Meme Corporate Governance

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Abstract

Can retail investors revolutionize corporate governance and make public companies more responsive to social concerns? The U.S. stock market offered an unusual experiment to test the impact of retail investors in 2021, when there was a dramatic influx of retail investors into the shareholder base of companies such as GameStop and AMC. The meme surge phenomenon elicited a variety of reactions from scholars and practitioners. While some worried that affected companies' share prices were becoming disjointed from their financial fundamentals, others predicted that retail shareholders will reduce the power of large institutional investors and democratize corporate governance. This Article presents the first empirical analysis of the impact of retail investors on the governance of companies affected by the "meme stock surge." The Article presents three principal findings. First, we show how the "meme stock" frenzy was affected by the introduction of the commission-free trading platform, such as Robinhood, in 2019. We show that the meme stock companies experienced higher abnormal stock returns when commission-free trading was widely introduced, and saw elevated trading volumes afterward. Second, we examine how the influx of retail shareholders has directly affected the governance outcomes at the meme stock companies. Notwithstanding the promise of a more active retail shareholder base, we show that meme stock companies have experienced a significant decrease in participation by their shareholders with respect to voting. Shareholder proposals under Rule 14a-8 have also been extremely limited, with most meme firms seeing no proposals brought after the rapid increase in retail ownership. Third, we examine whether the increase in retail shareholder base had any indirect effect on corporate governance and performance. While board gender diversity at these firms is broadly unchanged, their ESG scores have gotten worse subsequent to the meme surge. Examining meme firms' use of corporate funds, we find decreases in research and development and capital expenditures after the meme surge. Collectively, our findings suggest that the influx of retail shareholders at these companies have not translated into more "democratic" governance regimes or reduced agency costs, even at firms the scholarly and popular commentary had highlighted as the cynosure of the retail investor storm.

Keywords: Meme Stock, Retail Investors, Corporate Governance, Shareholder Voting, ESG

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MEME CORPORATE GOVERNANCE

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ABSTRACT

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* Northwestern Pritzker School of Law, University of Michigan Law School, and Northwestern Pritzker School of Law, respectively. The authors thank Sue Guan, Dorothy Shapiro Lund, Roberta Romano, Kathy Spier, George Triantis, and Jonathon Zytnick; conference participants at the 2023 Winter Deals Conference and Law and Technology Conference at the University of Southern California; workshop participants at the University of Michigan Law School, Bocconi University, and Corporate Law Academic Webinar Series (CLAWS) for many helpful comments and suggestions. The authors thank Irving A. Birkner (Kellogg School of Management at Northwestern University), Shay Elbaum (University of Michigan Law Library), and Clare Gaynor Willis (Northwestern Pritzker School of Law Library) for help with data collection, and Danny Damitio, Andrea Lofquist, Michael Palmer, and Nanzhu Wang for their excellent research assistance. Comments are welcome to dhruv.aggarwal@law.northwestern.edu, alchoi@umich.edu and alex.lee@law.northwestern.edu.

I. INTRODUCTION

Buoyed by pandemic checks and the advent of trading apps like Robinhood, offering commission-free and "gamified" trading, retail investors took Wall Street by storm in early 2021.[1] Coordinating through social media sites such as Reddit, retail investors engaged in an active "buy" campaign to dramatically push up the GameStop stock price to the stratospheric level of over $485 per share, from a starting price of less than $4 a share. GameStop, a gaming merchandise retailer, had been losing money and was facing a liquidity crisis.[2] Its low stock price was probative evidence that the market had been predicting a GameStop bankruptcy and a possible future liquidation. A number of hedge funds—most prominently Melvin Capital—had taken a large short position against its stock, betting that the price would drop even further.[3] Retail investors' influx seems to have been driven in part to create a "short squeeze" against the hedge funds.[4] The end result was a large loss for—as well as ultimate retreat by—the hedge funds.[5] Taking advantage of the elevated stock price, GameStop

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[1] Robinhood heavily utilizes the payment for order flow (PFOF) business model, under which the company receives payment from market makers in return for delivering a large order flow. For more detailed information, *see* Siqi Wang, *Consumers Beware: How Are Your Favorite "Free" Investment Apps Regulated?*, 19 DUKE L. & TECH. REV. 43 (2020-2021), Robert H. Battalio & Tim Loughran, *Does Payment For Order Flow To Your Broker Help Or Hurt You?*, 80 J. BUS. ETHICS 37 (2008), and Kate Rooney & Maggie Fitzgerald, *Here's How Robinhood Is Raking in Record Cash on Customer Trades — Despite Making It Free*, CNBC (Aug. 14 2020), www.cnbc.com/2020/08/13/how-robinhood-makes-money-on-customer-trades-despite-making-it-free.html. In our companion paper, we discuss the development and evolution of the PFOF system in more detail. *See* Dhruv Aggarwal, Albert H. Choi, and Alex Lee, "The Meme Stock Frenzy: Origins and Implications," working paper (2023).

[2] *See, e.g.*, GameStop Forms S-3, 10-Q, and 10-K from 2020, 2021, and 2022.

[3] *See, e.g.*, Laurence Fletcher, *Hedge Fund that Bet Against GameStop Shuts Down*, FIN. TIMES (June 22, 2021), https://www.ft.com/content/397bdbe9-f257-4ca6-b600-1756804517b6.

[4] Tim Hasso et al, "Who Participated in the GameStop Frenzy?: Evidence from Brokerage Accounts," working paper, Center for Tax and Accounting Research (May 2021), *available at* https://en.wiwi.uni-paderborn.de/fileadmin/cetar/TAF_Working_Paper_Series/TAF_WP_058_HassoMuellerPelsterWarkulat2021_rev.pdf Using a sample of all trades that took place on GameStop with a broker between December 1, 2020 and February 12, 2021, the authors were able to show that many retail investors closed their positions before the price peak and other retail investors even took a short position against GameStop. The evidence that many retail investors had a strong interest in taking a bet against Wall Street suggests that their interests weren't merely "financial" and they were willing to pay a price that is higher than what the firm's financials (or "fundamentals") dictated. Given that many meme companies, including GameStop and Bed Bath & Beyond, are performing quite poorly and many retail investors are staying loyal to these companies long after the meme surge, these long-term retail investors are also likely to be motivated by non-financial interests, such as the company's survival.

[5] *See, e.g.*, Toby Mathis, *How Much did Hedge Funds Lose on GameStop?*, INFINITY INVESTING (Sept. 27, 2001), https://infinityinvesting.com/gamestop-hedge-fund/. Eventually, Melvin Capital would shut down a little more than year later. *See Melvin Capital to Shut After Heavy Losses on Meme Stocks, Market Slump*, CNN.COM (May 19, 2022),

unsurprisingly engaged in a large amount of capital raising through a couple of stock sales,[6] thereby eliminating (at least temporarily) its previously dire liquidity condition. Retail shareholders, who have long played second-fiddle to more sophisticated market participants such as asset managers and pension funds, thus seemed to have vanquished Wall Street hedge funds and resurrected an ailing company whose business model warranted liquidation.

The meme surge phenomenon was met with both enthusiasm and cynicism. Some scholars and practitioners, concerned with the implication for the market's efficiency, called for regulation of zero-commission trading and, more broadly, retail investing.[7] Others, on the other hand, viewed the meme stock frenzy as signaling a new era of empowered retailed investors.[8] Those with a more optimistic outlook on the meme stock frenzy have argued that coordinated retail investor movement can further lead to coordinated shareholder movement, empowering retail shareholders to bring about significant changes in corporate governance and performance.[9] Given that the current shareholder landscape at most public companies is dominated by a small number of large institutional investors,

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https://www.cnn.com/2022/05/19/investing/melvin-capital-hedge-fund-closes/index.html. For a detailed exposition of how the GameStop saga unfolded in January of 2021, see, e.g., Jill E. Fisch, *GameStop and the Reemergence of the Retail Investors*, 102 B.U. L. REV. 102 (2022).

[6] *See, e.g.*, GameStop, Prospectus Supplement 2 (Apr. 5, 2021), *available at* https://www.sec.gov/Archives/edgar/data/1326380/000119312521186796/d192873d424b5.htm ("We have previously sold an aggregate of 3,500,000 shares of our common stock for aggregate gross proceeds of approximately $556,691,221 pursuant to the Sales Agreement and the prospectus supplement filed by us on April 5, 2021."). While it is reasonable to expect most meme stock companies to raise capital during moments of meme surges, our EDGAR search shows that only two companies—GameStop and AMC Entertainment, Inc.— took advantage of meme surges and made offerings. Other meme stock companies may have chosen not to take advantage of meme surges out of the concern that they may be blamed for knowingly selling shares at an inflated price. *See, e.g.*, Matt Levine, *Money Stuff: Meme Stocks Will Come With a Warning*, BLOOMBERG.COM (Feb. 9, 2021), https://www.bloomberg.com/news/newsletters/2021-02-09/the-sec-wants-reddit-meme-stocks-to-admit-they-re-dangerous-kky96vuo. After the capital raising, AMC Entertainment, Inc. attempted to increase the authorized number of common shares to engage in further equity issuance but the amendment proposal was resisted by the stockholders and was later dropped. More recently, AMC Entertainment issued AMC Preferred Equity Units ("APEs"), with same economic rights as common stock, using the board's authority to issue preferred stock so as to get around the charter amendment issue. *See, e.g.*, Matt Levine, *Money Stuff: AMC Has Some Clever APEs*, BLOOMBERG.COM (Feb. 1, 2023), https://www.bloomberg.com/opinion/articles/2023-02-01/amc-has-some-clever-apes.

[7] *See infra* Part II.

[8] *See id.*

[9] *See id.*

such as BlackRock, State Street and Vanguard,[10] the emergence of a large retail bloc would no doubt significantly alter the governance landscape of public companies.[11] But did the influx of retail investors indeed affect the governance and operation at the meme companies? This Article seeks to provide an initial assessment of the factors that created the meme phenomenon and its consequences for corporate governance and performance.

We start by analyzing the backgrounds of meme trading. The existing scholarship has almost exclusively associated meme stocks with the surge in social media interest (such as Reddit boards) in these companies starting in 2021.[12] While pandemic-era Reddit boards surely played a key role in popularizing these stocks, we trace the origins of meme trading further back, to the pre-pandemic era. Using an event study methodology, we find that meme stocks exhibited abnormal returns (and an abnormal increase in trading volume) in October 2019, when major online brokerages abolished commissions for trading. This suggests that meme companies were uniquely positioned to benefit from the surge in retail investor interest. Furthermore, the emergence and the significance of zero-commission trading for the meme stock phenomenon implies more fundamental changes that can happen at other public companies.

After documenting the importance of zero-commission trading on meme stocks, we proceed to examine the consequences of meme trading for corporate governance at meme stock companies. Specifically, we ask: Did the retail investors actually change the substance of the manager-shareholder (agency) relationship, or corporations' policies toward society (such as their ESG policies)? To answer this question, we begin with corporate law's paradigmatic framework for shareholder influence in

[10] *See, e.g.*, Dorothy Lund, *Asset Managers as Regulators*, 171 U. PENN. L. REV. 77 (2023) (describing the influence of large institutional shareholders the corporate governance of portfolio companies); Lucian Bebchuk & Scott Hirst, *Specter of the Giant Three*, 99 B.U. L. REV. 721, 729-32 (2019) (same).

