 0.0540 in normal days. Results mean that retail investors

[4] Results for other institutions are similar to those of MF and HF investors and are not exhibited for simplicity. These results are available on request.

significantly net-buy more before the announcement. The increasing pattern in net-buying for all retail groups is also pronounced in the seven-day window in Panel B.

On the other hand, certain institutional groups, e.g., mutual fund group and RQFII group, significantly decrease their net-exposure on stock when they net-sell more before announcement. Mutual fund investors' net-selling increases by 0.0367 with a *t*-stat of -2.18 one day before announcement (which is over 50% of their average net-selling magnitude of 0.0731 in normal days), while RQFII investors' net-selling increases by 0.1189 with a *t*-stat of -2.87 (which is around 7 times their average net-selling magnitude of 0.0170 in normal days). The results are even stronger when we adopt a seven-day window in Panel B, where other subgroups of foreign investors, QFII and HKC, join the net-selling force three days ahead.

So far, we document a novel finding that when pre-announcement, there is a drastic difference between retail (net-buy) and institutional investors (net-sell). The next question is why they exhibit such trading patterns, which we will address in the following sections.

4.2.2 Re-allocation Among Size Subgroups

In this section, we aim to examine the portfolio adjustment of different groups of investors, in the perspective of size, as a starting point. As small capitalization stocks in Chinese stock markets also differ from the large stocks in terms of systematic and idiosyncratic volatility, we are able to gain additional insights into the risk-taking behavior of investors.

In Table IV, we cross-sectionally divide stocks into three size subgroups (small, medium and large), and provide estimation results for the change in investor order imbalances for each subgroup before M2, as in Equation (2):

$$Y_{s,t} = \gamma + \sum_{i=-T}^{T} \beta_i D_i + \sum_{i=-T}^{T} \beta_i^M D_i * Med_s + \sum_{i=-T}^{T} \beta_i^L D_i * Large_s + \beta_x X_t + \epsilon_t \,, \quad (2)$$

where dependent variable is the aggregated time series variable of each investor group's order imbalances within each size subgroup *s* on each day *t*, calculated as the value-weighted average of each stock's order imbalance for that investor group within size subgroup *s* on each day *t*. *Med* (or *Large*) is a dummy variable indicating the medium (or large) size subgroup of stocks. The coefficient for the interaction term *D-1*Med* (or *D-1*Large*) captures the additional order imbalance change in the medium (or large) size subgroup compared to the small size subgroup.

From column (1) to (3), for small retail investors RT1-RT3, we find that the coefficients for *D-1* are significantly negative, being -0.0174 (*t*-stat of -3.16), -0.0152 (*t*-stat of -3.65) and -0.0067 (*t*-stat of -2.10) respectively, meaning that small retail significantly net-sell more on small size stocks. However, the coefficients on *D-1*Large* are significantly positive. For instance, for RT1, the total change in large cap stocks is -0.0174+0.0399, which is 0.0225, meaning that RT1 investors are actually significantly increasing their net-buying on large cap stocks. Similarly, for RT3, and RT4, the significantly positive coefficients for *D-1*Large* are deriving a similar pattern: while small retail increase their net-sell on small cap stocks, they are simultaneously increasing net-buy on large-cap stocks, which drives an unconditional finding of increasing net-buying, and represents a portfolio re-allocation from small stocks to large stocks. The largest retail group, RT5 investors, behave unlike the small retail investors in terms of dealing with small cap stocks, but all of them increase their net-buying on large cap stocks.

In terms of institutional investors, we observe an opposite pattern. For mutual fund and hedge fund investors in column (6) and (7), the coefficients for *D-1* are significantly positive, being

0.0330 (with a *t*-stat of 1.93) and 0.0400 (with a *t*-stat of 2.56), respectively. Meanwhile, the coefficients for *D-1*Med* and *D-1*Large* are both significantly negative, especially for *D-1*Large.* In column (6), *D-1*Large* has a coefficient of -0.0821 with a *t*-stat of -3.15, which means that mutual fund investors significantly net-sell large cap stocks (0.0330-0.0821 = -0.0491) while they net-buy small-cap stocks. In column (7), *D-1*Large* has a coefficient of -0.0374 with a *t*-stat of -1.67, which means that hedge fund investors significantly buy less large cap stocks compared to their net-buying on small-cap stocks. Results are similar with other groups of institutional investors in column (8) to column (10), and consistent in Panel B where we divide all institution investors into domestic and foreign institutions.

Overall, we find that while retail investors (especially small retail) re-allocate their portfolio towards large-cap stocks, institutions tend to re-allocate towards small-cap stocks. In the following section, we will examine the risk difference between small and large cap stocks to provide insights into institutional investors' risk-taking behavior.

4.3 Pre-announcement Risk-taking of Institutional Investors

Given the portfolio adjustment documented above, we have the following question: are institutional investors taking up or avoiding risk by putting more weight on small-cap stocks? Table V provides results for small, medium and large-cap stocks' systematic and idiosyncratic volatility during announcements. Specifically, for each subgroup, we calculate its systematic and idiosyncratic volatility during announcement using Equation (3):

$$Ret_{s,t} = \alpha_s + \underbrace{c_{MKT,s}MKT_t + c_{SMB,s}SMB_t + c_{VMG,s}VMG_t + c_{PMO,s}PMO_t}_{systematic} + \underbrace{\epsilon_{s,t}}_{idiosyncratic} \quad . \quad (3)$$

For each subgroup *s* on each announcement day *t*, we regress its announcement returns on

CH-4 factors from Liu, Stambaugh and Yuan (2019) using all historically-available past daily data. We then calculate estimates for systematic and idiosyncratic components of returns for each subgroup for all historical announcements, and then calculate systematic component and idiosyncratic component's standard deviations. After we obtain the series of standard deviations, we compute their mean values and *t*-statistics. We are more interested in the difference in standard deviation across size subgroups. "*Large-Small*" column reports the value and *t*-stat for the time-series difference between large size subgroup and small size subgroup, "*Large-Med*" for the difference between large size subgroup and medium size subgroup, and "*Med-Small*" for the difference between medium size subgroup and small size subgroup.

First, we find that the "*Large-Small*" difference of standard deviation is significantly negative both systematic and idiosyncratic. Large cap stocks have a lower annualized standard deviation of 3.94% in terms of idiosyncratic and 11.46% in terms of systematic than the small-cap stocks, indicating that the large-cap stocks are significantly less risky during announcement period. Second, the "*Large-Med*" difference of standard deviation is also significantly negative both systematic and idiosyncratic. Large cap stocks have a lower annualized standard deviation of 1.98% in terms of idiosyncratic and 11.59% in terms of systematic than the medium-cap stocks, meaning that the large-cap stocks are significantly less risky than the medium-cap stocks during announcement period. Finally, the "*Med-Small*" difference of standard deviation is only significant idiosyncratically (med-cap have a lower annualized standard deviation of 1.96% than the small-cap), not systematically (insignificant difference of 0.12% annualized).

Overall, we find that compared to small cap stocks, large cap stocks have lower systematic

and idiosyncratic volatility. Therefore, when institutional investors are leaning towards small cap stocks, they are putting more weight on risker stocks; and when retail investors are rebalancing towards large cap stocks, they are actually flying away from systematic and idiosyncratic volatility. Our findings are consistent with the hypothesis that institutional investors are willing to take up more risk ahead of the announcement.

4.4 Pre-announcement Trading Informativeness

The heterogeneous trading patterns we uncover raise an additional question: are certain groups of investors trading in more informative directions ahead of the announcement? Examining which investors' pre-announcement trading correlates with the price movement on announcement day provides further insights into the trading motives of different investors, and sheds light on how information gets incorporated into prices via heterogeneous investor trading.

Understanding trading informativeness matters for several reasons. First, it indicates which market participants potentially possess better information or analytical skills for processing public data on monetary conditions. Their trades would contribute more to pre-announcement learning and drifts. Second, monitoring trading informativeness provides clues on information flow in the market around major announcements. Finally, for policymakers, knowing whose trades are more informed helps assess how investors form expectations and decode monetary signals. This has implications for the efficacy of policy signaling through announcements.

To explore these issues, we now relate different investors' pre-announcement trading at stock-level to the eventual stock return on announcement day. We test whether certain groups' net buying at a particular stock one day before M2 correlates more strongly positively with the stock return

on M2 day. Specifically, we estimate the following panel regression:

$$Ret_{i,t+1} = c_1 StockOibGroup^{j}_{i,t} + c_2 StockOibGroup^{j}_{i,t} * D_{-1} + c_3{}' X_{i,t} + \epsilon_{i,t+1}\,, \qquad (4)$$

where $StockOibGroup^{j}_{i,t}$ is order imbalance of stock *i* on day *t* for investor group *j*. $Ret_{i,t+1}$ is the next-day stock return for stock *i*. $X_{i,t}$ is a vector of control variables for stock *i* on day t, including return, previous week return, previous month return, market capitalization, EP ratio and turnover. We also include firm fixed effects and double cluster the standard errors at both firm and day level.

While c_1 captures the correlation of certain group's trading and future stock return on normal days, c_2 captures the additional correlation between trading one day before M2 and the stock return on M2. If c_2 is (significantly) positive for a certain group of investors, then the investor becomes (significantly) more informed ahead of the announcement; however, if c_2 is (significantly) negative for a certain group of investors, then the investor becomes (significantly) less informed ahead of the announcement.

Results are reported in Table VI. In Panel A, we examine five groups of retail investors. On the one hand, for small retail investors from RT1 to RT4, the c_2 coefficients are all significantly negative while their c_1 coefficients are significantly negative as well. For instance, the smallest retail group, RT1, has the coefficient of -0.0132 for *StockOibGroup* and -0.0179 for *StockOibGroup*D-1*. That is, while small retail investors are not informed on normal days, they are even less informed ahead of the announcement. On the other hand, for large retail investor like RT5, the c_2 coefficient is significantly positive of 0.0028 (*t*-stat being 2.60), and c_1 is significantly positive of 0.0021 (*t*-stat being 10.49), meaning that large retail investors are normally

informed traders, especially so ahead of the announcement.

For institutional investor in Panel B, all groups of institutional investors can predict next day return on normal days, as reflected by the positive coefficients of *StockOibGroup*, and significantly so for mutual fund, hedge fund, QFII and HKC investors. Ahead of the announcement, moreover, domestic mutual fund investors, foreign QFII investors and foreign HKC investors can significantly increase their return predictability, as represented by the significantly positive coefficients for *StockOibGroup*D-1.* In other words, their net buying before announcement aligns more with next-day return (which is the return on announcement day) than usual. That is, there exist institutional investors that can better acquire/process information when the announcement is pending.

Overall, the results provide deeper micro-level evidence on how information relevant to monetary announcements gets impounded into prices through the trading of institutional investors and large retail investors.

4.5 Post-announcement Trading Conditional on Good or Bad News

Whether investors are able to correctly interpret the content and intention of the announcements and react in the corresponding way sheds light on the effectiveness of monetary policy via asset price channel, which serves as a key mechanism for monetary policy transmission to the real economy. Investor trading behavior is especially important to study in the asset price channel of monetary policy transmission because their collective reactions determine how asset prices respond to policy announcements. If investors fail to trade correctly on the implications of monetary policy news, asset prices may not adjust as expected. This could weaken the transmission

of monetary policy to the broader economy.

For example, if the central bank eases policy but investors incorrectly interpret this as bad news and sell assets, the desired stimulative effect on investment and spending may not materialize. Or speculative trading around announcements could introduce volatility unrelated to economic fundamentals. Understanding whether investors interpret policy news appropriately through their trading is thus crucial. If their behavior is not rational or grounded in economic fundamentals, the asset price channel may not operate smoothly. Monitoring trading flows and asset price movements around announcements provides insights into the functioning of this channel.

In this section, we examine how heterogeneous investors trade upon the announcement, conditional on good or bad news.

4.5.1 Baseline Post-announcement Reaction

We categorize announcements into good or bad news according to the market return's reaction on the announcement day. If the market reacts with positive return, then we suppose that the announcement carries expansionary news; on the other hand, if the market return negatively responds, we expect that the announcement delivers contractionary news.

Table VII provides estimation results for the conditional response of investor order imbalances upon the announcement of M2, specified by Equation (5):

$$Y_t = \gamma + \sum_{i=-T}^{T} \beta_{G,i} D_{G,i} + \sum_{i=-T}^{T} \beta_{B,i} D_{B,i} + \beta_x X_t + \epsilon_t \,, \tag{5}$$

where the dependent variable is the aggregated time series variable of each investor group's order imbalances, calculated as the value-weighted average of each stock's order imbalance for that investor group on day t. $D_{G,i}$ is a dummy variable for the ith day relative to a good announcement,

while $D_{B,i}$ denotes a dummy variable for the ith day relative to a bad announcement. For instance, *D(G, -1)* (or *D(G, 1)*) is a dummy variable indicating one day ahead of (or after) announcement with good news, while *D(B, -1)* (or *D(B, 1)*) is a dummy variable indicating one day ahead of (or after) announcement with bad news. The 0th day is the announcement day itself, so that *D(G, 0)* (or *D(B, 0)*) indicates the day of announcement with good (or bad) news.

We are especially interested in the coefficient for *D(G, 0)* (or *D(B, 0)*), which represents how investors change their net-buying or net-selling behavior upon hearing the good (or bad) news. If investors are able to correctly interpret the news, then we expect the coefficients for *D(G, 0)* and *D(B, 0)*) to be positive and negative, respectively.

In Panel A, where we adopt a three-day window, we observe three interesting patterns. First, from column (1) to (3), for small retail investors, *D(B, 0)* all have significantly positive coefficients while *D(G, 0)* do not. For instance, RT1 investors significantly increase their net-buying by 0.0562 with a *t*-stat of 3.97 upon bad news (around 90% of their average net-selling magnitude of 0.0619 in non-window days), while insignificantly sell more by 0.0201 upon good news. Similarly, RT2 and RT3 groups of investors significantly increase their net-buying by 0.0500 (nearly 3 times their average net-buying magnitude of 0.0174 in non-window days) and by 0.0299 (more than their average net-buying magnitude of 0.0286 in non-window days) with a *t*-stat of 3.75 and 2.50, respectively, upon bad news, while insignificantly sell more by 0.0188 and 0.0028 upon good news. The behavior of small retail investors suggest that they are not correctly interpreting the content or intention of the announcement, and may not trade in the corresponding way.

Second, for large retail investors (RT5) in column (5), we find an opposite pattern compared

with small retail. On good news day, RT5 increase their net-buying by 0.0240 with a t-stat of 2.81 (over 40% of their average net-buying magnitude of 0.0538 in non-window days), while they slightly net-sell more by 0.0044 on bad news day, which means that they are capable of trading in the correct direction conditionally. They do not seem formerly informed of the news content, as can by shown by the both positive coefficients of *D(G, -1)* and *D(B, -1)*), 0.0200 (*t*-stat being 2.49) and 0.0180 (*t*-stat being 2.28), respectively, which suggest that they unconditionally increase their net-buying ahead of announcements.

