

Retail Trading Frenzies and Real Investment Efficiency

EFMA Panel on “Hype in Financial Markets”

Clifton Green
Emory U



EMORY

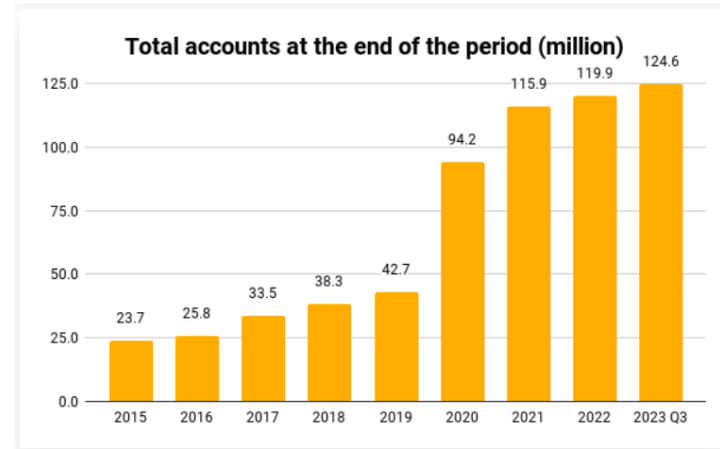
GOIZUETA
BUSINESS
SCHOOL

Origins of Hype

- Manias
 - Tulips (1630s), South Sea Bubble (1720), Railways (1840s), Dot-com (1990s)
- Why are we susceptible?
 - Herding
 - Evolutionary proclivity to follow others in uncertain environments
 - Narrative-driven reasoning
 - Stories simplify complex information, creating shared beliefs that coordinate behavior. We especially like narratives about new technologies or opportunities.
 - FOMO, Overconfidence / self-attribution bias
 - Structural incentives
 - Media: 'Hype is Hip on CNBC,' *Newsweek*, 2000, Analysts: Global Research Settlement (2003)

Rise of Retail Investors

- Retail Investors are playing a larger role in equity markets
 - Zero commission trading
 - Gamification of trading apps
 - Social media coordination
- Increasing influence of hype in financial markets



Retail Hype and Stock Prices

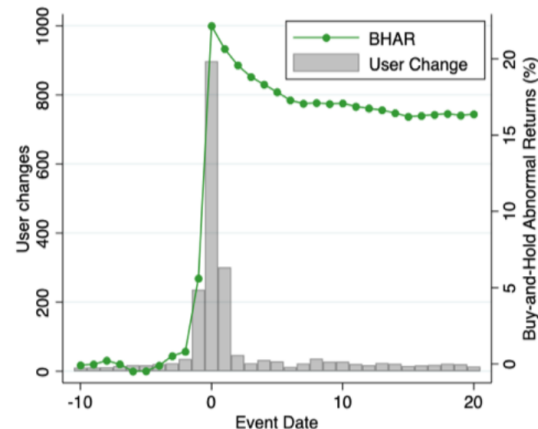
- Regulator Concerns

- Increased Volatility
- Wealth redistribution



- Academic Research

- Retail herding is not new: Dorn, Huberman, and Sengmueller (2008), Barber, Odean, and Zhu (2008), Han and Kumar (2013)
- Barber, Huang, Odean, Schwarz (2022)
 - Retail Herding: Top 0.5% of Robinhood owner increases



Brokerage Outages: Equity Markets



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Retail trader sophistication and stock market quality: Evidence from brokerage outages

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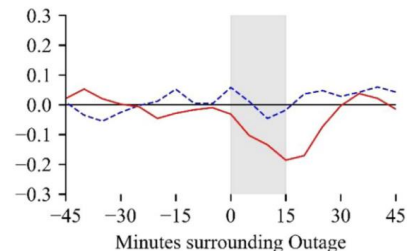
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ABSTRACT

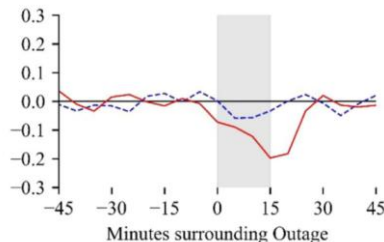
We study brokerage platform outages to examine the impact of retail investors on financial markets. We contrast outages at Robinhood, which caters to inexperienced investors, with outages at traditional retail brokers. For stocks with high retail interest, we find that negative shocks to Robinhood investor participation are associated with reduced market order imbalances, increased market liquidity, and lower return volatility, whereas the opposite relations hold following outages at traditional retail brokerages. The findings suggest that herding by inexperienced investors can create inventory risks that harm liquidity in stocks with high retail interest, while other retail trading improves market quality.

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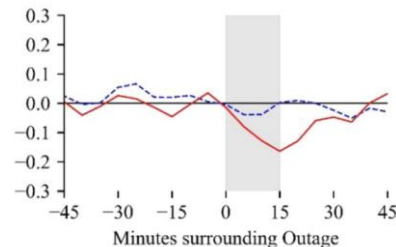
A. Volume



