Information Acquisition By Mutual Fund Investors: Evidence from Stock Trading Suspensions[†]

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Abstract

We study the impact of liquidity on investors' information acquisition by examining frequent trading suspensions in China. These suspensions render stocks illiquid, causing significant mispricing of mutual funds because the prices of fund shares are not adequately adjusted for valuation changes of the suspended holdings. We find that the liquidity created by mutual funds' demandable shares motivates investors to acquire firm-specific information about these illiquid holdings. This acquired information drives flows into underpriced funds and is then incorporated into stock prices when trading resumes. Our findings suggest that liquidity creation by mutual funds increases the amount of information about their illiquid holdings.

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Mutual funds, which hold over $60 trillion in global assets (ICI, 2023), have been increasingly investing in illiquid assets such as corporate debt, private equity, and real estate.[1] Despite the illiquidity of these portfolio assets, mutual fund investors can adjust their investments on a daily basis through demandable fund shares. This mechanism provides a highly liquid avenue of investing in illiquid assets. In this paper, we study the impact of mutual fund liquidity creation on investors' information choices. We show that investors acquire information on illiquid assets held by mutual funds, and their information is reflected in both fund flows and asset prices. Our findings suggest a liquidity channel whereby mutual funds increase the amount of information on illiquid assets.

An empirical challenge in studying this channel is to isolate the *incremental liquidity* that mutual funds create for an asset.[2] We address this challenge using frequent trading suspensions in the Chinese stock market. This setting provides a laboratory where many stocks experience prolonged periods of perfect illiquidity. During a suspension, the last source of liquidity is indirect, coming from mutual funds holding the suspended stock.[3] These funds, like any fund with illiquid assets, are often significantly mispriced because their suspended holdings are not adequately adjusted for valuation changes in the absence of trading. Investors can evaluate this mispricing using firm-specific information. By examining investor activities during suspensions and stock price movements when trading resumes, we gain important insights into how fund liquidity creation affects information about their illiquid holdings.

To guide our empirical analyses, we develop a rational expectations model of fund investors' information acquisition. In the model, a stock randomly becomes non-tradable after investors acquire information about its payoff. If investors cannot trade the stock, they can invest

[1]For a partial list of recent research on mutual funds investing in illiquid assets, see Goldstein, Jiang, and Ng (2017), Jiang, Li, Sun, and Wang (2022), Kwon, Lowry, and Qian (2020), Chernenko, Lerner, and Zeng (2021), Couts, Gonçalves, and Rossi (2020), Couts (2022), Agarwal et al. (2023), and Agarwal et al. (2024).

[2]This asset-level fund liquidity creation is generally difficult to quantify, as it varies dynamically with both the asset's own liquidity (e.g., investor-perceived trading opportunities and price impact) and its exposure to mutual funds (i.e., weights in fund portfolios).

[3]We discuss alternative sources of indirect liquidity, including exchange-traded funds (ETFs), dual-listed shares, convertible bonds, and derivatives in Section 6.

in the mutual fund, which holds the stock and has mispriced shares. Our model predicts a positive response of fund flows to the underpricing in fund shares. Moreover, the model predicts that a larger fund portfolio weight in the suspended stock motivates investors to acquire more information, making the stock's subsequent price more informative.

Several empirical facts suggest that our setting provides a useful laboratory for testing these predictions. First, when trading resumes, stock prices exhibit large movements. The majority of these movements are firm-specific and can be partially predicted by ex-ante variables, including an AI signal extracted from firm announcements. Second, many mutual funds hold suspended stocks, some with significant portfolio weights. Third, funds generally fail to adequately adjust their net asset values (NAVs) for suspended holdings, leaving investors with opportunities to profit from mispriced fund shares.

Our analysis of a large sample of mutual funds provides evidence that investors respond to the mispricing of fund shares generated by illiquid holdings. Our estimates indicate that, controlling for fund performance, a one-percentage-point mispricing leads to flows amounting to 3% of fund total assets. This flow response only occurs for inflows and is stronger for fund shares owned by institutions. Moreover, consistent with investors scrutinizing fund portfolios, our data from an internet mutual fund forum reveal increased investor posts about a fund's suspended holdings when these holdings have larger portfolio weights. Overall, our findings suggest that fund investors act on the information about suspended holdings.

While we control for a large set of fund-level variables, our estimated flow response could still be biased by omitted fund characteristics or the potential impact of flows on the portfolio stock's resumption returns. To address these concerns, we exploit regulatory rules imposed on Chinese mutual funds that require six portfolio reports per year with different timing and scope. Thus, only a subset of a fund's holdings are observed by investors at a given point in time. Using the precise dates of disclosed holdings, we can identify the causal effects of illiquid holdings by comparing investor responses to suspended holdings that are observed to

those that are not observed. Our comparison reveals significant differences between observed and unobserved holdings, which supports our interpretation that mispriced fund NAVs attract investor scrutiny and abnormal flows.

Next, we test our model predictions on information acquisition about suspended stocks. We use two measures of investors' information acquisition activities. The first measure is corporate visits by financial institutions during a stock's suspension period. This measure, based on Chinese firms' mandatory disclosures of private meetings with investors, captures the acquisition of private information. The second measure of information acquisition is the intensity of internet searches, which captures investor demand for firm-specific public information. Our empirical strategy compares suspension events by their exposures to mutual funds, proxied by the stock's maximum portfolio weight across funds, while controlling for the stock's overall mutual fund ownership as well as other firm and event-specific characteristics.

Using these two measures, we find that a suspended stock's exposure to mutual funds has a sizable positive impact on investors' information acquisition activities during suspensions. Our estimates show that, increasing the stock's exposure to mutual funds by one standard deviation attracts 43% more institutions to visit the firms relative to the average visit frequency. A larger increase in visitors is found among private funds (e.g., hedge funds), which may invest in mutual fund shares. We find a similar positive effect on internet searches. These findings suggest that the exposure to mutual funds induces an increase in investors' acquisition of both private and public information.

Finally, our model predicts that when trading resumes, the incremental information acquired by fund investors will be incorporated into stock prices and make them more informative about fundamentals. We test this prediction using a theory-motivated measure of price informativeness: the magnitude of price movements at resumptions. We find that a stock's exposure to mutual funds during the suspension period leads to significantly larger price movements when its trading resumes, suggesting that more information is incorporated

into prices. Moreover, we find that the exposure to mutual funds is also associated with a higher sensitivity between price movements at the resumption and the firm's future earnings surprises. These findings provide further evidence for fund investors' information acquisition.

This paper sheds light on a liquidity channel through which mutual funds affect investor information choices in capital markets. A large theoretical literature models asset managers as delegated information acquirers (e.g., Garcia and Vanden, 2009; Kacperczyk, Van Nieuwerburgh, and Veldkamp, 2016; Gârleanu and Pedersen, 2018). Consistent with this framework, the empirical literature has examined portfolio managers' informed investments (e.g., Coval and Moskowitz, 1999, 2001; Kacperczyk et al., 2005; Cohen, Frazzini, and Malloy, 2008) and investors' reactions to fund performance (e.g., Chevalier and Ellison, 1997; Sirri and Tufano, 1998). Our study differs from this literature in that it shows that the liquidity created by mutual funds influences investors' own information acquisition activities.

Our findings are related to three papers on flow responses to fund holdings. Among them, Solomon, Soltes, and Sosyura (2014) show that media coverage of stock holdings attracts return-chasing flows, Gallagher, Schmidt, Timmermann, and Wermers (2018) document outflows from money market funds exposed to the Eurozone crisis, and Di Maggio, Franzoni, Kogan, and Xing (2023) argue that funds avoid stocks with extreme returns because holding such stocks causes outflows. We complement these studies by examining informed flows when investors actively acquire information on illiquid assets in fund portfolios.

The mechanism of open-end funds has inspired a growing literature on liquidity transformation by non-bank financial intermediaries (Chernenko and Sunderam, 2016; Ma, Xiao, and Zeng, 2022). This literature analyzes liquidity mismatches and the resulting fragility in funds with illiquid asset portfolios (e.g., Goldstein, Jiang, and Ng, 2017). While our study focuses on occasional illiquidity events, our finding that investors acquire information about specific holdings suggests that in addition to liquidity mismatches, the transparency of fund portfolios may also play a role in fund fragility.

This paper also extends the literature on the valuation of illiquid holdings and stale fund net asset values. In existing studies, stale values arising from regional time differences (e.g., Zitzewitz, 2003, 2006; Chalmers, Edelen, and Kadlec, 2001) or illiquid bond portfolios (e.g., Choi, Kronlund, and Oh, 2019; Zhang, Kuong, and O'Donovan, 2023) can be exploited by investors without analyzing specific holdings. In our setting, by contrast, investors need firm-specific information to exploit the stale net asset values. Moreover, our paper extends the literature on trading suspensions. Prior studies of this regulatory rule generally focus on its impact on stock trading and returns (e.g., Kryzanowski, 1979; Howe and Schlarbaum, 1986; Bhattacharya and Spiegel, 1998; Huang, Shi, Song, and Zhao, 2018). Our study adds a new perspective on how this rule affects fund investors and fund flows in modern markets.

The rest of this paper proceeds as follows. Section 1 develops a stylized model to formalize the intuition and derive predictions. Section 2 introduces our empirical setting and data. Section 3 presents stylized empirical facts. We discuss the flow response to the mispricing in Section 4 and the information acquisition in Section 5. Section 6 discusses the fund valuation adjustment for suspended holdings and other potential sources of liquidity. Finally, Section 7 concludes.

1. Theoretical Framework

This section develops a simple model of fund investors' information acquisition. Our model endogenizes information acquisition and price informativeness in a rational expectations equilibrium (Grossman and Stiglitz, 1980). Specifically, we construct a partially-revealing equilibrium where asset prices, set by competitive market makers (Kyle 1985), aggregate noisy private signals (Hellwig, 1980). The precision of these signals is chosen by investors as in Verrecchia (1982). We depart from classical models by introducing occasional illiquidity events and by analyzing the impact of liquidity provided by mutual funds.

1.1. Setup

There are three time periods, $t = 0, 1, 2$, and a continuum of price-taking investors, indexed by $i \in [0, 1]$. Each investor has initial wealth W_0 and negative exponential utility $u(W_i) = -e^{-\rho W_i}$ over wealth W_i at $t = 2$. They can always lend and borrow at a zero risk-free rate. There is a risky asset that pays v at $t = 2$. The payoff v is normally distributed with mean v_0 and variance τ_v^{-1}. This asset is potentially illiquid: Investors can trade it at $t = 1$ if its market is open, which occurs exogenously with probability $q \in (0, 1]$. With probability $1 - q$, its trading is suspended, and the asset is completely non-tradable. We denote the tradable and non-tradable states at $t = 1$ with $M \in \{1, 0\}$.

Open-end fund. There exists a mutual fund whose portfolio consists of the asset that will pay v and some other risky assets. The value of the fund shares at $t = 2$ will be $v_f = \theta v + (1 - \theta)\omega$, where $\theta \in (0, 1)$ is the weight of the risky asset under consideration, and $\omega \sim N(0, \tau_\omega^{-1})$ is an unhedgeable payoff generated by other assets in the portfolio.[4] At $t = 1$, investors may purchase or redeem the fund's shares at a fixed share net asset value (NAV). This NAV depends on the potentially illiquid underlying asset. If the asset is tradable at $t = 1$, the NAV is $p_f = \theta p$. In contrast, if the asset is non-tradable, the NAV will be set at the unconditional expected share value, i.e., $p_f = \theta v_0$.

Information structure. In period $t = 1$, each investor i privately observes a noisy signal about v: $s_i = v + \tau_s^{-1/2}\epsilon_i$, where ϵ_i is standard normal and independent across investors. At $t = 0$, investor i chooses private information about v before knowing the realizations of M and s_i: The investor chooses a signal precision τ_s by incurring a non-pecuniary cost $c(\tau_s)$, where c is continuously differentiable, strictly increasing, strictly convex and satisfies $c'(0) = 0$. Random variables $v, \omega, u, \epsilon_i, M$ are mutually independent. Investor preferences, market structure, and all distributions are common knowledge among market participants.

[4]For simplicity, our model abstracts away the dilution or concentration effects of flows on the value of fund shares because the size of informed flows is small relative to the fund's size.

Trading. If the market for the risky asset is open at $t = 1$, each investor chooses a demand schedule $x_i(s_i, p)$ that buys x_i shares of the risky asset at price p. Meanwhile, a unit mass of noise traders submit net demand $u \sim N(0, \tau_u^{-1})$. A competitive fringe of risk-neutral market makers observe aggregate demand schedule $X(p) = \int_0^1 x_i(s_i, p)\,\mathrm{d}i + u$ and set price as $p = \mathbb{E}[v|X(\cdot)]$. We assume that θ is relatively small, hence whenever possible, investors will directly trade the risky asset. If the trading of the asset is suspended at $t = 1$, then each investor can choose to hold y_i units of fund shares.

Equilibrium. We focus on a symmetric linear equilibrium, characterized by (i) an asset demand schedule $x(s_i, p)$ that, given p, maximizes investor i's $t = 1$ expected utility $V(s_i, p) = \max_{x_i} \mathbb{E}[u(W_i)|s_i, p, M = 1]$ when the market is open, (ii) a fund share demand schedule $y(s_i)$ that maximizes investor i's $t = 1$ expected utility $V_f(s_i) = \max_{y_i} \mathbb{E}[u(W_i)|s_i, M = 0]$ from investing through the fund, (iii) an information choice τ_s that maximizes investor ex-ante expected utility $\Pi(\tau_s) = q\mathbb{E}[V(s_i, p)] + (1 - q)\mathbb{E}[V_f(s_i)] - c(\tau_s)$, and (iv) a price function

$$p = p_0 + \gamma(v - v_0) + \lambda u, \tag{1}$$

where p_0, γ, λ are endogenous coefficients determined by Bertrand competition among risk-neutral market makers. We define price informativeness as $\Phi = Var[v|p]^{-1} - \tau_v$, which is the amount of information about v that can be inferred from price p.

1.2. NAV Mispricing and Fund Flows

To analyze the mispriced fund NAVs when the underlying asset is non-tradable, we begin with the equilibrium price p set by market makers when the asset is tradable at $t = 1$.

Lemma 1. *For any given τ_s, there exists a unique linear asset market equilibrium at $t = 1$: if the market opens, investor i submits demand*

$$x(s_i, p) = \frac{\tau_s}{\rho}(s_i - p), \tag{2}$$

the informativeness of price p is $\Phi = \frac{\tau_s^2 \tau_u}{\rho^2}$, and the magnitude of price movement at $t = 1$ satisfies

$$Var[p - v_0] = \frac{1}{\tau_v} - \frac{1}{\Phi + \tau_v}. \tag{3}$$

Equation (2) shows that investor demand for the risky asset only depends on the difference between the realized signal s_i and the price p. Intuitively, investors trade on private signals more aggressively if their signals are more precise. As a result, the equilibrium price will be more informative about v (i.e., Φ will be greater) if investors receive more precise signals. Equation (3) links two endogenous variables, showing that the magnitude of the price movement at $t = 1$ is strictly increasing in Φ. We will develop an empirical measure of price informativeness based on this linktage.

It is worth noting that if the underlying asset is non-tradable at $t = 1$, the fund shares are mispriced by $\theta(p - v_0)$, where p is the fair value of the illiquid asset, namely, the market price if it were normally traded. Our first proposition describes how this NAV mispricing is related to investors' choices of investing in fund shares.

Proposition 1. *When the underlying asset is non-tradable, investment in the fund is positively correlated with the mispricing of the fund NAV: $Cov[\int_0^1 y_i \, \mathrm{d}i, \theta(p - v_0)] > 0$.*

The investor's demand for fund shares y_i and asset trading choice x_i are commonly driven by the investor's private signal s_i. Since s_i is an unbiased signal of the asset's payoff v, overall investors will purchase more fund shares when v is greater and vice versa. When v is greater, if the asset is tradable, its price p also tends to be higher, and hence if the asset is non-tradable, fund shares tend to be more undervalued. As such, there is a positive association between fund share undervaluation and informed investment in fund shares.

1.3. Fund Portfolio Weight and Investor Information Choices

When choosing information in period $t = 0$, investors face a tradeoff between the value of private signals and the cost of signal precision. Private information is less valuable if the price p, a public signal, is more informative about the payoff v. So investors will choose a lower signal precision if they anticipate a more informative price when the asset is tradable at $t = 1$. Meanwhile, because investors can invest via fund shares at a fixed NAV when the underlying asset is non-tradable, the value of private information also depends on the asset's exposure to the fund. In particular, when portfolio weight θ is greater, investors get less unwanted exposure to risks due to other assets in the fund portfolio, which allows them to make larger informed bets at a given level of risk.

The informativeness of price p and the asset's weight in fund portfolio θ jointly determine the marginal value of information. The investor's optimal information choice at $t = 0$ equalizes this marginal value and the marginal cost and in turn, affects the price informativeness at $t = 1$. In equilibrium, the signal precision at $t = 0$ results in a price informativeness at which every investor's choice is indeed optimal. The lemma below characterizes this equilibrium.

Lemma 2. *There exists a unique equilibrium at $t = 0$. The investor's optimal information choice τ_s is characterized by*

$$q \cdot \psi(\tau_s) + (1 - q)\varphi(\tau_s, \theta) = c'(\tau_s), \tag{4}$$

where $\psi : \mathbb{R}_+ \mapsto \mathbb{R}_{++}$ and $\varphi : \mathbb{R}_+ \times (0, 1) \mapsto \mathbb{R}_{++}$ are both continuously differentiable and strictly decreasing in τ_s, and φ is strictly increasing in θ.

Lemma 2 provides comparative statics with respect to θ. On the one hand, a greater θ raises φ due to the opportunity of investing via fund shares when the underlying asset is non-tradable. On the other hand, φ is still decreasing in τ_s due to investors' aversion to residual uncertainty in the value of fund shares. Given that the left hand side of (4) decreases in τ_s and that c' is strictly increasing, the equation implies that the equilibrium

signal precision is increasing in θ. This in turn leads to a more informative asset price when trading occurs.

Proposition 2. *In equilibrium, the signal precision τ_s and the price informativeness Φ are both increasing in θ.*

Proposition 2 shows that when the risky asset has a greater weight in the fund portfolio, investors will acquire more information. Moreover, when the asset turns out tradable at $t = 1$, its price will be more informative as investors will trade on more precise signals.

1.4. Testable Predictions

Our model yields two empirical predictions:

Prediction 1. *At the fund level, flows positively respond to the underpricing of fund NAVs caused by illiquid portfolio holdings.*

Prediction 2. *At the asset level, an illiquid asset's exposure to mutual funds increases investor information acquisition and price informativeness.*

2. Empirical Setting

The Chinese stock market presents several features that enable us to test our predictions: First, many firms experience prolonged periods of trading suspensions, during which their stocks become perfectly illiquid. Second, suspended stocks may be held by mutual funds with significant portfolio weights, which generates mispricing in fund NAVs. Third, stock prices exhibit large movements at trading resumptions, reflecting information accumulated during suspensions. Finally, for institutional reasons, a stock's exposure to mutual funds is better observed by researchers than by investors, which helps disentangle different explanations.

2.1. Institutional Background

Trading Suspensions. For many years, trading suspensions have been a regular phenomenon in the Chinese stock market. The two exchanges, the Shanghai Stock Exchange (SSE) and the Shenzhen Stock Exchange (SZSE), both require publicly listed firms to suspend trading before major corporate events (e.g., acquisitions/sales of assets, mergers, and restructurings).[5] At the planning stage of these events, firms must apply to the exchanges for a trading suspension. When suspended, firms have to announce the progress of their events and the planned dates of trading resumptions. The suspension period is, in principle, limited to no longer than three months.