Third, for institutional investors, they are all able to correctly interpret the news by either significantly net-selling more on bad news day or significantly net-buying more on good news day. For instance, for domestic institutional investors in column (6) and (7), mutual fund and hedge fund net-buy more on good news day by 0.0080 with *t*-stat being 0.31 and 0.0668 with *t*-stat being 2.55 (around 1.5 times their average net-buying magnitude of 0.0461 in non-window days), and net-sell more on bad news day by 0.0486 with *t*-stat being -2.04 and 0.0742 with *t*-stat being -3.57 (over 1.6 times their average net-buying magnitude of 0.0461 in non-window days), respectively. Foreign investors of QFII, RQFII and HKC share similar results in column (8), (9) and (10). For instance, QFII increase their net-buying by 0.1047 with a *t*-stat of 3.01 on good news day (over 1.8 times their average net-buying magnitude of 0.0575 in non-window days) while increasing their net-selling by 0.1810 with a *t*-stat of -5.72 on bad news day (over 3 times their average net-buying magnitude).

The results are robust in Panel B where we adopt a seven-day window. For small retail investors from column (1) to (3), to large retail in column (5), and to institutions from column (6)

to (10), coefficients for *D(G, 0)* and *D(B, 0)* are mostly in similar magnitude and significance to Panel A.

In general, we find that conditional of the content of the news, small retail are trading in the opposite direction to large retail and institutional investors. Our results suggest that large retail and institutional investors, by reacting in the correct way to monetary policy announcements, are thus particularly important in the policy transmission process.

4.5.2 Reaction Re-allocation Among Size Subgroups

Besides the conditional trading on good and bad news, we also conduct subgroup analysis to interact with good and bad news to see how different investors rebalance their portfolios towards small or large cap stocks conditional on good or bad news.

Table VIII provides estimation results for the change in investor order imbalances for small, medium and large-cap stocks upon the announcement of M2, conditional on good or bad news, as in Equation (6):

$$Y_{s,t} = \gamma + \sum_{i=-T}^{T} \beta_{G,i} D_{G,i} + \sum_{i=-T}^{T} \beta_{B,i} D_{B,i} + \sum_{i=-T}^{T} \beta_{G,i}^{M} D_{G,i} * Med_s + \sum_{i=-T}^{T} \beta_{B,i}^{M} D_{B,i} * Med_s + \sum_{i=-T}^{T} \beta_{G,i}^{L} D_{G,i} * Large_s + \sum_{i=-T}^{T} \beta_{B,i}^{L} D_{B,i} * Large_s + \beta_x X_t + \epsilon_t \,, \quad (6)$$

where dependent variable is the aggregated time series variable of each investor group's order imbalances within each size subgroup *s* on each day *t*, calculated as the value-weighted average of each stock's order imbalance for that investor group within size subgroup *s* on each day *t*. Other variables are defined as in the previous sections.

The coefficient for the interaction term *D(G,0)*Med* (or *D(G,0)*Large*) captures the additional order imbalance change in the medium (or large) size subgroup compared to the small

size subgroup on good news day. Similarly, the coefficient for the interaction term *D(B,0)*Med* (or *D(B,0)*Large*) captures the additional order imbalance change in the medium (or large) size subgroup compared to the small size subgroup on bad news day.

We observe three patterns from Table VIII. First, from column (1) to (3) for small retail, while D(B,0) are all insignificant, the interaction term of *D(B,0)*Med* (or *D(B,0)*Large*) is significantly positive of 0.0200 (or 0.0542) with a *t*-stat of 1.70 (or 3.03), meaning that while small retail incorrectly increase their net-buying on bad news days, they particularly bet on large cap and medium cap stocks to small cap stocks. On the other hand, their net-selling among small, medium and large size subgroups are not distinguishable on good news day, reflected by the significantly negative coefficient for *D(G,0)* yet insignificant coefficients of *D(G,0)*Med* and *D(G,0)*Large*. Therefore, for small retail investors, while they incorrectly interpret the news, they seem to have a strong preference to lean towards large cap stocks on bad news days.

Second, for large retail investors in column (5), they net-sell insignificantly on bad news days no matter for small-cap, medium-cap or large-cap stocks, reflected by the insignificant negative coefficients for *D(B,0)*, *D(B,0)*Med* and *D(B,0)*Large*. Meanwhile, when they significantly net buy more on good news days, their buying are mainly on small-cap and large-cap stocks, and less so for medium-cap stocks.

Finally, for institutional investors, the previous section shows that they are capable of trading in the right direction. However, domestic mutual fund investors and foreign HKC investors are betting on different size subgroups. In column (6), the coefficient for *D(G,0)* are significantly positive of 0.0749 with a *t*-stat of 3.13, while the interaction term *D(G,0)*Large* is significantly

negative of -0.0930 with a *t*-stat of -2.47, meaning that mutual fund investors are rebalancing their portfolio towards risker small cap stocks upon hearing good news. This could be due to a higher risk taking of mutual fund investors in the exchange for a higher expected future return. On the other hand, foreign HKC investors tend to rebalance towards large-cap stocks on good news days, reflected by an insignificant coefficient of *D(G,0)* yet significantly positive coefficients for *D(G,0)*Large*, being 0.0743 with a *t*-stat of 2.32. Overall, while institutions trade correctly in reaction of good and bad news, their heterogeneity in preference still exists in the pattern of putting different weights on small-cap or large-cap stocks.

4.6 Robustness Results

In this section, we provide various robustness results. We control for other overlapping monetary policy announcements or major economic indicator releases to examine pre-M2 returns in Section 4.6.1. We exploit the quasi-scheduled nature of M2 timings, separate them into early vs. late announcements, and re-examine our pre-M2 return and trading results in Section 4.6.2. Finally, we alternatively define good and bad news based on cumulative returns to check the post-announcement results in Section 4.6.3.

4.6.1 Overlapping News

When examining the return and trading dynamics pre-M2, our baseline results show that one day prior to M2, market return significantly increases and institutional investors significantly reduce their stock exposure while retail investors doing the opposite. As other important types of monetary policy announcements or major economic indicator releases may also happen one day before M2, it is thus important to make sure that our findings are not driven by the overlapping

news. In this section, we consider six other types of monetary policy announcements, including CBS, CTCM, LPR, OMO-MLF, RRR, and SLF/MLF/PSL. We also take nine types of economic releases into consideration, including CAIXIN, BOP, CPI/PPI, GDP, IP, PI, PMI, SWIFT, and TRADE. For each type of announcement (say, announcement *j*), we first examine how likely it is to happen on every window day of M2. We then control for its potential effect in influencing the pre-M2 result by repeating the baseline regression and ignoring the M2 event with announcement *j* happening one day before.

Table IX describes the frequency of other types of monetary policy announcements (Panel A) and major economic indicators (Panel B) overlapping with the timing of M2. For every M2, we calculate the number of times that another event (indicated by column name) occurs on any day within the 11-day window, and compute the frequency of another event's occurrence by the number of times over total number of M2 releases. "Day" column indicates the window day relative to M2 release. To start with, in Panel A where we include CBS, CTCM, LPR, OMO-MLF, RRR, and SLF/MLF/PSL, "*Sum of Other MP*" column presents frequency when any of these other monetary policy events occur. We find that the probability of having another major type of monetary policy announcement happening one day before, on, and after M2 is 7.79%, 19.48%, and 9.09%, respectively. More drastically, in Panel B where we include major economic releases ranked as most popular on Bloomberg, including CAIXIN, BOP, CPI/PPI, GDP, IP, PI, PMI, SWIFT, and TRADE, "*Sum of Other ER*" column presents frequency when any of these other economic releasing events occur. We find that the probability of having another major type of economic release happening one day before, on, and after M2 is as high as 40.26%, 36.36%, and 22.08%,

respectively.

We then turn to re-examine the pre-M2 drift in market return in Table X which controls for other overlapping announcements. Dependent variable is close-to-close excess return constructed from the Wind A-Share Index (*ExMktRet*). In Panel A, we control for other monetary policy announcements that happen one day before M2 by dropping the overlapped M2 event and re-estimate Equation (1). Other monetary policy announcements include CBS in column (1), CTCM in column (2), LPR in column (3), OMO-MLF in column (4), RRR in column (5), and SLF/MLF/PSL in column (6). Column (7) in Panel A drops M2 announcements with any of other types happening one day before. We notice that the return drift represented by the coefficient for *D-1* is still significantly positive after controlling for CBS, CTCM, RRR, and SLF/MLF/PSL, being 0.3274%, 0.3080%, 0.3131% and 0.3131%, respectively. The return drift is less significant yet still positive and with comparable economic magnitude for other columns.

Panel B controls for major economic indicator releases that happen one day before M2 by dropping the overlapped M2 event and re-estimate Equation (1). Major economic indicator releases include CAIXIN in column (1), BOP in column (2), CPI/PPI in column (3), GDP in column (4), IP in column (5), PI in column (6), PMI in column (7), SWIFT in column (8), and TRADE in column (9). Column (10) in Panel B drops M2 announcements with any of other types of economic releases happening one day before. We find that the return drift represented by the coefficient for *D-1* is still significantly positive after controlling for CAIXIN, BOP, CPI/PPI, GDP, PI, PMI, and nine releases combined, being 0.3131%, 0.3364%, 0.4465%, 0.3131%, 0.3131%, 0.3131%, and 0.4088%, respectively. The return drift is less significant yet still positive and with

comparable economic magnitude for other columns. Therefore, our basic finding of pre-M2 return premium is supported generally after controlling for overlapping news.

Besides the baseline return results, we also conduct more robustness checks on whether these various types of overlapping news influence our pre-M2 trading dynamics results. Appendix Table AI and Appendix Table AII respectively provide robust estimation results for the change in investor order imbalances before M2, controlling for other types of monetary policy announcements and economic indicator releases that happen one day before M2 by dropping the overlapped M2 event and re-estimate Equation (1).[5] Results still hold that (a) retail investors increase their net-buying ahead of M2, significantly so for RT2 to RT5 investors, which is consistent with Table III column (1) to (5); (b) institutional investors, especially mutual fund and RQFII investors, still significantly decrease their stock exposure by net-selling more ahead of M2, which is consistent with Table III column (6) and (9); and (c) overall, the robustness results are in similar economic magnitude and statistical significance compared with our benchmark results in Table III.

In all, we find that the overlapping of other types of monetary policy announcements and economic indicator releases are not posing concern to the validity of our baseline results.

4.6.2 Early vs. Late M2 Announcements

The exact timing of M2 announcements is not scheduled ex-ante, yet investors may infer a range of probable dates in the middle of each month for the announcement to occur. This quasi-scheduled nature of M2 timing enables us to exploit cross-event variation by separating M2

[5] Detailed estimation results are provided in Internet Appendix, available upon request.

announcements into early vs. late. Specifically, we define a M2 announcement happening as early (or late) if the corresponding calendar day-of-month is earlier (or later) than the median of the calendar day-of-month in the previous five years' rolling window. We do not choose to compare against whole sample median to avoid incurring forward looking bias.

Studying potential differences between early and late M2 announcements can provide the following additional insights. First, late announcements may involve more uncertainty as investors must wait longer without updated information. This could strengthen pre-announcement effects like return drifts and investor trading drifts. Second, if investors follow a monthly cycle of acquiring and processing public information in anticipation of M2, early vs. late timing may find them at different stages of this cycle. Our analysis thus then explores whether similar patterns exist for both early and late announcements, or if investor behavior and market dynamics differ based on where in the month the announcement falls.

Table XI provides estimation results for the change in market return and investor order imbalances before an early/late M2, specified by Equation (7):

$$Y_t = \gamma + \sum_{i=-T}^{T} \beta_{E,i} D_{E,i} + \sum_{i=-T}^{T} \beta_{L,i} D_{L,i} + \beta_x X_t + \epsilon_t \,, \tag{7}$$

where the dependent variable is the set of various market return measures in Panel A and aggregated time series variable of each investor group's order imbalances in Panel B. $D_{E,i}$ is a dummy variable for the ith day relative to an early announcement, while $D_{L,i}$ denotes a dummy variable for the ith day relative to a late announcement. We set *T* equals to 1 in this section, that is, *D(E, -1)* (or *D(E, 1)*) is a dummy variable indicating one day ahead of (or after) an early announcement, while *D(L, -1)* (or *D(L, 1)*) is a dummy variable indicating one day ahead of (or

after) a late announcement. The 0^{th} day is the announcement day itself, so that *D(E, 0)* (or *D(L, 0)*) indicates the day of an early (or late) announcement.

From Panel A, we notice that while *D(E, -1)* generally have insignificant results for all market return proxies, *D(L, -1)* are all significantly positive (except for large-cap stocks' returns). This indicates the pre-announcement return premium is more pronounced for late announcements occurring later than expected. Likewise, volatility drops more ahead of a late announcement as well, consistent with greater uncertainty resolution after uncertainty accumulation. The patterns align with the notion that uncertainty accumulates through the month without updated M2 data, strengthening pre-announcement effects for late releases.

From Panel B, the net-buying (or net-selling) drifts of retail investors (or institutional investors) pre-announcement are also more pronounced for late announcements. Retail ramp up buying while institutions cut exposure more ahead of late releases. This echoes the return and volatility results where effects are amplified for late announcements after longer-than-expected periods without news.

Overall, as the empirical patterns are stronger for late releases, we demonstrate how the quasi-scheduled nature of M2 timing impacts the market and investor behaviors through anticipation over the monthly cycle.

4.6.3 Alternative Separation of Good and Bad News

In this section, we alternatively categorize M2 announcements by the direction of market return during the following days cumulatively, with positive (or negative) market return from the announcement day till three days after indicating good (or bad) news, rather than the daily return

of announcement in baseline results.

Table XII provides robustness estimation results. Dependent variable is the aggregated time series variable of each investor group's order imbalances. In Panel A with a three-day window, we observe the similar set of three patterns as we do in Table VII. First, from column (1) to (3), for small retail investors, *D(B, 0)* all have significantly positive coefficients while *D(G, 0)* do not. For instance, RT1 investors significantly increase their net-buying by 0.0427 with a *t*-stat of 2.98 upon bad news, while insignificantly sell more by 0.0080 upon good news. Similarly, RT2 and RT3 groups of investors significantly increase their net-buying upon bad news while insignificantly sell more upon good news. Second, for large retail investors (RT5) in column (5), we again find an opposite pattern compared with small retail. On good news day, RT5 increase their net-buying by 0.0236 with a t-stat of 2.59, while they slightly net-sell more by 0.0033 on bad news day, magnitude comparable to Table VII's findings. Third, for institutional investors, domestic HF investors and foreign QFII investors are still capable of interpreting the news by significantly buying more on good news days or selling more on bad news days. Other institutional investors' results are insignificant. Results are similar in Panel B where we adopt a seven-day window.

In general, after considering alternative ways to categorize announcements into good or bad news, we still observe robust patterns as in the baseline results of Table VII where small retail seem to incorrectly understand and react to the news content while large retail and institutional investors correctly trade in response.