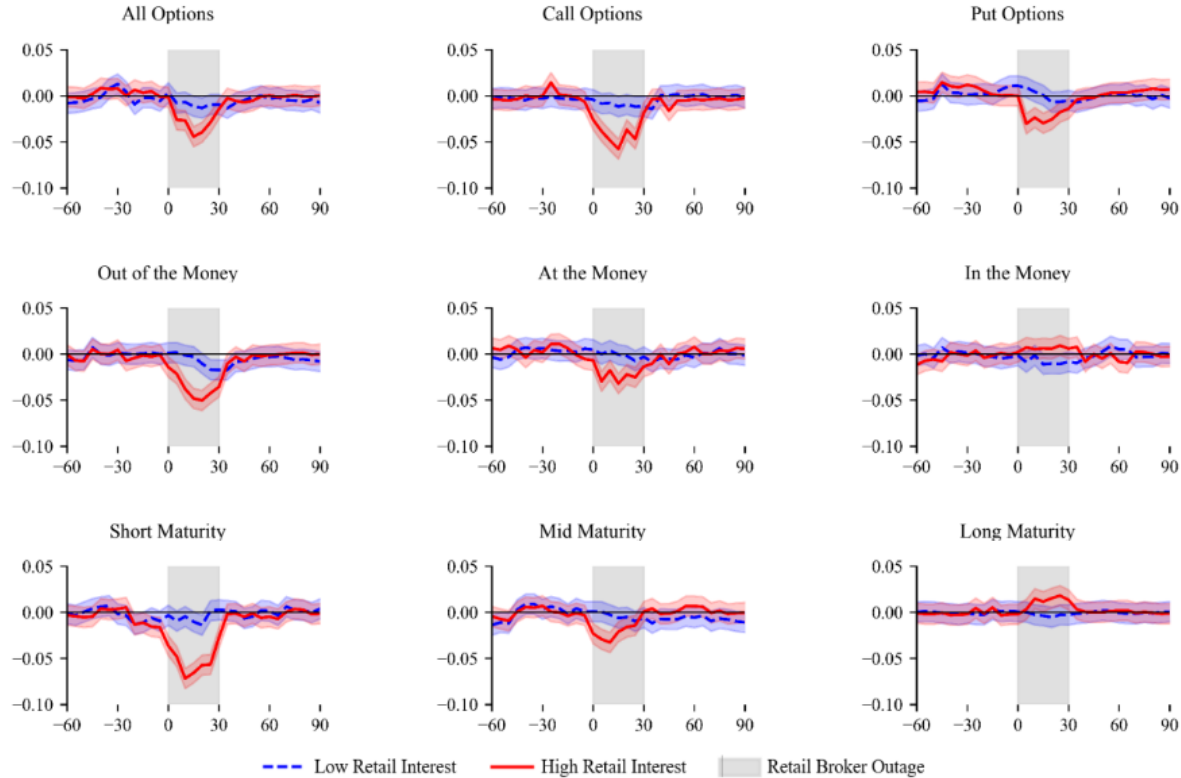
B. Quoted Spread



F. Volatility



Brokerage Outages: Option Markets (Implied Vol)



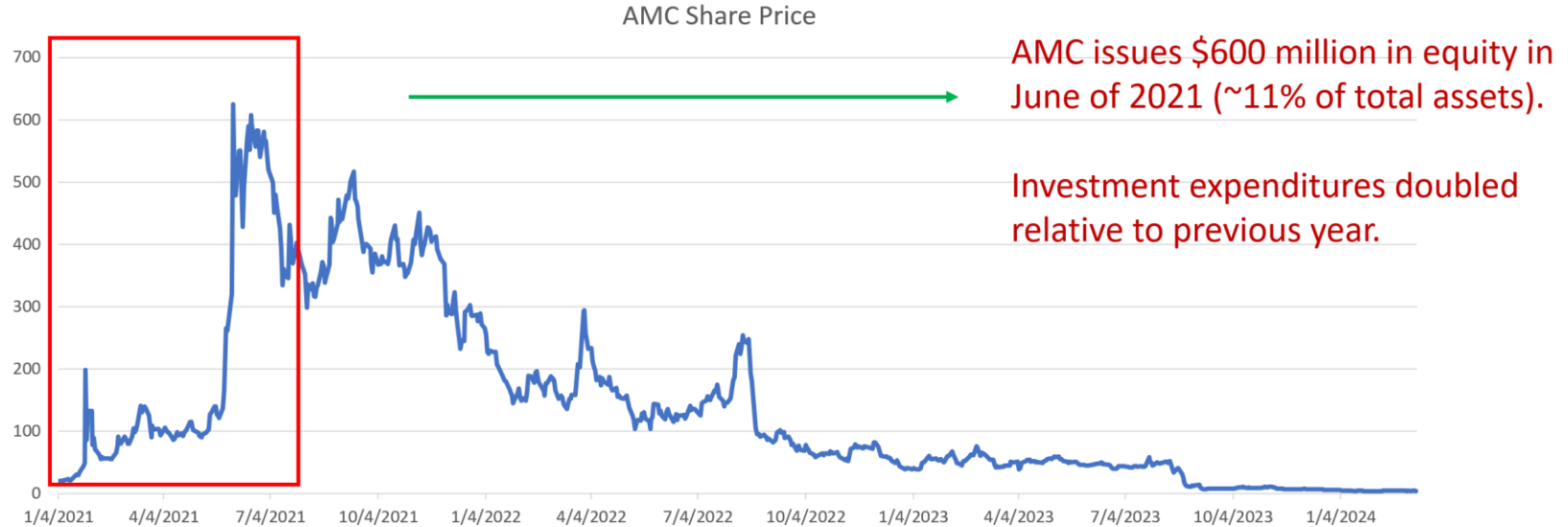
Retail Hype and Corporate Finance

- What are the implications of retail hype for “real efficiency”?
 - Longer-lived retail frenzies may affect firm issuance and investment

Anecdotal Evidence: AMC Frenzy



AMC Price Runup



More Examples

Hertz: And Now for Something Completely Worthless

Hertz is bankrupt, yet it moved to sell new stock anyway. For sheer audacity, our columnist says, this takes his breath away.



POLITICS

Trump Media closes down more than 18% after filing plans to issue more DJT stock

PUBLISHED MON, APR 15 2024 8:48 AM EDT | UPDATED MON, APR 15 2024 4:43 PM EDT

MONEY TALKS

AMC Raised \$1 Billion From Meme Stock Mania. Why Didn't GameStop Even Try?

The struggling video game retailer chose not to exploit an irrational market. Bad move.

Bed Bath Strikes From the Beyond

Section 16 blockers, General Private Markets, Bridgewater, the EA castle and gentleman drivers.

May 9, 2024 at 2:59 PM EDT



By Matt Levine

Matt Levine is a Bloomberg Opinion columnist. A former investment banker at Goldman Sachs, he was a mergers and acquisitions lawyer at Wachtell, Lipton, Rosen & Katz; a clerk for the U.S. Court of Appeals for the 3rd Circuit; and an editor of Dealbreaker.

Save

Bloodbath from the beyond

In the first few months of 2023, on its way into bankruptcy, Bed Bath & Beyond Inc. sold a ton of stock. In January 2023, it had about 117.3 million shares outstanding, worth about \$3.35 each; by April, it had 739.1 million, worth about \$0.30 each. Then it went bankrupt and now the shares are worth zero, though you can find contrarian views.