In practice, the suspension rules are not subject to stringent regulatory oversight or legal enforcement. As a result, many firms suspend for periods exceeding three months or even multiple years. This causes a significant fraction of publicly listed firms to be not traded for prolonged periods of time. Between 2004–2020, 78.5% of stocks listed on the two exchanges were suspended at least once, and in total, 4.6% of stock-trading day pairs were in suspension. Since these stocks cannot be traded during suspensions, the liquidity of the stocks is completely eliminated.[6]

Figure 1 summarizes suspension events. The annual event count typically falls between 500 and 2,000, with considerable variation across years and a particularly high frequency in 2006 and 2015. On average, suspensions last between 20 and 40 trading days. Such prevalent suspensions did not receive much regulatory attention until November 2018, when the China Securities Regulatory Commission (CSRC) implemented new guidelines to limit the scope and length of stock trading suspensions. After 2018, suspension events have become less frequent and shorter in duration.

[5]For example, both exchanges released guidance on stock trading suspensions in their 2012 rules about the supervision of corporate reorganizations.

[6]Chinese stocks do not trade in non-exchange venues such as over-the-counter (OTC) and alternative trading system (ATS) markets, and the two stock exchanges do not allow off-exchange block trades during the trading suspension period.

Mutual Funds. According to the Asset Management Association of China, there were 6,770 open-end mutual funds by December 2020. Among them, 1,362 are equity funds and 3,195 are mixed funds, with 2.06 and 4.36 trillion CNY total net assets (approximately 317 and 670 billion USD), respectively. In China, retail investors and non-financial entities (corporations, organizations, and government agencies) are the main shareholders of public firms. Despite years of growth, the share of stocks held by Chinese mutual funds decreased since its historical peak of 25% in 2007. In 2020, mutual funds held only 7.3% of the 64.2 trillion CNY (9.9 trillion USD) total market capitalization of tradable shares.

Since 2004, the CSRC has required mutual funds to publicly disclose portfolio holdings. Regulatory rules mandate six filings per year, including four quarterly reports, one semiannual report, and one annual report. Mutual funds must file the quarterly reports within 15 business days after the end of the most recent quarter. These reports disclose only the top-ten stock holdings in the fund portfolios. In contrast, complete portfolio snapshots as of the end of June and December are disclosed in the semiannual and annual reports. These semiannual and annual reports must be filed within 60 and 90 calendar days, respectively.

The CSRC requires mutual funds to hold no more than 10% of portfolio weight in any single stock. When a stock is suspended from trading, the stock's price becomes stale. To determine the valuation of suspended stocks in mutual fund portfolios, the CSRC suggested several methods, such as adjusting prices based on market returns. However, whether fund share prices accurately reflect fair values is an empirical question.

2.2. Data

Our study relies on several data sources. We use the China Stock Market & Accounting Research (CSMAR) database as the primary data source for stocks, public firms, and mutual funds. We collect thread posts on EastMoney's fund section, an online forum where Chinese investors discuss mutual funds. We also obtain data on corporate visits by financial institutions

and internet searches of individual stocks.

We begin with all 4,365 A-Share stocks ever listed on the main board of the SSE and the main board, the Growth Enterprise Market (GEM) board, and the Small/Medium Enterprise (SME) board of the SZSE between 2004–2020. We select stock trading suspension events between 2004–2020 that last for multiple trading days. There are 16,958 events. The duration of suspensions ranges between two and 1,679 trading days, with an average of 28.0 and a standard deviation of 59.5 trading days. We also extract the content of public announcements made during the suspension period and use OpenAI's GPT–3.5–turbo Large Language Model to process the textual information.

We use data on open-end mutual funds that ever existed between 2004–2020 from CSMAR. Our sample includes equity, bond, and mixed funds (CategoryID="S0601","S0602", or "S0604") and excludes money market funds, exchange-traded funds, funds of funds, listed open-end funds, and structured funds. This filter yields 2,881 funds. Our fund stock holdings data include top-ten holdings from quarterly reports and complete portfolio holdings from semiannual and annual reports. We obtain the number of shares and the weight of a stock in a fund's portfolio, as well as the precise date when the stock holding is disclosed to investors. After restricting our sample to fund-stock pairs between 2004–2020, there are 0.43 million and 1.14 million records of top-ten and non-top-ten stock holdings, respectively.

Our data from EastMoney's mutual fund section consist of detailed information extracted from user thread posts. Every post is associated with a unique fund identifier that can be linked to the fund in CSMAR. This feature allows us to measure investor attention on suspended fund stock holdings. Specifically, we identify a post as related to suspended portfolio holdings based on the title and content of the post.[7] In total, users made 6,767 such posts about 1,378 funds between July 2017 and December 2020. These posts were read 15.4 million times, liked 13,915 times, and received 8,583 user replies. Each post also includes a

[7]We use keywords "suspend", "resume", "suspension", and "resumption" to filter for posts related to suspended fund portfolio holdings.

score for the author's community impact, which ranges between one and ten.

The SZSE implemented in 2006 the CSRC's Fair Disclosure regulation, which mandates that firms publicly disclose their private meetings with investors.[8] Using this data source, we observe 128,219 private meetings between 2012 and 2020, involving 1.03 million institutional visitors. We classify a visitor institution as a "private fund" if the asset manager does not manage a mutual fund, aventure capital fund, or an insurance portfolio. We also obtain data on firm-level internet searches to measure investors' acquisition of public information (Drake, Roulstone, and Thornock, 2012; Kong, Lin, and Liu, 2019). We focus on searches through Baidu, the dominant search engine in the Chinese market. This dataset, collected from the Baidu Index Platform, provides weekly indexes that capture the intensity of user searches from computers (PCs) between 2006 and 2020 and mobile devices between 2011 and 2020.

We measure earnings surprises using quarterly earnings per share (EPS) and apply a seasonal random-walk model that is standard in the accounting literature (Bernard and Thomas, 1990).[9] Specifically, we compute unexpected earnings (UE_t) as the difference between the quarter's actual EPS and the EPS of the same quarter in the previous year. We then compute standardized unexpected earnings (SUE_t), which are UE_t scaled by their standard deviation over the past four to eight quarters.

2.3. Measuring Returns

We define *ResmRet* as the raw stock return that is realized at the end of a suspension event. A caveat is that some stocks face a 10% daily price limit, which constrains the immediate price movements on resumption days.[10] We carefully track the number of consecutive trading days that a stock's price hits daily price limits at resumption. Figure IA.1 in the Internet

[8]This data source has been used to measure information acquisition activities in prior literature (Cheng, Du, Wang, and Wang, 2016; Chen, Qu, Shen, Wang, and Xu, 2022).

[9]In China, analysts generally do not provide forecasts for quarterly earnings. The literature shows that earnings expectations of investors who lack access to analyst forecasts resemble the seasonal random-walk model (Bhattacharya, 2001; Battalio and Mendenhall, 2005; Ayers, Li, and Yeung, 2011)

[10]For for stocks with a special treatment ("ST") status, the daily price limit is 5%.

Appendix summarizes this number. While the CSRC exempts price limits on the first trading day for suspensions related to some corporate events, prices in about 45% of the suspensions still hit the limit on the day of resumption. For these events, we set $ResmRet$ to be the cumulative return from the beginning of the resumption day to the end of the day the stock stops hitting price limits, which we refer to as the "release day".

To capture firm-specific price movements at resumptions, we compute abnormal returns with a market model, using the Shanghai-Shenzhen A-Share Index return (MarketType ="53") as the market return and the one-year bank deposit rate as the risk-free rate. We first estimate the stock's beta with 250 daily returns before a suspension event. We then match each event with the market return, $MktRet$, and the risk-free return, Rf, between the suspension day and the resumption day (release day, if the price limit is hit) and define the event's abnormal return at resumption as $ResmAR = (ResmRet - Rf) - \beta(MktRet - Rf)$.

For mutual funds, we carefully adjust daily NAVs for dividend payouts and share splits before computing daily raw NAV returns. Similar to stocks, we compute daily NAV abnormal returns using 250 daily returns. Since our fund sample includes mixed funds, we estimate fund betas with a two-factor model, using the Shanghai-Shenzhen A-Share Index and Shanghai Corporate Bond Index as stock and bond market returns, respectively.

2.4. Sample Construction

To test our model's predictions, we construct samples at both the fund level and the suspension event level. The first sample is a fund-quarter panel, which we use to estimate flow response to NAV mispricing. To be included in the sample, we require funds to have a TNA of at least 100 million CNY and an age of at least one year at the beginning of the period. As standard in the literature, we calculate net flows into a fund as

$$Flow_{f,t} = \frac{TNA_{f,t} - TNA_{f,t-1} \times (1 + r_{f,t})}{TNA_{f,t-1} \times (1 + r_{f,t})}, \tag{5}$$

where $TNA_{f,t}$ is the total net assets of fund f at the end of quarter t, and $r_{f,t}$ is the fund's return over quarter t. To mitigate the influence of outliers, we winsorize the flows at the 2.5 and the 97.5 percentiles. We calculate the NAV mispricing as the product of a suspended stock's portfolio weight in fund f in quarter t and its price movement at resumption ($ResmRet$ or $ResmAR$) in quarter $t+1$.[11] Hence, this measure uses the stock returns realized at a resumption as a proxy for the mispricing of a suspended holding, an approach motivated in Section 3.3. If more than one suspended holding will resume trading in the next quarter, we aggregate the mispricing to the fund level. We supplement this quarterly sample with a fund-day panel, which allows us to measure daily investor activities in the internet mutual fund forum and to estimate how these activities respond to suspended holdings.

We create a separate sample of suspension events to test the prediction on information acquisition. We use two measures of investors' information acquisition activities. First, we measure the acquisition of private information about a firm based on financial institutions' corporate visits during the suspension period. Second, we measure overall investors' acquisition of public information with internet searches during the suspension period.[12] These two measures offer complementary views of investors' demand for firm-specific information. In this sample, we measure a stock's exposure to mutual funds with $MaxWgt_{i,t}$, the maximum weight of stock i across all fund portfolios at the quarter-end before its trading resumes during quarter $t+1$. While a stock may be held by multiple funds during its suspension period, investors likely focus on funds with relatively large portfolio weights. Following this intuition, we use the largest weight across all funds as a proxy for fund liquidity creation.[13]

[11]To ensure that the flows are driven by information before the resumptions, we construct this sample using only events for which the suspension and resumption dates are in different quarters.

[12]Appendix IA.4 shows large declines in internet searches during a firm's suspension period. Note that our test compares internet searches *between* suspension events by the stock's exposure to mutual funds.

[13]To mitigate the influence of very small funds, we consistently require fund size to be at least 100 million CNY to be considered in our samples. We report robust results using an alternative measure, the number of funds with large weights, in Section IA.5 in the Internet Appendix.

2.5. Summary Statistics

Table 1 presents summary statistics for variables in our main empirical tests. Panel A summarizes our fund-quarter sample for testing the flow response. The average fund is 5.7 years old, manages CNY 2 billion of assets, delivers a positive 1% abnormal quarterly return, and experiences 4% of outflow.[14] These funds generally charge no purchase fees, but some of them charge redemption fees.[15] The suspended fund portfolio weight, $SuspWgt$, is often substantial. As will be detailed in Section 4, we divide suspended holdings into two groups based on whether investors can observe them before trading resumes and calculate two versions of NAV mispricing accordingly. These mispricing measures have zero medians but are sizable at the two tails.

Panel B summarizes our fund-day sample of investor activities in the internet mutual fund forum. There are large numbers of days when the fund has a sizable $SuspWgt$, for holdings that observed and unobserved by investors on the day. Thread posts about suspended holdings are less frequent. Many investors do not use this forum, and among investors who use it, only a subset of them would post about a fund on a given day.

Panel C summarizes the suspension event-level sample. An average suspended firm has a CNY 6.3 billion market capitalization and 41.8 thousand shareholders. Only 3% of the firm's equity is owned by mutual funds, which is an order of magnitude lower than the ownership by other institutions. On average, a firm receives 1.4 visits by financial institutions during its suspension period, and fewer than 30% of these visitors are private funds. Suspended firms experience three times more internet searches on mobile devices compared to PCs. More than half of suspended firms are held by mutual funds, and many events have large exposures

[14] Consistent with literature (e.g., Chi, Liu, and Qiao, 2022), Chinese mutual funds in our sample outperform the market, both before and after fees.

[15] We re-construct the entire history of each fund's fee schedules to measure fees for each fund-quarter. Typically, purchase fee rates decrease in purchase amount, and redemption fee rates decrease in the duration of holding the fund. We use the purchase fee rate based on larger purchase amounts (e.g., $>$ 1 million CNY) and the redemption fee rate based on median holding duration (e.g., 7 days to 1 year).

to these funds.

3. Stylized Facts

In this section, we establish several empirical facts that serve as the foundation for testing our model's predictions.

3.1. Stock Price Movements at Resumption

When trading is suspended, new information cannot be incorporated into stock prices. Once trading resumes, the accumulated information will be reflected, giving rise to large stock price movements. Figure 2 summarizes these price movements at resumption. Panel (a) reports the distribution of $ResmRet$, which is largely symmetrically distributed around zero and highly volatile, exhibiting fat tails: 785 (3,454) suspension events end up with returns exceeding 50% (20%). Panel (b) replaces the variable with $ResmAR$, which is adjusted for market returns during the suspension period. The distribution remains similar. Indeed, the two return measures have standard deviations of 48% and 42%, respectively, which implies that stock price movements at resumption are primarily driven by firm-specific information.[16]

3.2. Predictability of Stock Price Movements

Stock price movements at the resumptions can be predicted by variables observed before the resumptions. To illustrate this, we estimate regressions of $ResmRet$ on $MktRet$ and firm-specific news during suspensions. Table 2 reports our estimation results. Column (1) shows that the market return during the suspension period predicts the resumption return with an R^2 of 34%. To investigate whether the length of the suspension is related to the resumption return, we include the logarithm of the number of suspension days as an additional

[16]The returns in Figure 2 are winsorized, resulting in a disproportionate mass at the ends of the distributions.

explanatory variable. We find that the resumption return increases with the length of the suspension, as shown in column (2). In column (3), we add the firm's earnings surprises announced during the suspension period, which capture firm-specific news and also positively predict $ResmRet$.

An important source of firm-specific information are the suspended firms' public announcements. We collect and use AI to process the content of these announcements, converting the textual information to a trading signal taking a value of -1, 0, or 1.[17] In column (4), we find that this signal positively predicts a 5.7 percentage point difference in the resumption return. The R^2 of this regression is a modest 0.3%, suggesting that our AI model's ability to extract information from announcements is limited. After including market returns and earnings surprises in column (5), the predictive power of our AI signal remains sizable and significant.

3.3. Suspended Stocks in Fund Portfolios

For mutual fund investors to profit from suspended stocks' predictable price movements, there are three necessary conditions. First, the weight of suspended stocks in fund portfolios should be sizable. Second, NAVs at which investors purchase and redeem fund shares should be mispriced due to the stale prices of suspended holdings. Third, investors should be able to observe suspended holdings before their trading resumes, which we discuss in Section 4.

Figure 3 presents fund portfolio weights of suspended stocks, measured at the quarter-end before resumption. Since small positions are unlikely relevant, we exclude holdings with portfolio weights below 1%. Many holdings have substantial portfolio weights.

To investigate whether funds accurately price NAVs based on the fair values of suspended holdings, we calculate two returns realized at resumptions: fund NAV returns, and suspended holdings' weight-implied NAV mispricing (i.e., the product of the portfolio weight and its resumption return). For example, if the portfolio weight of a suspended stock is 5%, and

[17]We explain this step in detail in Section IA.2 of the Internet Appendix.

its resumption return is 40%, then the weight-implied NAV return is $5\% \times 40\% = 2\%$. If funds accurately adjust the NAVs before resumptions, then these two measures should be uncorrelated, as any information during suspensions would already be reflected in the NAVs. In sharp contrast, Figure 4 presents a strong positive correlation between these two returns, with a slope close to one. This implies that overall, funds do not adequately adjust for changes in the valuation of suspended stocks. Therefore, investors can profit by exploiting mispriced NAVs using firm-specific information.[18]

4. Flow Response to Mispriced Illiquid Holdings

In this section, we test Prediction 1 by estimating how investors respond to suspended holdings.

4.1. Fund Flow Response to Mispriced NAVs

We investigate how fund flows respond to mispriced NAVs caused by suspended holdings. We estimate a flow regression in our fund-quarter sample:

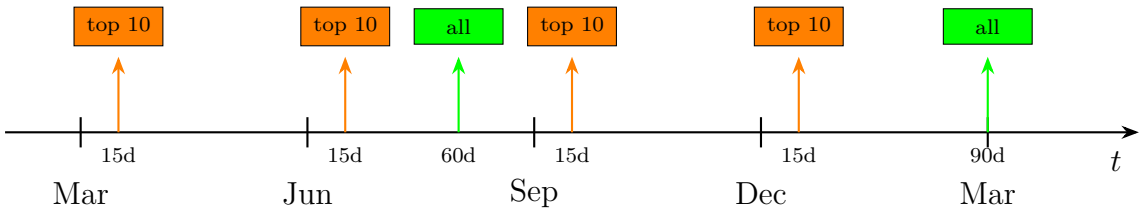
$$Flow_{f,t} = \beta Mispricing_{f,t} + \Gamma' Control_{f,t} + \delta_t + \epsilon_{f,t}, \tag{6}$$

where $Mispricing_{f,t}$ is fund f's NAV mispricing in quarter t. Our specifications control for lagged fund performance, measured as quarterly abnormal NAV returns, as well as other fund-level and fund family-level characteristics. We also include quarter fixed effects, thereby estimating β using variation in NAV mispricing across funds within the same quarter.

A concern for regression (6) is that there might be a spurious relationship between flow and NAV mispricing. This could occur if both variables are driven by omitted fund characteristics, or if the flow has a mechanical impact on the portfolio stock's resumption returns. To address

[18] In Section 6, we provide further evidence that even when funds adjust the valuation of suspended holdings, their adjustment reflects primarily market returns.

this concern, our empirical strategy compares suspended holdings that are observed with holdings that are not observed by investors before their trading resumes. As introduced in Section 2 and illustrated in the timeline below, each fund discloses six portfolio reports per year, with different timing and scope. Thus, only a subset of a fund's holdings are observed by investors at any point in time. Our strategy helps disentangle investor responses from spurious relationships because if our estimation is biased by omitted fund characteristics, such a bias would likely generate similar spurious responses to unobserved holdings as well.



It is worth noting that our strategy requires sufficient variation in unobserved suspended holdings for statistical power. Figure IA.2 shows that many unobserved holdings have large fund portfolio weights. Moreover, observed and unobserved suspended holdings have similar impacts on fund NAVs at trading resumptions, which is shown in Figure IA.3 in the Internet Appendix. Hence, a test on the difference between the sensitivities to mispricing between observed and unobserved holdings helps us to identify the causal effect of the investor response to mispriced NAVs.

To implement our strategy, we use the precise date of each fund portfolio report to track suspended holdings that are already disclosed and not yet disclosed, for any fund on any date. Details of this step can be found in Section IA.3 of the Internet Appendix. We then calculate fund suspended weights, $SuspWgt$, that are observed and unobserved by investors on each day in our fund-day panel. Similarly, we calculate two versions of NAV mispricing based on suspended holdings that are observed and unobserved by investors at the end of the quarter of flow measurement.