5 Conclusion

In this paper, we provide novel evidence on heterogeneous investors' trading dynamics

around China's monthly M2 announcements. Analyzing market return, volatility, and aggregated investor group order flows, the findings suggest institutional investors reduce stock exposure and tilt towards higher-risk small caps ahead of announcements, accumulating excess returns, while retail investors are in opposite directions so that market clears in equilibrium. Further micro-level evidence suggests that while small retail more negatively predict return before announcements, large retail and institutional investors possess higher return predictability then. Granular analysis of post-announcement trading further indicates heterogenous reactions in processing monetary news. Small retail investors fail to respond appropriately to news content, whereas large retail and institutions trade correctly, highlighting their key role in policy transmission. Overall, the fresh and crucial micro-level evidence we provide in this study may help the literature to better understand the pivotal role that the equity market and investor trading behavior play in how monetary policy signals are decoded into asset prices and then into meaningful real outcomes.

References

Ai, Hengjie, and Ravi Bansal, 2018, Risk preferences and the macroeconomic announcement premium, *Econometrica* 86, 1383–1430.

Ai, Hengjie, Ravi Bansal, and Leyla Jianyu Han, 2022, Information acquisition and the pre-announcement drift, *Working Paper*.

Bernanke, Ben S., and Kenneth N. Kuttner, 2005, What explains the stock market's reaction to Federal Reserve policy? *The Journal of Finance* 60, 1221–1257.

Bomfim, Antulio N., 2003, Pre-announcement effects, news effects, and volatility: Monetary policy and the stock market, *Journal of Banking & Finance* 27, 133–151.

Brunnermeier, Markus K, Michael Sockin, and Wei Xiong, 2022, China's model of managing the financial system, *The Review of Economic Studies* 89, 3115–3153.

Brusa, Francesca, Pavel Savor, and Mungo Wilson, 2020, One central bank to rule them all, *Review of Finance* 24, 263–304.

Chen, Kaiji, Jue Ren, and Tao Zha, 2018, The nexus of monetary policy and shadow banking in China, *American Economic Review* 108, 3891–3936.

Cieslak, Anna, Adair Morse, and Annette Vissing-Jorgensen, 2019, Stock returns over the FOMC cycle, *The Journal of Finance* 74, 2201–2248.

Cocoma, Paula, 2023, Explaining the pre-announcement drift, *Working Paper*.

Gorodnichenko, Yuriy, and Michael Weber, 2016, Are sticky prices costly? Evidence from the stock market, *American Economic Review* 106, 165–199.

Guo, Rui, Dun Jia, and Xi Sun, 2022, Information acquisition, uncertainty reduction, and pre-announcement premium in China, *Review of Finance* 27, 1077-1118.

Han, Haozhe, Grace Xing Hu, and Calvin Dun Jia, 2023, Learning, price discovery, and macroeconomic announcements, *Working Paper*.

Hu, Grace Xing, Jun Pan, Jiang Wang, and Haoxiang Zhu, 2022, Premium for heightened uncertainty: Explaining pre-announcement market returns, *Journal of Financial Economics* 145, 909–936.

Laarits, Toomas, 2019, Pre-announcement risk, *Working Paper*.

Liu, Hong, Xiaoxiao Tang, and Guofu Zhou, 2022, Recovering the FOMC risk premium, *Journal of Financial Economics* 145, 45–68.

Liu, Jianan, Robert F. Stambaugh, and Yu Yuan, 2019, Size and value in China, *Journal of Financial Economics* 134, 48–69.

Lucca, David O., and Emanuel Moench, 2015, The pre-FOMC announcement drift, *The Journal of Finance* 70, 329–371.

Morse, Adair, and Annette Vissing-Jorgensen, 2020, Information transmission from the Federal Reserve to the stock market: Evidence from governors' calendars, *Working Paper*.

Neuhierl, Andreas, and Michael Weber, 2020, Monetary momentum, *NBER Working Paper*.

Savor, Pavel, and Mungo Wilson, 2013, How much do investors care about macroeconomic risk? Evidence from scheduled economic announcements, *Journal of Financial and Quantitative Analysis* 48, 343–375.

Savor, Pavel, and Mungo Wilson, 2014, Asset pricing: A tale of two days, *Journal of Financial Economics* 113, 171–201.

Wachter, Jessica A, and Yicheng Zhu, 2022, A model of two days: Discrete news and asset prices, *The Review of Financial Studies* 35, 2246–2307.

Ying, Chao, 2020, The pre-FOMC announcement drift and private information: Kyle meets macro-finance, *Working Paper*.

Table I. Summary Statistics

This table presents summary statistics for aggregate order imbalances of different investor groups. Our sample period is from January 2014 to May 2020, and our sample firms are A-share stocks listed on a major stock exchange. Stock-day level order imbalance for each investor group is computed as the investor group's buy CNY volume minus sell CNY volume divided by buy CNY volume plus sell CNY volume. We then aggregate to time-series order imbalance for each group of investors, by cross-sectionally value weighting stock-level order imbalances for that investor group. Retail investors are stratified into five groups based on their account sizes: below 100,000 CNY (RT1), 100,000-500,000 CNY (RT2), 500,000-3 million CNY (RT3), 3 million-10 million CNY (RT4), and above 10 million CNY (RT5). Institutional investors include mutual fund (MF), hedge fund (HF), Qualified Foreign Institutional Investors (QFII), RMB Qualified Foreign Institutional Investors (RQFII), Hong Kong Connect program (HKC). Panel A presents the number of observations, mean, standard deviation, minimum, 25th percentile, median, 75th percentile and maximum of aggregated order imbalances for each investor group. Panel B presents correlations among different types of investors' aggregate order imbalances.

Panel A. Aggregate order imbalance distribution by different types of investors

Variables	Ndays	Mean	Std	Min	P25	P50	P75	Max
OibRT1	1,561	-0.0188	0.1006	-0.3629	-0.0839	-0.0165	0.0432	0.3709
OibRT2	1,561	0.0008	0.0883	-0.2984	-0.0527	0.0046	0.0590	0.2776
OibRT3	1,561	0.0020	0.0715	-0.3140	-0.0411	0.0047	0.0486	0.2375
OibRT4	1,561	0.0014	0.0617	-0.3623	-0.0333	0.0047	0.0393	0.2040
OibRT5	1,561	0.0114	0.0643	-0.4704	-0.0222	0.0173	0.0509	0.2458
OibMF	1,561	-0.0271	0.1466	-0.6296	-0.1211	-0.0208	0.0672	0.4246
OibHF	1,561	0.0055	0.1451	-0.5404	-0.0778	0.0005	0.0900	0.5756
OibQFII	1,561	-0.0206	0.2518	-0.6900	-0.2140	-0.0183	0.1658	0.6595
OibRQFII	1,561	-0.0381	0.3971	-0.8541	-0.3870	-0.0206	0.2695	0.8452
OibHKC	1,561	0.0193	0.1806	-0.5590	-0.0745	0.0000	0.1172	0.8081

Panel B. Correlations of aggregate order imbalances

	OibRT1	OibRT2	OibRT3	OibRT4	OibRT5	OibMF	OibHF	OibQFII	OibRQFII	OibHKC
OibRT1	1.00									
OibRT2	0.91	1.00								

OibRT3	0.76	0.93	1.00							
OibRT4	0.47	0.68	0.86	1.00						
OibRT5	0.00	0.20	0.43	0.68	1.00					
OibMF	-0.46	-0.55	-0.57	-0.45	-0.18	1.00				
OibHF	-0.46	-0.43	-0.29	-0.03	0.28	0.33	1.00			
OibQFII	-0.48	-0.46	-0.37	-0.18	0.00	0.24	0.36	1.00		
OibRQFII	-0.23	-0.22	-0.17	-0.09	-0.02	0.13	0.17	0.27	1.00	
OibHKC	-0.35	-0.33	-0.26	-0.10	0.04	0.17	0.32	0.34	0.18	1.00

Table II. Pre-announcement Returns and Volatility

This table provides estimation results for the change in market return and volatility before M2, as in Equation (1). Dependent variable is close-to-close excess return constructed from the Wind A-Share Index (*ExMktRet*) in column (1), close-to-close raw return from the Wind A-Share Index (*MktRet*) in column (2), open to close raw return (*OpenCloseMktRet*) in column (3), and the value-weighted return for stocks listed on a major stock exchange (*ExSERet*) in column (4). From column (5) to (7), we divide stocks listed on this stock exchange into three subgroups (small, medium and large, correspondingly) and the dependent variable is the value-weighted return for each subgroup (*ExSERet_SmallSize, ExSERet_MediumSize, ExSERet_LargeSize*). In column (8), we obtain realized intraday volatility for stocks listed on this major stock exchange from CSMAR, which is calculated as the sum of squared 5-minute log returns during the day (*SE_Volatility*). In Panel A, *D-1*, *D0,* and *D1* are dummy variables indicating the day before, of, after the announcement, respectively. In Panel B, *D(-3, -1)* (or *D(1,3)*) is a dummy variable indicating three days ahead of (or after) announcement while *D0* is the dummy variable indicating the day of announcement. We include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses. Sample period is from January 2014 to May 2020.

Panel A. Three-day window returns and volatility around M2 announcements

Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep.Var	ExMktRet	MktRet	OpenClose MktRet	ExSERet	ExSERet_ SmallSize	ExSERet_ MediumSize	ExSERet_ LargeSize	SE_ Volatility
D-1	0.3131*	0.3138*	0.3548**	0.1027	0.5710***	0.4892**	0.0380	-0.5185***
	(1.71)	(1.72)	(2.05)	(0.70)	(2.59)	(2.21)	(0.27)	(-2.96)
D0	0.0569	0.0577	-0.0495	0.0384	0.1194	0.1016	0.0244	-0.3163
	(0.33)	(0.33)	(-0.31)	(0.26)	(0.52)	(0.45)	(0.16)	(-1.46)
D1	0.0109	0.0117	0.0767	0.0029	-0.0332	-0.0010	0.0016	-0.3608*
	(0.06)	(0.07)	(0.45)	(0.02)	(-0.16)	(-0.00)	(0.01)	(-1.77)
Constant	-0.8790***	-0.0494	-0.8086***	0.0842	-0.1955	-0.0908	0.1187	1.4407***
	(-4.16)	(-0.23)	(-4.30)	(0.43)	(-0.82)	(-0.39)	(0.61)	(5.10)
Adj. R2	-0.002	-0.002	0.004	-0.005	0.007	0.002	-0.005	0.215
Obs.	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. Seven-day window returns and volatility around M2 announcements

Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep.Var	ExMktRet	MktRet	OpenClose MktRet	ExSERet	ExSERet_ SmallSize	ExSERet_ MediumSize	ExSERet_ LargeSize	SE Volatility
D(-3,-1)	0.2031*	0.2041*	0.2605**	0.0567	0.3687**	0.3214**	0.0182	-0.3659**
	(1.65)	(1.66)	(2.33)	(0.56)	(2.52)	(2.23)	(0.19)	(-2.23)
D0	0.0623	0.0633	-0.0364	0.0354	0.1336	0.1144	0.0195	-0.3767*
	(0.35)	(0.36)	(-0.23)	(0.23)	(0.58)	(0.51)	(0.13)	(-1.67)
D(1,3)	-0.0605	-0.0595	-0.0320	-0.0412	-0.0985	-0.0764	-0.0369	-0.3194**
	(-0.50)	(-0.49)	(-0.29)	(-0.41)	(-0.68)	(-0.54)	(-0.37)	(-2.19)
Constant	-0.8843***	-0.0549	-0.8210***	0.0869	-0.2094	-0.1032	0.1231	1.4949***
	(-4.14)	(-0.26)	(-4.27)	(0.45)	(-0.87)	(-0.43)	(0.64)	(5.21)
Adj. R2	-0.002	-0.002	0.005	-0.005	0.008	0.002	-0.005	0.215
Obs.	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table III. Pre-announcement Order Imbalances for Heterogeneous Investors

This table provides estimation results for the change in investor order imbalances before M2, as in Equation (1). Dependent variable is the aggregated time series variable of each investor group's order imbalances, calculated as the value-weighted average of each stock's order imbalance for that investor group. Investor groups include five groups of retail from column (1) to (5), mutual fund in column (6), hedge fund in column (7), QFII in column (8), RQFII in column (9), and HKC in column (10). In Panel A, *D-1*, *D0,* and *D1* are dummy variables indicating the day before, of, after the announcement, respectively. In Panel B, *D(-3, -1)* (or *D(1,3)*) is a dummy variable indicating three days ahead of (or after) announcement while *D0* is the dummy variable indicating the day of announcement. We include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses. Sample period is from January 2014 to May 2020.

Panel A. Three-day window order imbalances around M2 announcements

Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep.Var	Oib RT1	Oib RT2	Oib RT3	Oib RT4	Oib RT5	Oib MF	Oib HF	Oib QFII	Oib RQFII	Oib HKC
D-1	0.0126	0.0157*	0.0196***	0.0249***	0.0190***	-0.0367**	0.0064	0.0007	-0.1189***	-0.0019
	(1.16)	(1.69)	(2.60)	(3.94)	(3.33)	(-2.18)	(0.41)	(0.02)	(-2.87)	(-0.09)
D0	0.0177	0.0153	0.0134	0.0108	0.0100	-0.0200	-0.0031	-0.0369	-0.0423	-0.0029
	(1.52)	(1.42)	(1.56)	(1.62)	(1.39)	(-1.12)	(-0.17)	(-1.28)	(-0.90)	(-0.14)
D1	0.0090	0.0092	0.0060	0.0032	-0.0007	-0.0094	0.0050	0.0046	-0.0533	0.0066
	(0.82)	(0.87)	(0.66)	(0.39)	(-0.08)	(-0.54)	(0.31)	(0.16)	(-1.09)	(0.32)
Constant	-0.0626***	0.0167	0.0282***	0.0319***	0.0540***	-0.0731***	0.0474**	0.0601**	-0.0170	0.0552***
	(-5.04)	(1.51)	(3.10)	(4.17)	(6.92)	(-3.90)	(2.26)	(2.12)	(-0.34)	(3.05)
Adj. R2	0.075	0.030	0.044	0.085	0.106	0.051	0.014	0.036	0.040	0.016
Obs.	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. Seven-day window order imbalances around M2 announcements

Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep.Var	Oib RT1	Oib RT2	Oib RT3	Oib RT4	Oib RT5	Oib MF	Oib HF	Oib QFII	Oib RQFII	Oib HKC
D(-3,-1)	0.0142**	0.0139**	0.0138***	0.0149***	0.0123***	-0.0250**	-0.0066	-0.0373**	-0.0643**	-0.0244*

	(2.03)	(2.28)	(2.86)	(3.62)	(3.00)	(-2.28)	(-0.61)	(-2.06)	(-2.30)	(-1.83)
D0	0.0208*	0.0179*	0.0154*	0.0121*	0.0107	-0.0229	-0.0052	-0.0492*	-0.0477	-0.0068
	(1.77)	(1.65)	(1.78)	(1.79)	(1.48)	(-1.27)	(-0.28)	(-1.70)	(-1.00)	(-0.33)
D(1,3)	0.0128*	0.0114*	0.0075	0.0027	-0.0012	-0.0087	-0.0030	-0.0403**	-0.0282	0.0007
	(1.87)	(1.79)	(1.41)	(0.58)	(-0.25)	(-0.87)	(-0.29)	(-2.23)	(-0.98)	(0.06)
Constant	-0.0654***	0.0143	0.0264***	0.0307***	0.0533***	-0.0706***	0.0494**	0.0716**	-0.0123	0.0590***
	(-5.23)	(1.28)	(2.88)	(3.95)	(6.75)	(-3.75)	(2.36)	(2.50)	(-0.24)	(3.22)
Adj. R2	0.077	0.033	0.045	0.084	0.107	0.051	0.014	0.041	0.038	0.018
Obs.	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table IV. Pre-announcement Trading Within Small, Medium and Large Size Stocks for Heterogeneous Investors

This table provides estimation results for the change in investor order imbalances for small, medium and large-cap stocks before M2, as in Equation (2). We cross-sectionally divide stocks into three size subgroups. Dependent variable is the aggregated time series variable of each investor group's order imbalances within each size subgroup, calculated as the value-weighted average of each stock's order imbalance for that investor group within each size subgroup. Investor groups in Panel A include five groups of retail from column (1) to (5), mutual fund in column (6), hedge fund in column (7), QFII in column (8), RQFII in column (9), and HKC in column (10). In Panel B, we divide all institution investors into domestic institutions in column (1) and foreign institutions in column (2). *D-1*, *D0,* and *D1* are dummy variables indicating the day before, of, after the announcement, respectively. *Med* (or *Large*) is a dummy variable indicating the medium (or large) size subgroup of stocks. We include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses. Sample period is from January 2014 to May 2020.