More Examples



MARKETS

GameStop, AMC soar more than 70%

PUBLISHED MON, MAY 13 2024•7:03 AM EDT | UPDATED MON, MAY 13 2024•5:12 PM EDT

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GameStop Issues New Shares, Sending Stock Tumbling

By [AARON MCDADE](#) Published May 17, 2024

- Does this phenomenon extend beyond recent anecdotal evidence?
 - Retail buying
 - Price surge
 - Equity issuance
 - Investment
 - Subsequent underperformance

Research Questions

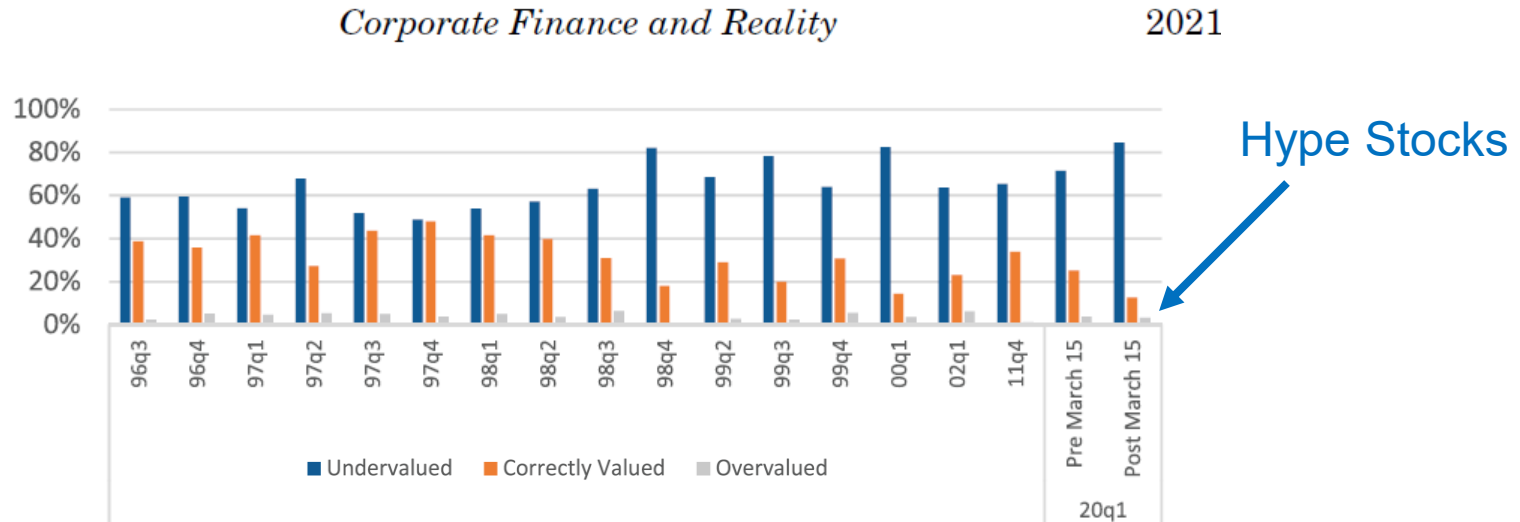
- Do retail investors affect prices over longer horizons?
- Do managers react by issuing equity?
- Are retail frenzies associated with investment?
- Patterns stronger after introduction of zero commissions?
- Do Frenzies affect profitability?

Stock Prices and the Real Economy

- Feedback from stock prices to firm decisions (Goldstein, Ozdenoren, and Yuan, 2013)
 - Prices can inform capital providers and firm management
 - [Reaction to M&A announcements](#) (Luo, 2005), [Investment sensitivity to stock prices](#) (Chen, Goldstein, and Jiang, 2007; Bakke and Whited, 2010; Edmans, Jayaraman, and Schneemeier, 2017). [Role of ETFs](#) (Antoniou, Li, Liu, Subrahmanyam, and Sun, 2022), [Stock price informativeness and productivity](#) (Bennett, Stulz, and Wang, 2020). [Introduction of EDGAR](#) (Goldstein, Yang, and Lou, 2023), [Firm disclosure](#) (Jayaraman and Wu, 2019, 2020). [Survey evidence](#) (Goldstein, Liu, and Yang, 2023).
 - Prices may be faulty informants; potential for distorted signals due to speculative trading
 - [Indexing hurts productivity](#) (Brogaard, Ringgenberg, and Sovich, 2019), [Investment reacts to mutual fund outflows](#) (Dessaint, Foucault, Fresard, and Matray, 2019; Lou and Wang, 2018).

Stock Prices and the Real Economy

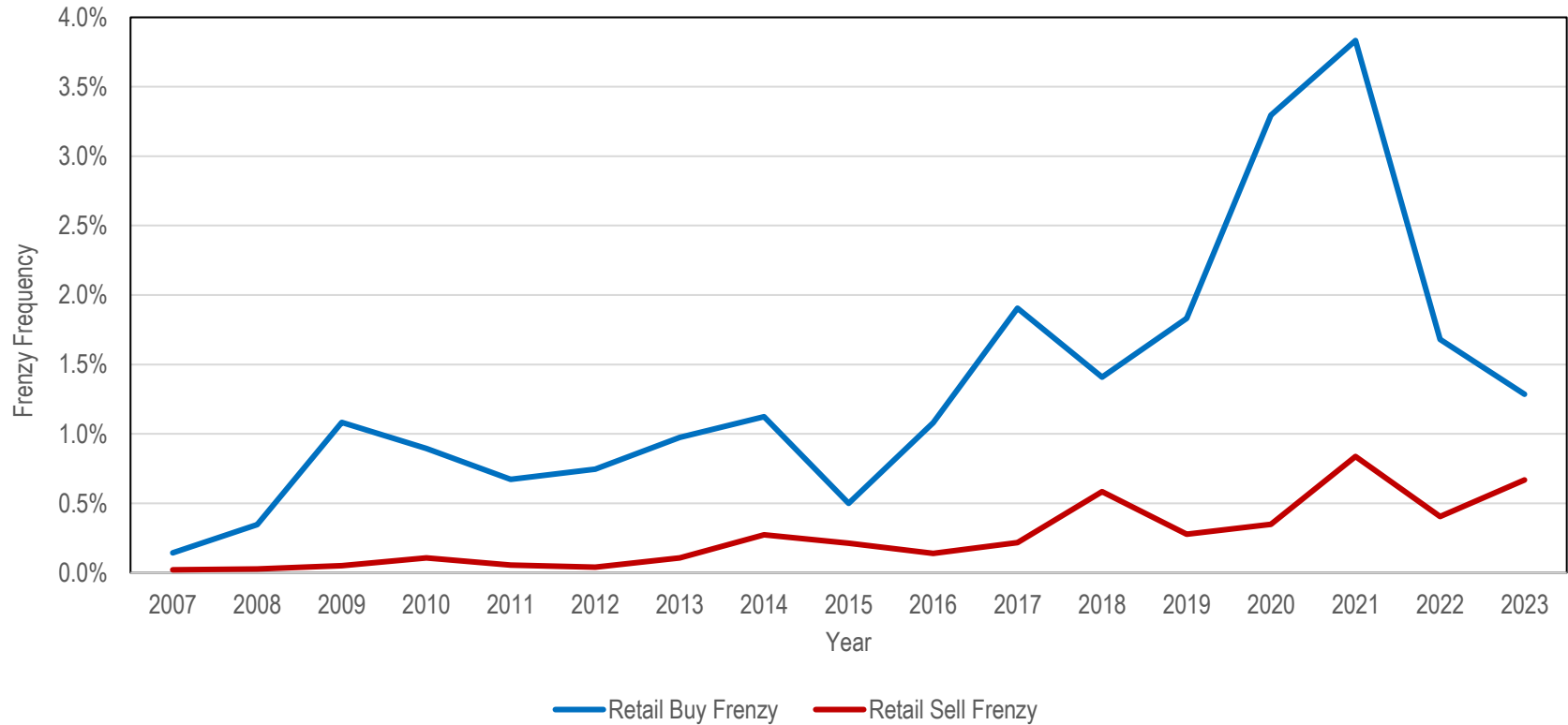
- Feedback from stock prices to firm decisions
 - “Issuance decisions are affected by perceived own-firm equity valuation”
 - [Survey evidence](#) (Graham and Harvey, 2001; Graham, 2022), [market timing evidence](#) (e.g. Jenter, 2005; Kim and Weisbach, 2008; Khan, Kogan, and Serafeim (2012); Dittmar and Field, 2015; Lee, 2021)