[11] *See, e.g.*, Jill Goldsmith, *AMC Entertainment CEO Adam Aron Asks Retail Investors To Back Off Social Media Posts "Laced With Hostility, Threats"*, DEADLINE (May 9, 2022) https://deadline.com/2022/05/amc-entertainment-adam-aron-amc-shareholders-meme-stock-1235019854/ (describing how AMC's "stockholder has completely turned over" from institutions to "individual retail traders from Reddit chatrooms").

[12] *See* sources listed *infra* note 12.

widely held public corporations: voting and shareholder proposals.[13] Foremost, we find that non-voting—i.e., the share of votes that were not cast for or against a proposal or marked as abstentions—in fact *increased* during and after the meme surge period for meme companies, as compared to other non-meme companies in the sample. Furthermore, the fraction of non-votes seems to be increasing even in 2021 and 2022, long after the initial "meme surge" was over. This is surprising since, presumably, by late 2021 and 2022, the retail investors who remain loyal to the firm would presumably care more about the firm's performance and governance.[14] That the fraction of non-votes at meme companies increased, not just in absolute terms but also compared to that of non-meme companies is still more perplexing.

Turning to shareholder proposals, we find no evidence that shareholders at meme stock companies are more likely to participate in governance activities by submitting shareholder proposals, either before or after the meme surge. Between 2015 and 2022, only one meme stock company—Bed Bath & Beyond—had any shareholder proposal included in the company's definitive proxy statements at all (three proposals, all in 2016), but these proposals predate the influx of retail investors. There was also no record of any shareholder proposal being excluded via the SEC's no-action letter process during the period examined, with the exception of GameStop, which successfully excluded three shareholder proposals submitted in 2022. The evidence is consistent with the hypothesis that the retail investors brought in by the meme phenomenon were hence either uninterested in voting or making proposals, or unable to do so effectively.

We then examine whether retail investors have had an *indirect* effect on meme stock companies, beyond traditional voting or making proposals. One of the most visible ways contemporary insurgent

[13] *See* Frank H. Easterbrook & Daniel R. Fischel, *Voting in Corporate Law*, 26 J.L. & ECON. 395 (1983); Marcel Kahan & Edward B. Rock, *The Hanging Chads of Corporate Voting*, 96 GEO. L.J. 1227 (2008).

[14] Although we do not have a direct measure on what fraction of the non-votes came from retail shareholders, since non-voting is usually associated with retail investors (as shown in the existing literature), the finding suggests that meme traders were apathetic in their role as stockholders and did not exercise their franchise.

shareholders can affect company policy is to alter its orientation toward environmental, social, and governance (ESG) goals. For example, in 2021, a small hedge fund waged a stunningly successful campaign to install three of its directors on the Exxon Mobil board, in order to pressure the energy company to reduce its carbon footprint.[15] Applying a difference-in-difference approach to data from the standard MSCI ESG Indexes, we find that meme companies surprisingly *deteriorated* in terms of prosocial performance after the meme surge of 2021. We also look at whether meme companies performed better in terms of board gender diversity—another salient issue in the corporate governance sphere. We find no evidence that meme companies performed better (or worse) on this metric. Meme retail investors do not seem to have made their companies' governance and performance more prosocial. In fact, if anything, the ESG result suggests that these firms' orientation toward social causes may have *worsened* in recent years.

As a final indirect measure of the meme surge, we look at how affected firms changed their operations and performance after both the abolition of commissions and the formation of online social communities surrounding these stocks. Foremost, looking at the aggregate measures (of meme and non-meme companies), we document how meme companies' average return on assets (ROA), an important metric in financial performance, has substantially worsened over the period, compared to non-meme companies. Based on the existing financial economics literature, one may expect that meme firms may decrease R&D and capital expenditure (and other innovative activities) when the shareholder base is replaced by less active retail shareholders with poorer monitoring capacity.[16] These

[15] *See* Matt Phillips, *Exxon's Board Defeat Signals the Rise of Social-Good Activists*, N.Y. TIMES (Jun. 9, 2021), https://www.nytimes.com/2021/06/09/business/exxon-mobil-engine-no1-activist.html.

[16] *See* Brian Bushee, The Influence of Institutional Investors on Myopic R&D Investment Behavior, 73 Acct Rev 305 (1998) (showing less "myopic" R&D spending when the share of institutional holdings increases); Philip Aghion et al., *Innovation and Institutional Ownership*, 103 AM. ECON. REV. 277 (2013) (showing how increase in institutional ownership increases more innovative activities at firms, including research and development expenditure); and Ian Appel, Todd Gormley, and Donald Keim, Passive Investors, Not Passive Owners, 121 Journal of Financial Economics 111 (2016) (making similar findings when institutional ownership increases due to changes in Russell 1000 and 2000 index compositions). *See also* Ming Dong, David Hirshleifer, and Siew Hong Teoh, Misvaluation and Corporate Inventiveness, 57 J Fin Quant Analysis 2605 (2021) (documenting an increase in R&D activity, among others, when firms are "over-valued" due to mutual fund inflows);

R&D expenses could potentially help meme companies to adjust their business model and business operations so as to improve their long-term profitability. However, consistent with the existing literature, we find that meme stocks significantly *reduced* R&D expenses after the influx of retail investors.[17] This is true even when we control for firm and time trends. Therefore, we were unable to find any tangible benefit for meme firms in terms of a boost to the firm's innovation activities.

Viewing these results collectively, we argue that, to date, there seems to be little evidence to support the belief that corporate governance is being "democratized" in the way the investing public has been. The organized movement among retail investors seems to be limited to the investing public's trading behavior and has not otherwise affected retail shareholders' engagement with corporations in a noticeable way. If anything, the existing evidence surprisingly points in the opposite direction. In addition, recent regulatory changes—such as the raised thresholds for submitting shareholder proposals under Rule 14a-8—may have made effective retail shareholder participation more difficult. For these reasons, we believe that meme traders may very well remain passive as shareholders, even as they remain active as investors, at least for the foreseeable future. To a certain extent, they can be seen as mirror images of institutional investors, who are often passive as investors, while remaining active as shareholders.[18]

The rest of this Article is organized as follows. Part II surveys the literature on retail investors, retail shareholders, and meme traders and summarizes the somewhat lofty expectations some commentators have expressed for the potential impact of retail investors on corporate governance. Part III explains our data sources and presents summary statistics. Part IV examines the origins of meme trading and explains the importance of the 2019 abolition of commissions by online brokerages,

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[17] *See infra* Part VI.

[18] *See* Ian Appel, Todd Gormley & Donald Keim, *Passive Investors, Not Passive Owners*, 121 J. FIN. ECON. 111 (2016) (documenting how an increase in institutional ownership leads to better governance outcomes, such as board independence and fewer anti-takeover devices, and performance, such as a higher return on assets (ROA) and more R&D expenditure).

including Robinhood. Part V shows that, despite the surge of retail investor interest in meme companies, shareholder non-voting at meme stock companies increased in recent years, and retail investors failed to make much of an impact using the shareholder proposal process.

Part VI looks at indirect effects of meme surges. First, it asks whether retail investors could have changed their firms' ESG performance or board gender diversity. We find that these companies have not become more prosocial recently but meme firms' ESG scores have decreased. Second, it investigates whether meme stocks spent more heavily on innovation after the influx of retail investors, and finds that these companies decreased both R&D as well as capital expenditures. Part VII concludes the Article and offers some possible directions for a future meme stock research agenda.

II. RETAIL INVESTORS, RETAIL SHAREHOLDERS, AND MEME TRADERS

Back in January 2021, when GameStop first experienced a series of dramatic meme surges, it was easy to dismiss the phenomenon as a transient anomaly that could be explained by the pandemic boredom and stimulus checks.[19] But the pandemic has long ended, while meme surges continue, albeit sporadically. Experts now believe meme trading is here to stay.[20] If meme trading has become a fact of life in our capital markets, it is reasonable to ask what more we can expect from retail investors participating in meme trading—i.e., their influence beyond the trading markets. The central inquiry of this Article is whether retail *investors* can bring about meaningful changes as retail *shareholders*. This Part considers the potential role that these retail investors may play as shareholders. Preliminarily, we conclude that, without further technological development, there may be no obvious path by which one can expect a similar revolution in shareholder activities.

A starting point for this inquiry is recognizing that although there is a natural connection between retail investors and retail shareholders, their actual activities are quite different. As an investor,

[19] *See* Joe Rennison & Stephen Gandel, *Meme Stocks Are Back. Here's Why Wild Trading May Be Here to Stay.*, NYTIMES.COM (Aug. 19, 2022), https://www.nytimes.com/2022/08/19/business/meme-stocks-bed-bath-beyond.html.
[20] *See id.*

an individual is concerned about profitable short or long run transactions. Her activities include studying market information and diversifying portfolios. As a shareholder, an individual is concerned about capital gains, dividend payments, and her control rights (what may collectively be called "corporate governance"). She has the right to participate in shareholder voting, nominate director candidates, submit proposals, or even run proxy contests.[21] An individual faces different vulnerabilities depending on whether she is acting as an investor or as a shareholder. A trader is vulnerable at the moment she is transacting because she may be purchasing or selling stocks at an unfair price due to undisclosed information.[22] By contrast, a shareholder is vulnerable as long as she owns the stock because corporate misconduct and breaches of fiduciary duties can reduce the share price.[23]

In addition, there is a significant difference between the payoffs of these activities. Retail traders participating in a meme surge will trade with a certain expectation and the payoff from their trades may be realized very quickly. There is a sense of instant gratification as well as an immediate opportunity to participate in a social activity. By contrast, retail shareholders may cast their votes only to find out that their votes have made no difference on the outcomes or that the proposals approved do not bring about any immediate changes in the way their corporations are run. In addition, if meme stock traders are driven by quick payoffs, they may not even be shareholders as of their company's record date—in other words, they may not be eligible to vote by the record date for the annual meetings.

Another factor to consider is that technological developments may have reduced *participation* costs for shareholder engagement, but not *information* costs. Participation costs refer to the resources the ordinary individual would require to find out about a firm and invest in it, while information costs

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[21] Another important right given to the shareholder, of course, is to bring lawsuits, based on either federal securities laws or corporate law (such as claims for breach of fiduciary duty), but we'll focus on investing and governance.
[22] *See* James J. Park, *Reassessing the Distinction Between Corporate and Securities Law*, 64 UCLA L. REV. 116, 116 (2017).
[23] *See id.*

are the costs she must incur to conduct research into the firm's business operations and corporate governance. The digital innovations that sparked meme trading, such as the abolition of trading commissions, may not have reduced the information costs of shareholder participation in the same manner that they reduced participation costs of trading. Because meme trading is not an information-intensive activity, mobile apps like Robinhood and the abolition of trading commissions paved the way for retail traders. By contrast, shareholder voting is an inherently information-intensive activity, and thus, even with technologies that are designed to reduce participation costs, information costs that come with voting cannot be fully eradicated. For all these reasons, a sudden burst of enthusiasm for one type of activity may not instantly translate to a groundswell for another form of market participation.

Nevertheless, the broader significance of the link between technological innovation and investing behavior should be appreciated. The GameStop saga and the meme stock frenzy of 2021 demonstrated the power of technology to coalesce dispersed individuals who can unite to bring about an impact and put checks on the forces of institutional players. Today, social media platforms, such as Reddit or Twitter, provide a space where individuals form communities, share information, and organize collective action. These platforms have also made it easier for people to spread information quickly, allowing them to mobilize and respond to events in real-time. From these perspectives, the fact of meme surges at least hints at a future in which technology can further enable and empower dispersed individuals to overcome the cost of collective action and promote a collectively cobbled together agenda.