Panel A. Retail and institutional order imbalances around M2 announcements across different market cap stocks

Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep. Var	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib
	RT1	RT2	RT3	RT4	RT5	MF	HF	QFII	RQFII	HKC
D-1	-0.0174***	-0.0152***	-0.0067**	0.0051	0.0173***	0.0330*	0.0400**	0.0095	0.0032	-0.0120***
	(-3.16)	(-3.65)	(-2.10)	(1.62)	(4.65)	(1.93)	(2.56)	(0.40)	(0.40)	(-2.77)
D-1*Med	0.0120	0.0104*	0.0071	-0.0026	-0.0072	-0.0508**	-0.0369*	-0.0138	-0.0098	0.0024
	(1.45)	(1.68)	(1.55)	(-0.62)	(-1.45)	(-2.25)	(-1.72)	(-0.46)	(-1.00)	(0.30)
D-1*Large	0.0399***	0.0428***	0.0327***	0.0180**	-0.0094	-0.0821***	-0.0374*	-0.0496	-0.1701***	0.0205
	(3.06)	(3.87)	(3.64)	(2.36)	(-1.28)	(-3.15)	(-1.67)	(-1.24)	(-3.55)	(0.90)
D0	-0.0090	-0.0121***	-0.0076**	0.0036	0.0086**	0.0289*	0.0227	0.0154	0.0101	-0.0121***
	(-1.45)	(-2.67)	(-2.13)	(0.96)	(2.14)	(1.79)	(1.30)	(0.66)	(1.41)	(-2.80)
D0*Med	0.0119	0.0123*	0.0067	-0.0021	-0.0099*	-0.0445**	-0.0270	-0.0030	-0.0007	-0.0022
	(1.25)	(1.83)	(1.44)	(-0.44)	(-1.70)	(-2.00)	(-1.15)	(-0.09)	(-0.07)	(-0.22)
D0*Large	0.0365***	0.0393***	0.0282***	0.0057	-0.0080	-0.0612**	-0.0323	-0.1016***	-0.0905*	0.0211
	(2.62)	(3.11)	(2.78)	(0.70)	(-0.86)	(-2.36)	(-1.24)	(-2.58)	(-1.70)	(0.94)
D1	-0.0089	-0.0101***	-0.0056***	0.0022	0.0109**	0.0290*	0.0095	0.0201	0.0062	-0.0087*

	(-1.59)	(-2.97)	(-2.71)	(0.86)	(2.54)	(1.93)	(0.70)	(0.92)	(0.81)	(-1.71)
D1*Med	0.0137*	0.0127***	0.0074***	-0.0003	-0.0099*	-0.0314	-0.0193	-0.0138	0.0036	0.0059
	(1.74)	(2.67)	(2.60)	(-0.08)	(-1.86)	(-1.50)	(-1.01)	(-0.48)	(0.30)	(0.59)
D1*Large	0.0267**	0.0303**	0.0174*	-0.0020	-0.0235**	-0.0502**	-0.0085	-0.0605	-0.0984*	0.0273
	(2.04)	(2.48)	(1.67)	(-0.21)	(-2.40)	(-2.09)	(-0.40)	(-1.62)	(-1.76)	(1.14)
Constant	-0.0695***	-0.0026	0.0090**	0.0147***	0.0364***	0.0005	0.0225**	0.0529***	-0.0062	0.0336***
	(-12.58)	(-0.55)	(2.36)	(4.44)	(9.74)	(0.04)	(1.99)	(3.45)	(-0.31)	(4.45)
Adj. R2	0.070	0.023	0.024	0.040	0.047	0.034	0.010	0.033	0.019	0.007
Obs.	4,680	4,680	4,680	4,680	4,680	4,680	4,680	4,680	4,680	4,680
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. Domestic and foreign order imbalances around M2 announcements across different market cap stocks

Reg	(1)	(2)	(3)
Dep. Var	OibDomestic	OibForeign	OibAllInst
D-1	0.0465***	-0.0114	0.0389***
	(3.75)	(-0.50)	(2.81)
D-1 * Med	-0.0481***	-0.0113	-0.0453**
	(-2.95)	(-0.40)	(-2.57)
D-1 * Large	-0.1057***	-0.0235	-0.0918***
	(-6.13)	(-0.66)	(-5.06)
D0	0.0222*	-0.0044	0.0180
	(1.67)	(-0.20)	(1.24)
D0 * Med	-0.0298*	-0.0090	-0.0299
	(-1.70)	(-0.31)	(-1.61)
D0 * Large	-0.0758***	-0.0371	-0.0653***
	(-3.80)	(-1.20)	(-3.21)
D1	0.0250**	0.0022	0.0222*
	(2.24)	(0.10)	(1.81)
D1 * Med	-0.0268*	-0.0092	-0.0277*

	(-1.88)	(-0.34)	(-1.81)
D1 * Large	-0.0584***	-0.0131	-0.0478**
	(-3.03)	(-0.40)	(-2.56)
Constant	-0.0262***	0.0727***	-0.0092
	(-3.12)	(5.09)	(-1.06)
Adj. R2	0.038	0.023	0.029
Obs.	4,680	4,680	4,680
FE	Yes	Yes	Yes

Table V. Systematic and Idiosyncratic Volatility Across Small, Medium and Large Size Stocks During Announcements

This table provides results for small, medium and large size subgroups' systematic and idiosyncratic volatility during announcements. We cross-sectionally divide stocks into three size subgroups. For each subgroup, we calculate its systematic and idiosyncratic volatility during announcement using Equation (3). That is, for each subgroup on each announcement day, we regress its announcement returns on CH4 factors using past daily data, then calculate estimates for systematic and idiosyncratic components of returns, and then calculate each component's standard deviation. After we obtain the series of standard deviations, we compute their mean values and t-statistics. "*Large-Small*" column reports the value and *t*-stat for the time-series difference between large size subgroup and small size subgroup, "*Large-Med*" column for the difference between large size subgroup and medium size subgroup, and "*Med-Small*" column for the difference between medium size subgroup and small size subgroup. Sample period is from January 2014 to May 2020.

Annualized std (%)		Stock Size Subgroup			Cross-group Difference		
		Large	Med	Small	Large-Small	Large-Med	Med-Small
Idiosyncratic standard deviation	Mean	3.80***	5.79***	7.75***	-3.94***	-1.98***	-1.96***
	t-Stat	(25.74)	(41.82)	(69.35)	(-21.28)	(-9.80)	(-11.01)
Systematic standard deviation	Mean	22.34***	33.92***	33.80***	-11.46***	-11.59***	0.12
	t-Stat	(64.68)	(40.43)	(33.21)	(-10.67)	(-12.77)	(0.09)

Table VI. Pre-announcement Trading Informativeness of Heterogeneous Investors

This table provides estimation results for the informativeness of investor trading one day before M2, as in Equation (4). Dependent variable is the next-day stock-level return. *StockOibGroup* is the stock-day level order imbalance of each investor group. Investor groups include five groups of retail (RT1-RT5) in Panel A and five groups of institutional investors (MF, HF, QFII, RQFII, HKC) in Panel B. *D-1* is the dummy variable indicating the day before announcement. We control for lagged variables including previous day return, previous week return, previous month return, market capitalization, EP ratio and turnover. We include firm fixed effects and standard errors are double-clustered at firm-day level in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Sample period is from January 2014 to May 2020.

Panel A. Retail investors pre-announcement informativeness

Reg	(1)	(2)	(3)	(4)	(5)
Group	RT1	RT2	RT3	RT4	RT5
StockOibGroup	-0.0132***	-0.0142***	-0.0096***	-0.0010***	0.0021***
	(-17.70)	(-14.90)	(-9.37)	(-2.85)	(10.49)
StockOibGroup*D-1	-0.0179***	-0.0199***	-0.0149***	-0.0031**	0.0028***
	(-3.68)	(-3.58)	(-3.02)	(-2.08)	(2.60)
Ret	0.0513***	0.0464**	0.0622***	0.0783***	0.0766***
	(2.87)	(2.43)	(3.24)	(4.36)	(4.32)
Ret(-5,-1)	-0.0026	-0.0010	0.0003	0.0007	0.0009
	(-0.32)	(-0.12)	(0.03)	(0.08)	(0.10)
Ret(-26,-6)	-0.0031	-0.0029	-0.0028	-0.0028	-0.0028
	(-1.11)	(-1.02)	(-0.98)	(-0.99)	(-1.00)
Lsize	-0.0020***	-0.0022***	-0.0023***	-0.0024***	-0.0023***
	(-3.78)	(-4.16)	(-4.45)	(-4.52)	(-4.42)
Lep	0.0096***	0.0095**	0.0089**	0.0086**	0.0088**
	(2.67)	(2.57)	(2.52)	(2.50)	(2.53)
Lturn	-0.0151	-0.0164	-0.0173	-0.0176	-0.0168
	(-1.15)	(-1.25)	(-1.32)	(-1.34)	(-1.28)
Adj. R2	0.016	0.014	0.011	0.008	0.009

Obs.	1823076	1824174	1824176	1824086	1823703

Panel B. Institutional investors pre-announcement informativeness

Reg	(1)	(2)	(3)	(4)	(5)
Group	MF	HF	QFII	RQFII	HKC
StockOibGroup	0.0005***	0.0013***	0.0010***	0.0004	0.0010***
	(3.59)	(7.14)	(6.69)	(1.36)	(4.17)
StockOibGroup*D-1	0.0009*	0.0008	0.0011**	-0.0001	0.0010*
	(1.66)	(0.86)	(2.17)	(-0.07)	(1.66)
Ret	0.0696***	0.0676***	0.0559***	0.0565**	0.0638***
	(3.62)	(3.81)	(2.94)	(2.23)	(2.74)
Ret(-5,-1)	-0.0002	-0.0000	-0.0008	-0.0109	-0.0053
	(-0.02)	(-0.00)	(-0.09)	(-1.12)	(-0.47)
Ret(-26,-6)	-0.0028	-0.0027	-0.0033	-0.0035	-0.0052
	(-0.95)	(-0.97)	(-0.94)	(-0.87)	(-1.09)
Lsize	-0.0025***	-0.0024***	-0.0022***	-0.0020***	-0.0025***
	(-4.51)	(-4.53)	(-3.73)	(-3.09)	(-3.60)
Lep	0.0094	0.0088*	0.0075	0.0131*	0.0062
	(1.39)	(1.75)	(1.44)	(1.72)	(0.97)
Lturn	-0.0166	-0.0186	-0.0178	-0.0401	-0.0155
	(-1.11)	(-1.43)	(-1.11)	(-1.34)	(-0.48)
Adj. R2	0.007	0.007	0.006	0.006	0.007
Obs.	1629372	1758752	1440767	443742	709702

Table VII. Trading Conditional on Good or Bad News

This table provides estimation results for the change in investor order imbalances upon the announcement of M2, conditional on good or bad news, as in Equation (5). We separate good and bad news announcement days by the direction of market return on that day, with positive (or negative) market return indicating good (or bad) news. Dependent variable is the aggregated time series variable of each investor group's order imbalances, calculated as the value-weighted average of each stock's order imbalance for that investor group. Investor groups include five groups of retail from column (1) to (5), mutual fund in column (6), hedge fund in column (7), QFII in column (8), RQFII in column (9), and HKC in column (10). In Panel A, *D(G, -1)* (or *D(G, 1)*) is a dummy variable indicating one day ahead of (or after) announcement with good news, while *D(B, -1)* (or *D(B, 1)*) is a dummy variable indicating one day ahead of (or after) announcement with bad news. *D(G, 0)* (or *D(B, 0)*) is a dummy variable indicating the day of announcement with good (or bad) news. In Panel B, *D(G, -3, -1)* (or *D(G, 1, 3)*) is a dummy variable indicating three days ahead of (or after) announcement with good news, while *D(B, -3, -1)* (or *D(B, 1, 3)*) is a dummy variable indicating three days ahead of (or after) announcement with bad news. We include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses. Sample period is from January 2014 to May 2020.