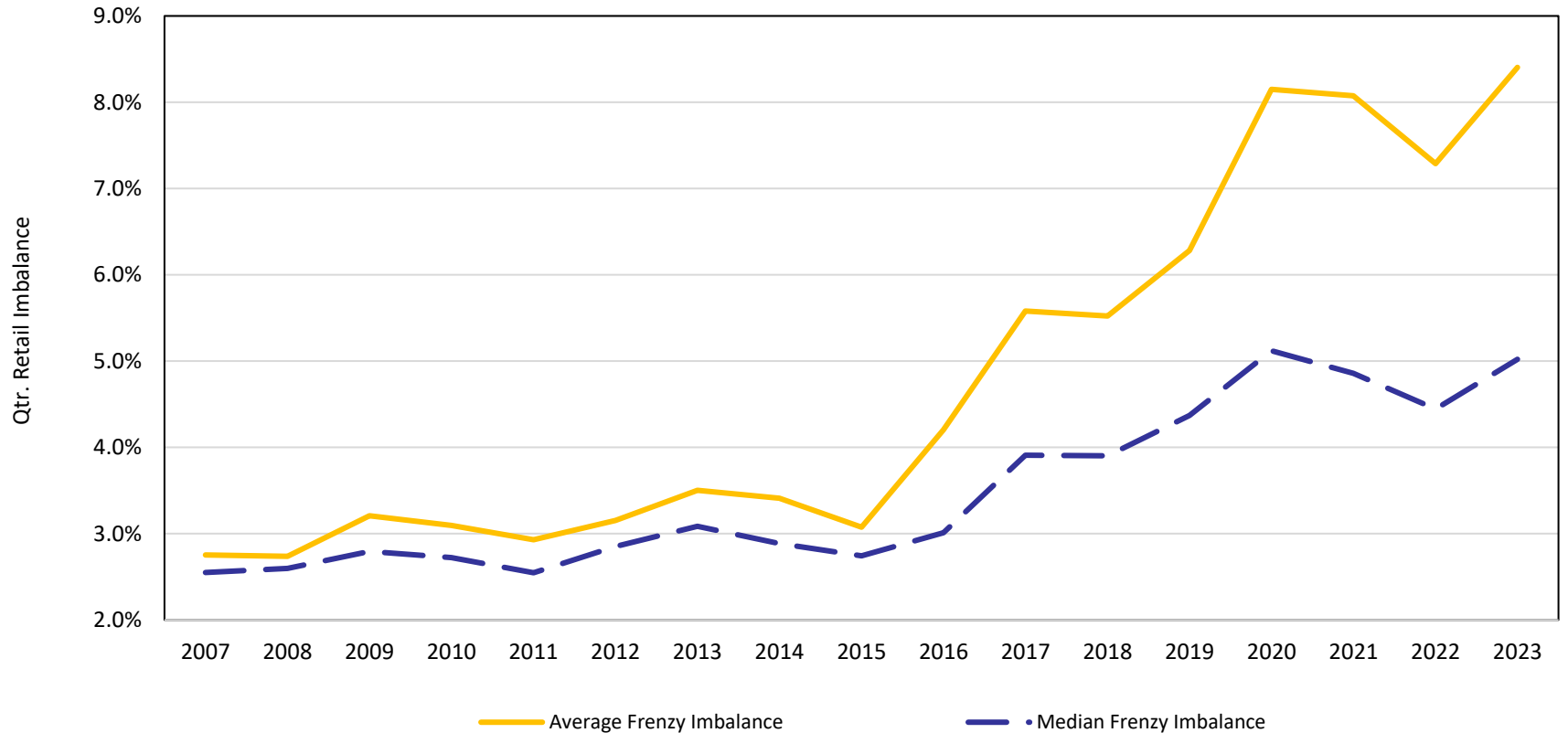
Identifying Retail Frenzies

- Classify and sign retail trades using Barber, Huang, Jorion, Odean, and Schwarz (JF forthcoming) refinements of Boehmer, Jones, Zhang and Zhang (JF 2021) approach
- Retail Imbalance: $(\text{Buy} - \text{Sell}) / \text{Shares Outstanding}$
 - Aggregate over rolling 3-month windows
 - Buy Frenzy = Imbalance > 2% of shares outstanding