A point worth highlighting is that it would not be accurate to group all retail investors together. The sudden influx is limited to a new generation of particular types of retail investors, that are now known by different names, such as "meme investors,"[24] "meme traders,"[25] "wireless investors,"[26] or "ultra-retail investors."[27] In our view, the term "meme traders" most aptly captures the observed pattern of transactions. In executing transactions motivated by Reddit discussion threads and triggering "short squeeze" attacks, these individuals cannot be said to be investing in any traditional sense. Although these traders only represent a subset of retail investors, they exist in sufficient numbers to affect price movements in the market for meme stocks.

The characteristics of this new generation of traders may explain why some scholars believe meme trades should be regulated. For example, Professor Abraham Cable argues that meme traders' herding and speculative tendencies lead them to have worse outcomes than the typical retail investor.[28] Similarly, Professor James Tierney notes that zero-commission stock trading apps can encourage excessive and socially wasteful trading behavior among meme traders and ultimately lead to an inefficient allocation of capital in the market.[29]

In addition to highlighting a potential need for regulation, these observations also suggest that the key distinction previously highlighted between retail investors and retail shareholders may not even be the salient point of inflection—insofar as meme traders are not primarily concerned about informed trading. At the same time, the distinction between traditional retail investors and meme traders may also be why one might expect changes in retail shareholder participation in corporate governance matters—insofar as meme traders are also shareholders, the traits that set apart meme traders from traditional retail investors may also predict preferences for greater engagements with corporations.

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[24] *Id.* at 2081.
[25] *See* Emily Stewart, *GameStop. Dogecoin. Now AMC. Do Meme Traders Need To Be Protected From Themselves? "If You're Trading Like It's a Game, You're Probably Going To Lose.,"* VOX (June 16, 2021), https://www.vox.com/policy-and-politics/22528238/gme-amc-robinhood-stock-market-reddit.
[26] *See* Ricci & Sautter (2021), *supra* note 3, at 51.
[27] *See* Abraham J.B. Cable, *Regulating Democratized Investing*, __ OHIO STATE L.J. (forthcoming 2023), *available at* https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4136828.
[28] *Id.* at 4.
[29] Tierney (2022), *supra* note 3, at 353; *see also* Guan, *supra* note 13, at 2069 (providing examples of how Robinhood's "gamification and fun user interface" promote inefficient trading by retail investors).

One optimistic view is that increased retail access to capital markets will "democratize" finance and such retail shareholders will embed their social, cultural, and distributional preferences on corporate policies.[30] For example, Professors Sergio Alberto Gramitto Ricci and Christina Sautter observe that millennials have a generationally defined and distinct set of values, and are more likely to prioritize ESG goals over profit.[31] In their telling, meme investors will seamlessly transform into engaged shareholders and usher in a new paradigm for corporate governance.[32]

Professor Jill Fisch advances a different argument to support increased engagement by retail investors, stressing that meme investors are a useful antidote to the concentration of market power in large institutional investors, and can help enlist ordinary citizens in the larger project of national economic development.[33] Citizen involvement via retail investing could also have the advantage of tempering corporate power, with retail investors able to sway management through their ability to influence close votes.[34]

Professors Alon Brav, Matthew Cain, and Jonathon Zytnick empirically assess the collective voting heft of retail investors using a large proprietary sample of shareholder ownership and voting records.[35] They conclude that retail investor voting can have as much of an impact on corporate outcomes as the voting preferences of the three largest institutional investors.[36] This suggests that, to the extent meme stock surges can motivate greater retail shareholder participation, there is a realistic possibility of significant changes in corporate governance.

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[30] *See* Fisch, *supra* 5, at 1841-42 & 1846-47; Ricci & Sautter, *supra* note 3, at 90-95; Sergio Alberto Gramitto Ricci & Christina M. Sautter, *The Wireless Investors Movement*, U. CHI. BUS. L. REV. BLOG (Jan. 28, 2022), https://businesslawreview.uchicago.edu/2022/01/28/the-wireless-investors-movement%EF%BF%BC (contending that retail trading "will naturally expand into corporate-governance-based initiatives").

[31] Ricci & Sautter, *supra* note 3, at 77.

[32] *Id.* at 78.

[33] *See* Fisch, *supra* note 5, at 1805.

[34] *Id.* at 1840.

[35] Alon Brav et al., *Retail Shareholder Participation in the Proxy Process: Monitoring, Engagement, and Voting*, 144 J. FIN. ECON. 492 (2022).

[36] *Id.* at 504.

Meanwhile, not all scholars are convinced that the retail investment surge will lead to significant changes in corporate governance.[37] For one thing, it is far from obvious that the influx of retail investors should have a positive effect on a company's ESG measures: such a prediction would only follow if it were established *a priori* that retail investors—specifically, the new generation of retail investors—tend to support ESG more vigorously than the existing institutional investors. To be sure, survey findings have tended to suggest that millennials and Gen Z investors care deeply about ESG.[38] On the other hand, Brav et al.—perhaps the most data-intensive study on this point to date—report that retail shareholders are *less* likely to support ESG proposals than institutional investors.[39] This finding suggests that the overall effect may be ambiguous: even if the new generation of retail investors are more likely to support ESG proposals (compared to the previous generation), it is unclear whether their support would exceed that of institutional investors.[40]

Equally important to note is that meme surges to date have been limited to a small set of companies that are not randomly selected. In discussing some common denominators among meme stock companies, one analysis catalogues factors such as low stock prices and enduring cultural relevance.[41] Indeed, our analysis of meme stocks reveals that these firms are mid to small-cap

[37] *See* Kastiel & Nili (2022), *supra* note 3, at 809, 814 (finding that retail investors "tend not to participate in the [corporate] voting process"); Tierney (2022), *supra* note 3, at 409–11; Brav et al., *supra* note 35, at 493 (finding that "[r]etail shareholders do not support environmental, social, and governance (ESG) proposals to the same degree that institutional investors do"); Matthew Fox, *Retail Investors' Influence Over The Stock Market Is In Decline As High-Growth Names Tumble And Meme-Stock Mania Fades, Jpmorgan Says*, MARKETS INSIDER (Feb. 10, 2022, 9:48 AM), https://markets.businessinsider.com/news/stocks/retail-investors-influence-over-stock-market-declining-meme-stock-mania-2022-2 (noting that retail investors are divesting from individual company stocks and reinvesting in traditional pooled investment vehicles, such as ETFs and mutual funds).

[38] Chris Versace & Mark Abssy, *How Millennials and Gen Z Are Driving Growth Behind ESG*, Nasdaq (September 23, 2022), https://www.nasdaq.com/articles/how-millennials-and-gen-z-are-driving-growth-behind-esg; Kathy Gurchiek, *Survey: ESG Strategies Rank High with Gen Z, Millennials*, SHRM (March 21, 2023), https://www.shrm.org/hr-today/news/hr-news/pages/survey-esg-strategies-rank-high-with-gen-z-millennials.aspx.

[39] Brav et al., *supra* note 35, at 493.

[40] It is also unclear whether millennial retail investors would agree among *themselves* on what constitutes ESG, and which ESG goals are most important. Recent scholarship shows that even ESG professionals hold widely disparate views on these issues. *See* Ingo Walter, *Sense and Nonsense in ESG Ratings*, 5 J.L. FIN. & ACCT. 307 (2020).

[41] Naaman Zhou, *What Is GameStop, Where Do the Memes Come in, and Who Is Winning or Losing?*, THE GUARDIAN (Jan. 28, 2021, 1:46 AM), https://www.theguardian.com/culture/2021/jan/28/what-is-gamestop-where-do-the-memes-come-in-and-who-is-winning-or-losing.

companies, valued under $10 billion in market capitalization (some in fact have a much smaller market capitalization), with low stock prices.[42] Their modest sizes imply that even trades by a subset of retail investors can affect their stock prices—as such, they can be targets of short squeezes.

On the other hand, small companies are also more likely to suffer from a lack of significant corporate governance activities. As Professors Kobi Kastiel and Yaron Nili document, firms with smaller market capitalizations are less likely to adopt "best practices" in corporate governance, and are less organized in doing so.[43] This could in part be because they are less likely to be targets of engagements by institutional shareholders[44] or attract shareholder proposals related to governance.[45]

Since meme companies have thus far been smaller firms, this suggests that they are unlikely to become overnight corporate governance exemplars. Consequently, meme surges and their impacts may potentially be confined to the trading markets and remain divorced from meaningful shareholder activities in corporate America. For these reasons, two years on from the GameStop saga, this Article seeks to examine what changes, if any, have taken place in the governance of the companies subject to meme surges.

III. Data and Summary Statistics

We use a variety of sources to collect information about meme stocks. Our first step is to identify which companies qualify as meme stock companies. We use Factiva[46] searches and Internet queries with appropriate keywords ("meme," "retail investors," "Reddit" in conjunction with "stock"

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[42] The market capitalizations of meme stock companies we examine range from about $56.2 million to $9.2 billion. Their respective market capitalizations, as of January 2023, are: $9.2 billion for Robinhood, $7 billion for GameStop, $2.8 billion for AMC, $2.5 billion for BlackBerry, $300 million for Bed Bath & Beyond, $150 million for Vinco, $77 million for Express, and $56 million for Koss. By comparison, the smallest company in S&P 500 index has a market capitalization of $14.6 billion. *See also infra* Part III (presenting summary statistics for firm financials at meme and non-meme companies).
[43] Kastiel & Nili (2022), *supra* note 3.
[44] *Id.*
[45] Kobi Kastiel & Yaron Nili, *In Search of the "Absent" Shareholders: A New Solution to Retail Investors' Apathy*, 41 DEL. J. CORP. L. 55 (2016).
[46] Factiva, owned by Dow Jones & Company, is a business research tool. It aggregates content from both free and licensed sources and provides access to over 32,000 newspapers, journals, magazines, etc. See https://www.dowjones.com/professional/factiva/.

and so on), modeling our approach on the nascent financial economics literature studying the meme trading phenomenon.[47] We identify the following eight companies as meme stock companies: Gamestop,[48] AMC Entertainment,[49] Bed Bath & Beyond,[50] Blackberry,[51] Express Inc.,[52] Koss,[53] Robinhood,[54] and Vinco.[55] For meme and non-meme stocks, we collect an array of financial and non-financial information for the time period of 2015 to 2022. First, stock price information comes from the Center for Research in Stock Prices (CRSP). Firm financials (size as proxied by assets in millions of dollars, performance (return on assets), debt ratio, cash ratio, closing stock price at the end of the fiscal year, and market value in millions) as well as research and development and capital and capital expenditures are collected from Compustat (both in millions of dollars). Finally, we get data on shareholder voting at all companies for which we could find data from Institutional Shareholder Services (ISS) (formerly known as Riskmetrics).

Table 1 presents the summary statistics for our dataset. Vote figures are organized at the shareholder proposal level, and are matched to the firm-year level observations for financials from Compustat.[56] Panel A displays the overall descriptive statistics, while Panel B compares the relevant

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[47] *See* Michele Costola et al., *On the "Mementum" of Meme Stocks*, 207 ECON. LETTERS 110021 (2021). The authors show how certain "meme stocks," GameStop, AMC, Koss, Moody's, Pfizer, and Disney, exhibited dynamics of price, trading volume, and social media activity, as measured by the number of tweets.