Panel A. Three-day window order imbalances around M2 announcement, conditional on good or bad news

Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep. Var	Oib RT1	Oib RT2	Oib RT3	Oib RT4	Oib RT5	Oib MF	Oib HF	Oib QFII	Oib RQFII	Oib HKC
D(G, -1)	0.0048	0.0113	0.0170	0.0217**	0.0200**	-0.0338	0.0136	0.0475	-0.1329**	-0.0107
	(0.28)	(0.81)	(1.57)	(2.42)	(2.49)	(-1.34)	(0.55)	(1.31)	(-2.19)	(-0.36)
D(B, -1)	0.0206	0.0203*	0.0222**	0.0282***	0.0180**	-0.0396*	-0.0009	-0.0472	-0.1046*	0.0071
	(1.59)	(1.71)	(2.19)	(3.26)	(2.28)	(-1.80)	(-0.05)	(-1.07)	(-1.89)	(0.28)
D(G, 0)	-0.0201	-0.0188	-0.0028	0.0106	0.0240***	0.0080	0.0668**	0.1047***	-0.0473	0.0502*
	(-1.26)	(-1.27)	(-0.24)	(1.25)	(2.81)	(0.31)	(2.55)	(3.01)	(-0.72)	(1.79)
D(B, 0)	0.0562***	0.0500***	0.0299**	0.0110	-0.0044	-0.0486**	-0.0742***	-0.1810***	-0.0373	-0.0569**
	(3.97)	(3.75)	(2.50)	(1.07)	(-0.39)	(-2.04)	(-3.57)	(-5.72)	(-0.56)	(-2.22)
D(G, 1)	0.0143	0.0222	0.0190	0.0119	0.0072	-0.0207	0.0062	-0.0198	-0.0973	-0.0074
	(1.02)	(1.65)	(1.64)	(1.18)	(0.91)	(-0.82)	(0.25)	(-0.47)	(-1.27)	(-0.24)
D(B, 1)	0.0036	-0.0041	-0.0072	-0.0056	-0.0086	0.0021	0.0037	0.0293	-0.0084	0.0210

	(0.22)	(-0.26)	(-0.53)	(-0.44)	(-0.64)	(0.09)	(0.19)	(0.81)	(-0.14)	(0.77)
Constant	-0.0619***	0.0174	0.0286***	0.0319***	0.0538***	-0.0738***	0.0461**	0.0575**	-0.0173	0.0540***
	(-4.97)	(1.58)	(3.16)	(4.19)	(6.94)	(-3.92)	(2.20)	(2.02)	(-0.34)	(3.01)
Adj. R2	0.080	0.037	0.047	0.084	0.108	0.051	0.023	0.052	0.038	0.019
Obs.	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. Seven-day window order imbalances around M2 announcement, conditional on good or bad news

Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib
Dep. Var	RT1	RT2	RT3	RT4	RT5	MF	HF	QFII	RQFII	HKC
D(G,-3,-1)	0.0102	0.0112	0.0113*	0.0112**	0.0118**	-0.0226	0.0058	-0.0234	-0.0525	-0.0320*
	(1.10)	(1.43)	(1.81)	(2.02)	(2.15)	(-1.54)	(0.38)	(-1.04)	(-1.33)	(-1.75)
D(B,-3,-1)	0.0183*	0.0168*	0.0164**	0.0187***	0.0128**	-0.0275*	-0.0193	-0.0519*	-0.0763**	-0.0167
	(1.89)	(1.93)	(2.40)	(3.31)	(2.25)	(-1.77)	(-1.38)	(-1.94)	(-2.08)	(-0.92)
D(G,0)	-0.0170	-0.0161	-0.0007	0.0119	0.0249***	0.0050	0.0652**	0.0927***	-0.0512	0.0468*
	(-1.06)	(-1.09)	(-0.06)	(1.39)	(2.89)	(0.19)	(2.48)	(2.65)	(-0.78)	(1.66)
D(B,0)	0.0592***	0.0525***	0.0318***	0.0122	-0.0038	-0.0512**	-0.0770***	-0.1937***	-0.0442	-0.0614**
	(4.17)	(3.93)	(2.65)	(1.19)	(-0.34)	(-2.14)	(-3.68)	(-6.09)	(-0.66)	(-2.39)
D(G,1,3)	0.0190**	0.0200**	0.0160**	0.0100*	0.0059	-0.0214	0.0005	-0.0424*	-0.0293	0.0128
	(2.24)	(2.57)	(2.38)	(1.69)	(0.98)	(-1.60)	(0.03)	(-1.68)	(-0.70)	(0.69)
D(B,1,3)	0.0066	0.0027	-0.0011	-0.0047	-0.0084	0.0043	-0.0066	-0.0384	-0.0270	-0.0117
	(0.66)	(0.29)	(-0.14)	(-0.69)	(-1.21)	(0.31)	(-0.49)	(-1.58)	(-0.74)	(-0.65)
Constant	-0.0646***	0.0152	0.0269***	0.0309***	0.0533***	-0.0715***	0.0486**	0.0693**	-0.0118	0.0581***
	(-5.16)	(1.37)	(2.96)	(4.00)	(6.81)	(-3.79)	(2.33)	(2.42)	(-0.23)	(3.19)
Adj. R2	0.083	0.040	0.048	0.085	0.109	0.052	0.025	0.055	0.036	0.021
Obs.	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561	1,561
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table VIII. Trading within Small, Medium and Large Size Stocks Conditional on Good or Bad News

This table provides estimation results for the change in investor order imbalances for small, medium and large-cap stocks upon the announcement of M2, conditional on good or bad news, as in Equation (6). We cross-sectionally divide stocks into three size subgroups. We separate good and bad news days by the direction of market return on announcement days, with positive (or negative) market return indicating good (or bad) news. Dependent variable is the aggregated time series variable of each investor group's order imbalances within each size subgroup, calculated as the value-weighted average of each stock's order imbalance for that investor group within each size subgroup. Investor groups include five groups of retail from column (1) to (5), mutual fund in column (6), hedge fund in column (7), QFII in column (8), RQFII in column (9), and HKC in column (10). *D(G, -1)* (or *D(G, 1)*) is a dummy variable indicating one day ahead of (or after) announcement with good news, while *D(B, -1)* (or *D(B, 1)*) is a dummy variable indicating one day ahead of (or after) announcement with bad news. *D(G, 0)* (or *D(B, 0)*) is a dummy variable indicating the day of announcement with good (or bad) news. *Med* (or *Large*) is a dummy variable indicating the medium (or large) size subgroup of stocks. We include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses. Sample period is from January 2014 to May 2020.

Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep. Var	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib
	RT1	RT2	RT3	RT4	RT5	MF	HF	QFII	RQFII	HKC
D(G,-1)	-0.0194**	-0.0147***	-0.0059*	0.0097**	0.0188***	0.0426*	0.0460*	0.0048	-0.0007	-0.0144***
	(-2.34)	(-2.71)	(-1.73)	(2.31)	(3.49)	(1.65)	(1.94)	(0.14)	(-0.08)	(-2.75)
D(G,-1)*Med	0.0140	0.0103	0.0073	-0.0065	-0.0053	-0.0584*	-0.0555*	-0.0182	-0.0118	0.0072
	(1.08)	(1.23)	(1.55)	(-1.31)	(-0.80)	(-1.69)	(-1.71)	(-0.42)	(-0.91)	(0.64)
D(G,-1)*Large	0.0342*	0.0382**	0.0293**	0.0097	-0.0091	-0.0982**	-0.0335	0.0110	-0.1800***	0.0142
	(1.68)	(2.31)	(2.26)	(0.89)	(-0.87)	(-2.47)	(-0.97)	(0.21)	(-2.59)	(0.42)
D(B,-1)	-0.0153**	-0.0158**	-0.0076	0.0005	0.0157***	0.0231	0.0338*	0.0145	0.0072	-0.0095
	(-2.14)	(-2.50)	(-1.41)	(0.11)	(3.12)	(1.04)	(1.69)	(0.45)	(0.63)	(-1.50)
D(B,-1)*Med	0.0100	0.0105	0.0068	0.0014	-0.0091	-0.0431	-0.0177	-0.0093	-0.0078	-0.0025
	(0.96)	(1.14)	(0.86)	(0.20)	(-1.23)	(-1.48)	(-0.64)	(-0.23)	(-0.53)	(-0.21)
D(B,-1)*Large	0.0457***	0.0475***	0.0363***	0.0265**	-0.0096	-0.0655**	-0.0414	-0.1118*	-0.1598**	0.0270
	(2.82)	(3.25)	(2.91)	(2.52)	(-0.94)	(-1.97)	(-1.47)	(-1.88)	(-2.43)	(0.88)

D(G,0)	-0.0296***	-0.0265***	-0.0118***	0.0042	0.0241***	0.0749***	0.1015***	0.0709**	0.0098	-0.0045
	(-3.59)	(-5.23)	(-3.85)	(1.27)	(4.83)	(3.13)	(4.36)	(2.05)	(1.10)	(-0.79)
D(G,0)*Med	0.0040	0.0071	0.0048	0.0012	-0.0176***	-0.0358	-0.0324	0.0117	-0.0079	0.0160
	(0.31)	(0.89)	(1.08)	(0.29)	(-2.58)	(-1.13)	(-1.03)	(0.25)	(-0.67)	(1.17)
D(G,0)*Large	0.0192	0.0192	0.0165	0.0065	-0.0064	-0.0930**	-0.0422	-0.0070	-0.0922	0.0743**
	(1.01)	(1.11)	(1.22)	(0.65)	(-0.58)	(-2.47)	(-1.17)	(-0.13)	(-1.24)	(2.32)
D(B,0)	0.0119	0.0025	-0.0035	0.0030	-0.0072	-0.0179	-0.0575***	-0.0407	0.0103	-0.0197***
	(1.51)	(0.37)	(-0.54)	(0.44)	(-1.38)	(-0.96)	(-3.07)	(-1.44)	(1.04)	(-3.39)
D(B,0)*Med	0.0200*	0.0176*	0.0087	-0.0054	-0.0021	-0.0534**	-0.0216	-0.0180	0.0068	-0.0208
	(1.70)	(1.88)	(1.07)	(-0.64)	(-0.24)	(-2.00)	(-0.85)	(-0.49)	(0.47)	(-1.61)
D(B,0)*Large	0.0542***	0.0599***	0.0402***	0.0049	-0.0096	-0.0285	-0.0221	-0.1986***	-0.0888	-0.0335
	(3.03)	(3.68)	(2.74)	(0.37)	(-0.69)	(-0.85)	(-0.77)	(-4.26)	(-1.15)	(-1.17)
D(G,1)	-0.0204**	-0.0155***	-0.0091***	0.0040	0.0119*	0.0444*	0.0074	0.0223	0.0087	-0.0176***
	(-2.44)	(-3.07)	(-2.91)	(0.98)	(1.94)	(1.91)	(0.36)	(0.63)	(0.86)	(-2.59)
D(G,1)*Med	0.0142	0.0103	0.0072*	-0.0004	-0.0136*	-0.0454	-0.0262	-0.0368	-0.0105	0.0031
	(1.22)	(1.51)	(1.77)	(-0.08)	(-1.81)	(-1.45)	(-0.91)	(-0.84)	(-0.52)	(0.22)
D(G,1)*Large	0.0475***	0.0537***	0.0383***	0.0078	-0.0133	-0.0899**	-0.0058	-0.0924	-0.1471*	0.0250
	(2.80)	(3.39)	(2.84)	(0.64)	(-1.21)	(-2.52)	(-0.17)	(-1.60)	(-1.69)	(0.69)
D(B,1)	0.0029	-0.0046	-0.0020	0.0004	0.0099*	0.0131	0.0116	0.0177	0.0035	0.0004
	(0.43)	(-1.09)	(-0.82)	(0.13)	(1.68)	(0.71)	(0.66)	(0.71)	(0.34)	(0.06)
D(B,1)*Med	0.0133	0.0151**	0.0076**	-0.0001	-0.0061	-0.0171	-0.0122	0.0098	0.0182	0.0088
	(1.31)	(2.40)	(1.99)	(-0.03)	(-0.81)	(-0.62)	(-0.49)	(0.27)	(1.36)	(0.62)
D(B,1)*Large	0.0053	0.0063	-0.0041	-0.0121	-0.0341**	-0.0094	-0.0114	-0.0277	-0.0485	0.0296
	(0.27)	(0.35)	(-0.26)	(-0.83)	(-2.10)	(-0.30)	(-0.42)	(-0.60)	(-0.70)	(0.96)
Constant	-0.0690***	-0.0022	0.0092**	0.0147***	0.0362***	-0.0003	0.0210*	0.0511***	-0.0064	0.0329***
	(-12.47)	(-0.45)	(2.42)	(4.46)	(9.75)	(-0.02)	(1.86)	(3.32)	(-0.31)	(4.39)
Adj. R2	0.076	0.029	0.026	0.040	0.050	0.036	0.022	0.042	0.018	0.010
Obs.	4,680	4,680	4,680	4,680	4,680	4,680	4,680	4,680	4,680	4,680
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table IX. Robustness Results for Other Announcements Overlapping with M2

This table describes the frequency of other types of monetary policy announcements (Panel A) and major economic indicators (Panel B) overlapping with the timing of M2. Sample period is from January 2014 to May 2020. For every M2, we calculate the number of times that another event (indicated by column name) occurs on any day within the 11-day window, and compute the frequency of another event's occurrence by the number of times over total number of M2 releases. "*Day*" column indicates the window day relative to M2 release. In Panel A, we include CBS, CTCM, LPR, OMO-MLF, RRR, and SLF/MLF/PSL. "*Sum of Other MP*" column presents frequency when any of these other monetary policy events occur. In Panel B, we include major economic releases ranked as most popular on Bloomberg, including CAIXIN, BOP, CPI/PPI, GDP, IP, PI, PMI, SWIFT, and TRADE. "*Sum of Other ER*" column presents frequency when any of these other economic releasing events occur.

Panel A. Occurrence frequency of other monetary policy announcements

MP type	Day	M2	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Sum of Other MP
M2	-5	0.00%	0.00%	2.60%	0.00%	2.60%	0.00%	6.49%	11.69%
M2	-4	0.00%	0.00%	0.00%	0.00%	6.49%	0.00%	1.30%	7.79%
M2	-3	0.00%	0.00%	2.60%	0.00%	1.30%	1.30%	3.90%	9.09%
M2	-2	0.00%	1.30%	6.49%	0.00%	2.60%	0.00%	1.30%	11.69%
M2	-1	0.00%	1.30%	1.30%	1.30%	5.19%	0.00%	0.00%	7.79%
M2	0	100.00%	0.00%	9.09%	0.00%	9.09%	0.00%	1.30%	19.48%
M2	1	0.00%	2.60%	3.90%	1.30%	2.60%	0.00%	0.00%	9.09%
M2	2	0.00%	1.30%	5.19%	0.00%	10.39%	1.30%	0.00%	16.88%
M2	3	0.00%	0.00%	6.49%	1.30%	6.49%	1.30%	0.00%	14.29%
M2	4	0.00%	0.00%	6.49%	0.00%	2.60%	0.00%	0.00%	9.09%
M2	5	0.00%	1.30%	2.60%	3.90%	2.60%	0.00%	0.00%	10.39%

Panel B. Occurrence frequency of other economic indicator releases

MP type	Day	CAIXIN	BOP	CPI/PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Sum of Other ER
M2	-5	2.60%	6.49%	3.90%	0.00%	0.00%	0.00%	2.60%	0.00%	9.09%	20.78%
M2	-4	1.30%	3.90%	18.18%	0.00%	0.00%	0.00%	1.30%	0.00%	18.18%	41.56%
M2	-3	0.00%	0.00%	28.57%	0.00%	1.30%	0.00%	0.00%	0.00%	12.99%	40.26%

M2	-2	0.00%	1.30%	20.78%	0.00%	7.79%	0.00%	0.00%	0.00%	16.88%	44.16%
M2	-1	0.00%	3.90%	18.18%	0.00%	6.49%	0.00%	0.00%	1.30%	12.99%	40.26%
M2	0	0.00%	1.30%	6.49%	10.39%	24.68%	0.00%	0.00%	0.00%	5.19%	36.36%
M2	1	1.30%	1.30%	0.00%	7.79%	18.18%	0.00%	0.00%	0.00%	1.30%	22.08%
M2	2	1.30%	0.00%	1.30%	5.19%	9.09%	0.00%	0.00%	2.60%	0.00%	14.29%
M2	3	2.60%	0.00%	0.00%	7.79%	10.39%	0.00%	0.00%	2.60%	0.00%	15.58%
M2	4	0.00%	0.00%	0.00%	1.30%	2.60%	0.00%	0.00%	3.90%	0.00%	6.49%
M2	5	5.19%	0.00%	0.00%	1.30%	1.30%	0.00%	2.60%	1.30%	0.00%	7.79%

Table X. Robustness Results for Pre-announcement Return Controlling for Other Overlapping Announcements

This table provides robust estimation results for the change in market return before M2, controlling for other types of announcements that occur then. Dependent variable is close-to-close excess return constructed from the Wind A-Share Index (*ExMktRet*). Panel A controls for other monetary policy announcements that happen one day before M2 by dropping the overlapped M2 event and re-estimate Equation (1). Other monetary policy announcements include CBS in column (1), CTCM in column (2), LPR in column (3), OMO-MLF in column (4), RRR in column (5), and SLF/MLF/PSL in column (6). Column (7) in Panel A drops M2 announcements with any of other types happening one day before. Panel B controls for major economic indicator releases that happen one day before M2 by dropping the overlapped M2 event and re-estimate Equation (1). Major economic indicator releases include CAIXIN in column (1), BOP in column (2), CPI/PPI in column (3), GDP in column (4), IP in column (5), PI in column (6), PMI in column (7), SWIFT in column (8), and TRADE in column (9). Column (10) in Panel B drops M2 announcements with any of other types happening one day before. *D-1*, *D0,* and *D1* are dummy variables indicating the day before, of, after M2, respectively. We include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses. Sample period is from January 2014 to May 2020.