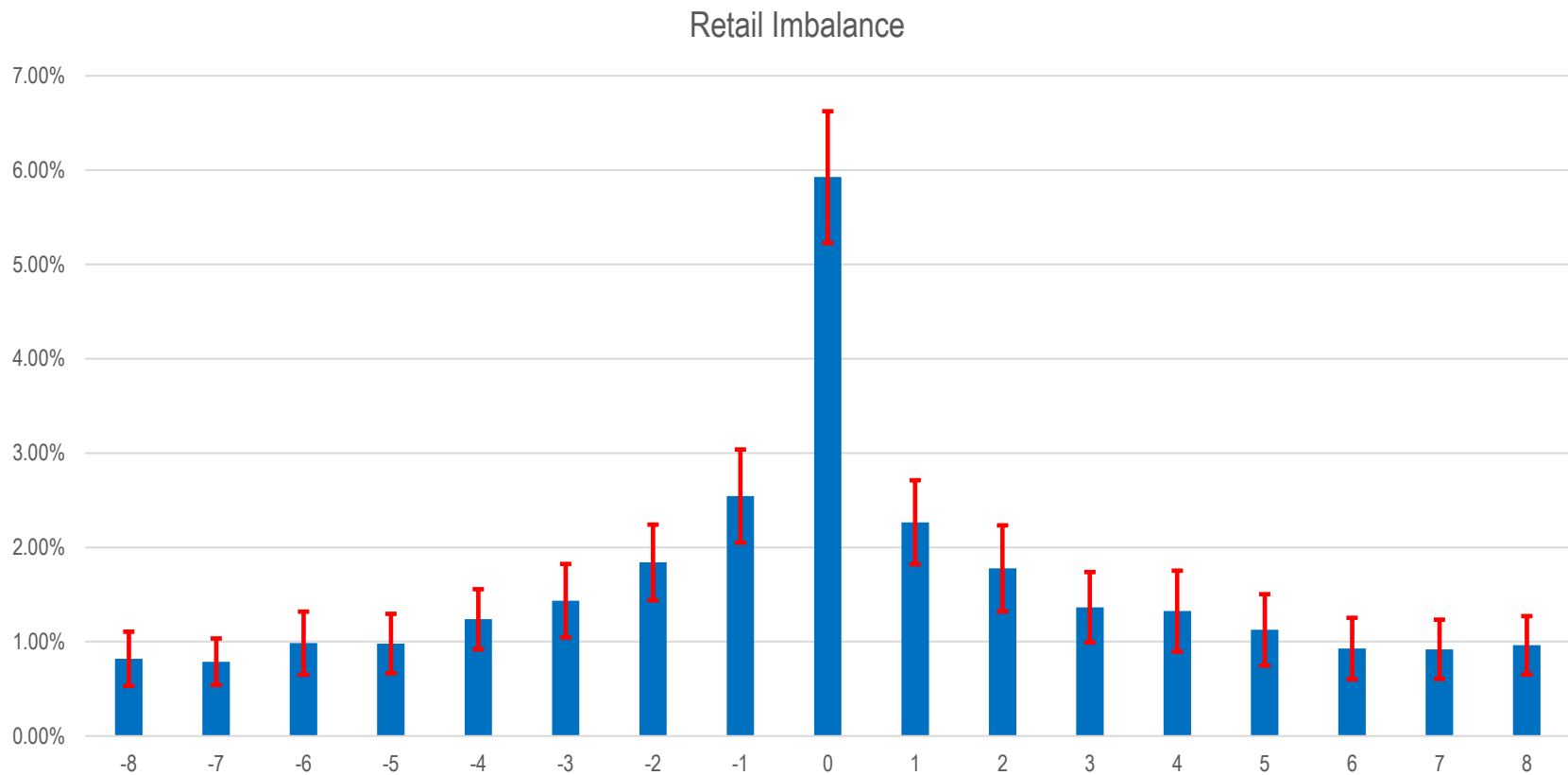
Retail Frenzy Frequency



Retail Frenzy Magnitude



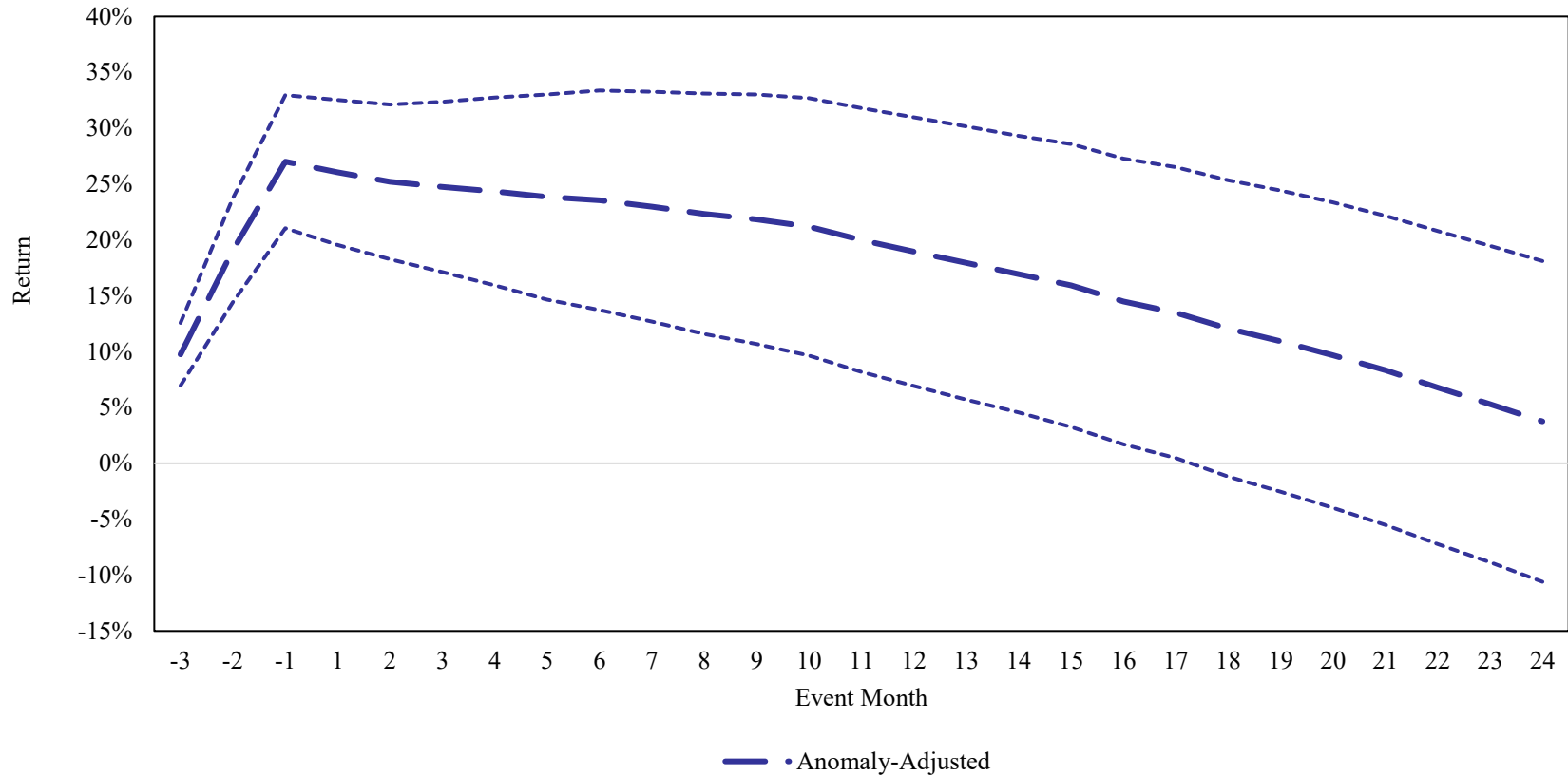
Retail Frenzy Persistence



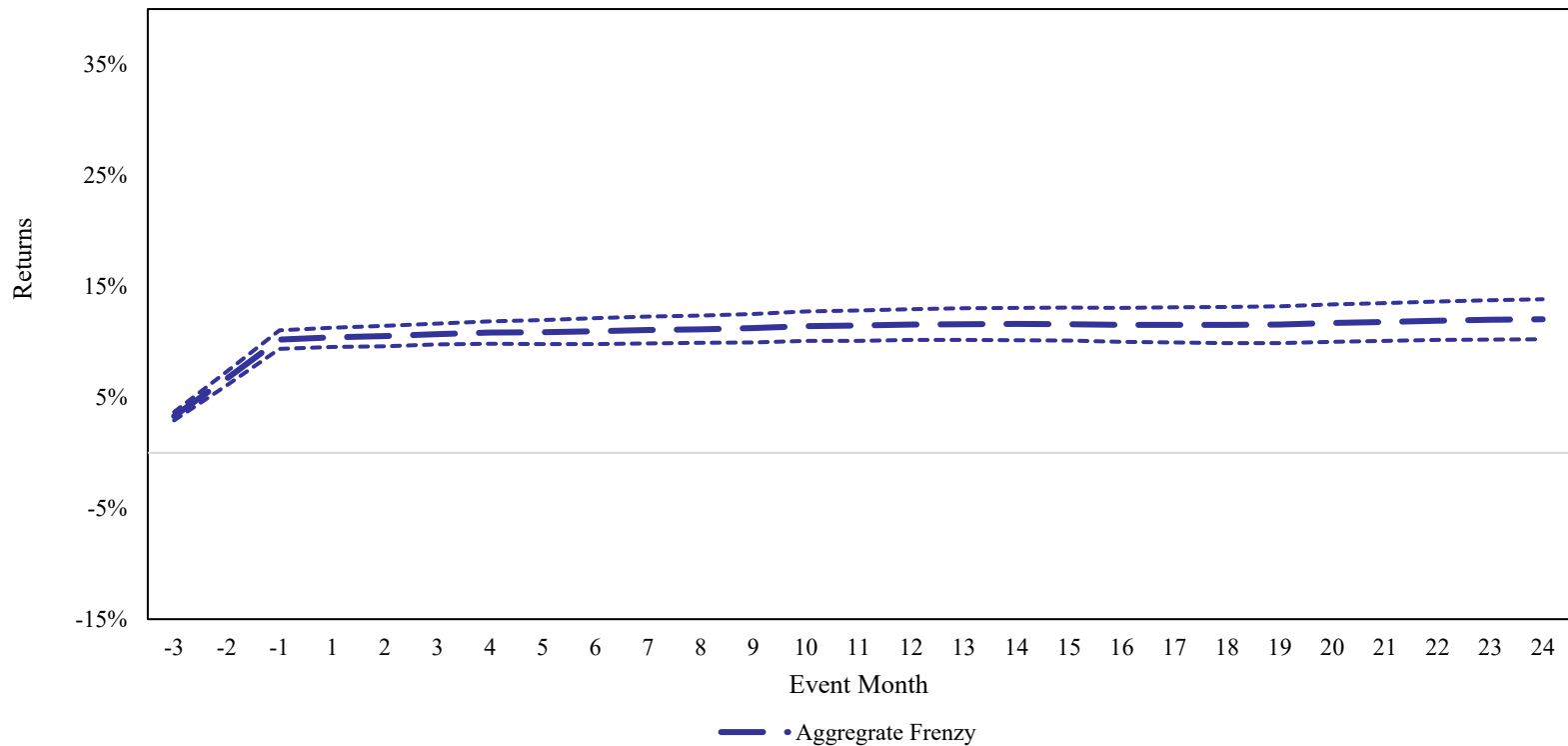
Determinants of Retail Frenzies: LPM

Q	-0.48%	-0.47%	-0.15%
ROA	-1.06%	-1.08%	-0.45%
Ret _{t-3, t-1}	-0.04%	-0.06%	0.08%
Ret _{t-12, t-4}	0.05%	0.00%	0.11%
Log (Assets)	-0.82%	-0.92%	-2.38%
Leverage	0.08%	0.09%	0.38%
Div Yield	0.05%	0.03%	-0.02%
Log (Volatility)	0.74%	0.78%	0.69%
Short Interest	0.99%	1.03%	1.25%
Asset Growth	-0.04%	-0.02%	-0.09%
Inst Ownership	-0.59%	-0.55%	-0.39%
Δ Inst Ownership	-0.04%	-0.04%	-0.04%
Fire Sale (Flow-to-Volume)	-0.20%	-0.24%	0.03%
Fire Purchase (Flow-to-Volume)	0.01%	0.01%	0.00%
Log (CSHR)	0.33%	0.36%	0.14%
Net Anomaly Score	-0.02%	0.02%	-0.02%
Log (1+WSB Posts)	0.27%	0.28%	0.22%
Log (1+SA Coverage)	0.44%	0.50%	0.30%
Constrained	0.10%	0.08%	0.02%
Capital Sensitive	0.31%	0.31%	0.05%
Time FE	Yes	Absorb	Absorbed
Ind × Time FE	No	Yes	Yes
Firm FE	No	No	Yes
Obs. (Firm-Months)	664,229	664,229	664,229
R-squared	5.41%	7.33%	17.34%

Retail Frenzies and Stock Returns



Aggregate Frenzies and Stock Returns