Table 3 reports our estimation results of the flow response to mutual fund mispricing based on equation (6). In column (1), our estimate for the coefficient of the NAV mispricing, as observed by investors, is positive and statistically significant. This point estimate indicates that, controlling for fund performance, a one-percentage-point NAV underpricing for observed holdings attracts 1.72% larger money flows into the fund. In contrast, the estimate for the coefficient on unobserved NAV mispricing is negative and statistically insignificant. In column (2), these estimates remain similar after adding control variables at the fund and family levels. The F-tests reject the null hypothesis $\beta^{obs} = \beta^{ubs}$ at a high confidence level. In columns (3)-(4), we measure NAV mispricing based on the abnormal resumption return $ResmAR$, instead of the raw resumption return $ResmRet$. We find qualitatively similar estimates with a larger magnitude using abnormal returns. The F-tests reject the equality of the coefficients at a significance level of at least 10%. This further supports our interpretation that fund flows respond to investors' information about suspended stocks in observed fund portfolios.

While all investors can purchase mutual fund shares, only existing investors of a fund can redeem shares. This short-sale constraint implies that flows may respond asymmetrically to positive and negative information during suspensions. We explore this potential asymmetry by replacing the investor-observed NAV mispricing with piecewise-linear variables, defined as $Underpricing = \max\{Mispricing, 0\}$ and $Overpricing = \min\{Mispricing, 0\}$, respectively. Table 4 reports our results of estimating such piecewise-linear specifications. Across all specifications, the estimates for the coefficient on $Underpricing$ are larger than those for $Mispricing$ in Table 3 and statistically significant. The point estimate in column (4) indicates that a one-percentage-point NAV underpricing leads to 3.1% of inflows. In contrast, the coefficients on $Overpricing$ are close to zero and insignificant. This evidence suggests that the flow response is indeed asymmetric, with inflows responding primarily to positive information on suspended holdings.

Next, we explore the response to mispricing in fund NAVs for different types of fund

investors. We do so by regressing the proportional change in the number of shares owned by institutional investors, retail investors, and fund company insiders separately on our measure of NAV mispricing. Because these numbers are reported only in semiannual and annual fund reports, we construct measures at a semiannual frequency and estimate regressions in fund-semiannual panel samples. Table 5 reports our estimation results. In the first row, mispricing is calculated based on all suspension events. Our estimates indicate that a 1% NAV underpricing is associated with an 1.51% increase in shares owned by institutional investors. In contrast, the corresponding change in shares owned by retail investors is a modest 0.25%. We do not find any impact for insiders.

In the second and third rows, we use suspension events that last for at least 10 or 100 trading days, respectively, to calculate NAV mispricing. The estimated increases in shares owned by both institutional and retail investors increase at longer horizons, implying that long-lasting events attract larger investor responses. Overall, our findings suggest that institutional investors are the most responsive to NAV mispricing, followed by retail investors. Interestingly, we even find an increase in fund ownership for fund insiders at the 100 trading day horizon. Thus, fund insiders increase their holdings of mispriced funds over longer horizons. The effect is stronger at long horizons because regulations require Chinese fund employees to hold their own fund shares for at least six months.

4.2. Investors' Scrutiny of Suspended Holdings

Our interpretation of the results on the flow response to mispricing is valid only if investors indeed scrutinize suspended holdings. We provide evidence for this necessary condition using our fund–day panel sample. Specifically, we regress fund-level measures of investor posts in the internet mutual fund forum on the weight of suspended stocks in the fund's portfolio:

$$Posts_{f,t} = \beta SuspWgt_{f,t} + \delta_f + \delta_t + \epsilon_{f,t}, \tag{7}$$

where $SuspWgt_{f,t}$ is fund f's total suspended portfolio weight on calendar day t. Similarly, for each fund-date, we calculate suspended weights that are observed and unobserved by investors based on portfolio snapshots that are already disclosed and not yet disclosed. We estimate β using within-fund variation in $SuspWgt_{f,t}$ and include year-date fixed effects to account for changes in overall suspensions and forum posts over time.

Table 6 reports our estimation results of equation (7). In Panel A, we use the continuous $SuspWgt$ for observed and unobserved holdings as the independent variables. The point estimate in column (1) indicates that, every one percentage-point increase in the observed suspended portfolio weight is associated with a 0.032 standard deviation increase in daily posts about a fund's suspended holdings (i.e., $0.137 \times 0.01/0.043$). Columns (2)–(4) use the number of user replies, the impact score, and the number of likes as the dependent variables, and obtain similar results. In contrast, the coefficients on the unobserved suspended portfolio weights are statistically indistinguishable from zero. Our F-tests in the last row reject at a 5% significance level the null hypothesis that the coefficients on observed and unobserved suspended weights are identical for three of the four measures.

Panel B further quantifies investor activities by replacing the continuous $SuspWgt$ with indicator variables that capture whether the suspended portfolio weight is below 5%, between 5%–10%, and above 10%. The magnitude of effects increases monotonically with the observed suspended weights. For fund–day pairs with observed suspended weights exceeding 10%, the new posts are about 20 times as frequent as pairs where the weights are less than 5%. On average, these posts receive 23 times more replies, are written by posters with 20 times higher impact scores, and obtain nine times more likes. No effect was found for indicator variables corresponding to unobserved holdings. Taken together, these results indicate that investors do scrutinize suspended stocks held by mutual funds based on currently disclosed portfolio snapshots.

5. Information Acquisition and Price Informativeness

So far, our tests do not distinguish the source of the information that drives the flow response. In this section, we investigate whether investors actively acquire information by testing Prediction 2 of our model. Specifically, we use our event-level sample and estimate how a suspended stock's exposure to mutual funds affects the information acquisition by investors during suspensions and the stock price informativeness at resumptions.

5.1. Increases in Information Acquisition Activities

To test the impact of the liquidity creation by mutual funds on investor information acquisition, we estimate regression

$$InfoAcquisition_{i,t} = \beta MaxWgt_{i,t} + \Gamma' Control_{i,t} + \delta_{ind} + \delta_t + \epsilon_{i,t}, \tag{8}$$

where $InfoAcquisition$ captures information acquisition activities by investors and is measured by either the number of corporate visits or internet searches.

Our variable of interest, $MaxWgt_{i,t}$, is based on suspended holdings at the quarter-end before trading resumes during quarter $t+1$. This variable is a function of fund portfolio choices, which could be drive by stock and event characteristics that correlate with the firm's ownership structure and information environment. To mitigate this concern, our specifications control for the fractions of the firm owned by other mutual funds and other institutional investors, firm characteristics (e.g., size, book-to-market, number of shareholders) and event characteristics (e.g., the duration of suspension). We also include industry fixed effects and quarter fixed effects (and headquarter city fixed effects, for corporate visits) to account for industry and time differences in our estimation. Our identifying assumption is that conditional on these control variables, suspension events have similar information acquisition activities in the absence of particular funds that have significant portfolio weights.

Table 7 reports our estimation results for the effect of a stock's exposure to mutual funds on investor corporate visits during suspensions. The dependent variable in columns (1)-(2) is the number of visits by all financial institutions.[19] Our estimates indicate that, controlling for the firm's mutual fund (and other institutional) ownership as well as event characteristics, a large exposure to a particular fund significantly increases the frequency of investor visits. On average, a one-standard-deviation increase in maximum fund portfolio weight attracts 0.6 more visits during suspensions, or 43% of the unconditional average frequency. Columns (3)-(4) use the number of visits by private funds as the dependent variable. Our estimates indicate that a one-standard-deviation increase in the stock's maximum fund portfolio weight attracts 0.3 more visits by private funds, or 63% of the unconditional average frequency.

Table 8 reports our results of estimating the same equation replacing the measure of information acquisition with the natural log of internet search indexes during suspensions. In columns (1)-(2), the dependent variable is based on searches from PCs. Our estimates indicate that the exposure to mutual funds has a positive and significant impact on internet searches. The point estimate suggests that, a one-percentage-point increase in the stock's maximum fund portfolio weight leads to a nearly one percent increase in internet searches about the firm. In columns (3)-(4), the dependent variable is based on searches from mobile devices. We find positive and marginally significant estimates for the effect of the stock's maximum fund portfolio weight. This is consistent with sophisticated investors, such as hedge funds, who tend to work with PCs in offices rather than with mobile devices.

5.2. Informative Stock Price Movements at Resumptions

We employ two approaches to test for the impact of fund liquidity creation on stock price informativeness. Our first approach uses a theory-motivated measure. Intuitively, if more information is acquired and incorporated into prices, on average, the price movements at

[19] A large fraction of visitors are sell-side analysts who collect information on behalf of their buy-side clients.

resumptions have a larger magnitude.[20] Hence, we measure price informativeness with $|ResmAR|$, the absolute value of firm-specific price movement at resumptions.[21]

We also apply an alternative approach to examine whether stock price movements at resumptions are more informative about future firm fundamentals. As common in the literature, we estimate the sensitivity of stock price movements to the firm's cash flows using an interaction specification:

$$\begin{aligned} SUE_{i,t+1} = \beta_1 MaxWgt_{i,t} \times PriceMove_{i,t} + \beta_2 PriceMove_{i,t} + \beta_3 MaxWgt_{i,t} \\ + \Gamma' Controls_{i,t} + \delta_{ind} + \delta_t + \epsilon_{i,t} \end{aligned} \tag{9}$$

where $PriceMove_{i,t}$ is stock i's price movement at resumption (i.e., $ResmRet$ or $ResmAR$) during quarter t, and $SUE_{i,t+1}$ is the firm's earnings surprise announced in quarter $t+1$. Suppose a stock's exposure to mutual funds during the suspension period does not change its price informativeness at the resumption, then $MaxWgt$ would be unrelated to the sensitivity: that is, β_1 would be zero. Instead, if stock price movements become more informative about firm cash flows due to its exposure to mutual funds, we would expect β_1 to be positive.

Table 9 reports our estimation results for the price informativeness measured by $|ResmAR|$. Our estimates show a positive and significant relation between a stock's exposure to mutual funds and the magnitude of its price movement at resumption. In columns (1)-(2), the sample includes all suspension events. On average, a one-standard-deviation incremental exposure leads to a 1.4% larger price movement after controlling for post-resumption stock volatility, the firm's mutual fund and institutional ownership, and other variables.[22]

A caveat in this test is the presence of daily price limits. When these limits are imposed, the supposedly immediate price movement may take multiple days to fully materialize, and

[20]Lemma 1 in our model shows that given τ_v, there is a positive relation between $Var[p - v_0]$ and price informativeness Φ. This monotonic relation implies that price informativeness $\Phi = Var[v|p]^{-1} - \tau_v$ can be measured without knowing the conditional variance $Var[v|p]$, which is hard to measure in data.

[21]The uncertainty in fundamentals (τ_v in the model) may differ across events. To account for this, we also control for $\sigma(AR)$, the standard deviation of daily abnormal returns over ten subsequent trading days.

[22]Table IA.3 in the Internet Appendix further shows that post-resumption price reversals are less severe when the stocks have a larger exposure to mutual funds.

hence we cannot claim that the price movement reflects only information acquired during the suspension period.[23] To address this concern, in columns (3)–(4) we use a subsample of events where the price movements at resumptions are not affected by price limits - the *ResmRet* is entirely realized on first trading day. We find that among these events, the estimated effect is even stronger: a one-standard-deviation incremental exposure to mutual funds during suspensions leads to a 3.6% larger price movement at resumptions. Overall, our results are consistent with our model's prediction on the informativeness of price movements at resumptions.

Finally, Table 10 reports our estimation results of the interaction specification in equation (9). Our estimates suggest that stock price movements at resumptions are more sensitive to future firm fundamentals when the stocks have larger exposures to mutual funds during suspensions. Across columns (1)–(4), the point estimates $\hat{\beta}_1$s are positive and statistically significant. A one-standard-deviation increase in the exposure to fund liquidity creation roughly doubles the sensitivity to earnings surprises in the next quarter relative to $\hat{\beta}_2$s, the estimate for the coefficient of the stock price movement. This result corroborates our previous evidence on stock price informativeness.

6. Discussion

6.1. Fund Valuation Adjustment For Suspended Holdings

During a stock's suspension period, fund companies may follow the CSRC's suggestions and adjust the stock's valuation in their calculation of fund NAVs. For a subset of events in which suspensions and resumptions occur in two different quarters, we observe the suspended stock's share value reported by the fund at the last quarter-end prior to resumption. There are 2,972 such events and 35,285 fund-event pairs, where 50.3% of pairs adjusted the share

[23] Existing research shows that stocks hitting price limits experience heightened investor attention (Seasholes and Wu, 2007) and price manipulation by large traders (Chen et al., 2019).

value during suspension.[24]

We first explore what information fund companies use in their adjustment of stock valuations. To do so, we compute an average change in a suspended stock's valuation across funds and regress the stock's resumption return on this average adjustment. In Table IA.1, we find that the average fund valuation adjustment positively predicts stock price movements at resumption. However, this predictive power disappears once we include the cumulative market return since suspension in the regression. This finding, consistent with the index-based method suggested by the regulator, indicates that fund companies do not adjust the valuation of suspended stocks beyond market returns.

Next, we examine the incentives behind fund valuation adjustments. Given that the adjustment is only for the realized market return, we use a piecewise linear specification, which decomposes the market return into its positive and negative regions, to test for differences between overvaluations and under-valuations. In columns (1)-(2) of Table IA.2, we regress an indicator variable that equals one if the fund adjusts the valuation on the two piecewise linear variables. Our estimates show that funds are more likely to adjust their overvalued suspended holdings after larger negative market returns. In contrast, the likelihood of adjustment does not increase after higher positive market returns. Our F-test indicates that this asymmetric relationship is statistically significant. In columns (3)-(4), we regress a continuous variable, the fund's valuation adjustment, on the piecewise linear variables. We find no significant difference between positive and negative market returns and the magnitudes of adjustments. Overall, our results suggest that fund companies are more incentivized to adjust for overvalued holdings, perhaps due to concerns over large outflows.

6.2. Other Potential Sources of Liquidity

Exchange-Traded Funds. Besides mutual funds, another source of liquidity for suspended

[24]Firms may pay dividends or experience share splits during the suspension period. We track these events and adjust stock prices accordingly before calculating fund valuation adjustments.

stocks could be exchange-traded funds (ETFs). Unlike mutual funds, whose demandable shares provide investors with daily liquidity, ETFs issue marketable shares. The liquidity of ETF shares depends on secondary market activities. To check if the liquidity created by ETFs also affects investors' information choices, we construct a sample of 184 equity ETFs.

Chinese ETFs have several distinct features. First, no intermediary is involved in the process of ETF creation and redemption: any investor has access to the conversion between ETFs' shares and a basket of their underlying stocks. Second, ETFs do not disclose their daily holdings. Instead, they publicly disclose daily creation/redemption baskets, which detail the number of shares required for each underlying stock, as well as the amount of cash required if a basket security is under a (mandatory or optional) cash substitution status. Third, ETF baskets are discretionary and often different from their stock holdings.[25]

We first check whether suspended holdings cause mispricing in ETF NAVs and ETF share prices. In Figure IA.5, we present scatter plots similar to Figure 4, using two measures of NAV mispricing, based on the ETF's quarterly portfolio weights and its daily baskets, respectively. We find a significant positive relationship between the implied NAV mispricing and ETF share values at trading resumption for both the NAVs and prices. This result implies that both the ETF's fund company and the secondary market fail to adequately adjust for the mispricing of suspended stocks. If ETF shares are sufficiently liquid, then informed investors should be able to profit from this mispricing, either by speculating on ETF share prices, or by converting and extracting the mispriced stock from ETF baskets.

However, the liquidity of these ETFs could impose a limit to arbitrage. Figure IA.6 presents the distribution of daily ETF premia. Chinese ETFs exhibit a very large dispersion in premia: the standard deviation of the ETF premium is 165 basis points. This dispersion is significantly greater than that of US equity ETFs and also exceeds that of equity ETFs in virtually all international markets in Engle and Sarkar (2006). Such a severe ETF mispricing

[25]By comparing ETF portfolio holdings and baskets at the ends of June and December, we find that 12% of stocks held by ETFs are not in their baskets, whereas 4% of stocks in ETF baskets are not in holdings.

appears to be a symptom of the illiquidity of Chinese ETF shares.[26]

We formally test whether ETF prices and flows respond to NAV mispricing caused by suspended holdings. Table IA.6 reports our estimation results of separately regressing ETF premia and flows on NAV mispricing. We find little evidence that ETF prices respond to NAV mispricing caused by suspended holdings. Also, ETF flows respond to lagged premia but not mispricing caused by suspended holdings, probably because the latter is often overwhelmed in magnitude by the former. Therefore, our findings indicate that ETFs unlikely motivate investors to acquire information about their suspended underlying stocks.

Dual-Listed Shares, Convertible Bonds, and Derivatives. In addition to investment funds, investors might attempt to use other liquid securities to profit from mispricing in suspended stocks. First, many Chinese firms are dual-listed in both the mainland stock exchanges and the Hong Kong Stock Exchange (HKEX). As the A shares and H shares are both equity of the same firm, their values should be similarly driven by the firm's fundamentals. Second, a few Chinese firms have convertible bonds outstanding that are traded on exchanges. A large fraction of these bonds' value comes from the option of converting to equity. Moreover, investors may want to use equity derivatives, such as stock options, to bet on information about suspended firms.

These strategies are, however, difficult to implement. Regulators and stock exchanges have long recognized the importance of trading suspensions and required securities to be suspended in a synchronized manner.[27] Moreover, derivatives markets in China have seen limited development, with almost no single-name derivative contracts available for trading in our sample period. Therefore, mutual funds, which allow daily purchase and redemption, serve as the primary source of indirect liquidity for suspended stocks.

[26] See Figure IA.7 for a case of a large mispricing in ETF shares unrelated to suspended holdings.

[27] For example, HKEX Guidance Letter states "For A and H share issuers, the Exchange and the PRC Exchanges closely coordinate and communicate as simultaneous trading halts in both markets are generally necessary to maintain a fair and orderly market in the trading of the respective A and H shares." Similarly, stock exchanges require that when the stock of a convertible bond issuer is suspended, the trading of its bonds as well as the conversion option will be also suspended.

7. Conclusion

This paper explores a liquidity channel through which mutual funds affect investors' information choices. In recent decades, mutual funds have been increasingly investing in illiquid assets. Meanwhile, these funds allow investors to purchase and redeem fund shares on a daily basis. We argue that this liquidity creation facilitates informed investment in illiquid assets, which in turn induces investors to acquire firm-specific information. We derive this insight in a rational-expectations theoretical framework and test our predictions in a unique empirical setting where a significant number of Chinese stocks become perfectly illiquid during trading suspensions. Our findings demonstrate that a stock's exposure to mutual funds significantly increases information acquisition activities. The firm-specific information investors acquire is reflected in the flows to funds with suspended holdings and the informativeness of stock price movements at trading resumptions.