[48] *See* Yun Li, *The $300 Billion Meme Stock That Makes GameStop Look Like Child's Play*, CNBC (Aug. 3, 2022), https://www.cnbc.com/2022/08/03/the-300-billion-meme-stock-that-makes-gamestop-look-like-childs-play.html.

[49] *See* Paul R. La Monica, *Meme Stock Mania May Finally Be Over*, CNN (Dec. 6, 2022), https://www.cnn.com/2022/12/06/investing/meme-stocks-gamestop-amc/index.html.

[50] *See id.*

[51] *See* Bernard Zambonin, *BlackBerry (BB): Why Jim Cramer Is Warning Investors to Avoid This Stock*, THE STREET (Oct. 12, 2022), https://www.thestreet.com/memestocks/other-memes/blackberry-bb-why-jim-cramer-is-warning-investors-to-avoid-this-stock.

[52] *See* Express, Inc., *Express, Inc.: A Former Meme Stock Could Be Headed Into Serious Trouble In A Recession*, SEEKING ALPHA (July 19, 2022), https://seekingalpha.com/article/4524180-express-inc-a-former-meme-stock-could-be-headed-into-serious-trouble-in-a-recession.

[53] *See* Samuel O'Brient, *Why Is Meme Favorite KOSS Stock Soaring 40% Today?*, INVESTOR PLACE (July 25, 2022), https://investorplace.com/2022/07/why-is-meme-favorite-koss-stock-soaring-40-today/.

[54] *See* Maggie Fitzgerald, *Robinhood is Not a Meme Stock and Doesn't Plan to Sell Shares to Raise Funds, CFO Says*, CNBC (Aug. 19, 2021), https://www.cnbc.com/2021/08/19/robinhood-is-not-a-meme-stock-and-doesnt-plan-to-sell-shares-to-raise-funds-cfo-says.html.

[55] *See* Clark Schultz, *Vinco Ventures Skyrockets on Big Day for Meme Stocks*, SEEKING ALPHA (Aug. 16, 2022), https://seekingalpha.com/news/3873788-vinco-ventures-skyrockets-on-big-day-for-meme-stocks.

[56] Although we have also collected institutional ownership data, based on 13F filings, from Thompson-Reuters, so as to indirectly back out the fraction of retail ownership, because the 13F reporting is done on a quarterly basis and there was a

statistics between meme and non-meme companies and also presents t-tests. The first statistic in Panel B, Percent Non-Votes, measures the lack of shareholder participation in direct governance. Following the accounting literature, we define shareholder non-participation as the percentage of outstanding shares that were not voted "for," "against," or "abstention" with respect to proposals at a meeting. Between 2015 and 2022, the average yearly non-participation rate for meme stocks was 28.75%. This is higher than the 25.04% average for non-meme firms and the difference is significant at the 1% level.

Panel A

	N	Mean	SD
Percent Votes for Proposal	289422	70.53	19.16
Percent Votes against Proposal	289422	4.34	8.6
Percent Non-Votes	289422	24.84	17.26
Ln(Assets)	282189	7.8	2.31
Cash Ratio	276587	.12	.18
Debt Ratio	224586	.28	.24
Return on Assets	282061	-.04	.25
Research and Development Expense	180296	294.56	2123.57
Capital Expenditures	228832	449.6	2117.09
Closing Price	288369	56.14	141.04
Market Value	259924	15314.18	74007.27

Panel B

	Non-Meme Firms (1)	Meme Firms (2)	t-statistic (1)–(2)
Percent Non-Votes	25.04	28.75	–3.94***
Return on Assets	–0.05	–0.098	3.17***
Cash Ratio	.14	.13	1.3
Debt Ratio	.28	.32	–3.05***
Ln(Assets)	7.56	7.37	1.54
Closing Price	56.18	28.54	3.72***
Market Value	15331.22	3023.8	3.15**

Table 1. Summary Statistics. Panel A presents information on the shareholder voting results and financial variables for the meme stocks identified in Section III.A., for the period 2015-22. All financial variables are winsorized at the 1% level. Panel B presents t-tests for some of these variables between meme and non-meme stocks. The ***, **, and * denote significance at the 1%, 5%, and 10% levels.

large turnover at the meme stock companies during the "meme surge," the data turned out to be unreliable. For instance, when the institutional ownerships were aggregated, for some companies, the fractions exceeded one.

The next four statistics in Panel B, Return on Assets, Cash Ratio, Debt Ratio, and Ln(Assets), present a picture of their respective financial status and performance. In particular, when we compare the respective returns on assets, we see that the mean return on assets for meme stocks is –0.098, which is statistically significantly (at 1% level) lower than –0.05 for the non-meme companies. We also see that, while Cash Ratio and Ln(Assets) are not statistically significantly different, the meme companies have a statistically significantly higher debt ratio (at 32%) compared to non-meme companies (at 28%).

Finally, the last two statistics in Panel B, Closing Price and Market Value (in millions), show some of the characteristics of the respective stock. Perhaps not surprisingly, meme companies, on average, had lower stock prices and lower market capitalization than non-meme companies: the average stock price of meme companies is about one-half of non-meme companies and the average market capitalization of meme companies (a little over $3 billion), one-fifth of that of non-meme companies. In sum, the descriptive statistics indicate that meme companies are on average less profitable (or unprofitable), more heavily leveraged, and have lower stock prices and market capitalizations, consistent with media reports.[57]

IV. THE TWIN SHOCKS TO MEME STOCKS

In the popular imagination, social media usage during the coronavirus pandemic has been singled out as the main driver of the emergence of meme stocks. The *New York Times* has characterized meme stock investments as being "propelled by a social media frenzy and a bit of boredom" during pandemic-related social distancing.[58] The Wikipedia entry for "meme stock" defines it as "a stock that gains popularity among retail investors through social media."[59] However, for our set of meme stocks,

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[57] *See* James Mackintosh, *AMC's Meme-Stock Traders Mess with Corporate Theory*, WALL ST. J. (Jun. 8, 2021), https://www.wsj.com/articles/amcs-meme-stock-traders-mess-with-corporate-theory-11623107259.
[58] *See* Erin Griffith, *No End to Whiplash in Meme Stocks, Crypto and More*, N.Y. TIMES (Jun. 23, 2021), https://www.nytimes.com/2021/06/23/technology/no-end-to-whiplash-in-meme-stocks-crypto-and-more.html.
[59] *See Meme Stock*, WIKIPEDIA, https://en.wikipedia.org/wiki/Meme_stock.

we identify an association with retail investors that (1) predates the pandemic and (2) does not relate to social media platforms, such as Reddit or Twitter. More specifically, we look at the meme stocks' response to the abolition of commissions by major brokerage platforms in late 2019.

On October 1, 2019, the major online brokerages Charles Schwab and TD Ameritrade eliminated commissions for all their customers. These platforms, which had dominated the online brokerage business, were responding to stiff competition from a new rival, Robinhood, which had pioneered the zero-commission trading model.[60] The advent of zero-commission trading has been widely acknowledged as a root cause of the explosion in retail investing activity. One of the leading explanations for why individuals do not participate in the stock market has been that there is a fixed cost of investing that proves potentially insurmountable for the less wealthy.[61] It is unsurprising that, by reducing the entry cost of trading (i.e., commissions), the 2019 decision by major brokerages increased retail investor activity.[62]

How did the abolition of trading commissions affect meme stocks? The relatively unexpected and sudden decision of the major brokerage platforms to introduce commission-free trading allows us to use the event study methodology to assess its impact. Given that this was prior to the meme stock surge of 2021, to the extent that the market was relatively, informationally "efficient," the stock prices around October 1, 2019 would reflect the impact of the abolition of commissions on meme

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[60] *See* Paul R. La Monica, *E-Trade Cuts Commissions to Zero Along with Rest of Brokerage Industry*, CNN (Oct. 3, 2019), https://www.cnn.com/2019/10/02/investing/etrade-zero-commissions/index.html. Experts termed this move "inevitable" after Charles Schwab and TD Ameritrade's decision on October 1. *See id. See also CFO Commentary*, CHARLES SCHWAB (October 1, 2019), www.aboutschwab.com/cfo-commentary/oct-2019. Share prices of Charles Schwab, TD Ameritrade, and E-Trade experienced a significant loss in response to Charles Schwab's zero commission announcement. *See* Lisa Beilfuss & Alexander Osipovich, *The Race to Zero Commissions*, WALL ST. J. (Oct. 5, 2019), www.wsj.com/articles/the-race-to-zero-commissions-11570267802.

[61] *See* Joseph Briggs et al., *Windfall Gains and Stock Market Participation*, 139 J. FIN. ECON. 57 (2021); Annette Vissing-Jorgensen, *Towards an Explanation of Household Portfolio Choice Heterogeneity: Nonfinancial Income and Participation Cost Structures* (Apr. 11, 2002), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=307121.

[62] *See* Maggie Fitzgerald, *Retail Investors Continue to Jump Into The Stock Market After GameStop Mania*, CNBC (Mar. 10, 2021), https://www.cnbc.com/2021/03/10/retail-investor-ranks-in-the-stock-market-continue-to-surge.html ("[r]etail trading has been accelerating since the industrywide decision to drop commissions in the fall of 2019").

stocks.[63] First, we identify what the expected return for each stock would have been during the event period if the event had not occurred (i.e., if the commissions had not been dropped). Using the standard Fama-French three-factor model, this may be written as:[64]

$$R_{it} = a_{it} + \beta_{mt} R_{mt} + \beta_{SMB} R_{SMB} + \beta_{HML} R_{HML} + \varepsilon_{it}$$

Here, R_{it} is the return on stock i on date t minus the risk free rate; R_{mt} is the market return on date t minus the risk free rate; R_{SMB} is the return on a portfolio of small companies; and R_{HML} is the book to market factor which is the portfolio of firms with high book value to market value ratio. The abnormal return that can be traced to the event (i.e., the associated stock price movement) is the actual return minus the expected return:

$$AR_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_{Mt} R_{Mt} - \hat{\beta}_{HML} R_{HML} - \hat{\beta}_{HML} R_{HML}.$$

We calculate the abnormal returns on October 1, 2019 for all companies in the Compustat database, and regress them against an indicator for whether the company is one of our eight meme stocks. Table 2 presents the results from the event study. Column (1) shows that meme stocks had abnormal returns that were 2.25 percentage points higher than the market, and the coefficient on the indicator variable is highly statistically significant. Column (2) reruns the regression in model (1) adding controls for firm financials (size as proxied by the natural logarithm of assets, cash ratio, debt ratio, and return on assets) and the results remain largely unchanged. One concern with our results could be that meme stocks are categorically different from non-meme companies. As a final robustness check, we control for the possibility that the financials of meme and non-meme companies may be different. Using the entropy-balancing technique invented in the social science literature, we balance

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[63] *See generally* Sanjai Bhagat & Roberta Romano, *Event Studies and the Law: Part I: Technique and Corporate Litigation*, 4 AM. L. & ECON. REV. 141 (2002); Sanjai Bhagat & Roberta Romano, *Event Studies and the Law: Part II: Empirical Studies of Corporate Law*, 4 AM. L. & ECON. REV. 380 (2002); A. Craig MacKinlay, *Event Studies in Economics and Finance*, 35 J. ECON. LIT. 13 (1997).

[64] *See* S.P. Kothari & Jerold B. Warner, *Econometrics of Event Studies*, *in* 1 HANDBOOK OF CORPORATE FINANCE 3 (Bjørn Espen Eckbo & B. Espen Eckbo eds., 2008).

the means of the covariates for meme and non-meme companies.[65] As shown in column (3), our result for meme stocks remains robust to the entropy-balancing method.