Retail Frenzies and Equity Issuance

- New equity issues greater than 3% of market value of equity (McKeon, 2015)
 - Includes at the market offerings (not in SDC)
 - 1/3 of public float can be issued within any 12-month period.
 - 63% of issuances in 2016 (Billet, Floros, and Garfinkel, 2019)

$$Issuance_{it} = \alpha + \beta_1 Frenzy_{i,t-1,t-6} + \beta_2 Controls + \beta_3 LagY + FE + \varepsilon_{it}.$$

- Firm-quarter panel (LPM and Logistic)
 - *Frenzy* is 1 if the last quarter meets the 2% threshold
 - Controls: taken from determinants analysis (Q, ROA, Volatility, etc.), lagged issuance
 - Cluster by firm and time
- Logit with firm fixed effects: firms that recently experienced a retail frenzy are 69% more likely to issue equity.

Retail Frenzies and Investment

- Managers raise equity following retail frenzies
 - Could hold cash or reduce debt
 - Investment?

$$Investment_{it} = \alpha + \beta_1 Frenzy_{i,t-1,t-6} + \beta_2 Controls + \beta_3 LagY + FE + \varepsilon_{it}.$$

- Firm-quarter panel
 - CAPX / PPENT
 - Acquisitions / PPENT
- Frenzies are associated with an additional \$26 billion in CAPX and \$39 billion in Acquisitions over the sample period.