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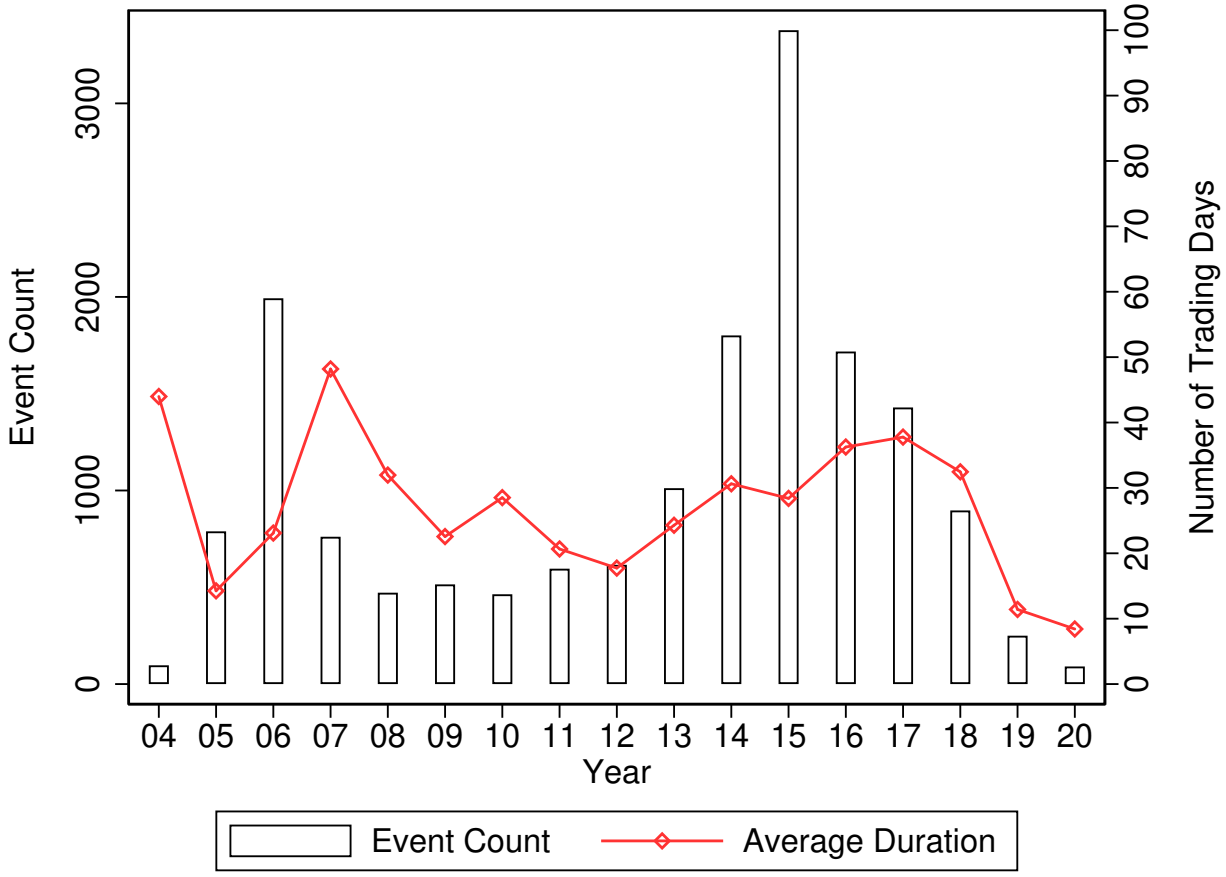
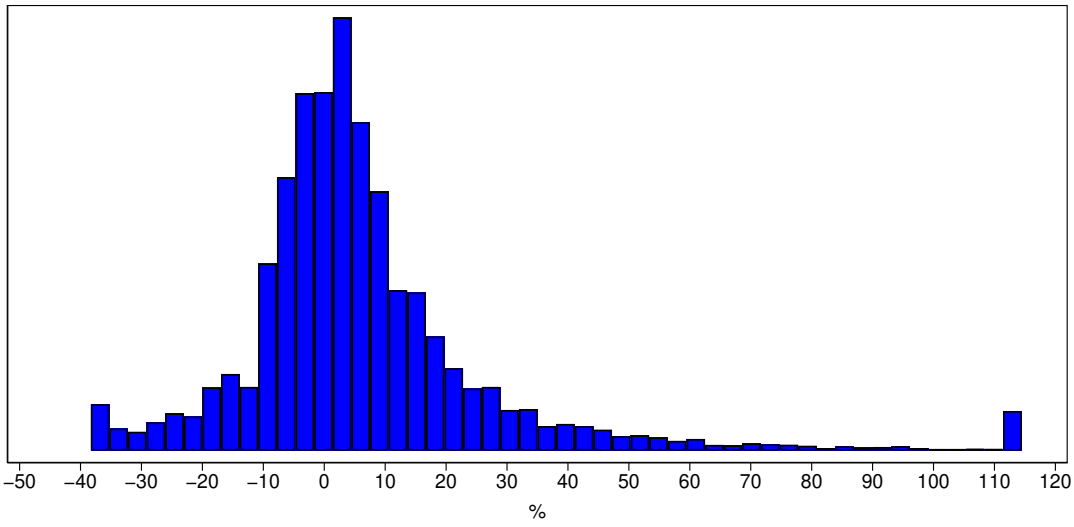


Figure 1: **Stock Trading Suspension Events, 2004–2020.**
This figure plots annual number of stock trading suspension events and average event duration, measured in trading days.

(a) *ResmRet*



(b) *ResmAR*

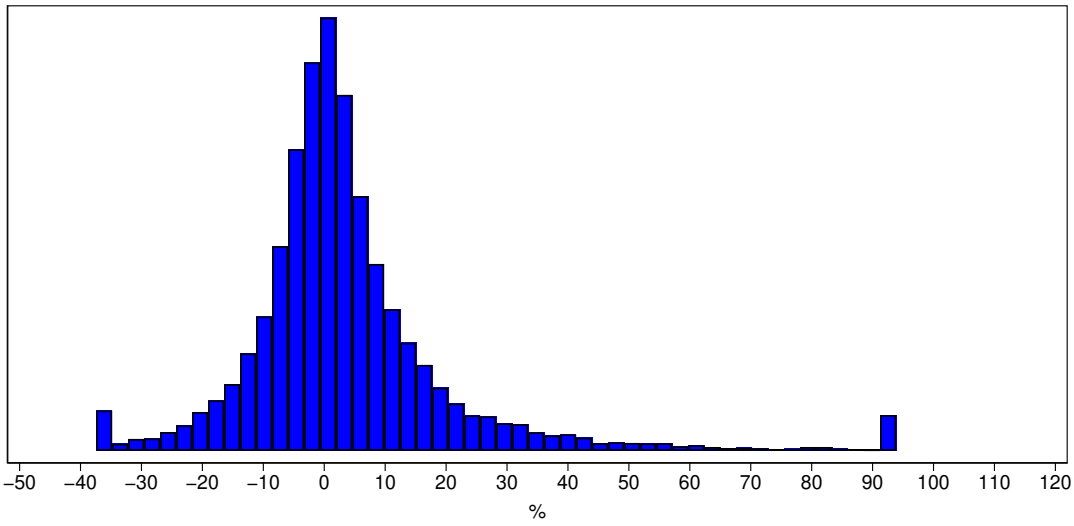


Figure 2: **Stock Price Movements At Trading Resumptions.**
This figure summarizes stock price movements at resumptions, winsorized at the 1st and 99th percentiles. Panel (a) is a histogram of raw returns realized when stock trading resumes. Panel (b) is a histogram of abnormal returns at resumptions, measured as risk-adjusted returns that adjust for market returns between suspension and resumption dates.

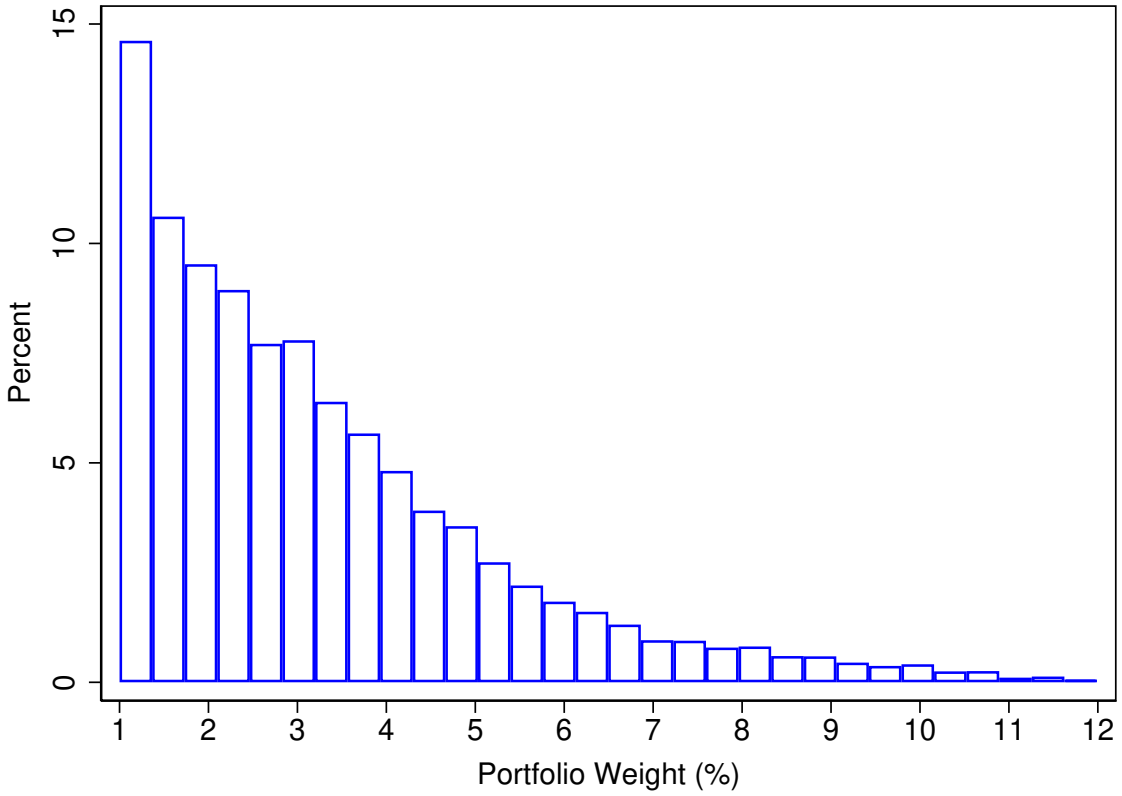


Figure 3: **Fund Portfolio Weight of Suspended Stocks.**
This figure presents histograms of fund portfolio weights in suspended stocks, based on holdings at the end of the quarter before trading resumes. Stock-fund pairs for trading suspension events during 2004–2020 with a reported portfolio weight between 1% and 12% are included.

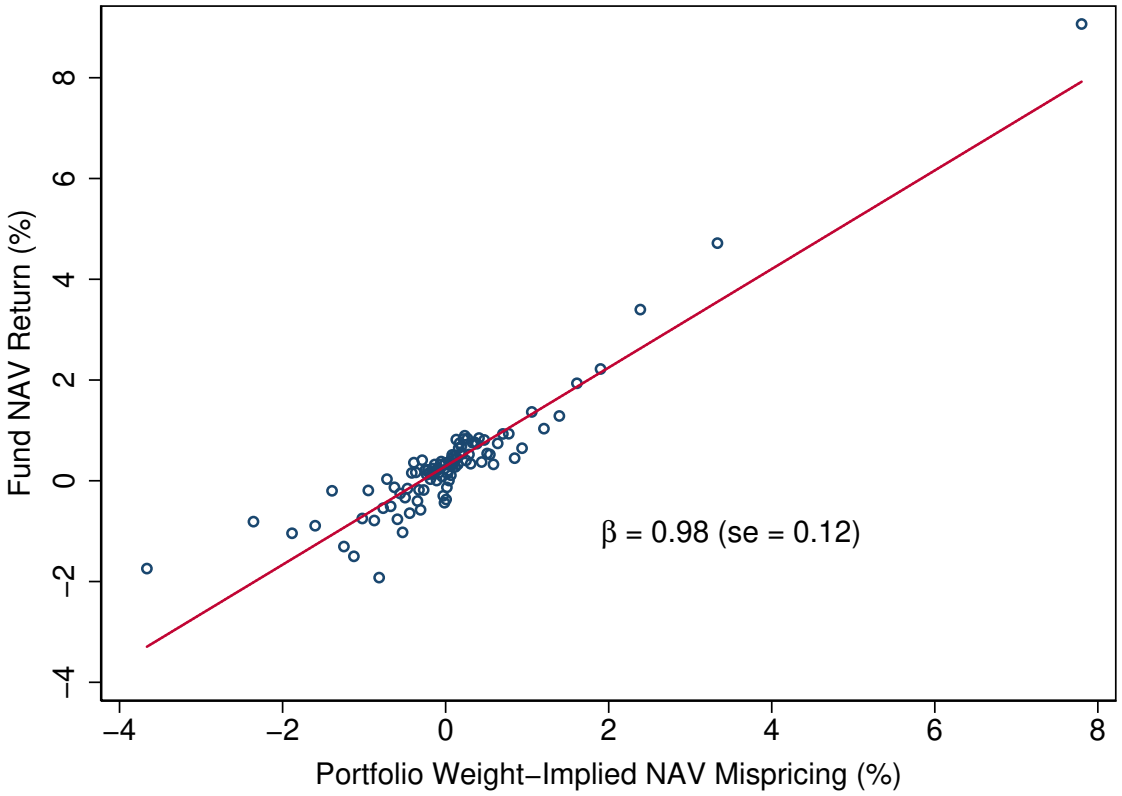


Figure 4: **Fund NAV Movements At Stock Trading Resumptions.**
This figure is a scatter plot that groups suspended fund stock holdings into 100 bins based on their portfolio weight-implied NAV mispricing (i.e., the product of portfolio weight and $ResmRet$). Both axes are measured in percentage points. Fund portfolio holdings are based on disclosed holdings at the end of the quarter before trading resumes. Stock-fund pairs for all trading suspension events with at least a 1% reported portfolio weights between 2004–2020 are included. OLS estimates for slope (β) and heteroskedasticity-robust standard error are reported.

Table 1: **Summary Statistics**

This table presents summary statistics. Panel A summarizes the fund flow sample, where each observation is a fund–quarter for all sample funds and quarters between 2004–2020. *Flow* is quarterly net flow into a fund. *Mispricing* is fund NAV mispricing, measured as the product of suspended holding's portfolio weight and its *ResmRet* (or *ResmAR*), aggregated to the fund level. Fund performance is quarterly abnormal NAV return, and Family Performance is TNA-weighted average performance of funds within a family. Panel B summarizes the internet mutual fund forum sample where each observation is a fund–date for all sample funds and calendar days between July 2017– December 2020. Daily investor activity measures (Thread, Reply, Score, and Like) are the numbers of new posts, replies, impact scores, and user likes of threads related to suspended holdings. $SuspWgt$ is the the total weight of stocks in the fund's portfolio that are suspended. Panel C summarizes the suspension event sample. Visit is the number of institutional investors that visit the firm, and Internet Search is total weekly Baidu Search Index of the firm, both measured during its trading suspension period. $\sigma(AR)$ is the standard deviation of daily stock abnormal returns over the first five trading days after the release day of resumption. SUE is standardized unexpected earnings, announced in the quarter after trading resumption. $MaxWgt$ is the maximum weight of the stock across all fund portfolios, as observed by investors before trading resumption. Mutual Fund Ownership is the fraction of the firm's equity held by mutual funds, and Institutional Ownership is the fraction held by institutional investors excluding mutual funds. *SuspDays* is the suspension event's number of trading days. Earnings Announcement and Other Announcement are the numbers of firm announcements related and unrelated to earnings made during the suspension period. *Obs* and *Unobs* indicate that a measure is calculated based on holdings currently observed and unobserved by investors. Fund TNA and firm market capitalization are in CNY millions.

Panel A: Fund Flow Sample

	N	mean	sd	p1	p50	p99
Flow	29,938	-3.8%	20.8%	-49.4%	-4.0%	75.0%
Obs Mispricing: *ResmRet*	29,938	0.0%	0.6%	-1.2%	0.0%	1.4%
Unobs Mispricing: *ResmRet*	29,938	0.0%	0.3%	-0.6%	0.0%	0.5%
Obs Mispricing: *ResmAR*	29,938	0.0%	0.4%	-1.0%	0.0%	1.2%
Unobs Mispricing: *ResmAR*	29,938	0.0%	0.2%	-0.5%	0.0%	0.4%
Fund Performance	29,938	1.0%	7.7%	-19.4%	0.6%	23.3%
Fund TNA	29,938	2,001.2	3,202.4	104.6	878.3	15,069.8
Fund Age (year)	29,938	5.7	3.7	1.3	4.6	15.9
Fund Ret Vol	29,938	5.4%	3.4%	0.3%	4.9%	16.4%
Purchase Fee	29,938	0.0%	0.0%	0.0%	0.0%	0.0%
Redemption Fee	29,938	0.4%	0.2%	0.0%	0.5%	1.0%
Expense Ratio	29,938	1.6%	0.4%	0.2%	1.8%	2.2%
Family TNA	29,938	33,123.3	32,149.4	775.1	24,483.1	145,651.7
Family Performance	29,938	0.7%	5.3%	-14.0%	0.7%	14.2%
Obs SuspWgt	29,938	0.6%	1.8%	0.0%	0.0%	9.4%
Unobs SuspWgt	29,938	0.2%	0.9%	0.0%	0.0%	4.6%

Table 1: **Summary Statistics - Continued**

Panel B: Internet Mutual Fund Forum Activity Sample

	N	mean	sd	p90	p95	p99	max
Thread	1,530,089	0.001	0.043	0	0	0	11
Reply	1,530,089	0.001	0.199	0	0	0	196
Score	1,530,089	0.003	0.164	0	0	0	47
Like	1,530,089	0.001	0.174	0	0	0	202
Obs SuspWgt	1,530,089	0.8%	2.5%	3.0%	5.3%	11.6%	63.9%
Unobs SuspWgt	1,530,089	0.2%	0.9%	0.4%	1.7%	4.2%	24.8%

Panel C: Suspension Event Sample

	N	mean	sd	p1	p25	p50	p75	p99
Visit: All Institutions	7,570	1.4	10.2	0.0	0.0	0.0	0.0	38.0
Visit: Private Funds	7,570	0.4	3.9	0.0	0.0	0.0	0.0	12.0
Internet Search: PC	9,165	4,795	39,586	0	443	1,401	4,025	40,427
Internet Search: Mobile	7,189	19,317	582,738	178	932	2,480	6,655	59,623
$\|ResmAR\|$	16,385	12.8%	40.2%	0.1%	2.7%	6.3%	13.4%	95.7%
$\sigma(AR)$	16,191	3.2%	2.3%	0.5%	1.8%	2.8%	4.2%	8.9%
SUE	14,998	0.0	1.7	-6.5	-0.6	0.0	0.5	7.4
MaxWgt	16,385	2.0%	2.8%	0.0%	0.0%	0.2%	3.5%	10.0%
Mutual Fund Ownership	16,385	3%	5%	0%	0%	0%	3%	22%
Institutional Ownership	16,385	37%	25%	-1%	12%	39%	58%	85%
Suspension Duration	16,385	28.8	64.4	2.0	5.0	10.0	28.0	204.0
Market Capitalization	16,385	6,381	18,282	172	1,304	3,089	6,325	54,377
Number of Shareholder	16,385	41,811	58,330	4,638	14,763	25,852	47,004	277,468
Book to Market	16,385	0.49	1.19	0.00	0.00	0.00	1.00	4.00
Earnings Announcement	16,385	1.9	4.2	0.0	0.0	1.0	2.0	18.0
Other Announcement	16,385	0.3	0.2	-0.1	0.2	0.3	0.4	0.8

Table 2: **Predict Stock Price Movements at Resumption**

This table reports estimates from regressing *ResmRet*, stock return realized at trading resumption, on ex-ante variables measured over the suspension period: stock market, cumulative earnings surprises (SUE), and an AI trading signal extracted from corporate announcements. SuspDays is the suspension event's number of trading days. SUE is set as zero if no earnings announcement was made during the suspension period. Each observation is a stock trading suspension event between 2004–2020. Columns (1)-(3) include all suspension events. Columns (4)-(5) include events for which the textual content of corporate announcements is available and used to generate a trading signal $(-1, 0, 1)$ from GPT-3.5-Turbo AI model. Heteroskedasticity-robust standard errors are reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: *ResmRet*