	(1) OLS	(2) OLS	(3) Entropy Balanced
Meme Stock	2.252***	2.238***	2.230***
	(0.645)	(0.655)	(0.614)
Constant	-0.127***	-0.269	0.300
	(0.0269)	(0.246)	(0.768)
Observations	7,110	3,531	3,531
R-squared	0.001	0.010	0.208
Firm Financials	No	Yes	Yes

Table 2. Event Study Results. This table presents results from an event study using the Fama-French three-factor model. The dependent variable in this linear regression model is the abnormal stock return on October 1, 2019. Columns (1) and (2) use ordinary least squares regression and column (3) balances covariates for meme and non-meme companies using the entropy-balancing technique. Columns (2) and (3) add controls for firm size (proxied by the natural logarithm of assets), cash ratio, debt ratio, and return on assets. All financial variables are winsorized at the 1% level. The ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Figure 1 graphs the mean cumulative abnormal returns of meme stocks. The mean abnormal returns are represented by the solid line in the middle, while the dotted lines enclose the 95% confidence interval. Day "0" in this figure refers to October 1, 2019. The figure shows an economically and statistically significant gain for meme stocks around the time the major brokerages dropped trading commissions. In unreported results, we find that meme stocks had significant abnormal returns on October 1, 2019 when we use alternative asset pricing models such as the capital asset pricing model (CAPM) or Carhart four-factor model.[66]

[65] *See* Jens Hainmueller, *Entropy Balancing for Causal Effects: A Multivariate Reweighting Method to Produce Balanced Samples in Observational Studies*, 20 POL. ANALYSIS 25 (2012).

[66] These asset pricing models are described in detail in MacKinlay, *supra* note 63, and Kothari & Warner, *supra* note 64.

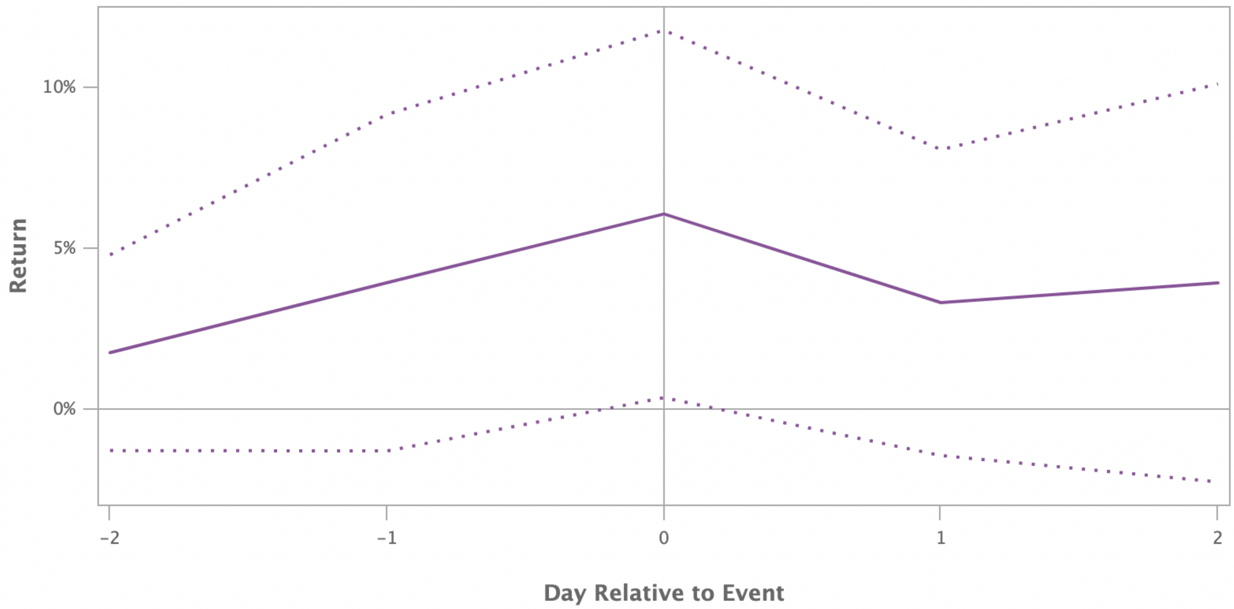

Figure 1. Cumulative Abnormal Returns for Meme Stocks. This figure graphs the mean cumulative abnormal returns for meme stocks around October 1, 2019, when major brokerages abolished trading commissions (denoted as day 0). The dotted lines represent the 95% confidence interval for cumulative abnormal returns.

In addition to the abnormal returns, we also examine the magnitude of share turnover. Figure 2 presents data on the share turnover for meme stocks and other companies between 2015 and 2022. We define turnover as the daily average of the number of stocks of the firm traded as a percentage of total outstanding common stock, using data from CRSP. Since meme stocks are, on average, smaller firms, we subdivide non-meme companies into those belonging to the smallest quartile in terms of market capitalization and other bigger firms. Meme stocks saw an increase in trading volume both after the abolition of commissions on October 1, 2019, and a further increase in 2021-22 after the explosion of social media interest in these firms. There was a significant increase compared to both smallest-quartile and larger non-meme firms. Two points are notable. First, meme stocks had a higher turnover compared to non-meme stocks even in the first period, i.e., before the abolition of commissions. Second, both meme and non-meme stocks saw an increase in trading volumes after the abolition of commissions, although the increase was markedly greater for meme companies.

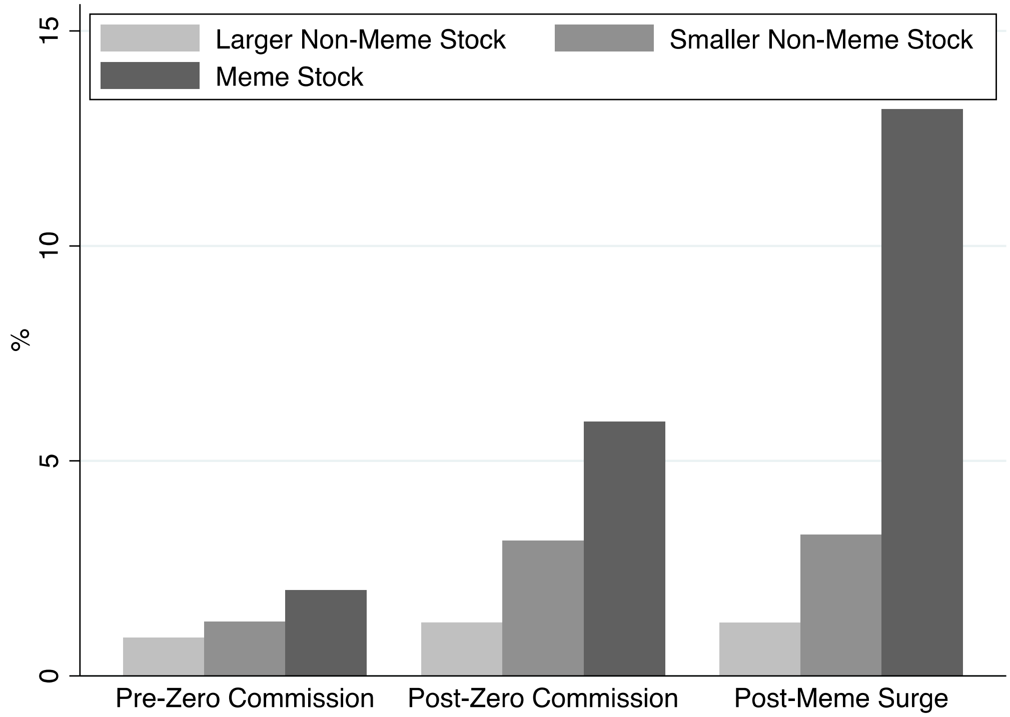

Figure 2. Average Turnover for Meme Stocks and Other Firms. This figure graphs the mean share turnover (shares traded each day as a percentage of total outstanding common stock) according to CRSP data. The data is presented separately for meme and non-meme stocks. Non-meme stocks are further subdivided into those that belong to the smallest quartile by market capitalization and larger firms. "Pre-Zero Commission" refers to the period from 2015 to September 2019, "Post-Zero Commission" to 10/1/19-12/31/20, and "Post-Meme Surge" to 2021-22.

We estimate a regression model where we analyze the factors affecting the average daily turnover for CRSP companies in all three periods. We include as explanatory variables an indicator for meme stock, two dummies for *Post-Zero Commission* and *Post-Meme Surge*, and the interaction of the meme indicator with each time dummy. We include firm fixed effects to make sure the results are not driven by idiosyncratic factors unique to any given company. Both interaction terms are positive and statistically significant. The results are presented in Table 3. Therefore, even controlling for firm fixed effects and time trends, meme companies seem to have especially gained with respect to this measure of liquidity in the latter time periods. The results remain qualitatively unchanged when we additionally control for firm market value. The event study results presented in this section show that meme stock companies gained value around the time major brokerages abolished commissions. The influx of retail investors precipitated by zero commissions could therefore have been particularly impactful for the meme stocks.

Post-Zero Commission	0.664***
	(0.0714)
Post-Zero Commission x Meme	3.252*
	(1.874)
Post-Meme Surge	0.517***
	(0.0822)
Post-Meme Surge x Meme	12.23***
	(3.634)
Constant	1.080***
	(0.0402)
Observations	20,764
R-squared	0.875
Firm Fixed Effects	Yes

Table 3. Meme Stocks and Trading Volume. This table presents the results of a linear regression model where the dependent variable is the daily percentage of outstanding shares that are traded. "Post-Zero Commission" refers to the time period 10/1/19-12/31/20, and "Post-Meme Surge" to 2021-22. The regression model includes firm fixed effects, and all standard errors are clustered at the firm level. The ***, **, and * denote significance at the 1%, 5%, and 10% levels.

V. DIRECT SHAREHOLDER ENGAGEMENT AT MEME STOCK COMPANIES

In this Part, we explore the effect of meme stock investing on the more direct mechanisms for shareholder engagement: voting and making shareholder proposals. This can help us empirically assess claims that the influx of retail investors would affect corporate governance, and possibly empower shareholders to more actively engage with management. To briefly summarize the findings, empirical results show that predictions of retail investor-driven changes in corporate governance may be overstated. First, the level of shareholder voting at meme companies *decreased* after the abolition of commissions by online brokerages, and reduced *further* in the aftermath of 2021's meme surge. Second, we find no evidence of active shareholder engagement by way of shareholder proposals at the companies in our sample, except in limited circumstances.

A. Non-Voting Among Meme Traders

A central claim in this literature is that the retail shareholders brought in after the meme phenomenon may be more likely to be assertive and more vigorously engage with management.[67] At least as one proxy of such heightened engagement, one could expect more retail shareholders to vote on governance proposals, including director elections and other consequential decisions, at these firms after 2021. Ideally, if we can observe each shareholder's characteristics (e.g., institutional versus retail), how many shares are owned by each shareholder, and how many of those shares are voted on, we will be able to tell exactly what the rate of participation among retail shareholders is. Unfortunately, due largely to the limitation on data, we do not have access to any information on whether certain votes came from a retail versus an institutional shareholder.[68] Hence, we resort to a more indirect measure in estimating retail shareholder participation.

