

Negative Sentiment and Aggregate Retail Trading: Evidence from Mass Shootings

Tianchen (Hugo) Zhao

University of Maryland * Email: tzhao97@umd.edu * 404-200-3760

Abstract

I analyze the role of sentiment in aggregate retail investors' trading activity. Using mass shootings in the U.S. as exogenous, non-economic, and negative shocks to investor sentiment, I find that retail investors on average net sell stocks of firms headquartered in the states where mass shootings took place in the previous week ("local" stocks). Consistent with lower sentiment-driven trading, the retail net divestment from local stocks increases in the number of victims from mass shootings, and is more pronounced following unsolved shootings and shootings with teenage victims. However, such trading behavior does not seem to be rational, as local mass shootings have little impact on local firms' financial and operating performances, as well as local economic conditions. Finally, institutional investors do not react to mass shootings, which suggests that retail investors are more prone to sentiment

Motivation

- Retail investors are important participants in the U.S. equity market (25% of U.S. equity trading volume)
- Conventional wisdom:** retail investors are "noise traders" who are subject to sentiment, whereas institutional investors are sophisticated and rational
- Most studies only focus on [asset return implications](#) of sentiment changes, not [the actual trading behaviors](#)

Research Questions

- What role does sentiment play in aggregate retail investors' [daily equity trading decisions and activities](#)?
- Are institutional investors affected by sentiment?