	(1)	(2)	(3)	(4)	(5)
Market Return	1.844***	1.806***	1.799***		1.788***
	(0.180)	(0.176)	(0.174)		(0.222)
Log(SuspDays)		0.036***	0.037***		0.046***
		(0.004)	(0.004)		(0.006)
SUE			0.031***		0.018
			(0.008)		(0.011)
AI Signal				0.057***	0.055***
				(0.021)	(0.016)
Intercept	0.030***	-0.060***	-0.060***	0.094***	-0.071***
	(0.004)	(0.012)	(0.012)	(0.004)	(0.017)
N	16,879	16,879	16,879	8,802	8,802
R^2	0.343	0.352	0.356	0.003	0.341

Table 3: **Mutual Fund Flows and NAV Mispricing**

This table reports estimates from regressions of fund flows on the fund's NAV mispricing caused by suspended holdings. Each observation is a fund–quarter pair for quarters between 2006–2020. *Mispricing* is fund NAV mispricing, measured as the product of suspended holding's portfolio weight and its resumption return, aggregated to the fund level. Resumption return is measured with *ResmRet* in columns (1)-(2) and *ResmAR* in columns (3)-(4). Fund performance is quarterly abnormal NAV return, and Family Performance is TNA-weighted average performance of funds within a family. *Obs* and *Unobs* indicate that the measure is calculated based on holdings currently observed and unobserved by investors. Standard errors are clustered at the fund level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: *Flow*

	ResmRet		*ResmAR*	
	(1)	(2)	(3)	(4)
Obs Mispricing	1.72***	1.75***	2.00***	2.01***
	(0.34)	(0.34)	(0.46)	(0.46)
Unobs Mispricing	-0.33	-0.28	0.40	0.49
	(0.62)	(0.62)	(0.65)	(0.66)
Performance	0.33***	0.32***	0.32***	0.31***
	(0.03)	(0.03)	(0.03)	(0.03)
Log(TNA)		-0.01***		-0.01***
		(0.00)		(0.00)
Log(Age)		0.02***		0.02***
		(0.00)		(0.00)
Fund Ret Vol		0.40***		0.40***
		(0.07)		(0.07)
Repurchase Fee		-5.09*		-5.08*
		(2.73)		(2.69)
Redemption Fee		-0.44		-0.47
		(0.90)		(0.89)
Expense Ratio		-1.40***		-1.36***
		(0.49)		(0.49)
Log(Familiy TNA)		0.01***		0.01***
		(0.00)		(0.00)
Family Performance		0.02		0.02
		(0.04)		(0.04)
Year-Quarter Fixed Effects	Y	Y	Y	Y
N	29,938	29,938	29,938	29,938
R^2	0.051	0.059	0.050	0.058
Test: *Obs* Mispricing = *Unobs* Mispricing				
F statistic	9.23	9.11	4.20	3.76
p value	0.002	0.003	0.041	0.053

Table 4: **Mutual Fund Flows and NAV Mispricing: Piecewise Linear Specifications**

This table reports estimates from regressions of fund flows on the fund's NAV mispricing caused by suspended holdings. Each observation is a fund–quarter pair for quarters between 2006–2020. Piecewise linear variables are defined as $Underpricing = \max\{Mispricing, 0\}$ and $Overpricing = \min\{Mispricing, 0\}$, where $Mispricing$ is measured as the product of suspended holding's portfolio weight observed by investors and its resumption return, aggregated to the fund level. Resumption return is measured with $ResmRet$ in columns (1)-(2) and $ResmAR$ in columns (3)-(4). Fund performance is quarterly abnormal NAV return. Fund control variables are the same as in Table 3. Standard errors are clustered at the fund level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: $Flow$

	$ResmRet$		$ResmAR$	
	(1)	(2)	(3)	(4)
Underpricing	2.20***	2.19***	3.00***	3.07***
	(0.39)	(0.39)	(0.56)	(0.56)
Overpricing	-0.02	0.20	0.02	-0.13
	(0.39)	(0.39)	(0.48)	(0.49)
Performance	0.33***	0.32***	0.32***	0.33***
	(0.03)	(0.03)	(0.03)	(0.03)
Fund Controls	N	Y	N	Y
Year-Quarter Fixed Effects	Y	Y	Y	Y
N	29,938	29,938	29,938	29,938
R^2	0.051	0.059	0.051	0.059

Table 5: **Changes in Fund Ownership and NAV Mispricing**

This table reports estimates from regressions of investors' fund ownership on the fund's NAV mispricing caused by suspended holdings. Each observation is a fund–semiyear pair between 2006–2020. In columns (1), (2), and (3), the dependent variable $\Delta Ownership$ is the proportional change in the number of fund shares held by institutional investors, retail investors, and fund company insiders, respectively. *Mispricing* is fund NAV mispricing, measured as the product of suspended holding's portfolio weight and its resumption abnormal return, aggregated to the fund level. Event Inclusion indicates that *Mispricing* is calculated based on suspension events with the corresponding minimum duration. Fund control variables include the fund's performance, log size, log age, return volatility, and expense ratio. Standard errors are clustered at the fund level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: $\Delta Ownership$

		Institution	Retail	Insider
Event Inclusion		(1)	(2)	(3)
>1d	Mispricing	1.51**	0.25**	0.40
		(0.59)	(0.11)	(0.66)
	R^2	0.065	0.247	0.040
≥ 10d	Mispricing	1.74***	0.44***	-0.28
		(0.62)	(0.15)	(0.65)
	R^2	0.065	0.247	0.041
≥ 100d	Mispricing	4.53***	1.05***	1.44*
		(1.36)	(0.23)	(0.86)
	R^2	0.065	0.247	0.040
	Fund Controls	Y	Y	Y
	Year-Semiyear Fixed Effects	Y	Y	Y
	N	14,031	14,636	12,567

Table 6: **Investor Internet Forum Activities and Suspended Stock Holdings**

This table reports estimates from regressions of investor internet forum activity measures on suspended fund stock holdings. Each observation is a fund-day pair for calendar days between July 2017–December 2020. In columns (1)–(4), the dependent variables are the daily numbers of new posts, replies, impact scores, and user likes of threads related to suspended holdings. In Panel A, regressor $SuspWgt$ is the total weight of stocks in the fund's portfolio that are suspended. In Panel B, regressors $SuspWgt \in (0, 5\%]$, $SuspWgt \in (5, 10\%]$, and $SuspWgt > 10\%$ are dummy variables that equal one if $SuspWgt$ is within $(0, 5\%]$, $(5, 10\%]$, and $> 10\%$, respectively. *Obs* and *Unobs* indicate that stock holdings that are currently observed and unobserved by investors. Standard errors are two-way clustered at the stock and week levels and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Panel A: Continuous Regressors

	(1)	(2)	(3)	(4)
	Thread	Reply	Score	Like
Obs SuspWgt	0.137***	0.133**	0.424***	0.056**
	(0.033)	(0.063)	(0.099)	(0.024)
Unobs SuspWgt	0.041	0.052	0.139	0.030
	(0.034)	(0.055)	(0.111)	(0.019)
Fund Fixed Effects	Y	Y	Y	Y
Date Fixed Effects	Y	Y	Y	Y
N	1.53m	1.53m	1.53m	1.53m
R^2	0.020	0.004	0.016	0.002
Test: *Obs* SuspWgt = *Unobs* SuspWgt				
F statistic	18.79	4.34	15.68	2.13
p value	0.000	0.039	0.000	0.146

Panel B: Dummy Regressors

	(1)	(2)	(3)	(4)
	Thread	Reply	Score	Like
Obs SuspWgt$\in (0, 5\%]$	0.001***	0.001***	0.003***	0.001***
	(0.000)	(0.000)	(0.001)	(0.000)
Obs SuspWgt$\in (5\%, 10\%]$	0.007***	0.005***	0.023***	0.001**
	(0.002)	(0.001)	(0.005)	(0.001)
Obs SuspWgt$> 10\%$	0.020***	0.023*	0.063***	0.009**
	(0.006)	(0.012)	(0.017)	(0.004)
Unobs SuspWgt$\in (0, 5\%]$	-0.000	-0.001	-0.000	0.000
	(0.000)	(0.001)	(0.001)	(0.000)
Unobs SuspWgt$\in (5\%, 10\%]$	0.007	0.008	0.022	0.004
	(0.005)	(0.005)	(0.015)	(0.003)
Unobs SuspWgt$> 10\%$	0.005	-0.001	0.029	-0.000
	(0.006)	(0.001)	(0.030)	(0.001)
Fund Fixed Effects	Y	Y	Y	Y
Date Fixed Effects	Y	Y	Y	Y
N	1.53m	1.53m	1.53m	1.53m
R^2	0.019	0.004	0.015	0.002

Table 7: **Exposure to Mutual Funds and Corporate Visits During Suspensions**

This table reports estimates from regressing the number of corporate visits on the stock's exposure to mutual funds. Each observation is a suspension event for SZSE-listed stocks between 2012–2020. The dependent variable is the number of corporate visits by financial institutions during the suspension period. Visits by all institutions are used in columns (1)-(2), and visits by private funds (e.g., hedge funds) are used in columns (3)-(4). $MaxWgt$ is the maximum weight of the stock across all fund portfolios, as observed by investors before trading resumption. Mutual Fund Ownership is the fraction of the firm's equity held by mutual funds, excluding the fund with $MaxWgt$, and Institutional Ownership is the fraction held by institutional investors excluding mutual funds. SuspDays is the suspension event's number of trading days. Earnings Announcement and Other Announcement are the numbers of firm announcements related and unrelated to earnings made during the suspension period. Standard errors are clustered at the stock level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: Number of Corporate Visits

	All Institutions		Private Funds	
	(1)	(2)	(3)	(4)
MaxWgt	23.15***	22.01***	9.04***	8.74***
	(7.51)	(7.38)	(2.88)	(2.83)
Mutual Fund Ownership	-2.28	-1.31	-1.87	-1.61
	(4.68)	(4.65)	(1.61)	(1.59)
Institutional Ownership	-1.50*	-1.61*	-0.69**	-0.72**
	(0.81)	(0.83)	(0.31)	(0.32)
Log(SuspDays)	0.81***	0.48***	0.21***	0.12**
	(0.10)	(0.16)	(0.03)	(0.06)
Log(MarketCap)	1.34***	1.51***	0.46***	0.50***
	(0.31)	(0.33)	(0.12)	(0.13)
Log(Shareholder)	0.13	0.09	0.04	0.03
	(0.22)	(0.22)	(0.08)	(0.08)
Book to Market		2.64***		0.71***
		(0.83)		(0.27)
Log(EarningsAnn)		1.14***		0.29*
		(0.44)		(0.16)
Log(OtherAnn)		0.12		0.04
		(0.25)		(0.09)
Year-Quarter Fixed Effects	Y	Y	Y	Y
City Fixed Effects	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
N	7,558	7,558	7,558	7,558
R^2	0.06	0.06	0.05	0.05

Table 8: **Exposure to Mutual Funds and Internet Searches During Suspensions**

This table reports estimates from regressing internet searches during a stock's suspension on the stock's exposure to mutual funds. Each observation is a suspension event between 2006–2020. The dependent variable is the natural log of the firm's total Baidu Search Index during the suspension period. Searches from PCs are used in columns (1)-(2), and searchs from mobile devices (for 2011-2020) are used in columns (3)-(4). $MaxWgt$ is the maximum weight of the stock across all fund portfolios, as observed by investors before trading resumption. Mutual Fund Ownership is the fraction of the firm's equity held by mutual funds, excluding the fund with $MaxWgt$, and Institutional Ownership is the fraction held by institutional investors excluding mutual funds. SuspDays is the suspension event's number of trading days. Earnings Announcement and Other Announcement are the numbers of firm announcements related and unrelated to earnings made during the suspension period. Standard errors are clustered at the stock level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: Internet Search Index

	PC		Mobile Devices	
	(1)	(2)	(3)	(4)
MaxWgt	0.97***	0.95***	0.54	0.62*
	(0.35)	(0.36)	(0.36)	(0.36)
Mutual Fund Ownership	-0.30	-0.29	-0.59*	-0.63**
	(0.25)	(0.25)	(0.31)	(0.31)
Institutional Ownership	-0.16***	-0.17***	-0.11**	-0.11**
	(0.05)	(0.05)	(0.05)	(0.05)
Log(SuspDays)	0.99***	0.95***	0.98***	0.95***
	(0.01)	(0.01)	(0.01)	(0.01)
Log(MarketCap)	0.25***	0.25***	0.18***	0.17***
	(0.02)	(0.02)	(0.02)	(0.02)
Log(Shareholder)	0.34***	0.34***	0.48***	0.48***
	(0.02)	(0.02)	(0.02)	(0.02)
Book to Market		-0.06		-0.20***
		(0.09)		(0.06)
Log(EarningsAnn)		0.08***		0.08***
		(0.02)		(0.02)
Log(OtherAnn)		0.01		0.00
		(0.01)		(0.01)
Year-Quarter Fixed Effects	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
N	8,762	8,762	7,138	7,138
R^2	0.82	0.82	0.83	0.83

Table 9: **Exposure to Mutual Funds and Stock Price Informativeness at Trading Resumptions: the Magnitude of Price Movement**

This table reports estimates from regressing the informativeness of stock price movement at resumption on the stock's exposure to mutual funds. Each observation is a suspension event between 2004–2020. The dependent variable is $|ResmAR|$, the absolute value of stock abnormal return at trading resumption. Sample in columns (1)-(2) includes all suspension events, and sample in columns (3)-(4) includes only events that are not affected by daily price limits on the resumption day. $MaxWgt$ is the maximum weight of the stock across all fund portfolios, as observed by investors before trading resumption. $\sigma(AR)$ is the standard deviation of daily stock abnormal returns over the first five trading days after the release day of resumption. Mutual Fund Ownership is the fraction of the firm's equity held by mutual funds, excluding the fund with $MaxWgt$, and Institutional Ownership is the fraction held by institutional investors excluding mutual funds. SuspDays is the suspension event's number of trading days. Earnings Announcement and Other Announcement are the numbers of firm announcements related and unrelated to earnings made during the suspension period. Standard errors are clustered at the stock level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: $|ResmAR|$

	All Suspension Events		Events w/o Price Limits	
	(1)	(2)	(3)	(4)
MaxWgt	0.54***	0.51***	1.41***	1.29***
	(0.20)	(0.19)	(0.36)	(0.32)
$\sigma(AR)$	0.97***	0.90***	0.53	0.42
	(0.17)	(0.17)	(0.33)	(0.32)
Mutual Fund Ownership	0.26***	0.26***	0.43***	0.44***
	(0.08)	(0.08)	(0.14)	(0.13)
Institutional Ownership	0.08***	0.07***	0.16***	0.15***
	(0.03)	(0.03)	(0.04)	(0.04)
Log(SuspDays)	0.08***	0.03***	0.11***	0.04***
	(0.01)	(0.00)	(0.02)	(0.01)
Log(MarketCap)	-0.09***	-0.08***	-0.14***	-0.13***
	(0.02)	(0.02)	(0.03)	(0.03)
Log(Shareholder)	0.04***	0.04***	0.07***	0.07***
	(0.01)	(0.01)	(0.02)	(0.02)
Book to Market		0.12**		0.19*
		(0.06)		(0.10)
Log(EarningsAnn)		0.17***		0.28***
		(0.03)		(0.05)
Log(OtherAnn)		0.01		-0.00
		(0.01)		(0.03)
Year-Quarter Fixed Effects	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
N	16,191	16,191	8,809	8,809
R^2	0.11	0.13	0.12	0.16

Table 10: **Exposure to Mutual Funds and Stock Price Informativeness at Trading Resumptions: Sensitivity to Firm Cash Flows**

This table reports estimates from regressing a firm's future earnings surprise on the interaction between the stock's exposure to mutual funds and its price movement at trading resumption. Each observation is a suspension event between 2004–2020. The dependent variable is the firm's standardized unexpected earnings (SUE) announced in the quarter after trading resumption. Stock price movement $PriceMove$ is measured with $ResmRet$ in columns (1)-(2) and $ResmAR$ in columns (3)-(4). $MaxWgt$ is the maximum weight of the stock across all fund portfolios, as observed by investors before resumption. Mutual Fund Ownership is the fraction of the firm's equity held by mutual funds, excluding the fund with $MaxWgt$, and Institutional Ownership is the fraction held by institutional investors excluding mutual funds. SuspDays is the suspension event's number of trading days. Earnings Announcement and Other Announcement are the numbers of firm announcements related and unrelated to earnings made during the suspension period. Standard errors are clustered at the stock level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: SUE

	$ResmRet$		$ResmAR$	
	(1)	(2)	(3)	(4)
MaxWgt × PriceMove	4.44**	4.26**	4.76*	4.65*
	(2.11)	(2.11)	(2.67)	(2.68)
PriceMove	0.08**	0.09**	0.09**	0.10**
	(0.03)	(0.03)	(0.04)	(0.04)
MaxWgt	-1.42*	-1.38*	-1.31*	-1.28*
	(0.77)	(0.78)	(0.77)	(0.78)
Mutual Fund Ownership	1.02**	1.00**	1.06**	1.04**
	(0.44)	(0.44)	(0.44)	(0.44)
Institutional Ownership	0.12	0.11	0.12	0.12
	(0.08)	(0.08)	(0.08)	(0.08)
Log(SuspDays)	-0.02*	-0.04***	-0.02*	-0.04***
	(0.01)	(0.02)	(0.01)	(0.02)
Log(MarketCap)	0.13***	0.12***	0.12***	0.12***
	(0.03)	(0.03)	(0.03)	(0.03)
Log(Shareholder)	-0.11***	-0.10***	-0.10***	-0.10***
	(0.03)	(0.03)	(0.03)	(0.03)
Book to Market		-0.25***		-0.25***
		(0.08)		(0.08)
Log(EarningsAnn)		0.03		0.04
		(0.04)		(0.04)
Log(OtherAnn)		0.05		0.05*
		(0.03)		(0.03)
Year-Quarter Fixed Effects	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
N	14,998	14,998	14,998	14,998
R^2	0.04	0.04	0.04	0.04

Internet Appendix

"Information Acquisition by Mutual Fund Investors"

IA.1. Model Proofs

Proof of Lemma 1. Under the model's distributional assumption, it is standard that an investor's $t = 1$ optimal investment choice is

$$x(s_i, p) = \frac{\mathbb{E}[v|s_i, p] - p}{\rho Var[v|s_i, p]}, \tag{IA.1}$$

where

$$\mathbb{E}[v|s_i, p] = v_0 + Cov\Big[v, \begin{pmatrix} s_i \\ p \end{pmatrix}\Big]' Var\Big[\begin{pmatrix} s_i \\ p \end{pmatrix}\Big]^{-1} \begin{pmatrix} s_i - v_0 \\ p - p_0 \end{pmatrix}, \tag{IA.2}$$

$$Var[v|s_i, p] = \tau_v^{-1} - Cov\Big[v, \begin{pmatrix} s_i \\ p \end{pmatrix}\Big]' Var\Big[\begin{pmatrix} s_i \\ p \end{pmatrix}\Big]^{-1} Cov\Big[v, \begin{pmatrix} s_i \\ p \end{pmatrix}\Big]. \tag{IA.3}$$

Using the conjectured price function (1), the demand in $(IA.1)$ can be written as

$$x(s_i, p) = \frac{\tau_s}{\rho} s_i + \zeta(p), \tag{IA.4}$$

where ζ is an affine function of p. By law of large numbers, the aggregate demand

$$X(p) = \frac{\tau_s}{\rho} \int_0^1 s_i \, \mathrm{d}i + \zeta(p) + u = \frac{\tau_s}{\rho} v + \zeta(p) + u, \tag{IA.5}$$

so for market makers, curve $X(\cdot)$ is observationally equivalent to $\frac{\tau_s}{\rho} v + u$, and equilibrium price satisfies $p = \mathbb{E}[v|\frac{\tau_s}{\rho} v + u]$. Since $(v, \frac{\tau_s}{\rho} v + u)$ is jointly normal, this implies

$$p = \underbrace{v_0}_{p_0} + \underbrace{\frac{\tau_u \tau_s^2}{\rho^2 \tau_v + \tau_u \tau_s^2}}_{\gamma} (v - v_0) + \underbrace{\frac{\rho \tau_u \tau_s}{\rho^2 \tau_v + \tau_u \tau_s^2}}_{\lambda} u. \tag{IA.6}$$

Substitute γ and λ into $(IA.1)$ and collect terms, it follows that $\zeta(p) = -\frac{\tau_s}{\rho} p$, which in turn leads to the optimal demand schedule in (2).