One way of such an indirect estimation is by measuring aggregate non-votes at shareholder meetings. Non-votes in shareholder meetings (i.e., votes that were not cast for or against a proposal and were not abstentions) are more commonly attributed to "low-information" retail investors.[69] Corporate insiders and institutional investors, on the other hand, are considered to be much more diligent in registering their votes. Assuming that this understanding is reasonable, if retail investors became more engaged after 2021, we could expect the overall share of non-votes to fall.[70]

In analyzing the rate of non-votes, it is also important to account for the *type* of proposal. Shareholder proposals at U.S. public companies are generally of two types: routine and non-routine.

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[67] *See supra* Part II.

[68] Some scholars have been successful in accessing data owned by proxy service firms, such as Broadridge, and have been able to much more accurately estimate retail shareholder participation. See Brav et al. (2022), supra note 29.

[69] *See* Kastiel and Nili (2016), *supra* note 45, at 62–64.

[70] *See* Rachel Geoffroy, *Electronic Proxy Statement Dissemination and Shareholder Monitoring* (Dec. 8, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3264846, at 12. The author examines the changes from postal mail to electronic distribution of proxies and shows how electronic distribution of proxies actually reduced shareholder participation by about 1% to 2%. With the assumption that the non-participation comes from retail investors, this implies that retail investor participation decreased by about 7% to 17%.

Routine proposals are those that pertain to the company's day-to-day operations but are not expected to significantly affect the company's financial performance. Examples of this type are proposals for the ratification of auditors or approving stock splits. By contrast, non-routine proposals typically relate to the company's long-term strategy or are expected to have a significant impact on the company's financial performance. Examples include the issuance of new stock, election of directors, a merger with another company, divesting a business unit, or any other proposal stockholders could have concerns with, and would affect their ownership.

For our purposes, there is an important distinction between these two types: brokers can vote shares on behalf of their owners for routine matters, but *not* for non-routine matters. Therefore, only a shareholder can vote their own shares for non-routine proposals.[71] Figure 3 graphically presents the yearly average of non-vote rates on proposals at both meme and non-meme companies between 2015 and 2022. We hand-coded each proposal listed in the ISS data as either "routine" or "non-routine" based on Rule 452 of the New York Stock Exchange.[72] Consistent with the literature, we find that non-routine proposals (where brokers cannot vote on behalf of shareholders) have consistently higher levels of non-participation for both meme and non-meme firms.

More importantly, we find an increase in shareholder non-voting rate after 2018, concentrated in meme companies (for both routine and non-routine proposals). This is the opposite trend from what one would expect if post-meme-surge retail shareholders were more engaged with respect to corporate governance at firms such as AMC and GameStop. Figure 3 also suggests there was a surge in non-voting beginning in 2019, concentrated in meme stocks and the trend was continuing, at least through 2022, particularly for voting on non-routine matters. Note also that the share of non-votes at non-meme companies stays relatively stable throughout the period.

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[71] *Id.* at 4.
[72] *See* N.Y. STOCK EXCH'G. R. 452, https://nyseguide.srorules.com/rules.

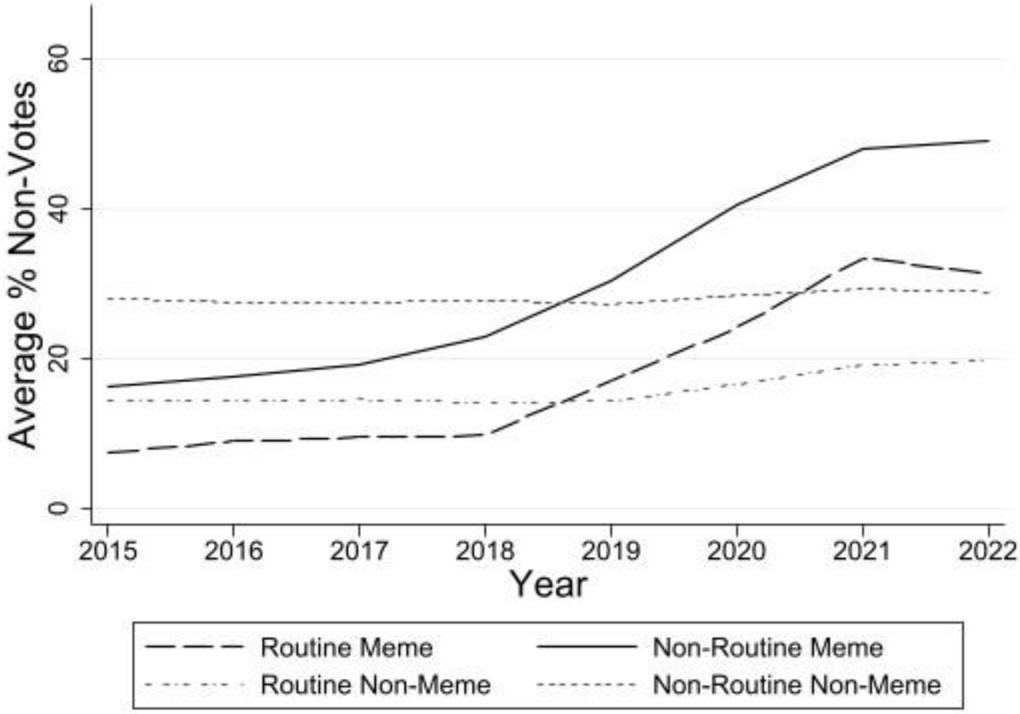

Figure 3. Average Share of Non-Votes for Meme and Non-Meme Stocks Over Time, By Proposal Type. This figure presents information on the yearly average percentage of votes that were not voted in shareholder meetings. We define the number of non-votes as Total Outstanding Shares – (Votes For + Votes Against + Abstentions). We split the data by meme/non-meme stock as well as proposal type (i.e., whether or not it qualifies as "routine" as defined in NYSE Rule 452).

If we were to expect that retail shareholders are less likely to participate in direct governance, this finding may not be too surprising. At the same time, however, there is reason to believe that many of the retail investors who participated in the meme surge of early 2021 remain loyal to the firm.[73] If the fraction of retail investors at meme stock companies remains relatively high through 2021 and 2022, and many of them care more about the companies' survival and performance, one would expect them to be more active in firm governance. From this perspective, the fact that the share of no-votes

[73] *See, e.g.*, Caitlin McCabe, *GameStop's Most Loyal Shareholders Are in It for the Long Haul, Not the Memes*, WALL ST. J. (June 6, 2021), https://www.wsj.com/articles/gamestops-most-loyal-shareholders-are-in-it-for-the-long-haul-not-the-memes-11622971801. *See also* Caitlin McCabe et al., *Where Six Meme Stock Investors Are Now*, WALL ST. J. (Jan. 28, 2022), https://www.wsj.com/articles/where-six-meme-stock-investors-are-now-11643365810.

keeps increasing through 2021 and 2022, long after the initial "meme surge" was over, seems surprising.

	(1) Baseline	(2) With Firm Financials
Non-Routine	14.04***	13.98***
	(0.198)	(0.223)
Meme *x* Non-Routine	-5.607***	-5.585***
	(1.495)	(1.534)
2019-20	0.681***	0.830***
	(0.140)	(0.170)
Meme *x* 2019-20	5.204***	2.650
	(1.780)	(1.760)
Non-Routine *x* 2019-20	-0.630***	-0.688***
	(0.149)	(0.162)
Meme *x* Non-Routine *x* 2019-20	7.910***	8.125***
	(1.406)	(1.425)
2021-22	3.899***	4.622***
	(0.195)	(0.232)
Meme *x* 2021-22	13.91***	11.59**
	(4.841)	(4.672)
Non-Routine *x* 2021-22	-3.297***	-3.531***
	(0.178)	(0.195)
Meme *x* Non-Routine *x* 2021-22	7.503***	7.901***
	(1.725)	(1.942)
Constant	12.29***	23.68***
	(0.179)	(2.087)
Observations	238,506	194,929
R-squared	0.699	0.735
Firm Fixed Effects	Yes	Yes
Firm Financials	No	Yes

Table 4. Meme Stocks and Non-Voting. This table presents the results of a linear regression model where the dependent variable is the percentage of shares that were **not** voted for a proposal at shareholder meetings. We define the number of non-votes as Total Outstanding Shares – (Votes For + Votes Against + Abstentions). *2019-20* equals 1 for years 2019 and 2020, while *2021-22* equals 1 for 2021 and 2022. We split the data by proposal type (i.e., whether or not it qualifies as "routine" as defined in NYSE Rule 452). Column (2) adds controls for firm assets, cash ratio, debt ratio, and return on assets. Columns (1) and (2) include year and firm fixed effects, and all standard errors are clustered at the firm level. The ***, **, and * denote significance at the 1%, 5%, and 10% levels.

Table 4 presents a more formal regression analysis (using linear probability models), where the dependent variable is the percentage of non-votes at a shareholder proposal level. We collect this data for all companies from the ISS database, from 2015 to 2022, to make sure we capture any secular time trends in shareholder voting across the market. Column (1) presents the baseline model, while column (2) adds financial variables as controls. Note, foremost, that the coefficient estimates (except for the estimate on variable, *Meme* x 2019-20), along with their statistical significance, are fairly consistent across the two models, indicating that the specifications are fairly robust. In terms of the results, at the top of the table, the dummy for non-routine proposals is positive (with the point estimates of 14.04 and 13.98, respectively) and highly statistically significant (at 1% level), indicating that these types of matters generally have greater non-participation than routine proposals (per stock exchange regulations): non-vote shares on non-routine matters are about 14% points higher compared to those on routine matters.

The coefficient estimates on 2019-20 and 2021-22 indicator variables are also positive and statistically significant, indicating that there is a general trend towards non-votes across all companies. When we interact both time period dummies with the *Meme* indicator, on the other hand, is positive and highly statistically significant at least in the baseline model, indicating that there seems to be more non-voting at meme companies after both the abolition of commissions and the surge in social media interest in these companies.[74] The rise in non-voting for meme stocks seems concentrated in non-routine proposals, as one would expect since brokers cannot vote on behalf of the shareholders on these issues.

Most tellingly, the triple interaction of *Meme*, each time period dummy, and *Non-Routine* is also positive (with coefficient estimates ranging from about 7.5 to 8.1) and highly statistically significant (at 1% level) in both the baseline model and with financial controls. The estimates tell us that compared to routine matters at meme companies at these two time periods, the share of non-votes on non-routine matters are about 7.5 to 8 percentage points higher. The results indicate that, for 2019-

[74] Controlling for firm financials in column (2), the interaction between *Meme* and 2019-20 is no longer significant.

22, meme stocks saw a greater rise in non-voting compared to other firms, and this effect was especially pronounced for proposals for which brokers cannot vote on behalf of shareholders.

B. Shareholder Proposals at Meme Stock Companies

As another measure of shareholder engagement, we look at the number (and the content) of shareholder proposals that were submitted by retail shareholders at meme stock companies. For example, it is possible that even if the level of retail shareholder voting at meme companies has remained low (or has gotten lower) the meme surge may have emboldened a minority of retail shareholders to take more active steps in submitting shareholder proposals to affect corporate governance and corporate policies. While there are other channels of influencing corporate governance—such as running a proxy contest or nominating a director candidate through proxy access (if the company allows it)—these other channels require significant economic resources (in the case of proxy contests) or more significant ownership thresholds and holding periods (in the case of accessing proxy ballots directly). As such, these are less salient means for meme traders. For this reason, the more promising route for meme traders is likely through submission of a shareholder proposal.