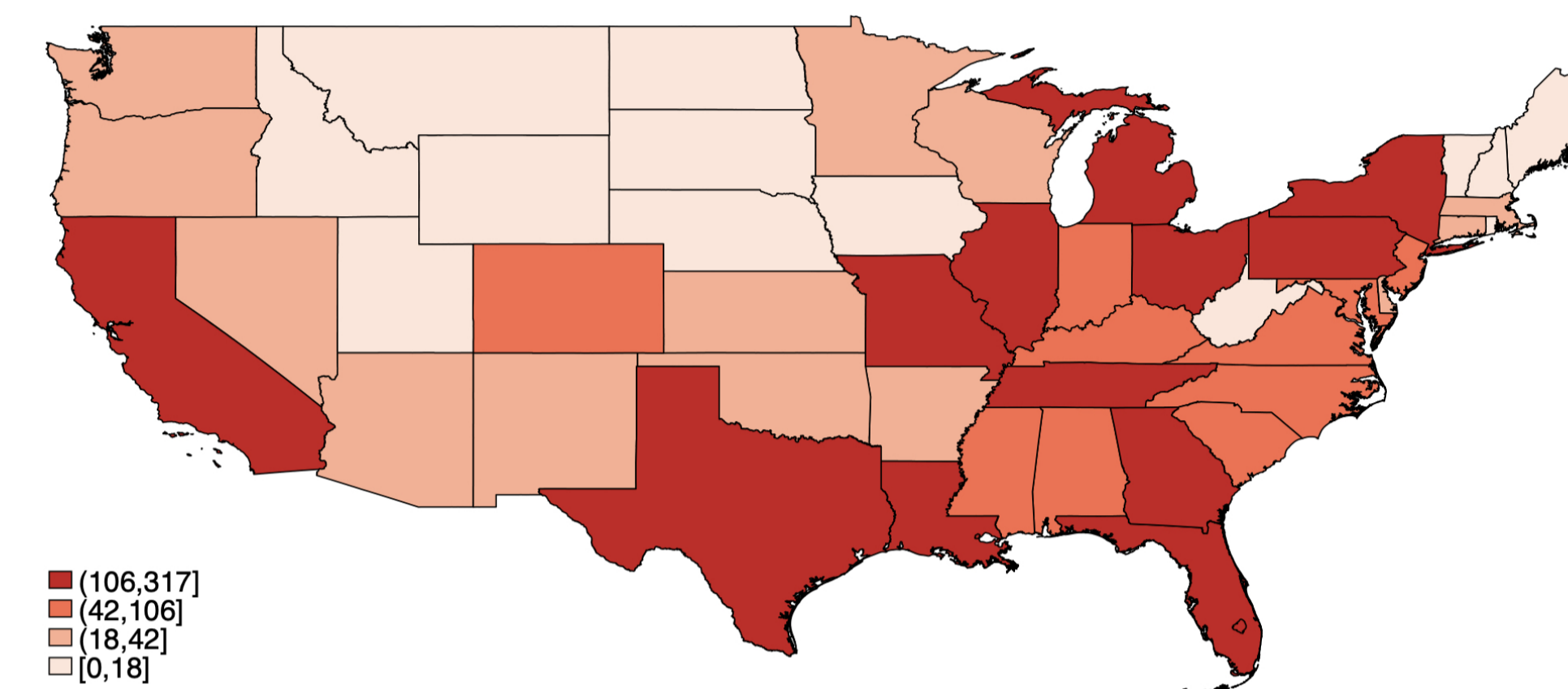
Approach

- Apply BJZZ (2021) algorithm to identify a [comprehensive set of retail and institutional orders](#) regarding > 3000 public companies in the U.S.
- Use > 3000 mass shootings as proxies for [non-economic, salient, exogenous, and negative shocks](#) to investor sentiment

Data

- Sample period: 2013-2021
- Daily** retail and institutional trading activity: BJZZ (2021) algorithm on [sub-penny price improvement](#) in orders from TAQ
- Mass shootings: Gun Violence Archive (GVA). > 3000 shootings in which at least 4 people were injured or killed by the use of firearms
- Stock characteristics: CRSP and Compustat
- State economic conditions: U.S. Bureau of Economic Analysis (BEA)

Mass Shootings Across U.S. States



Retail Investors Rationality

- No significant changes in local stock returns or local firms' operating performances after mass shootings \Rightarrow [retail investors are not rational](#)

	w	w+1	w+2	w+3
	(1)	(2)	(3)	(4)
Shooting	-0.001 [0.003]	-0.004 [0.004]	-0.001 [0.004]	0.002 [0.004]
Controls	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y
Year-month FE	Y	Y	Y	Y
	Sales/Assets		ROA	
	(1)	(2)	(3)	(4)
Log_Shooting	-0.071 [0.080]		0.122 [0.085]	
Log_Victim		-0.021 [0.039]		0.061 [0.053]
Firm FE	Y	Y	Y	Y
State FE	Y	Y	Y	Y
Industry-Year FE	Y	Y	Y	Y

Empirical Specification

$$Mroib_{i,s,t} = \alpha + \beta * Shooting_{s,w-1} + Controls + FEs + \epsilon_{i,s,t}$$

- $Mroib_{i,s,t}$: daily retail order imbalance for stock i in state s on day t : (buy - sell) / (buy + sell)
- $Shooting_{s,w-1}$: dummy = 1 if at least one mass shooting occurred in state s during week $w - 1$
- $Controls$: Stock and state characteristics that affect both retail trading and the likelihood of mass shootings

Baseline Results

- Google SVI suggests people pay close attention to mass shootings
- [Retail investors net sell local stocks after mass shootings](#)

Dep. Var.	Volume Imbalance		Trades Imbalance	
	(1)	(2)	(1)	(2)
Shooting	-0.160*** [0.058]	-0.100** [0.039]		
Return	-0.037*** [0.003]	-0.040*** [0.003]		
Log_Size	0.294*** [0.030]	0.378*** [0.033]		
Controls	Y	Y		
Industry FE	Y	Y		
Year-month FE	Y	Y		
Obs	6396133	6396133		
Adj. R ²	0.4%	1.39%		

Shooting-level Heterogeneity

- Net retail divestment increases following [more severe and tragic mass shootings](#)

Dep. Var.	Volume Imbalance	
	(1)	(2)
Not_Arrested	-0.196*** [0.066]	
Arrested	-0.046 [0.069]	
Teen		-0.255*** [0.065]
Adult		-0.106 [0.066]
Controls	Y	Y
Industry FE	Y	Y
Year-month FE	Y	Y
Obs	6396133	6396133
Adj R ²	0.4%	1.39%

Institutional Trading

- Institutional investors exhibit no reactions to the same set of mass shootings

Dep. Var.	Volume Imbalance		Trades Imbalance	
	(1)	(2)	(1)	(2)
Shooting	0.007 [0.049]	0.015 [0.040]		
Return	0.018*** [0.001]	0.018*** [0.001]		
Log_Size	0.611*** [0.025]	0.307*** [0.016]		
Controls	Y	Y		
Industry FE	Y	Y		
Year-month FE	Y	Y		
Obs	6396133	6396133		
Adj. R ²	2.75%	4.74%		