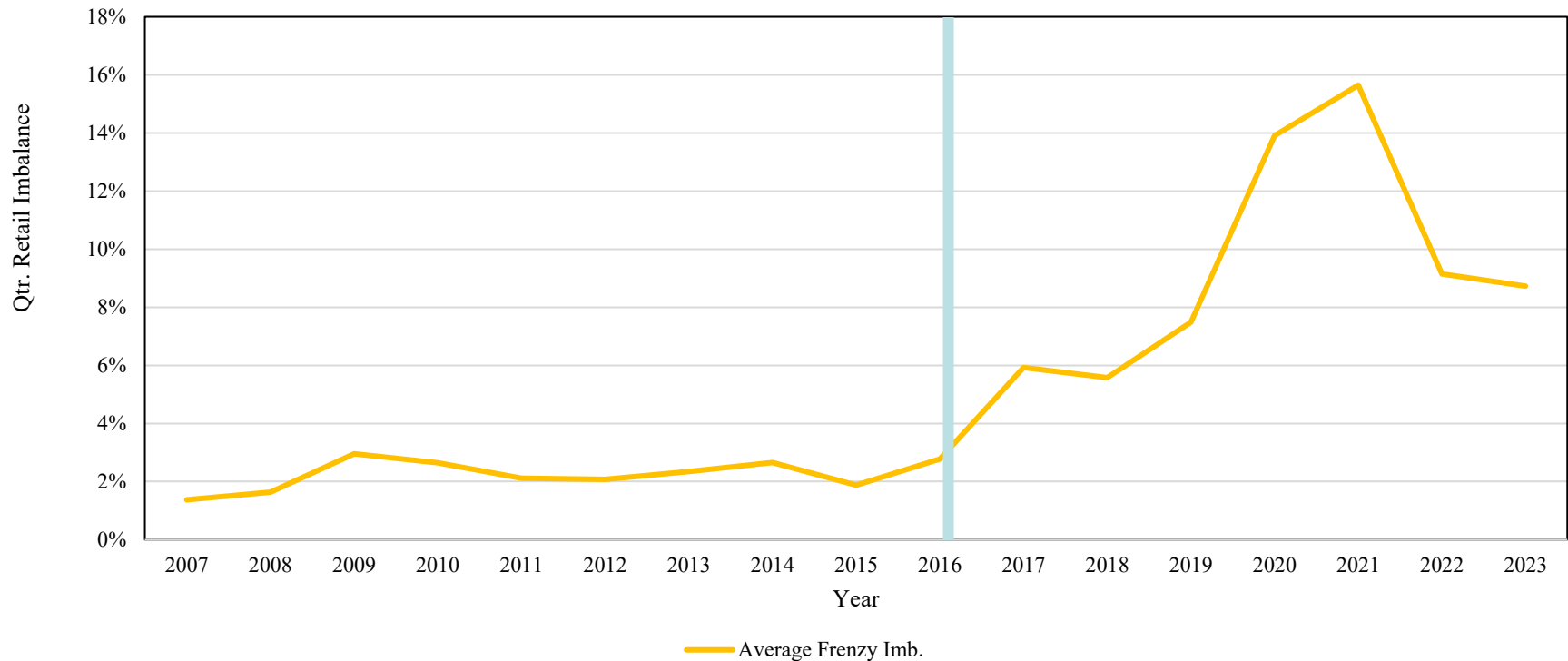
Robustness

- Match on Time - Industry - Size - Q
- Match on Time - Industry - Size - Past Return
- Match on Time - Industry - ROA - Asset Growth
- Match on Propensity Score (Nearest Neighbor)
- Vary frenzy threshold
- Use BJZZ to measure retail trading
- Vary timing of frenzy
- Exclude Covid period
- Exclude very small firms

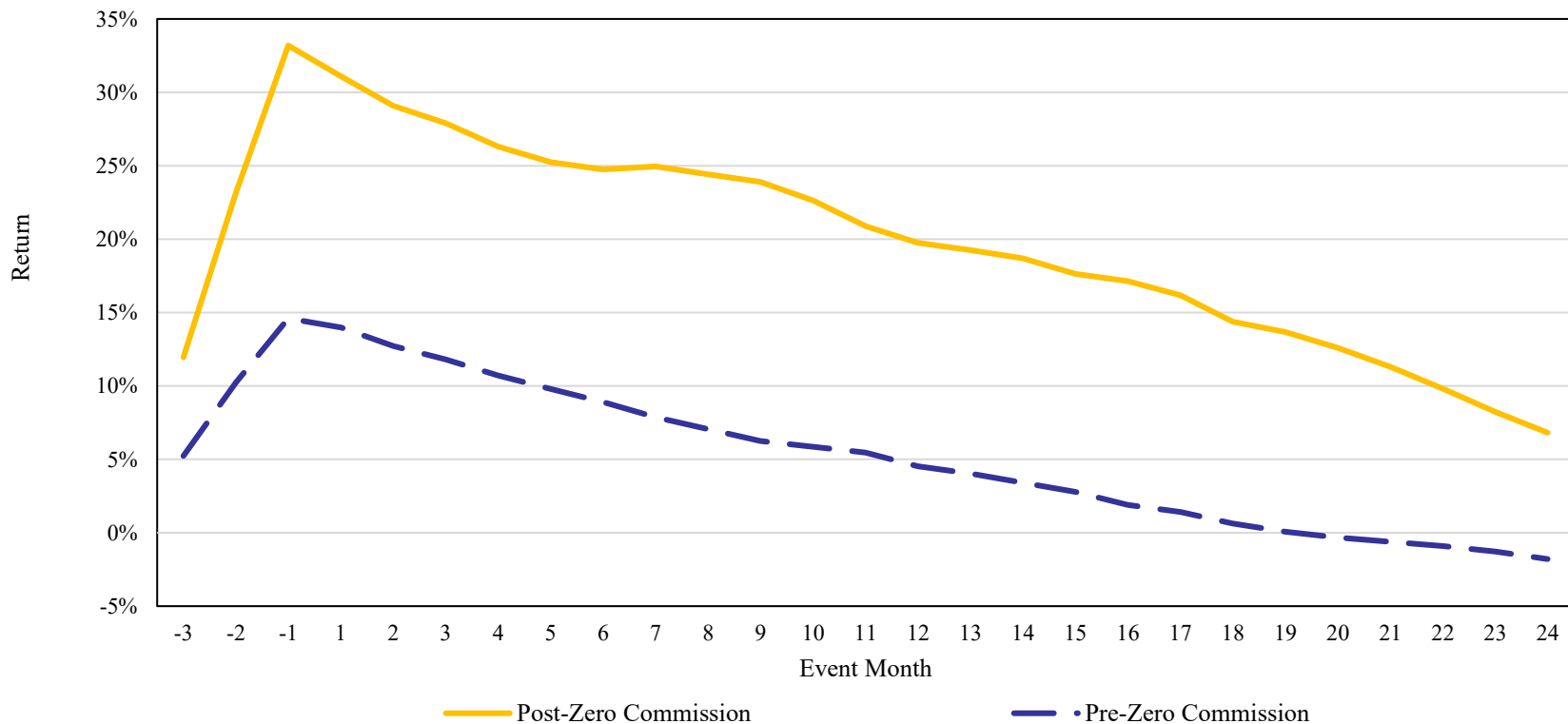
Retail Frenzies – Time Series Trends

- Frenzies should be larger in more recent sample
 - Zero Commission Trading
 - COVID/Work from Home
 - Increased role of social media
- Construct *Relative Frenzy* - an indicator equal to one if Retail OIB fall in top 1.3% relative to other firms at the same time.
 - Roughly same number of frenzies
 - Contrast frenzies in pre (2007-2016) and post (2017-2023) periods