First, some institutional background and potential complication for our empirical analysis. The eligibility requirement for a shareholder to submit a shareholder proposal is governed by Rule 14a-8,[75] which imposes an ownership threshold. Once a proposal is submitted by an eligible shareholder, the SEC rules require the company to add the proposal to the agenda for voting at the next annual shareholders meeting, unless the SEC provides special permission to exclude it from consideration.[76] Since 1998, Rule 14a-8 has maintained a relatively low share ownership threshold: it required only that a shareholder had held at least $2,000 or 1% of a company's securities for at least

[75] *See* Securities Exchange Act of 1934 Rule 14a-8, 17 C.F.R. § 240.14a-8 (2020).
[76] *See id.*

one year.[77] The SEC, however, recently replaced the $2,000 threshold with three alternative thresholds and adjusted the corresponding holding periods. Specifically, (1) if a shareholder owns more than or equal to $25,000, then he may submit a proposal if he has held the shares for at least one year; (2) if a shareholder owns less than $25,000 but more than or equal to $15,000, he must have owned for at least two years; and (3) if a shareholder owns less than $15,000 but more than or equal to $2,000, he must have owned for at least three years.[78] The rule was proposed on November 5, 2019,[79] adopted on September 23, 2020, and went into effect on January 4, 2021.[80] However, the SEC noted that the changed thresholds would only affect proposals submitted for annual meetings that take place after January 1, 2022.[81]

The SEC's revised thresholds are presumably much more difficult to meet, and this was indeed the agency's intention. The previous requirement of $2,000 and a one-year holding period is arguably a (more) reasonable threshold for meme traders. The revised thresholds and the corresponding holding periods are much less likely met by meme traders—especially the segment of retail investors that began participating in the stock market only after the introduction of commission-free trading platforms. For this reason, we can reasonably expect little activity from meme traders by way of shareholder proposals for annual meetings taking place after January 1, 2022.

As a threshold inquiry, we first examined whether investors reacted to the SEC's decision to change the Rule 14a-8 thresholds. There were no changes in the thresholds between the SEC's rule proposal (November 5, 2019) and rule adoption (September 23, 2020). We examined both of these

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[77] *See* Securities Exchange Act of 1934 Rule 14a-8, 17 C.F.R. § 240.14a-8 (1998); Securities Exchange Act of 1934 Rule 14a-8, 17 C.F.R. § 240.14a-8 (2007); Securities Exchange Act of 1934 Rule 14a-8, 17 C.F.R. § 240.14a-8 (2011).
[78] *See* Securities Exchange Act of 1934 Rule 14a-8, 17 C.F.R. § 240.14a-8 (2020).
[79] U.S. Securities & Exchange Commission, Procedural Requirements and Resubmission Thresholds Under Exchange Act Rule 14a-8, Release No. 34-87458, 84 FR 66458 (Nov. 5, 2029).
[80] U.S. Securities & Exchange Commission, Procedural Requirements and Resubmission Thresholds Under Exchange Act Rule 14a-8, Release No. 34-89964, 85 FE 70240 (Sept. 23, 2020).
[81] Press Release, *SEC Adopts Amendments to Modernize Shareholder Proposal Rule* (Sept. 23, 2020) https://www.sec.gov/news/press-release/2020-220 ("[T]he final amendments will apply to any proposal submitted for an annual or special meeting to be held on or after January 1, 2022.").

event dates—the rule proposal date as setting the market's expectation and the rule adoption date as finalizing the proposal through adoption. If meme traders were particularly committed to influencing corporate governance, these events may correlate with negative stock market reactions. In unreported results, we find no significant market reactions for meme stock companies for both of these events, which we interpret to be consistent with the idea that meme traders were never interested in participating in corporate governance.

We followed through by reviewing the meme stock companies' definitive proxy statements filed with EDGAR from 2015 to 2022 to see whether they included shareholder proposals. These proxy statements typically indicate whether a particular proposal is submitted by a shareholder. Even in the absence of any such specification, the proxy statements will invariably indicate whether the board approves each proposal, which is a good indication that the proposal is internally proposed. Note, however, that the lack of shareholder proposals in definitive proxy statements does not necessarily indicate that no shareholder submitted a proposal to be included in the proxy. First, under Rule 14a-8, management is permitted to exclude a shareholder proposal under a few specific circumstances.[82] But exclusion is permitted only after management submits its reasons to the SEC. For this reason, we also searched through the SEC's No-Action Letter archives to see whether any of these companies sought to exclude shareholder proposals, and if so, on what grounds. Second, it is also possible for management to persuade a shareholder to withdraw a proposal through negotiation.[83] These are done through private agreements, and we are unaware of any public data set that would

[82] *See* Securities Exchange Act of 1934 Rule 14a-8, 17 C.F.R. § 240.14a-8 (2020).

[83] *See, e.g.*, Yaron Nili & Kobi Kastiel, *The Giant Shadow of Corporate Gadflies*, 94 S.C. L. REV. 569, 580 (2021)("After a shareholder submits a proposal . . . , the proponent may withdraw the proposal after negotiations with the company."). There is also reason to believe that companies may be less likely to seek to exclude proposals through SEC no-action letters, as the result of the SEC's recent policy change with respect to issuing no-action letters. *See* SEC Division of Corporation Finance, *Shareholder Proposals: Staff Legal Bulletin No. 14L (CF)* (Nov. 3, 2021), https://www.sec.gov/corpfin/staff-legal-bulletin-14l-shareholder-proposals.

capture withdrawn proposals.[84] For this reason, for data analysis purposes, we will assume that all shareholder proposals properly submitted are reflected under our search. Nevertheless, given the possibility of negotiations that may occur as a result of submitted-but-withdrawn shareholder proposals, we will look to other measures in Part VI.

For all meme companies in the sample, with respect to observable shareholder proposals, we verified our numbers and analysis for this Section using the SharkWatch dataset, which is a standard resource for studying shareholder proposals.[85] Table 5 describes, for each meme stock company, the number of shareholder proposals included (i) in the company's proxy statements, (ii) approved each year, and (iii) properly excluded via SEC's no-action letter. Some benchmark figures may be helpful to set proper expectations. In terms of raw numbers of shareholder proposals among the S&P 1500 companies, Professors Kobi Kastiel and Yaron Nili document "a relatively steady and significant number of shareholder proposals submitted to the S&P 1500 [between 2005 and 2018] (an average of 517 proposals per year)."[86] The pattern, however, is not uniform across 1500 companies. In 2015, for example, "over 450 proposals were submitted to large-cap companies" that comprise the S&P 500, while "fewer than 150 shareholder proposals combined were submitted to the mid- and small-cap companies that comprise the S&P 400 and 600, respectively."[87] Given that meme stock companies are small-cap to mid-cap companies, there would be no expectation that any of these companies would be inundated with shareholder proposals.

Nevertheless, the results shown in Table 5 may be revealing. For AMC Entertainment Inc, Blackberry, Express, Inc., Koss, Vinco Venture, there were *no* shareholder proposals submitted

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[84] We are also unaware of any study that has examined such proposals. For example, in their extensive empirical study on shareholder proposals, Nili & Kastiel (2021) acknowledge that their data set "does not include proposals that were withdrawn due to a negotiated agreement or otherwise." *Id.* at 581.
[85] *See, e.g.*, Kastiel & Nili (2016), *supra* note 45.
[86] Kastiel & Nilli (2021), *supra* note 83, at 14.
[87] Kastiel & Nili (2022), *supra* note 3, at 807.

between 2015 and 2022.[88] The same is true with Robinhood, but the company went public fairly recently, and thus has had only one definitive proxy statement issued (in 2022). Thus, for these companies, no proposal was ever included in any definitive proxy statement (which the board did not recommend), and none of these companies have had to request no-action letters from the SEC (in excluding a shareholder proposal) during the time frame.

Company\Year	**Shareholder Proposals Included/Approved/Excluded**							
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
AMC Entertainment Inc.	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0
Bed Bath and Beyond	0/0/0	3/2/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0
Blackberry	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0
Express, Inc.	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0
GameStop Corp.	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/3
Koss	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0
Robinhood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0/0/0
Vinco Venture	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0	0/0/0

Table 5. Shareholder Proposals at Meme Stock Companies, 2015-2022. This table presents the number of shareholder proposals at meme companies between 2015 and 2022. For each company-year observation, we provide the total number of shareholder proposals included in the proxy statements, approved by shareholder vote, and excluded via SEC no-action letters.

Bed Bath and Beyond received three shareholder proposals in 2016, all of which the board recommended against. These included (i) a proposal for the board to implement proxy access, (ii) a proposal to have shareholders approve future severance packages, and (iii) a proposal for equity-based compensation for senior executives. Of these three, only the last one failed to pass.[89] Note also that these proposals significantly predate the meme surge, and as such, cannot be attributed to the influx of retail investors.

[88] Kastiel and Nili explain, however, that "in many cases, shareholder proposals do not reach the voting stage" because "some companies prefer to work with the proposing shareholder to bring about a change rather than have the proposal go to a shareholder vote." *Id.* at 582.

[89] *See* Form 8-K, Bed Bath & Beyond Inc. (July 1, 206), available at https://www.sec.gov/Archives/edgar/data/886158/000117184316010938/f8k_070116.htm.

Finally, GameStop sought and received three no-action letters from the SEC for excluding shareholder proposals, all dating to April 22, 2022.[90] These involved proposals by three different shareholders, and management could permissibly exclude all of them for failing to meet the deadline for submission. Note, however, that given that these proposals were for the 2022 annual meeting, which requires the raised thresholds, these shareholders are *unlikely* to be meme traders. Meanwhile, the content of these proposals is also worth examining.

In one proposal, a self-described registered GameStop shareholder (who didn't specify how many shares he held) proposed that the company offer an NFT dividend to its stockholders.[91] In another proposal, a shareholder, who claims to own 191 Class A shares proposed that the board "immediately engage the services of the Company's Transfer Agent, Computershare Limited to enable both investment and Direct Registration of Class A shares in both Roth and Traditional Individual Requirement Account Shareholder Investment Programs at Computershare."[92] Finally, a third shareholder who beneficially owns 540 Class A shares of GME submitted an identical proposal as the second shareholder.[93]

What can we learn from the shareholder proposals we examined? The 2016 proposals by Bed Bath & Beyond shareholders do reflect a genuine attempt at participating in corporate governance matters. But as mentioned already, these efforts predate the influx of retail investors. The GameStop shareholder proposals, however, tell a different story. On the one hand, they do indicate retail investor participation. It is possible that they were encouraged by the meme surge of 2021 to actually organize some activist effort. On the other hand, these proposals also do not relate to corporate governance matters. One is a dividend payment suggestion, while the other is a proposal to help certain retail

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[90] *See* GameStop Corp., SEC No-Action Letter, 2022 WL 1037146 (Apr. 21, 2022); GameStop Corp., SEC No-Action Letter, 2022 WL 1037147 (Apr. 21, 2022); and GameStop Corp., SEC No-Action Letter, 2022 WL 1037148 (Apr. 21, 2022).
[91] *See* GameStop Corp., SEC No-Action Letter, 2022 WL 1037147 (Apr. 21, 2022).
[92] *See* GameStop Corp., SEC No-Action Letter, 2022 WL 1037146 (Apr. 21, 2022).
[93] *See* GameStop Corp., SEC No-Action Letter, 2022 WL 1037148 (Apr. 21, 2022).

shareholders take tax advantages. As of yet, there is no indication that GameStop investors—meme traders or not—are particularly likely to bring about governance reforms through shareholder proposals.