Next, using the values of γ and λ,

$$Var[v|p] = \tau_v^{-1} - \frac{Cov[v,p]^2}{Var[p]} = \frac{\rho^2}{\rho^2\tau_v + \tau_u\tau_s^2}, \tag{IA.7}$$

rearranging which gives $\Phi = \frac{\tau_u\tau_s^2}{\rho^2}$ in Lemma 1. Moreover, equation (IA.6) implies

$$Var[p - v_0] = \frac{\tau_u\tau_s^2}{\tau_v(\rho^2\tau_v + \tau_u\tau_s^2)}. \tag{IA.8}$$

Given (IA.7), we have $\rho^2\tau_v + \tau_u\tau_s^2 = \rho^2(\Phi + \tau_v)$, and hence

$$Var[p - v_0] = \frac{\tau_u\tau_s^2}{\rho^2\tau_v(\Phi + \tau_v)} = \frac{1}{\tau_v} - \frac{1}{\Phi + \tau_v}. \tag{IA.9}$$

Proof of Proposition 1. Given the model setup, conditional on s_i, v_f is normally distributed. At $t = 1$, if $M = 0$, the investor chooses

$$y(s_i) = \frac{\mathbb{E}[v_f|s_i] - p_f}{\rho Var[v_f|s_i]}, \tag{IA.10}$$

where

$$\mathbb{E}[v_f|s_i] - p_f = \theta(\mathbb{E}[v|s_i] - v_0) = \frac{\theta\tau_s}{\tau_v + \tau_s}(s_i - v_0), \tag{IA.11}$$

$$Var[v_f|s_i] = \theta^2 Var[v|s_i] + (1-\theta)^2 Var[\omega] = \frac{\theta^2}{\tau_v + \tau_s} + \frac{(1-\theta)^2}{\tau_\omega}. \tag{IA.12}$$

Since $\int_0^1 s_i \,\mathrm{d}i = v$, investors' total investment in the fund is

$$\int_0^1 y_i \,\mathrm{d}i = \frac{\theta\tau_s}{(\tau_v + \tau_s)\rho Var[v_f|s_i]}(v - v_0). \tag{IA.13}$$

Meanwhile, for any equilibrium price p, the mispricing of fund shares is

$$\theta(p - v_0) = \theta\gamma(v - v_0) + \theta\lambda u. \tag{IA.14}$$

Since $\gamma > 0$, as shown in (IA.6), and $Cov[v, u] = 0$, it follows that $Cov[\int_0^1 y_i \,\mathrm{d}i, \theta(p - v_0)] > 0$.

Proof of Lemma 2. In the first step, we derive the investor's expected utility at $t = 1$ when the asset is tradable. Substitute (IA.1) into this conditional expected utility and collect

terms,

$$V(s_i, p) = -\exp\Big(-\rho W_0 - \frac{(\mathbb{E}[v|s_i, p] - p)^2}{2Var[v|s_i, p]}\Big). \tag{IA.15}$$

The optimal demand schedule (2) implies that $\mathbb{E}[v|s_i, p] - p = \tau_s Var[v|s_i, p](s_i - p)$, hence

$$V(s_i, p) = -\exp\Big(-\rho W_0 - \frac{1}{2}\tau_s^2 Var[v|s_i, p](s_i - p)^2\Big). \tag{IA.16}$$

Since $s_i - p$ is normal with mean zero and variance $Var[s_i - p]$, we can rewrite $(s_i - p)^2$ as $Var[s_i - p] \cdot z$, where z follows a chi-square distribution with one degree of freedom: $z \sim \chi^2(1)$. Using the moment generating function of z, the investor's $t = 0$ expectation of $V(s_i, p)$ is

$$\mathbb{E}[V(s_i, p)] = -e^{-\rho W_0}\Big(1 + \tau_s^2 Var[v|s_i, p]Var[s_i - p]\Big)^{-1/2}. \tag{IA.17}$$

To simplify the equation above, it can be verified, with the values of γ and λ, that

$$\tau_s Var[v|s_i, p]Var[s_i - p] = Var[v|p]. \tag{IA.18}$$

Therefore

$$\mathbb{E}[V(s_i, p)] = -e^{-\rho W_0}\sqrt{\frac{\tau_v + \Phi}{\tau_v + \tau_s + \Phi}}, \tag{IA.19}$$

which is strictly increasing and concave in τ_s on $\mathbb{R}_+$.

In the second step, we derive the investor's expected utility at $t = 1$ when the risky asset non-tradable. Substitute (IA.10) into $\mathbb{E}[u(W_i)|s_i, M = 0]$, it follows that

$$V_f(s_i) = -\exp\Big(-\rho W_0 - \frac{(\mathbb{E}[v_f|s_i] - p_f)^2}{2Var[v_f|s_i]}\Big). \tag{IA.20}$$

Recognize that in

$$(\mathbb{E}[v_f|s_i] - p_f)^2 = \frac{\theta^2\tau_s^2}{(\tau_v + \tau_s)^2}(s_i - v_0)^2, \tag{IA.21}$$

variable $(s_i - v_0)$ is normally distributed with zero mean, and we can rewrite $(s_i - v_0)^2 = (\tau_v^{-1} + \tau_s^{-1}) \cdot z$, where z follows a chi-square distribution with one degree of freedom: $z \sim \chi^2(1)$.

Using the moment generating function of z, the investor's $t = 0$ expectation of $V_f(s_i)$ is

$$\mathbb{E}[V_f(s_i)] = -e^{-\rho W_0}\left(1 + \frac{\tau_s\tau_\omega}{\tau_v(\tau_\omega + (\frac{1}{\theta} - 1)^2(\tau_v + \tau_s))}\right)^{-1/2}, \tag{IA.22}$$

which is also concave in τ_s for any θ.

In the last step, we characterize the equilibrium. At $t = 0$, the investor takes price p, and hence its informativeness Φ, as given and chooses τ_s to maximize

$$\Pi(\tau_s) = q\mathbb{E}[V(s_i, p)] + (1 - q)\mathbb{E}[V_f(s_i)] - c(\tau_s). \tag{IA.23}$$

Since c is strictly convex, the objective Π is a continuous and strictly concave function of τ_s. The investor's optimal choice is then characterized by first-order condition

$$q\frac{\partial\mathbb{E}[V(s_i, p)]}{\partial\tau_s} + (1 - q)\frac{\partial\mathbb{E}[V_f(s_i)]}{\partial\tau_s} - c'(\tau_s) = 0. \tag{IA.24}$$

If an equilibrium exists, every investor chooses τ_s given $\Phi = \frac{\tau_s^2\tau_u}{\rho^2}$. In equilibrium, τ_s solves equation (4) in the text:

$$q \cdot \psi(\tau_s) + (1 - q)\varphi(\tau_s, \theta) = c'(\tau_s), \tag{IA.25}$$

where

$$\psi(\tau_s) = 2e^{-\rho W_0}\left(\tau_v + \frac{\tau_s^2\tau_u}{\rho^2}\right)^{1/2}\left(\tau_v + \tau_s + \frac{\tau_s^2\tau_u}{\rho^2}\right)^{-3/2} \tag{IA.26}$$

is strictly decreasing on $\mathbb{R}_+$ and lower bounded by zero, and

$$\varphi(\tau_s, \theta) = 2e^{-\rho W_0}\tau_\omega(\tau_v + \tau_s)^{-3/2}\left(\frac{\tau_v}{(\tau_\omega + (\frac{1}{\theta} - 1)^2\tau_v)(\tau_\omega + (\frac{1}{\theta} - 1)^2(\tau_v + \tau_s))}\right)^{1/2} \tag{IA.27}$$

is strictly decreasing in τ_s and strictly increasing in θ. Thus, the left hand side of (IA.25) is a continuous function that is positive at $\tau_s = 0$, strictly decreasing in τ_s, and approaches zero as τ_s goes to infinity. Since the right hand side satisfies $c'(0) = 0$ and is continuous and strictly increasing, there exists a unique equilibrium.

IA.2. Processing Announcements with AI

This section explains how we use OpenAI's GPT-3.5-turbo Large Language Mode (LLM) to process the textual information in corporate announcements.

IA.2.1. Prepare Textual Information

We begin with all announcements made during the suspension period and exclude earnings announcements, for which the information is already quantified by our earnings surprise measure. Next, we filter, clean, and standardize the raw textual information.

To remove uninformative briefings, we require the announcement text to be no shorter than 50 Chinese characters. In some suspension events, the firm regularly releases announcements with almost identical content. We remove such repetitive announcements as follows. For each announcement, we calculate a textual similarity score based on the generalized edit distance between the content of the announcement and every subsequent announcement made during the same suspension event. If multiple announcements are highly similar, we keep only the latest one within the suspension event. We then sort all filtered announcements of a suspension event by announcement date and concatenate them into a single string as input.

IA.2.2. Prompts

The GPT-3.5-turbo is a chat-based model that simulates a conversation between the user and a system, which requires high-level instructions that help guide the model's responses to specific instructions in our message. We write our prompts in Chinese language. This not only improves the AI model's performance in processing information in the context of the Chinese stock market, but also helps avoid potential lead-ahead bias stemming from the model's training data. Below are our prompts.

High-level instructions:

> 您是一位有丰富经验的中国股票投资专家。请记住，停牌期间如果宣布重大资产或债务重组成功，复牌后股价往往大涨，而如果重大项目失败，复牌后股价通常下跌。然而，重大事件的筹划，以及停复牌，分红派息，并购，发行证券等并一定不意味着公司股价会因此而上升或下降。股价取决于事件的结果是否优于预期。

Content of our message:

> 以下为某上市公司在停牌期间发布的公告。回复'涨'如果您预测复牌后股价会上涨，'跌'如果您预测股价会下跌，或者'不知道'如果您没有把握判断未来股价方向。不要解释具体原因。这里是公告内容： [input announcement here].

Our prompt instructs the AI model to act as an expert Chinese stock investor and evaluate the impact of corporate announcements on stock prices, with an emphasis on the progress (e.g., success or failure) of major events. The AI's response is a single word indicating its prediction of whether stock price will go "up" or "down" after trading resumes. If the AI is uncertain, it will respond with "I don't know". We convert these responses into a numerical variable, which takes values -1, 0, or 1.

IA.3. Holdings Observed and Unobserved by Investors

This section provides details on how we determine suspended fund stock holdings observed and unobserved by investors at different points of time in our fund-level samples.

IA.3.1. Internet Mutual Fund Forum Investor Activities Sample

This is a fund–day panel of investor activities on EastMoney, an internet forum used by Chinese mutual fund investors, for all sample funds and calendar days between July 2017–December 2020.

(a) Observed suspended holdings (*obs*) on a day:

i. We inner join a dataset of currently suspended stock-day pairs with all fund holdings at the end of the two preceding quarters that are disclosed before the current day. We then keep the most recently disclosed stock–day–fund observation if the trio is matched to two portfolio snapshots. Next, we aggregate portfolio weight of suspended holdings to the fund-day level.

ii. These are suspended holdings suggested by the portfolio snapshot that investors can observe on the day.

(b) Unobserved suspended holdings (*ubs*) on a day:

i. We inner join a dataset of currently suspended stock-day pairs with all fund holdings for which the portfolio snapshot date is before the resumption date and are disclosed after the current day. We keep the earliest fund–day–stock observation if the trio is matched to two portfolio snapshots. We then exclude a fund–day–stock observation if it is in the observed suspended holdings above. Next, we aggregate portfolio weight of suspended holdings to the fund–day level.

ii. These are suspended holdings that investors would have believed to exist if they had more timely information on fund holdings on the day.

IA.3.2. Fund Flows Sample

This is a fund–quarter panel for all sample funds between 2004–2020.

(a) Observed suspended holdings (*obs*) in quarter t:

i. To ensure that our quarterly flow observation is associated with only information before trading resumption, we create a dataset of stock suspension events for which suspension begins at least 10 trading days before, and trading resumes no more

than 30 trading days after, the end of quarter t. We then inner join this dataset with all fund holdings at the end of quarter $t-1$.

ii. These are suspended stock holdings suggested by the portfolio snapshot that investors can observe during the quarter of flow measurement.

(b) Unobserved suspended holdings (ubs) in quarter t:

i. We inner join the same dataset of stock suspension events with all fund holdings at the end of quarter t. We then exclude a stock–event–fund if it is among observed suspended holdings in (a).

ii. These are suspended holdings that investors would have believed to exist if they had more timely information on fund holdings during the quarter of flow measurement.

IA.4. Internet Searches Around Suspensions and Resumptions

Internet searches capture the extent to which investors access public information about a firm. To estimate how such activities change around suspension and resumption events, we separately regress the natural logarithm of a stock's weekly Baidu Search Index on two groups of weekly dummy variables. These dummies indicate the time intervals relative to suspension and resumption events. Specifically, suspension dummies equal one for weeks ranging from -1 to -7 and beyond -7 weeks before suspension, and from 1 to 7 and beyond 7 weeks after suspension. Resumption dummies are defined in a similar manner. For post-suspension dummies and pre-resumption dummies to equal one, we require the stock to be in suspension during the week. When estimating the coefficients of suspension dummies, we exclude stock-week pairs within the $[-7, +10]$ window around resumption, and vice versa for resumption dummies.

We use search indexes from mobile devices and PCs as our dependent variables. In all specifications, we control for the natural logarithm of the number of shareholders, the

book-to-market ratio, stock fixed effects, and week fixed effects.

Figure IA.4 displays our estimation results. Panel A shows that before suspensions, mobile search index is stable and similar to, or slightly lower than, stock-week pairs that are not around suspension events. Once the suspension starts, search index jumps up by 15% in the first week and then quickly declines, until becoming 40% lower than usual after the seventh week. This pattern suggests that when a stock enters a prolonged suspension, investors gradually lose interest in learning about the firm. Comparing Panels A and B, our estimates based on searches from mobile devices and PCs are very similar.

Unlike suspensions, which are unanticipated, investors update their beliefs on the likelihood of resumptions as firms update on their corporate progress. Consistent with our prediction that the chance of trading increases information production, Panels C and D show that search index gradually increases from the fourth week before resumption. Search index has a sudden spike of roughly 30% greater than usual during the first week of trading resumption, after which the index slowly converges towards normal levels.

IA.5. Measurement of Exposure to Mutual Funds

In Section 5, our measure of a suspended stock's exposure to mutual funds, $MaxWgt$, is the maximum portfolio weight across all funds. This section presents robustness tests that replace $MaxWgt$ with $NFundLargeWgt$, which is the number of mutual funds with at least 3% of portfolio weight in the suspended stock, as observed by investors before trading resumption. Accordingly, we calculate the control variable Mutual Fund Ownership by excluding the equity stake held by these funds.

Panels A, B, C, and D of Table IA.5 report results of re-estimating the specifications in Tables 7, 8, 9, and 10. Overall, the estimates are qualitatively similar to our main results, with comparable quantitative magnitudes.

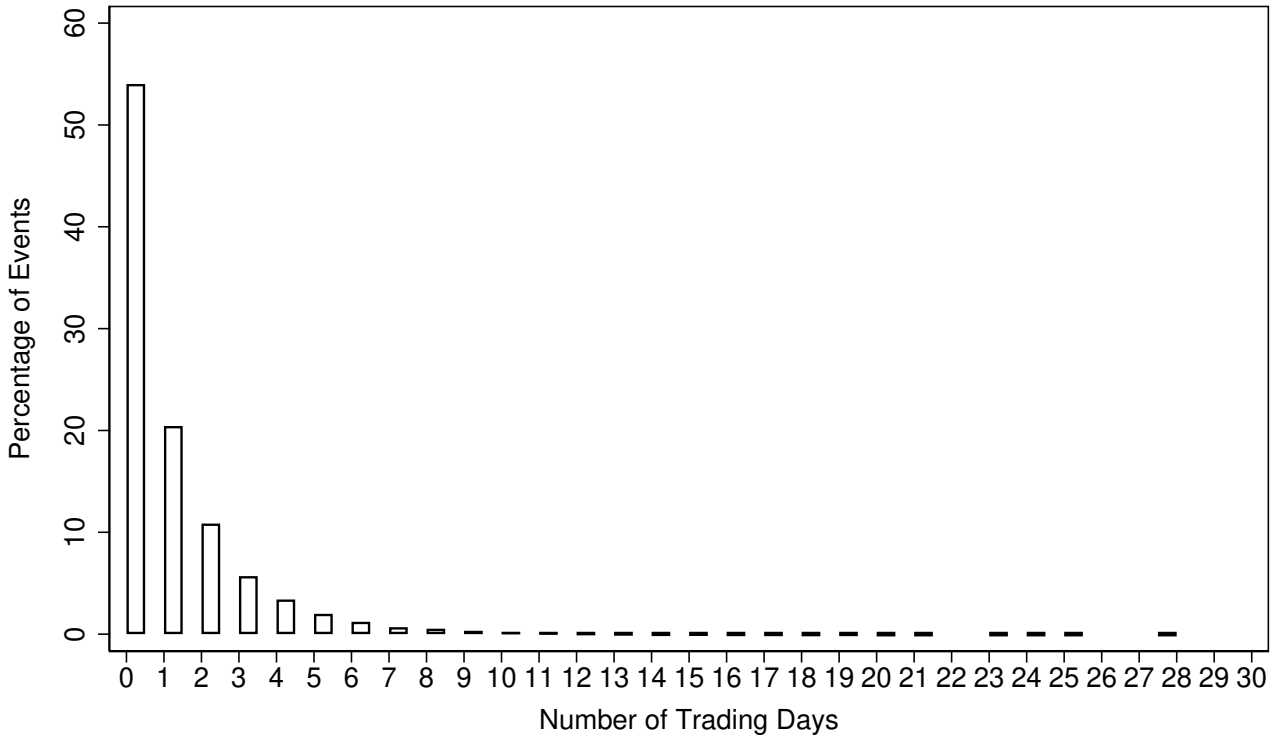


Figure IA.1: **Number of Trading Days of Hitting Price Limits at Resumption.** This figure presents a histogram for the number of consecutive trading days that a stock hits daily price limits at resumption.