Panel A. Pre-M2 return controlling for other types of monetary policy announcements

Dep Var.	ExMktRet						
Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	0.3274*	0.3080*	0.2866	0.3042	0.3131*	0.3131*	0.2910
	(1.78)	(1.67)	(1.57)	(1.59)	(1.71)	(1.71)	(1.50)
D0	0.0470	0.0583	0.0466	0.0651	0.0569	0.0569	0.0439
	(0.27)	(0.33)	(0.26)	(0.36)	(0.33)	(0.33)	(0.24)
D1	0.0131	0.0130	0.0022	-0.0154	0.0109	0.0109	-0.0231
	(0.08)	(0.08)	(0.01)	(-0.09)	(0.06)	(0.06)	(-0.13)
Constant	-0.8795***	-0.8793***	-0.8771***	-0.8790***	-0.8790***	-0.8790***	-0.8775***
	(-4.17)	(-4.16)	(-4.15)	(-4.16)	(-4.16)	(-4.16)	(-4.15)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	-0.002	-0.002	-0.003	-0.002	-0.002	-0.002	-0.003
Obs	1561	1561	1561	1561	1561	1561	1561

Panel B. Pre-M2 return controlling for other types of economic indicator releases

Dep Var.	ExMktRet									
Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D-1	0.3131*	0.3364*	0.4465**	0.3131*	0.2876	0.3131*	0.3131*	0.2866	0.2405	0.4088**
	(1.71)	(1.81)	(2.50)	(1.71)	(1.50)	(1.71)	(1.71)	(1.57)	(1.52)	(2.42)
D0	0.0569	0.0760	0.0772	0.0569	-0.0266	0.0569	0.0569	0.0466	0.0018	-0.1130
	(0.33)	(0.42)	(0.39)	(0.33)	(-0.15)	(0.33)	(0.33)	(0.26)	(0.01)	(-0.50)
D1	0.0109	0.0035	0.0480	0.0109	0.0394	0.0109	0.0109	0.0022	0.0268	0.0692
	(0.06)	(0.02)	(0.24)	(0.06)	(0.23)	(0.06)	(0.06)	(0.01)	(0.17)	(0.34)
Constant	-0.8790***	-0.8798***	-0.8827***	-0.8790***	-0.8731***	-0.8790***	-0.8790***	-0.8771***	-0.8707***	-0.8690***
	(-4.16)	(-4.16)	(-4.17)	(-4.16)	(-4.13)	(-4.16)	(-4.16)	(-4.15)	(-4.13)	(-4.11)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	-0.002	-0.002	-0.001	-0.002	-0.003	-0.002	-0.002	-0.003	-0.003	-0.002
Obs	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561

Table XI. Early vs. Late Announcements: Pre-announcement Returns and Order Imbalances for Heterogeneous Investors

This table provides estimation results for the change in market return and investor order imbalances before an early/late M2, as in Equation (7). For each M2 announcement, we categorize it into one of the early and late announcement subgroups, according to whether the calendar day of month for the announcement is earlier or later than the sample median. In Panel A, dependent variable is close-to-close excess return constructed from the Wind A-Share Index (*ExMktRet*) in column (1), close-to-close raw return from the Wind A-Share Index (*MktRet*) in column (2), open to close raw return (*OpenCloseMktRet*) in column (3), and the value-weighted return for stocks listed on a major stock exchange (*ExSERet*) in column (4). From column (5) to (7), we divide stocks listed on this stock exchange into three subgroups (small, medium, and large, correspondingly) and the dependent variable is the value-weighted return for each subgroup (*ExSERet_SmallSize*, *ExSERet_MediumSize*, *ExSERet_LargeSize*). In column (8), we obtain realized intraday volatility for stocks listed on this major stock exchange from CSMAR, which is calculated as the sum of squared 5-minute log returns during the day (*SE_Volatility*). In Panel B, dependent variable is the aggregated time series variable of each investor group's order imbalances, calculated as the value-weighted average of each stock's order imbalance for that investor group. Investor groups include five groups of retail from column (1) to (5), mutual fund in column (6), hedge fund in column (7), QFII in column (8), RQFII in column (9), and HKC in column (10). In both panels, *D(E,-1)* (or *D(E,1)*) is a dummy variable indicating one day ahead of (or after) an early announcement, while *D(L,-1)* (or *D(L,1)*) is a dummy variable indicating one day ahead of (or after) a late announcement. *D(E,0)* (or *D(L,0)*) is a dummy variable indicating the day of an early (or late) announcement. We include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses. Sample period is from January 2014 to May 2020.

Panel A. Market return before early/late announcements

Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep.Var	ExMktRet	MktRet	OpenClose MktRet	ExSERet	ExSERet_ SmallSize	ExSERet_ MediumSize	ExSERet_ LargeSize	SE_ Volatility
D(E, -1)	0.0346	0.0257	0.1465	-0.0554	0.2173	0.0996	-0.0830	-0.5070**
	(0.12)	(0.09)	(0.66)	(-0.22)	(0.69)	(0.31)	(-0.34)	(-2.42)
D(L, -1)	0.5577**	0.5670**	0.5374**	0.2411	0.8824***	0.8319***	0.1436	-0.5304**
	(2.48)	(2.54)	(2.15)	(1.52)	(3.00)	(2.86)	(0.96)	(-2.08)
D(E, 0)	-0.0062	-0.0151	-0.0969	0.0769	-0.0990	-0.0703	0.0998	-0.2506
	(-0.02)	(-0.06)	(-0.38)	(0.41)	(-0.28)	(-0.20)	(0.56)	(-0.95)

D(L, 0)	0.1124	0.1218	-0.0082	0.0046	0.3113	0.2528	-0.0417	-0.3754
	(0.50)	(0.54)	(-0.04)	(0.02)	(1.08)	(0.90)	(-0.18)	(-1.16)
D(E, 1)	0.0600	0.0511	0.1828	0.0373	0.0495	0.0620	0.0324	-0.1003
	(0.23)	(0.19)	(0.74)	(0.18)	(0.15)	(0.21)	(0.16)	(-0.31)
D(L, 1)	-0.0306	-0.0212	-0.0152	-0.0264	-0.1035	-0.0539	-0.0249	-0.5899***
	(-0.15)	(-0.10)	(-0.07)	(-0.15)	(-0.40)	(-0.21)	(-0.14)	(-2.65)
Constant	-0.8915***	-0.0634	-0.8140***	0.0807	-0.2163	-0.1123	0.1182	1.4593***
	(-4.19)	(-0.30)	(-4.29)	(0.41)	(-0.90)	(-0.47)	(0.61)	(5.13)
Adj. R2	-0.003	-0.003	0.003	-0.006	0.006	0.002	-0.007	0.214
Obs.	1561	1561	1561	1561	1561	1561	1561	1561
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. Heterogeneous investor trading order imbalances before early/late announcements

Reg	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep. Var	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib
	RT1	RT2	RT3	RT4	RT5	MF	HF	QFII	RQFII	HKC
D(E, -1)	-0.0033	0.0044	0.0093	0.0187**	0.0160*	-0.0190	0.0005	0.0115	-0.1106*	-0.0090
	(-0.21)	(0.32)	(0.88)	(1.97)	(1.75)	(-0.81)	(0.02)	(0.27)	(-1.84)	(-0.33)
D(L, -1)	0.0266*	0.0258**	0.0287***	0.0304***	0.0217***	-0.0524**	0.0116	-0.0086	-0.1264**	0.0045
	(1.85)	(2.08)	(2.79)	(3.71)	(3.14)	(-2.23)	(0.52)	(-0.22)	(-2.23)	(0.16)
D(E, 0)	0.0152	0.0110	0.0079	0.0041	0.0065	0.0077	-0.0006	-0.0407	-0.0539	-0.0291
	(0.87)	(0.66)	(0.60)	(0.40)	(0.53)	(0.34)	(-0.02)	(-0.92)	(-0.78)	(-1.06)
D(L, 0)	0.0200	0.0191	0.0183	0.0167*	0.0130	-0.0445*	-0.0053	-0.0333	-0.0324	0.0202
	(1.31)	(1.38)	(1.64)	(1.96)	(1.58)	(-1.71)	(-0.20)	(-0.90)	(-0.51)	(0.71)
D(E, 1)	-0.0033	-0.0015	-0.0050	-0.0022	-0.0074	0.0146	0.0081	-0.0443	-0.0158	0.0131
	(-0.19)	(-0.09)	(-0.32)	(-0.15)	(-0.51)	(0.64)	(0.37)	(-1.02)	(-0.25)	(0.44)
D(L, 1)	0.0198	0.0186	0.0157	0.0080	0.0053	-0.0305	0.0022	0.0475	-0.0863	0.0010
	(1.48)	(1.47)	(1.60)	(1.00)	(0.68)	(-1.22)	(0.10)	(1.38)	(-1.21)	(0.04)
Constant	-0.0641***	0.0154	0.0268***	0.0310***	0.0533***	-0.0697***	0.0474**	0.0576**	-0.0149	0.0541***

	(-5.13)	(1.38)	(2.92)	(3.99)	(6.67)	(-3.69)	(2.24)	(2.02)	(-0.29)	(2.99)
Adj. R2	0.075	0.030	0.044	0.084	0.105	0.052	0.012	0.035	0.038	0.015
Obs.	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table XII. Robustness Results for Post-Announcement Trading Conditional on Alternatively Separated Good or Bad News

This table provides robustness results for the change in investor order imbalances upon the announcement of M2, conditional on alternatively categorized good or bad news, as in Equation (4). We separate good and bad news announcements by the direction of market return on the following days, with positive (or negative) market return from the announcement day till three days after indicating good (or bad) news. Dependent variable is the aggregated time series variable of each investor group's order imbalances, calculated as the value-weighted average of each stock's order imbalance for that investor group. Investor groups include five groups of retail from column (1) to (5), mutual fund in column (6), hedge fund in column (7), QFII in column (8), RQFII in column (9), and HKC in column (10). In Panel A, *D(G,-1)* (or *D(G,1)*) is a dummy variable indicating one day ahead of (or after) announcement with good news, while *D(B,-1)* (or *D(B,1)*) is a dummy variable indicating one day ahead of (or after) announcement with bad news. *D(G,0)* (or *D(B,0)*) is a dummy variable indicating the day of announcement with good (or bad) news. In Panel B, *D(G,-3,-1)* (or *D(G,1,3)*) is a dummy variable indicating three days ahead of (or after) announcement with good news, while *D(B,-3,-1)* (or *D(B,1,3)*) is a dummy variable indicating three days ahead of (or after) announcement with bad news. We include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses. Sample period is from January 2014 to May 2020.

Panel A. Three-day window

Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep. Var	Oib RT1	Oib RT2	Oib RT3	Oib RT4	Oib RT5	Oib MF	Oib HF	Oib QFII	Oib RQFII	Oib HKC
D(G, -1)	0.0079	0.0086	0.0143	0.0193**	0.0158*	-0.0364	0.0126	0.0275	-0.1922***	-0.0034
	(0.48)	(0.61)	(1.27)	(2.04)	(1.95)	(-1.43)	(0.53)	(0.64)	(-3.45)	(-0.12)
D(B, -1)	0.0173	0.0228*	0.0248**	0.0303***	0.0221***	-0.0370*	0.0003	-0.0258	-0.0478	-0.0005
	(1.25)	(1.93)	(2.57)	(3.75)	(2.84)	(-1.70)	(0.01)	(-0.67)	(-0.83)	(-0.02)
D(G, 0)	-0.0080	-0.0108	-0.0033	0.0080	0.0236***	-0.0094	0.0433*	0.0416	-0.0490	0.0044
	(-0.46)	(-0.68)	(-0.27)	(0.92)	(2.59)	(-0.38)	(1.71)	(0.94)	(-0.83)	(0.17)
D(B, 0)	0.0427***	0.0406***	0.0297***	0.0135	-0.0033	-0.0304	-0.0482*	-0.1132***	-0.0357	-0.0100
	(2.98)	(3.05)	(2.62)	(1.36)	(-0.31)	(-1.22)	(-1.93)	(-3.50)	(-0.50)	(-0.33)
D(G, 1)	-0.0181	-0.0150	-0.0081	0.0029	0.0049	0.0033	0.0321	0.0720*	-0.0877	0.0286
	(-1.33)	(-1.14)	(-0.72)	(0.29)	(0.59)	(0.14)	(1.44)	(1.80)	(-1.29)	(1.04)

D(B, 1)	0.0352**	0.0326**	0.0197	0.0036	-0.0061	-0.0216	-0.0213	-0.0606*	-0.0203	-0.0147
	(2.22)	(2.10)	(1.44)	(0.27)	(-0.47)	(-0.88)	(-1.01)	(-1.69)	(-0.30)	(-0.48)
Constant	-0.0633***	0.0160	0.0278***	0.0318***	0.0540***	-0.0728***	0.0479**	0.0620**	-0.0193	0.0558***
	(-5.11)	(1.45)	(3.07)	(4.18)	(6.99)	(-3.89)	(2.29)	(2.18)	(-0.38)	(3.09)
Adj. R2	0.080	0.036	0.047	0.083	0.107	0.049	0.018	0.042	0.040	0.014
Obs.	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. Seven-day window

Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dep. Var	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib	Oib
	RT1	RT2	RT3	RT4	RT5	MF	HF	QFII	RQFII	HKC
D(G, -3, -1)	0.0098	0.0090	0.0097	0.0107*	0.0115**	-0.0237	-0.0089	-0.0330	-0.0839**	-0.0279
	(1.05)	(1.09)	(1.46)	(1.81)	(1.98)	(-1.52)	(-0.62)	(-1.32)	(-2.21)	(-1.57)
D(B, -3, -1)	0.0182*	0.0186**	0.0177***	0.0190***	0.0132**	-0.0261*	-0.0042	-0.0414*	-0.0451	-0.0208
	(1.90)	(2.21)	(2.73)	(3.60)	(2.51)	(-1.82)	(-0.28)	(-1.67)	(-1.19)	(-1.13)
D(G, 0)	-0.0058	-0.0089	-0.0017	0.0093	0.0247***	-0.0119	0.0418	0.0299	-0.0534	0.0010
	(-0.34)	(-0.55)	(-0.14)	(1.05)	(2.70)	(-0.48)	(1.64)	(0.67)	(-0.90)	(0.04)
D(B, 0)	0.0465***	0.0438***	0.0319***	0.0148	-0.0028	-0.0334	-0.0506**	-0.1258***	-0.0422	-0.0144
	(3.24)	(3.28)	(2.81)	(1.48)	(-0.26)	(-1.34)	(-2.02)	(-3.87)	(-0.58)	(-0.47)
D(G, 1, 3)	-0.0192**	-0.0143*	-0.0053	0.0034	0.0084	0.0043	0.0228	-0.0002	-0.0021	0.0261
	(-2.18)	(-1.72)	(-0.75)	(0.55)	(1.47)	(0.33)	(1.55)	(-0.01)	(-0.06)	(1.53)
D(B, 1, 3)	0.0439***	0.0363***	0.0200***	0.0021	-0.0106	-0.0212	-0.0280**	-0.0791***	-0.0534	-0.0239
	(4.88)	(4.29)	(2.72)	(0.31)	(-1.51)	(-1.53)	(-2.20)	(-3.44)	(-1.36)	(-1.28)
Constant	-0.0668***	0.0131	0.0258***	0.0306***	0.0536***	-0.0700***	0.0501**	0.0729**	-0.0117	0.0600***
	(-5.39)	(1.19)	(2.81)	(3.94)	(6.83)	(-3.73)	(2.40)	(2.54)	(-0.23)	(3.27)
Adj. R2	0.093	0.047	0.051	0.083	0.111	0.051	0.021	0.047	0.037	0.019
Obs.	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Internet Appendix

Appendix Table AI. Robustness Results for Pre-announcement Trading Controlling for Other Overlapping Monetary Policy Announcements

This table provides robust estimation results for the change in investor order imbalances before M2, controlling for other types of monetary policy announcements that occur then. Dependent variable is the aggregated time series variable of each investor group's order imbalances, calculated as the value-weighted average of each stock's order imbalance for that investor group. Investor groups include five groups of retail from Panel A to Panel E, mutual fund in Panel F, hedge fund in Panel G, QFII in Panel H, RQFII in Panel I, and HKC in Panel J. Each panel controls for other monetary policy announcements that happen one day before M2 by dropping the overlapped M2 event and re-estimate Equation (1). Other monetary policy announcements include CBS in column (1), CTCM in column (2), LPR in column (3), OMO-MLF in column (4), RRR in column (5), and SLF/MLF/PSL in column (6). Column (7) in each Panel drops M2 announcements with any of other types happening one day before. *D-1*, *D0,* and *D1* are dummy variables indicating the day before, of, after M2, respectively. We include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses. Sample period is from January 2014 to May 2020.

Panel A. RT1 order imbalances controlling for other overlapping monetary policy announcements

Dep Var.	OibRT1						
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	0.0149	0.0125	0.0137	0.0124	0.0126	0.0126	0.0160
	(1.37)	(1.14)	(1.25)	(1.09)	(1.16)	(1.16)	(1.41)
D0	0.0189	0.0155	0.0181	0.0167	0.0177	0.0177	0.0184
	(1.61)	(1.33)	(1.54)	(1.40)	(1.52)	(1.52)	(1.51)
D1	0.0094	0.0068	0.0085	0.0062	0.0090	0.0090	0.0060
	(0.84)	(0.62)	(0.76)	(0.55)	(0.82)	(0.82)	(0.51)
Constant	-0.0628***	-0.0623***	-0.0627***	-0.0624***	-0.0626***	-0.0626***	-0.0628***
	(-5.06)	(-5.02)	(-5.05)	(-5.02)	(-5.04)	(-5.04)	(-5.05)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Adj. R2	0.075	0.074	0.075	0.074	0.075	0.075	0.075
Observations	1561	1561	1561	1561	1561	1561	1561

Panel B. RT2 order imbalances controlling for other overlapping monetary policy announcements

Dep Var.				OibRT2			
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	0.0172*	0.0153	0.0168*	0.0154	0.0157*	0.0157*	0.0181*
	(1.84)	(1.63)	(1.81)	(1.60)	(1.69)	(1.69)	(1.87)
D0	0.0169	0.0129	0.0149	0.0145	0.0153	0.0153	0.0159
	(1.57)	(1.20)	(1.37)	(1.32)	(1.42)	(1.42)	(1.42)
D1	0.0090	0.0069	0.0078	0.0056	0.0092	0.0092	0.0038
	(0.84)	(0.66)	(0.74)	(0.51)	(0.87)	(0.87)	(0.35)
Constant	0.0165	0.0170	0.0167	0.0169	0.0167	0.0167	0.0167
	(1.49)	(1.54)	(1.51)	(1.53)	(1.51)	(1.51)	(1.50)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.031	0.030	0.030	0.030	0.030	0.030	0.030
Observations	1561	1561	1561	1561	1561	1561	1561

Panel C. RT3 order imbalances controlling for other overlapping monetary policy announcements

Dep Var.				OibRT3			
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	0.0203***	0.0195**	0.0202***	0.0195**	0.0196***	0.0196***	0.0210***
	(2.68)	(2.56)	(2.67)	(2.50)	(2.60)	(2.60)	(2.64)
D0	0.0148*	0.0114	0.0130	0.0129	0.0134	0.0134	0.0139
	(1.72)	(1.33)	(1.49)	(1.49)	(1.56)	(1.56)	(1.58)
D1	0.0060	0.0039	0.0050	0.0023	0.0060	0.0060	0.0012
	(0.65)	(0.44)	(0.55)	(0.25)	(0.66)	(0.66)	(0.12)
Constant	0.0280***	0.0284***	0.0282***	0.0284***	0.0282***	0.0282***	0.0282***

	(3.08)	(3.13)	(3.10)	(3.13)	(3.10)	(3.10)	(3.10)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.045	0.043	0.044	0.044	0.044	0.044	0.044
Observations	1561	1561	1561	1561	1561	1561	1561

Panel D. RT4 order imbalances controlling for other overlapping monetary policy announcements

Dep Var.				OibRT4			
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	0.0250***	0.0248***	0.0254***	0.0254***	0.0249***	0.0249***	0.0260***
	(3.90)	(3.87)	(3.97)	(3.84)	(3.94)	(3.94)	(3.84)
D0	0.0116*	0.0095	0.0104	0.0106	0.0108	0.0108	0.0110
	(1.73)	(1.43)	(1.54)	(1.56)	(1.62)	(1.62)	(1.59)
D1	0.0034	0.0011	0.0027	-0.0012	0.0032	0.0032	-0.0016
	(0.41)	(0.13)	(0.32)	(-0.14)	(0.39)	(0.39)	(-0.19)
Constant	0.0317***	0.0321***	0.0318***	0.0320***	0.0319***	0.0319***	0.0318***
	(4.15)	(4.20)	(4.17)	(4.20)	(4.17)	(4.17)	(4.18)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.085	0.084	0.085	0.084	0.085	0.085	0.085
Observations	1561	1561	1561	1561	1561	1561	1561

Panel E. RT5 order imbalances controlling for other overlapping monetary policy announcements

Dep Var.				OibRT5			
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	0.0193***	0.0188***	0.0191***	0.0176***	0.0190***	0.0190***	0.0179***
	(3.34)	(3.26)	(3.30)	(3.00)	(3.33)	(3.33)	(2.98)
D0	0.0099	0.0097	0.0099	0.0094	0.0100	0.0100	0.0094
	(1.36)	(1.33)	(1.36)	(1.28)	(1.39)	(1.39)	(1.23)

D1	-0.0007	-0.0017	-0.0012	-0.0031	-0.0007	-0.0007	-0.0037
	(-0.09)	(-0.21)	(-0.15)	(-0.38)	(-0.08)	(-0.08)	(-0.44)
Constant	0.0540***	0.0541***	0.0540***	0.0542***	0.0540***	0.0540***	0.0541***
	(6.91)	(6.94)	(6.92)	(6.97)	(6.92)	(6.92)	(6.96)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.106	0.106	0.106	0.106	0.106	0.106	0.106
Observations	1561	1561	1561	1561	1561	1561	1561

Panel F. Mutual fund order imbalances controlling for other overlapping monetary policy announcements

Dep Var.				OibMF			
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	-0.0377**	-0.0381**	-0.0375**	-0.0393**	-0.0367**	-0.0367**	-0.0414**
	(-2.21)	(-2.25)	(-2.20)	(-2.24)	(-2.18)	(-2.18)	(-2.31)
D0	-0.0214	-0.0180	-0.0189	-0.0167	-0.0200	-0.0200	-0.0169
	(-1.19)	(-1.00)	(-1.05)	(-0.90)	(-1.12)	(-1.12)	(-0.89)
D1	-0.0097	-0.0060	-0.0085	-0.0037	-0.0094	-0.0094	-0.0031
	(-0.55)	(-0.35)	(-0.48)	(-0.21)	(-0.54)	(-0.54)	(-0.17)
Constant	-0.0729***	-0.0734***	-0.0731***	-0.0734***	-0.0731***	-0.0731***	-0.0732***
	(-3.88)	(-3.91)	(-3.90)	(-3.91)	(-3.90)	(-3.90)	(-3.90)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.051	0.051	0.051	0.051	0.051	0.051	0.051
Observations	1561	1561	1561	1561	1561	1561	1561

Panel G. Hedge fund order imbalances controlling for other overlapping monetary policy announcements

Dep Var.				OibHF			
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	0.0062	0.0054	0.0075	0.0073	0.0064	0.0064	0.0082

	(0.39)	(0.34)	(0.47)	(0.44)	(0.41)	(0.41)	(0.49)
D0	-0.0025	-0.0036	-0.0027	-0.0017	-0.0031	-0.0031	-0.0007
	(-0.13)	(-0.19)	(-0.14)	(-0.09)	(-0.17)	(-0.17)	(-0.03)
D1	0.0049	0.0058	0.0064	0.0034	0.0050	0.0050	0.0049
	(0.31)	(0.37)	(0.40)	(0.21)	(0.31)	(0.31)	(0.29)
Constant	0.0473**	0.0474**	0.0472**	0.0472**	0.0474**	0.0474**	0.0470**
	(2.26)	(2.26)	(2.25)	(2.25)	(2.26)	(2.26)	(2.24)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.014	0.014	0.014	0.014	0.014	0.014	0.014
Observations	1561	1561	1561	1561	1561	1561	1561

Panel H. QFII order imbalances controlling for other overlapping monetary policy announcements

Dep Var.					OibQFII		
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	-0.0025	0.0030	-0.0035	0.0064	0.0007	0.0007	-0.0013
	(-0.09)	(0.10)	(-0.12)	(0.21)	(0.02)	(0.02)	(-0.04)
D0	-0.0431	-0.0315	-0.0359	-0.0344	-0.0369	-0.0369	-0.0399
	(-1.51)	(-1.10)	(-1.23)	(-1.16)	(-1.28)	(-1.28)	(-1.34)
D1	0.0056	0.0099	0.0064	0.0077	0.0046	0.0046	0.0107
	(0.20)	(0.35)	(0.22)	(0.27)	(0.16)	(0.16)	(0.36)
Constant	0.0608**	0.0592**	0.0602**	0.0593**	0.0601**	0.0601**	0.0601**
	(2.14)	(2.09)	(2.12)	(2.09)	(2.12)	(2.12)	(2.12)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.036	0.035	0.036	0.036	0.036	0.036	0.036
Observations	1561	1561	1561	1561	1561	1561	1561

Panel I. RQFII order imbalances controlling for other overlapping monetary policy announcements

Dep Var.	OibRQFII						
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	-0.1226***	-0.1210***	-0.1193***	-0.1177***	-0.1189***	-0.1189***	-0.1219***
	(-2.93)	(-2.88)	(-2.84)	(-2.73)	(-2.87)	(-2.87)	(-2.76)
D0	-0.0507	-0.0494	-0.0367	-0.0601	-0.0423	-0.0423	-0.0634
	(-1.08)	(-1.05)	(-0.77)	(-1.25)	(-0.90)	(-0.90)	(-1.31)
D1	-0.0565	-0.0542	-0.0461	-0.0702	-0.0533	-0.0533	-0.0663
	(-1.14)	(-1.10)	(-0.94)	(-1.40)	(-1.09)	(-1.09)	(-1.30)
Constant	-0.0159	-0.0161	-0.0175	-0.0142	-0.0170	-0.0170	-0.0136
	(-0.31)	(-0.32)	(-0.35)	(-0.28)	(-0.34)	(-0.34)	(-0.27)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6-Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.040	0.040	0.039	0.040	0.040	0.040	0.040
Observations	1561	1561	1561	1561	1561	1561	1561

Panel J. HKC order imbalances controlling for other overlapping monetary policy announcements

Dep Var.	OibHKC						
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)
D-1	-0.0047	-0.0005	-0.0010	0.0057	-0.0019	-0.0019	0.0038
	(-0.23)	(-0.02)	(-0.05)	(0.28)	(-0.09)	(-0.09)	(0.18)
D0	-0.0050	0.0001	-0.0013	-0.0036	-0.0029	-0.0029	-0.0042
	(-0.25)	(0.00)	(-0.06)	(-0.17)	(-0.14)	(-0.14)	(-0.20)
D1	0.0062	0.0088	0.0106	0.0065	0.0066	0.0066	0.0103
	(0.29)	(0.42)	(0.51)	(0.30)	(0.32)	(0.32)	(0.47)
Constant	0.0555***	0.0548***	0.0548***	0.0548***	0.0552***	0.0552***	0.0548***
	(3.07)	(3.03)	(3.03)	(3.03)	(3.05)	(3.05)	(3.03)
Reduced Event	CBS	CTCM	LPR	OMO-MLF	RRR	SLF/MLF/PSL	Previous-6-Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.016	0.016	0.016	0.016	0.016	0.016	0.016

Observations	1561	1561	1561	1561	1561	1561	1561

Appendix Table AII. Robustness Results for Pre-announcement Trading Controlling for Other Overlapping Economic Indicator Releases

This table provides robust estimation results for the change in investor order imbalances before M2, controlling for other types of major economic indicator releases that occur then. Dependent variable is the aggregated time series variable of each investor group's order imbalances, calculated as the value-weighted average of each stock's order imbalance for that investor group. Investor groups include five groups of retail from Panel A to Panel E, mutual fund in Panel F, hedge fund in Panel G, QFII in Panel H, RQFII in Panel I, and HKC in Panel J. Each panel controls for other major economic indicator announcements that happen one day before M2 by dropping the overlapped M2 event and re-estimate Equation (1). Other major economic indicator releases include CAIXIN in column (1), BOP in column (2), CPI/PPI in column (3), GDP in column (4), IP in column (5), PI in column (6), PMI in column (7), SWIFT in column (8), and TRADE in column (9). Column (10) in each panel drops M2 announcements with any of other types happening one day before. *D-1*, *D0,* and *D1* are dummy variables indicating the day before, of, after M2, respectively. We include year, month and weekday fixed effects in the regression. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Robust standard errors are in parentheses. Sample period is from January 2014 to May 2020.