Pre/Post Zero Commissions: **Relative** Frenzy



Frenzy Returns: Pre- and Post-Zero Commissions



Equity Issuance & Investment: Pre vs. Post

	Equity Issuance	CAPX	Acquisitions
	[1]	[2]	[3]
Relative Retail Frenzy × Post Zero Commission	15.25%	1.71%	4.08%
	(6.93)	(2.11)	(3.36)
Relative Retail Frenzy × Pre Zero Commission	3.61%	1.35%	-1.10%
	(3.46)	(3.45)	(-1.61)
Post – Pre	11.63%	0.36%	5.18%
	(4.71)	(0.39)	(3.65)
Controls	Yes	Yes	Yes
Time × Industry Fixed Effects	Yes	Yes	Yes
Obs. (Firm-Quarters)	209,308	209,308	209,308

Retail Frenzies and Profitability

- Feedback models (e.g., Goldstein, Ozdenoren, and Yuan, 2013): prices may influence stakeholder decisions and impact firm fundamentals.
 - Relaxing financial constraints
 - Improving relationships with suppliers
 - Hiring/retaining better employees
 - Improving consumer demand
- Test whether retail frenzies are associated with profitability.
 - Pos. Forecast Error: Indicator if earnings exceed I/B/E/S consensus.
 - Captures whether firms outperform expectations
 - Pos. Forecast Revision: Indicator if analyst forecasts increase after the frenzy
 - Measures whether analysts revise expectations upward post-frenzy.
- Significantly positive in the full sample, concentrated in Post-Zero Commission

Performance of Frenzy Investments

- Retail frenzies increase equity issuance and investment.
 - Issuance timing is well-documented
 - Investment result less obvious. Mechanism is unclear.
- Two possibilities:
 - Relaxed financial constraints enable value-enhancing projects.
 - Low ability or agency leads to value-destroying investments.
- Test whether investments following frenzies predict future performance.
 - High Investment: Large CAPX (top quartile, >50% increase) or large acquisition (>1% of fixed assets). Low Investment: Other frenzy firms.
 - Build calendar-time portfolios:
 - Weight stocks based on months classified as high or low investment over prior 24 months. Estimate abnormal returns using CAPM and six-factor models.

Performance of Frenzy Investments

	CAPM Alpha		Six-Factor Alphas		
	All Investments		All Investments	CAPX	Acquisitions
Frenzy – Low Investment	-1.55		-0.61	-0.67	-0.63
	(-2.19)		(-1.28)	(-1.44)	(-1.33)
Frenzy – High Investment	-2.38		-1.45	-1.33	-1.77
	(-3.45)		(-2.91)	(-2.27)	(-3.55)
High - Low Investment	-0.83		-0.84	-0.65	-1.13
	(-2.69)		(-2.73)	(-1.70)	(-2.67)

New Investments vs. Assets-in-Place

- Post-frenzy poor performance could reflect overvaluation of existing assets, or value destruction from frenzy-induced investments
- Distinguishing these is important to identify the mechanism
 - If driven by assets in place → suggests initial mispricing but not necessarily bad investment decisions
 - If poor performance stems from new investments → suggests misallocation of new capital
- Analyst forecast revisions and earnings surprises around new investments
 - Analysts are significantly less likely to revise upwards in the week after a post-frenzy merger announcement (compared to non-frenzy mergers)
 - Post-frenzy earnings surprises are more negative after large investments
 - Suggests analysts view post-frenzy mergers as value-destroying, despite initial positive market reactions.

Why Do Managers Invest in Value-Destroying Projects?

- Frenzies lead to increased investment, but much of it appears value-destroying.
- Explore whether **managerial ability** explains who overinvests.
- Lower-ability managers may
 - Overestimate project returns (overconfidence).
 - Struggle to screen and execute investments efficiently.
- Measure ability using
 - Revenue efficiency score (Demerjian, Lev, and McVay 2012)
 - Historical industry-adjusted returns (alternative proxy).
- Investment increases after frenzies are concentrated among low-ability managers.
 - Post-investment underperformance is much worse for low-ability managers
 - Returns: Six-factor alpha -2.06% (low ability) vs -0.89% (high ability).
 - Earnings surprises: -10.0% (low ability) vs -4.5% (high ability).

Joint Role of Managerial Ability and Financial Constraints

- Frenzies relax financial constraints, giving managers more capital to invest.
- Low-ability managers may still overinvest even when unconstrained if they misinterpret price signals (Dessaint et al., 2019).
 - Partition firms into 4 groups
 - High vs. Low Ability (Demerjian measure)
 - Constrained vs. Unconstrained (KZ Index)
- Only low-ability, financially constrained managers significantly increase investment after frenzies.
 - Other groups show little or no investment response.
- Suggests relaxed constraints empower lower-ability managers to overinvest.

Other Potential Explanations for Investment

- Faulty learning (✕)
 - No evidence that managers mistakenly interpret peer firms' price surges as signals of broader investment opportunities
- Catering to Retail Investors (✕)
 - No evidence that investment is associated with increased retail buying
- Gambling for Resurrection (✕)
 - No evidence that investment is associated with better right tail outcomes
- Agency Issues/ Managerial Incentives(✕)
 - No evidence that investment is associated with higher compensation or reduced likelihood of turnover

Conclusions

- Retail hype can lead to significant overvaluation
- Managers react by issuing equity & increasing investment
 - Relation is stronger after introduction of zero commissions
- Associated with improvements in profitability
 - Consistent with feedback models (Goldstein, Ozdenoren, and Yuan, 2013).
 - Improvements not large enough to justify valuations.
- Investment concentrated among constrained firms with lower ability managers
 - Leads to lower returns and more negative earnings surprises.
 - Frenzies relax financial constraints, enabling overinvestment by less skilled managers
- Retail frenzies may negatively impact the real economy.
 - Raises regulatory concerns about factors driving coordinated retail trading (e.g., zero-commission trading, social media).