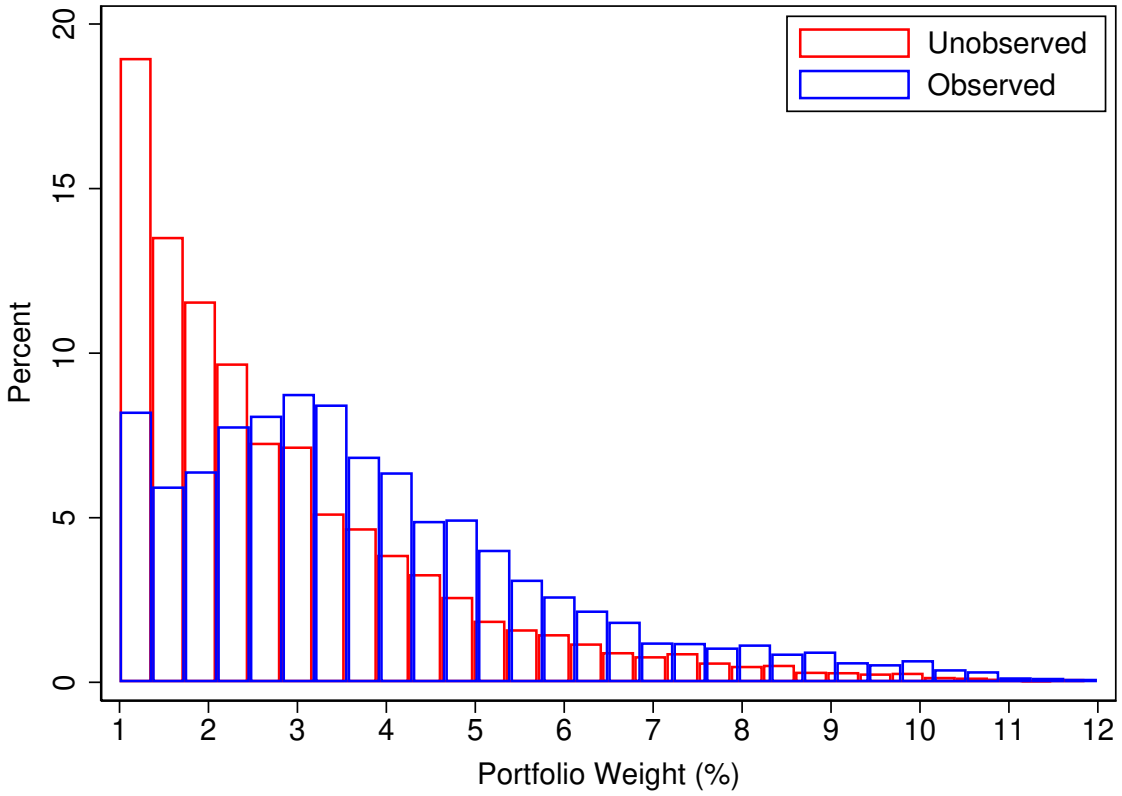


Figure IA.2: **Fund Portfolio Weight of Suspended Stocks: Visibility of Holdings.** This figure presents histograms of fund portfolio weights in suspended stocks, based on holdings at the end of the quarter before trading resumes. Stock-fund pairs for trading suspension events during 2004–2020 with a reported portfolio weight between 1% and 12% are included. A suspended holding is observed by investors if and only if the portfolio snapshot is disclosed before trading resumes.

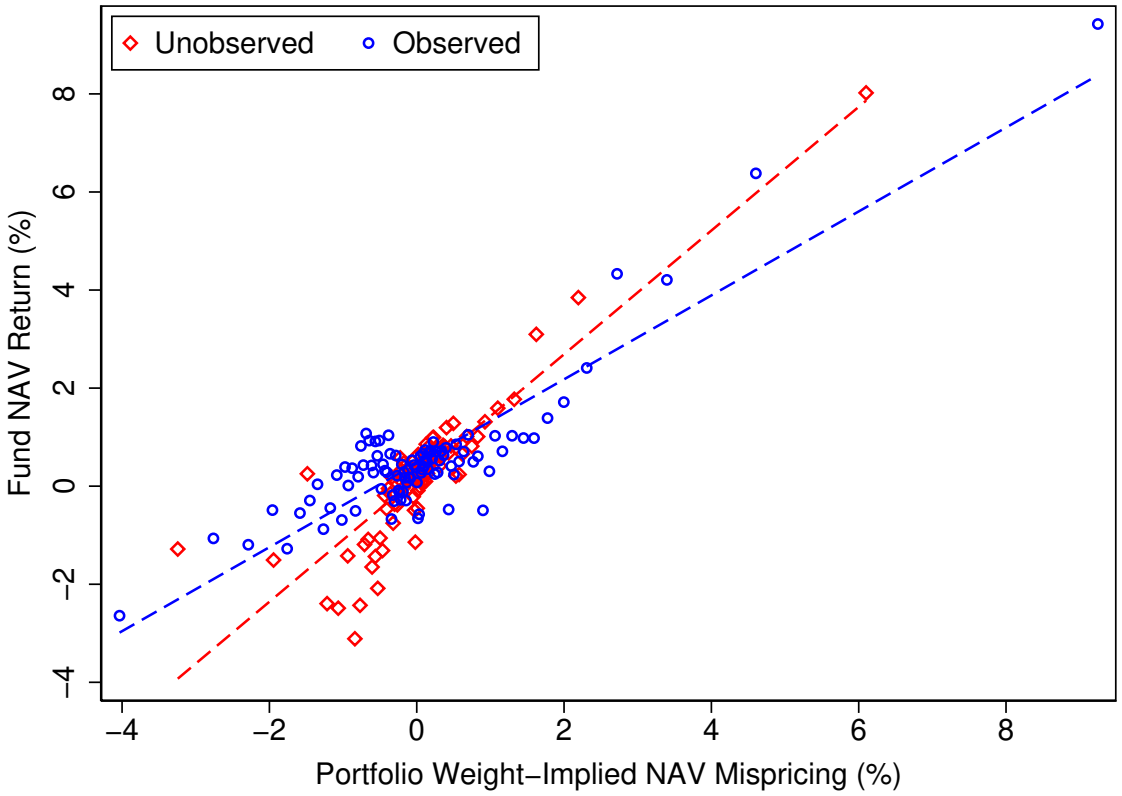


Figure IA.3: **Fund NAV Movements At Stock Trading Resumptions: Visibility of Holdings.**
This figure produces the scatter plot in Figure 4 separately for suspended fund holdings that are observed and unobserved by investors before trading resumes. Suspended fund stock holdings are grouped into 100 bins based on their weight-implied impact on fund NAVs at resumptions (i.e., the product of portfolio weight and *ResmRet*). Both axes are measured in percentage points. Fund portfolio holdings are based on disclosed holdings at the end of the quarter before trading resumes. Difference between the two slope coefficients is statistically insignificant. Stock-fund pairs for all trading suspension events with at least a 1% reported portfolio weights between 2004–2020 are included.

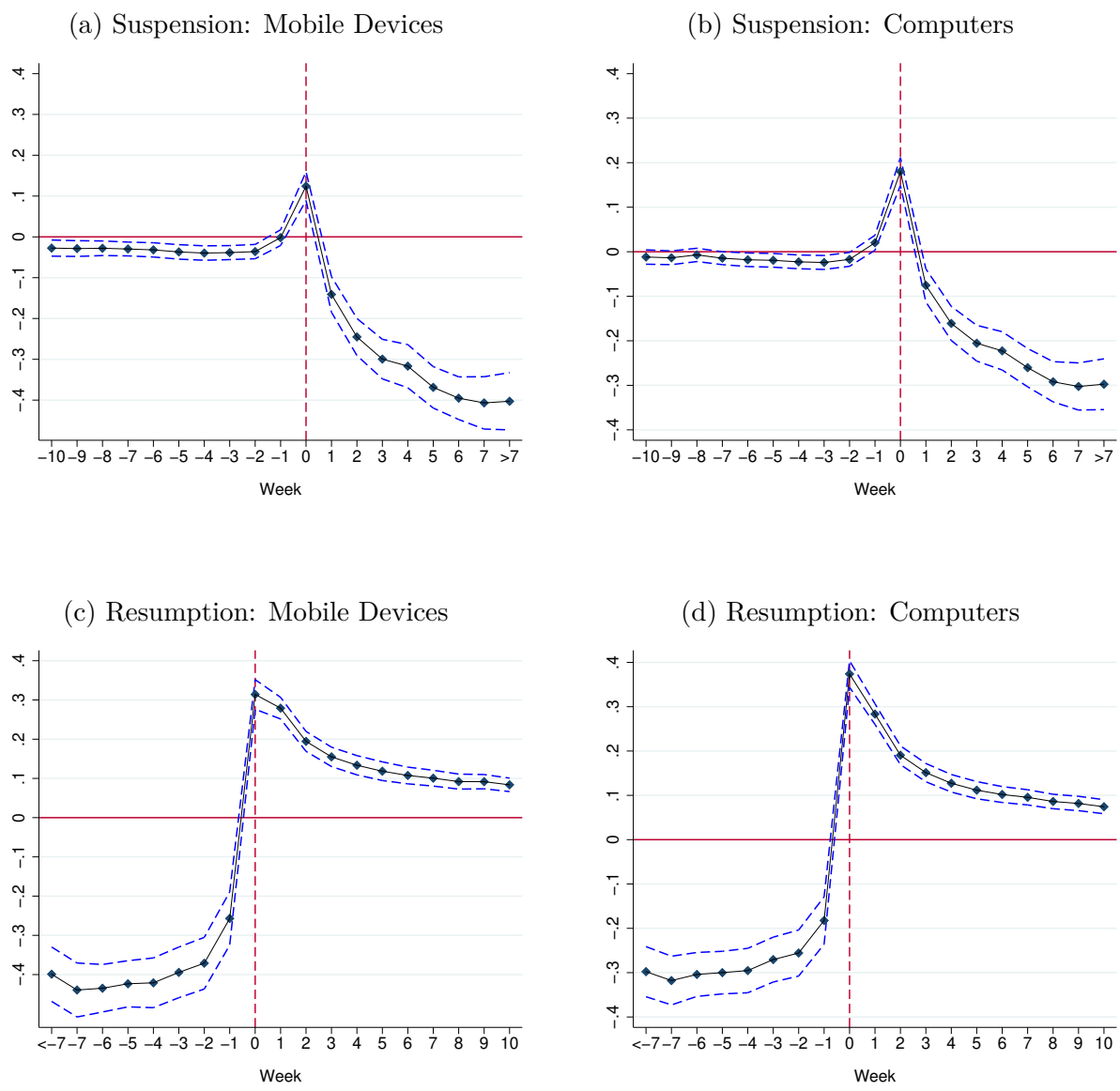


Figure IA.4: **Internet Searches Around Suspension and Resumption Events.** This figure presents estimates from regressing the natural log of a stock's weekly Baidu search index on two groups of weekly dummy variables. The two groups of dummies indicate whether the time intervals between the current week and the week of suspension and resumption, respectively. Post-suspension dummies $\{1, 2, 3, 4, 5, 6, 7, >7\}$ and pre-resumption dummies $\{-1, -2, -3, -4, -5, -6, -7, <\text{-}7\}$ equal one only if the stock-week is in suspension. When estimating coefficients for dummies around suspension, the sample excludes stock-week pairs within $[-7, +10]$ weeks around resumption. When estimating coefficients for dummies around resumption, the sample excludes stock-week pairs within $[-10, +7]$ weeks around suspension. Searches from mobile devices and computers are separately reported in Panels (a), (c) and Panels (b), (d). Control variables include the natural log of the number of shareholders, book-to-market ratio, stock fixed effects, and week fixed effects. Dash lines indicate 99% confidence intervals. Standard errors are two-way clustered at the stock and week levels.

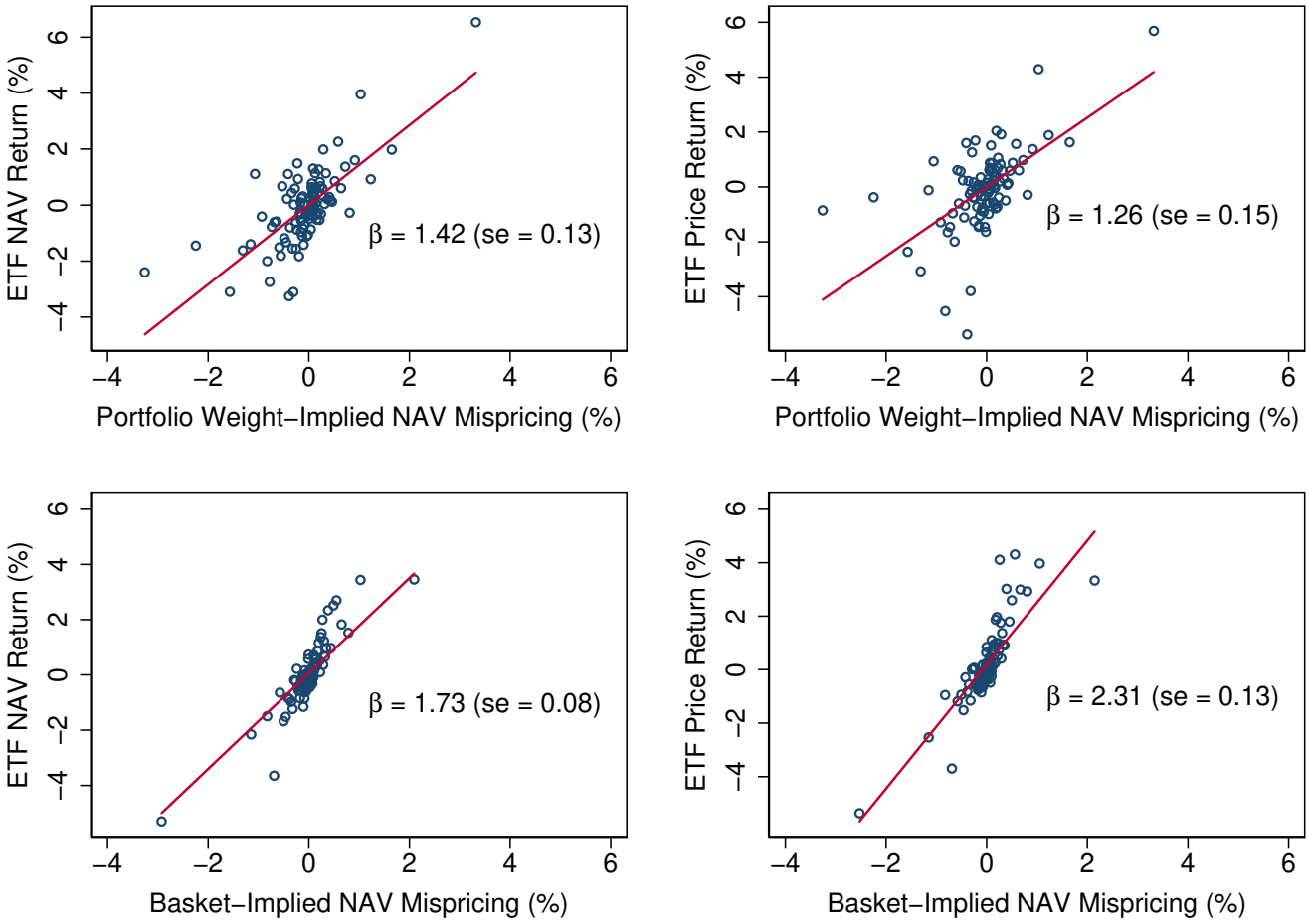


Figure IA.5: **ETF NAV and Price Movements At Stock Trading Resumptions.** This figure presents scatter plots that group suspended ETF stock holdings into 100 bins based on portfolio weight-implied NAV mispricing (i.e., the product of portfolio weight and $ResmRet$). Both axes are measured in percentage points. In the upper two panels, ETF portfolio holdings are based on disclosed holdings at the end of the quarter before trading resumes. In the lower two panels, ETF portfolio holdings are inferred based on fund-reported daily creation/redemption baskets. Stock-fund pairs for all trading suspension events with at least a 1% reported (or inferred) portfolio weights between 2004–2020 are included. OLS estimates for slope (β) and heteroskedasticity-robust standard error are reported.

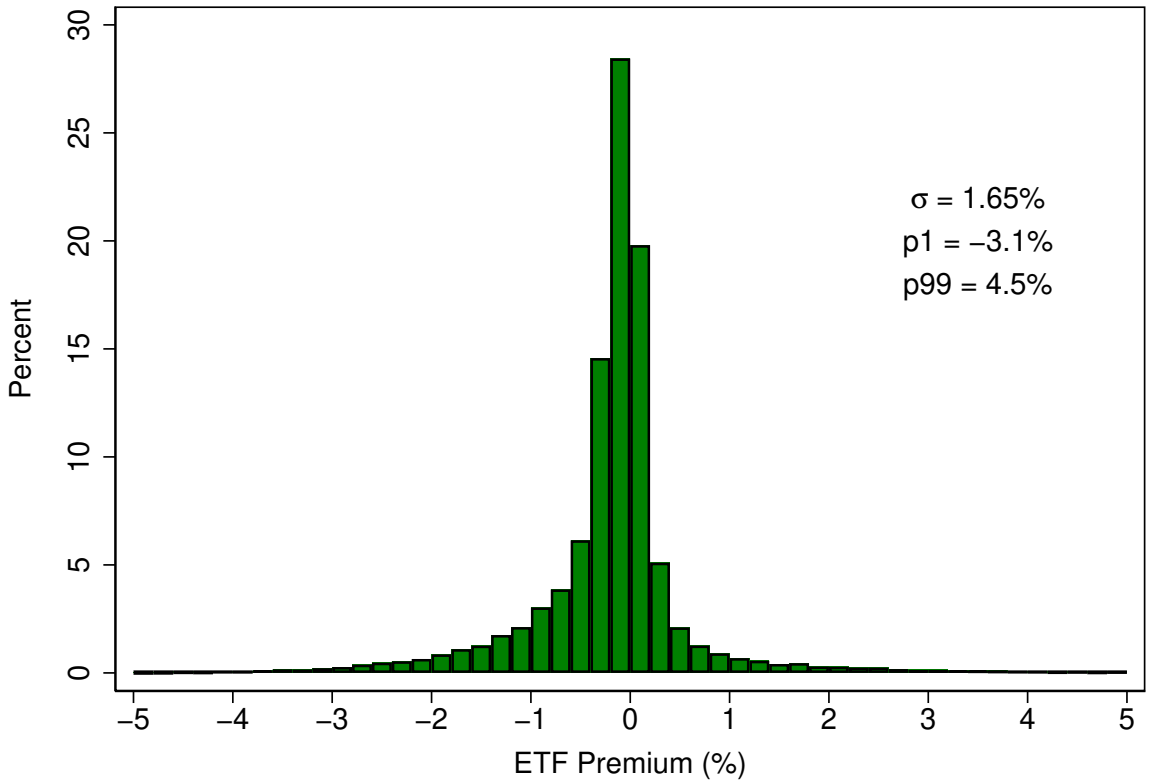


Figure IA.6: **Distribution of ETF Premium.**
This figure presents a histogram for the distribution of ETF premium for all equity ETFs between 2011-2020.