Panel A. RT1 order imbalances controlling for other overlapping economic indicator announcements

Dep Var.	OibRT1									
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D-1	0.0126	0.0140	0.0118	0.0126	0.0134	0.0126	0.0126	0.0137	0.0115	0.0132
	(1.16)	(1.26)	(0.97)	(1.16)	(1.22)	(1.16)	(1.16)	(1.25)	(1.00)	(0.94)
D0	0.0177	0.0142	0.0179	0.0177	0.0193*	0.0177	0.0177	0.0181	0.0137	0.0126
	(1.52)	(1.21)	(1.35)	(1.52)	(1.66)	(1.52)	(1.52)	(1.54)	(1.11)	(0.86)
D1	0.0090	0.0068	0.0070	0.0090	0.0030	0.0090	0.0090	0.0085	0.0044	-0.0107
	(0.82)	(0.60)	(0.56)	(0.82)	(0.27)	(0.82)	(0.82)	(0.76)	(0.36)	(-0.71)
Constant	-0.0626***	-0.0623***	-0.0622***	-0.0626***	-0.0624***	-0.0626***	-0.0626***	-0.0627***	-0.0618***	-0.0609***
	(-5.04)	(-5.02)	(-5.00)	(-5.04)	(-5.03)	(-5.04)	(-5.04)	(-5.05)	(-4.99)	(-4.91)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.075	0.074	0.074	0.075	0.075	0.075	0.075	0.075	0.074	0.074
Obs.	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561

Panel B. RT2 order imbalances controlling for other overlapping economic indicator announcements

Dep Var.	OibRT2									
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D-1	0.0157*	0.0162*	0.0148	0.0157*	0.0167*	0.0157*	0.0157*	0.0168*	0.0146	0.0157
	(1.69)	(1.71)	(1.47)	(1.69)	(1.77)	(1.69)	(1.69)	(1.81)	(1.53)	(1.39)
D0	0.0153	0.0126	0.0154	0.0153	0.0160	0.0153	0.0153	0.0149	0.0111	0.0082
	(1.42)	(1.14)	(1.24)	(1.42)	(1.47)	(1.42)	(1.42)	(1.37)	(0.98)	(0.58)
D1	0.0092	0.0070	0.0081	0.0092	0.0038	0.0092	0.0092	0.0078	0.0059	-0.0086
	(0.87)	(0.65)	(0.67)	(0.87)	(0.35)	(0.87)	(0.87)	(0.74)	(0.50)	(-0.58)
Constant	0.0167	0.0170	0.0171	0.0167	0.0169	0.0167	0.0167	0.0167	0.0174	0.0184*
	(1.51)	(1.53)	(1.54)	(1.51)	(1.53)	(1.51)	(1.51)	(1.51)	(1.58)	(1.67)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.030	0.030	0.029	0.030	0.030	0.030	0.030	0.030	0.029	0.029
Observations	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561

Panel C. RT3 order imbalances controlling for other overlapping economic indicator announcements

Dep Var.	OibRT3									
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D-1	0.0196***	0.0206***	0.0178**	0.0196***	0.0207***	0.0196***	0.0196***	0.0202***	0.0180**	0.0185**
	(2.60)	(2.67)	(2.17)	(2.60)	(2.68)	(2.60)	(2.60)	(2.67)	(2.31)	(2.00)
D0	0.0134	0.0121	0.0136	0.0134	0.0128	0.0134	0.0134	0.0130	0.0092	0.0058
	(1.56)	(1.36)	(1.38)	(1.56)	(1.45)	(1.56)	(1.56)	(1.49)	(1.02)	(0.51)
D1	0.0060	0.0046	0.0035	0.0060	0.0016	0.0060	0.0060	0.0050	0.0026	-0.0117
	(0.66)	(0.49)	(0.34)	(0.66)	(0.17)	(0.66)	(0.66)	(0.55)	(0.26)	(-0.93)
Constant	0.0282***	0.0283***	0.0287***	0.0282***	0.0284***	0.0282***	0.0282***	0.0282***	0.0289***	0.0300***
	(3.10)	(3.12)	(3.16)	(3.10)	(3.14)	(3.10)	(3.10)	(3.10)	(3.20)	(3.33)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined

FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.044	0.044	0.043	0.044	0.044	0.044	0.044	0.044	0.042	0.042
Observations	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561

Panel D. RT4 order imbalances controlling for other overlapping economic indicator announcements

Dep Var.						OibRT4				
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D-1	0.0249***	0.0261***	0.0261***	0.0249***	0.0256***	0.0249***	0.0249***	0.0254***	0.0231***	0.0275***
	(3.94)	(4.02)	(3.69)	(3.94)	(3.86)	(3.94)	(3.94)	(3.97)	(3.43)	(3.26)
D0	0.0108	0.0103	0.0124	0.0108	0.0088	0.0108	0.0108	0.0104	0.0075	0.0048
	(1.62)	(1.48)	(1.63)	(1.62)	(1.26)	(1.62)	(1.62)	(1.54)	(1.04)	(0.51)
D1	0.0032	0.0025	0.0025	0.0032	-0.0006	0.0032	0.0032	0.0027	-0.0013	-0.0121
	(0.39)	(0.30)	(0.26)	(0.39)	(-0.08)	(0.39)	(0.39)	(0.32)	(-0.14)	(-1.07)
Constant	0.0319***	0.0320***	0.0321***	0.0319***	0.0322***	0.0319***	0.0319***	0.0318***	0.0326***	0.0334***
	(4.17)	(4.19)	(4.21)	(4.17)	(4.22)	(4.17)	(4.17)	(4.17)	(4.29)	(4.43)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.085	0.085	0.084	0.085	0.084	0.085	0.085	0.085	0.082	0.083
Observations	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561

Panel E. RT5 order imbalances controlling for other overlapping economic indicator announcements

Dep Var.						OibRT5				
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D-1	0.0190***	0.0206***	0.0212***	0.0190***	0.0180***	0.0190***	0.0190***	0.0191***	0.0141**	0.0166**
	(3.33)	(3.55)	(3.55)	(3.33)	(3.02)	(3.33)	(3.33)	(3.30)	(2.34)	(2.29)
D0	0.0100	0.0098	0.0097	0.0100	0.0070	0.0100	0.0100	0.0099	0.0082	0.0024
	(1.39)	(1.31)	(1.14)	(1.39)	(0.93)	(1.39)	(1.39)	(1.36)	(1.02)	(0.21)
D1	-0.0007	-0.0008	-0.0022	-0.0007	-0.0021	-0.0007	-0.0007	-0.0012	-0.0053	-0.0121
	(-0.08)	(-0.10)	(-0.24)	(-0.08)	(-0.26)	(-0.08)	(-0.08)	(-0.15)	(-0.61)	(-1.04)

Constant	0.0540***	0.0540***	0.0543***	0.0540***	0.0544***	0.0540***	0.0540***	0.0540***	0.0548***	0.0555***
	(6.92)	(6.94)	(6.98)	(6.92)	(6.98)	(6.92)	(6.92)	(6.92)	(7.05)	(7.20)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.106	0.107	0.106	0.106	0.105	0.106	0.106	0.106	0.104	0.104
Observations	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561

Panel F. Mutual fund order imbalances controlling for other overlapping economic indicator announcements

Dep Var.						OibMF				
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D-1	-0.0367**	-0.0378**	-0.0243	-0.0367**	-0.0375**	-0.0367**	-0.0367**	-0.0375**	-0.0328*	-0.0159
	(-2.18)	(-2.18)	(-1.37)	(-2.18)	(-2.23)	(-2.18)	(-2.18)	(-2.20)	(-1.84)	(-0.83)
D0	-0.0200	-0.0222	-0.0135	-0.0200	-0.0175	-0.0200	-0.0200	-0.0189	-0.0108	-0.0012
	(-1.12)	(-1.20)	(-0.68)	(-1.12)	(-0.97)	(-1.12)	(-1.12)	(-1.05)	(-0.58)	(-0.05)
D1	-0.0094	-0.0096	0.0000	-0.0094	-0.0057	-0.0094	-0.0094	-0.0085	-0.0086	0.0100
	(-0.54)	(-0.54)	(0.00)	(-0.54)	(-0.31)	(-0.54)	(-0.54)	(-0.48)	(-0.46)	(0.41)
Constant	-0.0731***	-0.0730***	-0.0751***	-0.0731***	-0.0735***	-0.0731***	-0.0731***	-0.0731***	-0.0744***	-0.0767***
	(-3.90)	(-3.88)	(-3.99)	(-3.90)	(-3.92)	(-3.90)	(-3.90)	(-3.90)	(-3.97)	(-4.08)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.051	0.051	0.048	0.051	0.050	0.051	0.051	0.051	0.049	0.047
Observations	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561

Panel G. Hedge fund order imbalances controlling for other overlapping economic indicator announcements

Dep Var.						OibHF				
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D-1	0.0064	0.0089	0.0104	0.0064	0.0047	0.0064	0.0064	0.0075	-0.0011	0.0077
	(0.41)	(0.55)	(0.61)	(0.41)	(0.30)	(0.41)	(0.41)	(0.47)	(-0.07)	(0.39)
D0	-0.0031	0.0003	0.0022	-0.0031	-0.0126	-0.0031	-0.0031	-0.0027	-0.0022	-0.0079

	(-0.17)	(0.02)	(0.10)	(-0.17)	(-0.66)	(-0.17)	(-0.17)	(-0.14)	(-0.11)	(-0.30)
D1	0.0050	0.0034	0.0024	0.0050	0.0050	0.0050	0.0050	0.0064	-0.0047	-0.0100
	(0.31)	(0.21)	(0.13)	(0.31)	(0.31)	(0.31)	(0.31)	(0.40)	(-0.28)	(-0.46)
Constant	0.0474**	0.0471**	0.0470**	0.0474**	0.0482**	0.0474**	0.0474**	0.0472**	0.0481**	0.0483**
	(2.26)	(2.24)	(2.25)	(2.26)	(2.30)	(2.26)	(2.26)	(2.25)	(2.30)	(2.31)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014
Observations	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561

Panel H. QFII order imbalances controlling for other overlapping economic indicator announcements

Dep Var.						OibQFII				
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D-1	0.0007	0.0022	0.0021	0.0007	0.0018	0.0007	0.0007	-0.0035	0.0070	0.0213
	(0.02)	(0.07)	(0.06)	(0.02)	(0.06)	(0.02)	(0.02)	(-0.12)	(0.23)	(0.56)
D0	-0.0369	-0.0309	-0.0401	-0.0369	-0.0383	-0.0369	-0.0369	-0.0359	-0.0251	-0.0074
	(-1.28)	(-1.06)	(-1.26)	(-1.28)	(-1.28)	(-1.28)	(-1.28)	(-1.23)	(-0.83)	(-0.20)
D1	0.0046	0.0131	0.0309	0.0046	0.0084	0.0046	0.0046	0.0064	-0.0018	0.0465
	(0.16)	(0.47)	(1.06)	(0.16)	(0.29)	(0.16)	(0.16)	(0.22)	(-0.06)	(1.38)
Constant	0.0601**	0.0593**	0.0589**	0.0601**	0.0598**	0.0601**	0.0601**	0.0602**	0.0589**	0.0551*
	(2.12)	(2.09)	(2.08)	(2.12)	(2.11)	(2.12)	(2.12)	(2.12)	(2.08)	(1.95)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.036	0.035	0.036	0.036	0.036	0.036	0.036	0.036	0.035	0.036
Observations	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561

Panel I. RQFII order imbalances controlling for other overlapping economic indicator announcements

Dep Var.						OibRQFII				
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)

D-1	-0.1189***	-0.1211***	-0.1069**	-0.1189***	-0.0913**	-0.1189***	-0.1189***	-0.1193***	-0.1405***	-0.0794
	(-2.87)	(-2.81)	(-2.39)	(-2.87)	(-2.16)	(-2.87)	(-2.87)	(-2.84)	(-3.24)	(-1.49)
D0	-0.0423	-0.0473	-0.0415	-0.0423	-0.0206	-0.0423	-0.0423	-0.0367	-0.0654	-0.0205
	(-0.90)	(-0.97)	(-0.85)	(-0.90)	(-0.42)	(-0.90)	(-0.90)	(-0.77)	(-1.31)	(-0.35)
D1	-0.0533	-0.0480	-0.0346	-0.0533	-0.0434	-0.0533	-0.0533	-0.0461	-0.0546	0.0199
	(-1.09)	(-0.95)	(-0.66)	(-1.09)	(-0.86)	(-1.09)	(-1.09)	(-0.94)	(-1.05)	(0.33)
Constant	-0.0170	-0.0170	-0.0202	-0.0170	-0.0205	-0.0170	-0.0170	-0.0175	-0.0154	-0.0255
	(-0.34)	(-0.33)	(-0.40)	(-0.34)	(-0.40)	(-0.34)	(-0.34)	(-0.35)	(-0.30)	(-0.50)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.040	0.039	0.038	0.040	0.037	0.040	0.040	0.039	0.041	0.036
Observations	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561

Panel J. HKC order imbalances controlling for other overlapping economic indicator announcements

Dep Var.						OibHKC				
Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
D-1	-0.0019	-0.0011	-0.0001	-0.0019	-0.0023	-0.0019	-0.0019	-0.0010	0.0039	0.0045
	(-0.09)	(-0.05)	(-0.00)	(-0.09)	(-0.11)	(-0.09)	(-0.09)	(-0.05)	(0.18)	(0.16)
D0	-0.0029	0.0023	-0.0004	-0.0029	-0.0118	-0.0029	-0.0029	-0.0013	0.0092	0.0149
	(-0.14)	(0.11)	(-0.02)	(-0.14)	(-0.56)	(-0.14)	(-0.14)	(-0.06)	(0.42)	(0.54)
D1	0.0066	0.0115	0.0013	0.0066	0.0001	0.0066	0.0066	0.0106	0.0121	0.0098
	(0.32)	(0.53)	(0.06)	(0.32)	(0.00)	(0.32)	(0.32)	(0.51)	(0.53)	(0.35)
Constant	0.0552***	0.0544***	0.0552***	0.0552***	0.0562***	0.0552***	0.0552***	0.0548***	0.0538***	0.0537***
	(3.05)	(3.02)	(3.07)	(3.05)	(3.11)	(3.05)	(3.05)	(3.03)	(2.97)	(2.99)
Reduced Event	CAIXIN	BOP	CPI_PPI	GDP	IP	PI	PMI	SWIFT	TRADE	Previous-9 Combined
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R2	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016
Observations	1561	1561	1561	1561	1561	1561	1561	1561	1561	1561