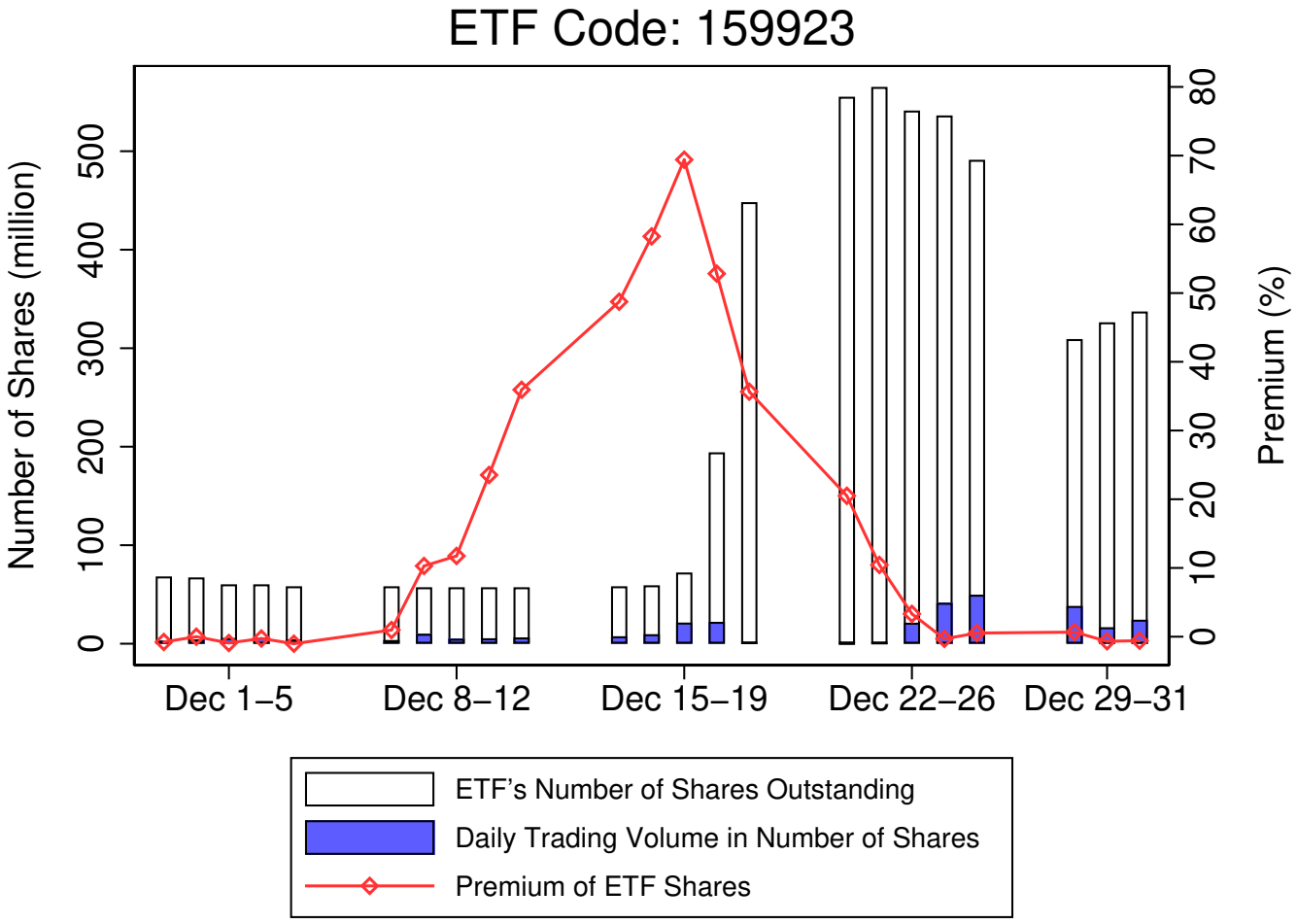


Figure IA.7: **Illiquidity and Mispricing of ETFs: Case Study.**
This figure presents a case of ETF mispricing, in which the premium of the ETF (Name: DaCheng CSI 100 Index ETF) quickly widened to around 70 percentage points in December 2014 despite relatively small trading volumes. This mispricing persisted over multiple trading days, until it was eventually arbitraged away after large flows into the ETF.

Table IA.1: **Fund Valuation Adjustment For Suspended Stock Holdings**

This table reports results from estimating regressions of *ResmRet* on average fund valuation adjustment ($ValAdj$) during suspension. The sample is a subset of suspension events between 2004–2020 where suspension and resumption occur in two different quarters, and at least one fund-reported stock valuation during suspension is observed. Valuation adjustment is measured as the change from the closing price at suspension to fund-reported share value at the last quarter-end prior to resumption, averaged across funds. Market return is measured between suspension date and resumption date (release date, if daily price limits are triggered). SuspDays is the suspension event's number of trading days. Heteroskedasticity-robust standard errors are reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: *ResmRet*			
	(1)	(2)	(3)
ValAdj	1.07***	0.09	0.09
	(0.11)	(0.11)	(0.11)
Market Return		1.19***	1.19***
		(0.10)	(0.10)
Log(SuspDays)			0.02***
			(0.01)
Intercept	0.06***	0.04***	-0.02
	(0.01)	(0.00)	(0.02)
N	2,966	2,966	2,966
R^2	0.08	0.40	0.40

Table IA.2: **Market Return During Suspension and Fund Valuation Adjustment**

This table reports results from estimating piecewise-linear regressions of fund stock valuation adjustment on cumulative market return during suspension. Each observation is a fund–event pair for suspension events between 2004–2020 where suspension and resumption occur in two different quarters, and the fund's reported stock valuation during suspension is observed. Valuation adjustment is measured as the change from the closing price at suspension to fund-reported share value at the last quarter-end prior to resumption. In column (1)–(2), the dependent variable is a dummy that equals one if the fund adjusts the valuation of the suspended stock. In columns (3)–(4), the dependent variable $ValAdj$ is a continuous variable for the change in valuation after adjustment. Cumulative stock market return is measured between the suspension and the last quarter-end prior to resumption, and piecewise linear variables are defined as Market Return $Positive = \max\{MarketReturn, 0\}$ and Market Return $Negative = \min\{MarketReturn, 0\}$, respectively. SuspDays is the number of trading days between suspension and the last quarter-end prior to resumption. Fund performance is quarterly abnormal NAV return. Standard errors are two-way clustered at the stock level and the fund level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: Fund Valuation Adjustment

	1(ValAdj)		ValAdj	
	(1)	(2)	(3)	(4)
Market Return *Positive*	0.07	0.07	0.38***	0.38***
	(0.15)	(0.15)	(0.07)	(0.07)
Market Return *Negative*	-0.65***	-0.65***	0.60***	0.60***
	(0.15)	(0.15)	(0.16)	(0.16)
Log(TNA)	0.01	0.00	0.00**	0.00**
	(0.01)	(0.01)	(0.00)	(0.00)
Log(SuspDays)	0.09***	0.09***	-0.00	-0.00
	(0.02)	(0.02)	(0.00)	(0.00)
Performance		-0.13*		-0.03
		(0.07)		(0.02)
Log(Age)		0.00		-0.00*
		(0.01)		(0.00)
Fund Ret Vol		1.06***		-0.04
		(0.23)		(0.07)
Expense Ratio		4.51*		0.62
		(2.51)		(0.58)
Year-Quarter Fixed Effects	Y	Y	Y	Y
N	23,060	23,060	23,060	23,060
R^2	0.192	0.197	0.159	0.159
Test: Market Return *Positive* = Market Return *Negative*				
F statistic	8.364	8.399	1.355	1.360
p value	0.004	0.004	0.245	0.244

Table IA.3: **Stock Price Reversals After Trading Resumptions**

This table reports results from estimating regressions of post-resumption stock abnormal return on stock abnormal return at resumption. The dependent variable $PostResmCAR$ is stock cumulative abnormal return, starting from the first trading day after the resumption day (release day, if price limit is hit) and ending on the 5th, 21th, or 120th trading days in columns (1)-(2), (3)-(4), and (5)-(6), respectively. $MaxWgt$ is the maximum weight of the stock across all fund portfolios, as observed by investors before trading resumption. SuspDays is the suspension event's number of trading days. Earnings Announcement and Other Announcement are the numbers of firm announcements related and unrelated to earnings made during the suspension period. Standard errors, clustered at the stock level, are reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: $PostResmCAR$

CAR measured over:	1 week		1 month		6 months	
	(1)	(2)	(3)	(4)	(5)	(6)
MaxWgt × ResmAR	0.07	0.01	0.01	-0.15	1.30**	0.93*
	(0.21)	(0.21)	(0.28)	(0.28)	(0.52)	(0.51)
ResmAR	-0.00	-0.00	-0.02***	-0.02***	-0.02**	-0.02**
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
MaxWgt	-0.06*	0.23***	-0.24***	0.28***	-0.23**	-0.14
	(0.03)	(0.04)	(0.06)	(0.07)	(0.10)	(0.12)
Log(SuspDays)		-0.01***		-0.01***		-0.03***
		(0.00)		(0.00)		(0.00)
Log(MarketCap)		-0.01***		-0.03***		-0.01***
		(0.00)		(0.00)		(0.00)
Log(Shareholder)		0.00***		0.00		-0.03***
		(0.00)		(0.00)		(0.00)
Book to Market		-0.00		-0.02		-0.08***
		(0.01)		(0.02)		(0.02)
Log(EarningsAnn)		0.01		-0.01		0.01
		(0.00)		(0.01)		(0.01)
Log(OtherAnn)		0.01***		0.01***		0.05***
		(0.00)		(0.00)		(0.00)
N	16,278	16,278	16,222	16,222	14,237	14,237
R^2	0.00	0.02	0.00	0.02	0.00	0.03

Table IA.4: **Mutual Fund Flows and NAV Mispricing: Excluding the 2015 Crash**

This table reports estimates from regressions of fund flows on the fund's NAV mispricing caused by suspended holdings. Each observation is a fund–quarter pair for quarters between 2006–2020, excluding the stock market crash period (Q2 and Q3 of 2015). *Mispricing* is fund NAV mispricing, measured as the product of suspended holding's portfolio weight and its resumption return, aggregated to the fund level. Resumption return is measured with *ResmRet* in columns (1)-(2) and *ResmAR* in columns (3)-(4). Fund performance is quarterly abnormal NAV return, and Family Performance is TNA-weighted average performance of funds within a family. *Obs* and *Unobs* indicate that the measure is calculated based on holdings currently observed and unobserved by investors. Standard errors are clustered at the fund level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: *Flow*

	ResmRet		*ResmAR*	
	(1)	(2)	(3)	(4)
Obs Mispricing	1.89***	1.92***	2.20***	2.23***
	(0.36)	(0.36)	(0.49)	(0.49)
Unobs Mispricing	-0.42	-0.36	0.29	0.41
	(0.66)	(0.67)	(0.72)	(0.73)
Performance	0.33***	0.32***	0.32***	0.31***
	(0.03)	(0.03)	(0.03)	(0.03)
Log(TNA)		-0.01***		-0.01***
		(0.00)		(0.00)
Log(Age)		0.02***		0.02***
		(0.00)		(0.00)
Fund Ret Vol		0.41***		0.42***
		(0.07)		(0.07)
Repurchase Fee		-5.07*		-5.06*
		(2.70)		(2.65)
Redemption Fee		-0.32		-0.35
		(0.90)		(0.90)
Expense Ratio		-1.44***		-1.40***
		(0.48)		(0.48)
Log(Familiy TNA)		0.01***		0.01***
		(0.00)		(0.00)
Family Performance		-0.01		-0.01
		(0.04)		(0.04)
Year-Quarter Fixed Effects	Y	Y	Y	Y
N	28,872	28,872	28,872	28,872
R^2	0.044	0.052	0.043	0.052

Table IA.5: **Measuring Exposure to Mutual Funds: Robustness Tests**

Panels A–D of this table report results of re-estimating event-level regressions in Tables 7-10, replacing the measure of a stock's exposure to mutual funds $MaxWgt$ with $NFundLargeWgt$, which is the number of mutual funds with at least 3% of portfolio weight in the suspended stock, as observed by investors before trading resumption. Mutual Fund Ownership is the fraction of the firm's equity held by mutual funds, excluding funds in $NFundLargeWgt$, and Institutional Ownership is the fraction held by institutional investors excluding mutual funds. SuspDays is the suspension event's number of trading days. Earnings Announcement and Other Announcement are the numbers of firm announcements related and unrelated to earnings made during the suspension period. Standard errors are clustered at the stock level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Panel A, Dependent Variable: Number of Corporate Visits

	All Institutions		Private Funds	
	(1)	(2)	(3)	(4)
NFundLargeWgt	0.15***	0.14***	0.05***	0.05***
	(0.05)	(0.05)	(0.02)	(0.02)
Mutual Fund Ownership	-2.09	-1.36	-1.62	-1.42
	(4.73)	(4.72)	(1.66)	(1.66)
Institutional Ownership	-1.51*	-1.61*	-0.70**	-0.73**
	(0.82)	(0.84)	(0.32)	(0.33)
Log(SuspDays)	0.82***	0.49***	0.22***	0.13**
	(0.10)	(0.16)	(0.03)	(0.06)
Log(MarketCap)	1.33***	1.49***	0.46***	0.51***
	(0.31)	(0.33)	(0.13)	(0.14)
Log(Shareholder)	0.03	-0.00	0.00	-0.01
	(0.22)	(0.22)	(0.08)	(0.08)
Book to Market		2.76***		0.77***
		(0.85)		(0.28)
Log(EarningsAnn)		1.16***		0.30*
		(0.44)		(0.16)
Log(OtherAnn)		0.10		0.03
		(0.25)		(0.09)
Year-Quarter Fixed Effects	Y	Y	Y	Y
City Fixed Effects	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
N	7,558	7,558	7,558	7,558
R^2	0.06	0.06	0.05	0.05

Table IA.5: **Robustness Tests - Continued**

Panel B, Dependent Variable: Internet Search Index

	PC		Mobile Devices	
	(1)	(2)	(3)	(4)
NFundLargeWgt	0.008***	0.008***	0.009***	0.009***
	(0.002)	(0.002)	(0.003)	(0.003)
Mutual Fund Ownership	-0.351	-0.343	-0.863***	-0.864***
	(0.245)	(0.245)	(0.326)	(0.324)
Institutional Ownership	-0.160***	-0.166***	-0.102**	-0.100**
	(0.048)	(0.048)	(0.047)	(0.047)
Log(SuspDays)	0.987***	0.954***	0.980***	0.952***
	(0.007)	(0.010)	(0.006)	(0.010)
Log(MarketCap)	0.245***	0.246***	0.164***	0.159***
	(0.019)	(0.020)	(0.015)	(0.015)
Log(Shareholder)	0.340***	0.338***	0.481***	0.482***
	(0.021)	(0.021)	(0.016)	(0.017)
Book to Market		-0.048		-0.191***
		(0.090)		(0.063)
Log(EarningsAnn)		0.079***		0.078***
		(0.022)		(0.021)
Log(OtherAnn)		0.015		0.001
		(0.011)		(0.011)
Year-Quarter Fixed Effects	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
N	8,762	8,762	7,138	7,138
R^2	0.822	0.823	0.826	0.827

Table IA.5: **Robustness Tests - Continued**

Panel C, Dependent Variable: $|ResmAR|$

	All Suspension Events		Events w/o Price Limits	
	(1)	(2)	(3)	(4)
NFundLargeWgt	0.003***	0.003***	0.005***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)
$\sigma(AR)$	0.981***	0.913***	0.546*	0.440
	(0.175)	(0.174)	(0.332)	(0.321)
Mutual Fund Ownership	0.283***	0.274***	0.557***	0.540***
	(0.092)	(0.089)	(0.156)	(0.149)
Institutional Ownership	0.083***	0.074***	0.159***	0.146***
	(0.027)	(0.026)	(0.044)	(0.041)
Log(SuspDays)	0.081***	0.033***	0.112***	0.042***
	(0.007)	(0.005)	(0.016)	(0.009)
Log(MarketCap)	-0.089***	-0.085***	-0.129***	-0.120***
	(0.017)	(0.016)	(0.029)	(0.026)
Log(Shareholder)	0.040***	0.036***	0.066***	0.061***
	(0.011)	(0.010)	(0.017)	(0.016)
Book to Market		0.128**		0.192**
		(0.063)		(0.097)
Log(EarningsAnn)		0.173***		0.277***
		(0.033)		(0.054)
Log(OtherAnn)		0.013		-0.005
		(0.014)		(0.031)
Year-Quarter Fixed Effects	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
N	16,191	16,191	8,809	8,809
R^2	0.111	0.131	0.123	0.155

Table IA.5: **Robustness Tests - Continued**

Panel D, Dependent Variable: *SUE*

	ResmRet		*ResmAR*	
	(1)	(2)	(3)	(4)
NFundLargeWgt × PriceMove	0.037**	0.036*	0.047*	0.046*
	(0.019)	(0.019)	(0.026)	(0.026)
PriceMove	0.087**	0.091**	0.096**	0.100***
	(0.035)	(0.035)	(0.038)	(0.039)
NFundLargeWgt	0.005	0.005	0.006*	0.005
	(0.003)	(0.003)	(0.003)	(0.003)
Mutual Fund Ownership	0.884*	0.896*	0.938*	0.949*
	(0.492)	(0.492)	(0.491)	(0.491)
Institutional Ownership	0.134*	0.125	0.137*	0.127*
	(0.077)	(0.077)	(0.077)	(0.077)
Log(SuspDays)	-0.023*	-0.044***	-0.022*	-0.044***
	(0.012)	(0.017)	(0.012)	(0.017)
Log(MarketCap)	0.094***	0.093***	0.090***	0.090***
	(0.029)	(0.029)	(0.029)	(0.029)
Log(Shareholder)	-0.093***	-0.092***	-0.091***	-0.091***
	(0.028)	(0.028)	(0.028)	(0.028)
Book to Market		-0.243***		-0.242***
		(0.079)		(0.079)
Log(EarningsAnn)		0.032		0.034
		(0.043)		(0.043)
Log(OtherAnn)		0.049*		0.051*
		(0.029)		(0.028)
Year-Quarter Fixed Effects	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
N	14,997	14,997	14,997	14,997
R^2	0.035	0.036	0.035	0.036

Table IA.6: **ETF Premium and Flows in Response to NAV Mispricing**

This table reports results from regressing daily ETF share premium and flows on the fund's mispricing caused by suspended holdings. Each observation is a fund-day pair between 2011–2020. *Mispricing* is NAV mispricing, measured as the product of suspended holding's portfolio weight and its resumption abnormal return, aggregate to the fund level. Only suspended holdings that resume in the next 10 trading days are used. Portfolio weights of ETF holdings are inferred from fund-reported daily creation/redemption baskets. In columns (1)-(2), the dependent variable is the ETF's premium, i.e., the percentage difference between its share price and NAV. In columns (3)-(4), the dependent variable is the ETF's daily flow, i.e., the percentage change in its number of shares outstanding. Premium $t-1$, $t-2$, $t-3$ are the ETF's premium on the last 1, 2, and 3 trading days, respectively. Standard errors are clustered at the fund level and reported in parentheses. *, **, *** represent 10%, 5%, and 1% levels of statistical significance.

Dependent Variable: ETF Premium and Flow

	Premium		Flow	
	(1)	(2)	(3)	(4)
Mispricing	0.17	0.16	0.11	0.11
	(0.11)	(0.11)	(0.07)	(0.07)
Premium $t-1$			0.05***	0.05***
			(0.02)	(0.02)
Premium $t-2$			0.05***	0.05***
			(0.02)	(0.02)
Premium $t-3$			0.02	0.02
			(0.01)	(0.01)
Log(TNA)	0.00***	0.00***	0.00	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)
Log(Age)		0.00*		-0.00**
		(0.00)		(0.00)
Repurchase Fee		-0.26***		0.02
		(0.10)		(0.05)
Redemption Fee		0.13		-0.04
		(0.10)		(0.07)
Expense Ratio		-0.12		0.13
		(0.13)		(0.14)
Date Fixed Effects	Y	Y	Y	Y
N	88,993	88,993	87,705	87,705
R^2	0.123	0.128	0.066	0.067