VI. Beyond Voting: ESG, Board Gender Diversity, and R&D

Voting is not the only way shareholders can influence corporate governance at public companies. Boards, institutional investors, and policymakers are increasingly paying attention to a firm's prosocial performance as captured by ESG metrics.[94] Even if retail investors do not directly participate in governance (through voting or making proposals), it is possible that their presence and preferences could indirectly influence how firms are governed. For example, the meme surge could have left a considerable imprint on public companies if retail investors managed to make their firms' preferences more prosocial. For one thing, because management may be able to raise extra cash through at-the-market offerings at inflated stock prices,[95] managers have reason to cater to the preferences of meme traders—i.e.,., to make sure meme surges persist and these investors do not go away. In addition, it is also possible that a meme trader may have submitted a shareholder proposal but decided to withdraw it in return for some concession from the board or management, such as instituting some prosocial changes. Another possible indirect effect of meme surges could have been an increase in R&D spending. For example, those companies that engaged in at-the-market offerings could have invested the new funds in transformative innovative activity. Below we also explain other mechanisms that were highlighted in the finance literature.[96] To estimate these possible indirect

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[94] *See* Max M. Schanzenbach & Robert H. Sitkoff, *Reconciling Fiduciary Duty and Social Conscience: The Law and Economics of ESG Investing by a Trustee*, 72 STAN. L. REV. 381 (2020).
[95] An at-the-market offering allows an issuer to sell more of its stocks at the prevailing market price. According to our EDGAR search, GameStop and AMC Entertainment, Inc. took advantage of meme surges and made at-the-market offerings. *See also* Felix Gillette & Eliza Ronalds-Hannon, *AMC's CEO Turned His $9 Billion Company Into a Meme Machine*, BLOOMBERG.COM (Aug. 17, 2022), https://www.bloomberg.com/news/features/2022-08-17/amc-amc-stock-became-a-meme-thanks-to-adam-aron-s-antics (describing how AMC's CEO "transformed himself into a Twitter-obsessed, gold mine-buying, populist folk hero for retail investors").
[96] *See infra* Section VI.B.

influences, in this Part, we first assess the impact of the meme phenomenon on firm ESG scores and board gender diversity. We then investigate whether meme companies spent more on R&D and capital expenditures after the influx of retail investors.

A. ESG Scores at Meme Stock Companies

An important claim in the legal scholarship on retail investors is that these new entrants to the financial markets have different goals and expectations from management (as compared to more established institutional players). Ricci and Sauter, for example, envisage meme trading as "a social movement able to bring business corporations to serve their original partly-private-partly-public purpose."[97] In other words, scholars envisaged meme companies as potentially deviating from the shareholder wealth-maximization norm and advancing social and environmental causes, under pressure from retail investors. There is a demographic aspect to this argument. As Fisch observes, many of the retail investors who invested in meme stocks were younger people. Since some argue that the millennial generation has different preferences and is in favor of socially responsible investing even at the cost of wealth-maximization, Fisch expected the young cohort of retail investors to potentially pressure management to improve ESG metrics.[98] However, Fisch is careful to note that "the extent to which citizens will pursue stakeholder or societal goals in their role as investors remains unclear."[99]

To shed some light on the extent to which meme traders affected socially responsible investing and management, we obtain data on ESG scores for each firm in the Compustat dataset between 2015 and 2021. The ESG scores are taken from the MSCI ESG Score Indexes. This indexes measure ESG in several different ways, but we choose the most comprehensive measure—industry-adjusted total

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[97] *See* Ricci & Sautter, *supra* note 3, at 51.
[98] *See* Fisch, *supra* note 5, at 1850-51. *See also* Michal Barzuza, Quinn Curtis, & David Webber, *Shareholder Value(s): Index Fund ESG Activism and the New Millennial Corporate Governance*, 93 S. CAL. L. REV. 1243, 1250 (2020) (arguing that the direct and indirect pressure from millennial investors is pushing mutual funds, who are competing for the millennial investors' investment, to become more active on ESG issues).
[99] *See id.* at 1851.

ESG score—as our outcome of interest.[100] MSCI measures the ESG for each firm at different points in the year. Therefore, we count an ESG score to "belong" to a given year if it was assessed after June 30 of the previous calendar year or before June 30 of that year. For example, any ESG score assessed between June 30, 2015 and June 30, 2016 is counted as that firm's 2016 ESG score. We estimate a difference-in-difference regression model assessing whether ESG scores changed differently for meme stocks after the abolition of commissions and the meme surge of 2021. Table 6 presents the results of this regression.

	(1) Baseline	(2) With Financials
2019-20	0.326***	0.292***
	(0.0305)	(0.0347)
2019-20 x Meme	-0.0817	-0.0108
	(0.127)	(0.125)
2021	0.644***	0.601***
	(0.0434)	(0.0494)
2021 x Meme	-1.818**	-1.722*
	(0.918)	(0.910)
Constant	4.219***	4.244***
	(0.0515)	(0.0792)
Observations	16,646	12,910
R-squared	0.806	0.810
Firm Fixed Effects	Yes	Yes
Firm Financials	No	Yes

Table 6. Meme Stocks and ESG Scores. This table presents the results of a linear regression model where the dependent variable is the yearly industry-adjusted ESG score reported for each firm by MSCI ESG Indexes. *2019-20* equals 1 for years 2019 and 2020, while *2021* equals 1 for 2021. Column (2) adds controls for firm assets, cash ratio, debt ratio, and return on assets. Columns (1) and (2) include firm fixed effects, and all standard errors are clustered at the firm level. The ***, **, and * denote significance at the 1%, 5%, and 10% levels.

[100] There is some debate as to what the ESG rating really captures. The rating is intended to measure risk, but ESG scholars also employ this metric as a performance indicator—e.g., firms' efforts to manage ESG risks. For studies using this index as a performance indicator, see, for example, Ľuboš Pástor et al., *Dissecting Green Returns*, 146 J. FIN. ECON. 403 (2022); Mozaffar Khan et al., *Corporate Sustainability: First Evidence on Materiality*, 91 ACC'T. REV. 1697 (2016). For more on the debate, see George Serafeim & Aaron Yoon, *Stock Price Reactions to ESG News: The Role of ESG Ratings and Disagreement*, REV. ACC'T. STUD. 1 (2022).

As shown in the Table, there is no observable positive effect of meme trading on our treated companies with respect to ESG scores, either after the abolition of commissions in 2019 or the rise in social media interest in 2021. In fact, not only are all the coefficient estimates, on (2019-20 x Meme) and (2021 x Meme) variables, negative, the coefficient estimates on (2021 x Meme) variable are statistically significantly negative, with or without financial variables at control, at 10% and 5% levels, respectively. While it is difficult to make a conclusive statement based on these results, these results are consistent with the earlier results on shareholder voting and proposals and perhaps not too surprising. If we think that the (new) retail investors are (more) passive, it would not be surprising to expect that the companies would face less (indirect) pressure from the retail investors and be less inclined to improve upon the ESG issues, even if retail investors may care more about these topics. Furthermore, as discussed briefly in Parts II and III, meme firms had higher debt than other firms, and many of them had faltering business models. With an influx of new passive shareholders, management at these firms may have been tempted to reduce expenditure in compliance or ESG initiatives, especially when they know that they will face little pressure from their retail shareholder base.

B. Board Diversity at Meme Stock Companies

Next, we look at the relationship between meme trading and board gender diversity. We use data on board gender diversity from BoardEx, with the dependent variable equaling the fraction (between 0 and 1) of a company's board that is female.[101] The regression analyses, presented in Table 7, does not show meme companies granting women greater representation on boards either after the abolition of commissions or the advent of the social media-driven meme surges. Unlike the ESG results in Table 6, we do not see meme companies performing "worse" than other companies. Our

[101] Ethnic diversity is another variable we could examine. Nevertheless, BoardEx datasets do not include ethnicity data in a readily usable format.

results simply imply that there is no significant relationship between the meme phenomenon and women's representation on the board.

	(1) Baseline	(2) With Financials
2019-20	0.0637***	0.0575***
	(0.00200)	(0.00232)
2019-20 x Meme	0.00955	0.0103
	(0.0587)	(0.0609)
2021	0.103***	0.0942***
	(0.00269)	(0.00315)
2021 x Meme	0.00897	0.0168
	(0.0612)	(0.0620)
Constant	0.170***	-0.0106
	(0.000967)	(0.0297)
Observations	11,539	10,657
R-squared	0.809	0.811
Firm Fixed Effects	Yes	Yes
Firm Financials	No	Yes

Table 7. Meme Stocks and Board Gender Diversity. This table presents the results of a linear regression model where the dependent variable is the share of directors that is female, per BoardEx. *2019-20* equals 1 for years 2019 and 2020, while *2021* equals 1 for 2021. Column (2) adds controls for firm assets, cash ratio, debt ratio, and return on assets. Columns (1) and (2) include firm fixed effects, and all standard errors are clustered at the firm level. The ***, **, and * denote significance at the 1%, 5%, and 10% levels.

This Part's results are not necessarily inconsistent with the observations made in the literature about retail investors primarily belonging to the millennial generation,[102] or this age cohort of investors having pro-ESG preferences. Instead, taken together with the earlier results about low levels of voting by retail investors, they imply that retail investor apathy renders them likely unable to change management policies toward the environment or social causes. Therefore, while the earlier scholarship on retail investors understandably thought millennial retail investors would move firms away from the wealth-maximization norm once they got a seat at the table, they underestimated the possibility that these investors would neglect to actually take their seat by voting.

[102] *See* Barzuza et al. (2020), *supra* note 98.

C. Profitability, R&D, and Capital Expenditure

As the final set of empirical exercise, we explore whether the influx of retail investors at the meme stock companies may have (indirectly) affected the financial performance or operations at the companies. To set the stage, Figure 4 presents three graphs on the average return on assets (ROAs), average R&D expenses, and average Capital Expenditures (CapEx), for meme and non-meme companies between 2015 and 2021. With respect to the ROAs (a profitability measure), shown in the upper-left panel, there is a clear downward trend at meme companies while the non-meme companies' average profitability seems much more stable over the same period. At the beginning of the sample period, in fact, meme stock companies were on average more profitable than other, non-meme companies, but the meme companies have experienced a sustained slide in their return on assets, and by the end of the sample period, meme companies are performing significantly worse than non-meme companies. Despite some meme companies raising large sums of money by conducting at-the-market offerings at elevated prices,[103] notably Game Stop and AMC, these firms saw a decrease in profitability.

The substantial decrease in profitability of meme companies could be due to the fact that their business models may have been fundamentally untenable in a changing world. It is also possible that the agency costs within these firms have gotten worse due, for instance, to less monitoring and less activism by their (retail) shareholders.[104] The average R&D expenses and capital expenditure trends (as shown in the upper right panel and lower left panel, respectively) seem to suggest that, at the operational level, meme companies are spending less on innovation and structural improvements. Before we proceed, however, we should note that the small number of meme stocks by definition

[103] *See supra* note 6 and accompanying text.
[104] *See* Ian Appel, Todd Gormley, and Donald Keim, *Passive Investors, Not Passive Owners*, 121 Journal of Financial Economics 111 (2016). The authors empirically examine how the influx of institutional shareholders, due to an exogenous change in Russell 1000 and 2000 indices, affect corporate governance and show that the firm performance generally improves when there are more institutional investors. In some sense, our paper is looking almost at the opposite question, but basing on the meme surge. In addition to firm performance, which will be discussed in part VI, we also document investors' participation governance.

introduces more variability in any numerical averages, so there may be more "noise" in the time-trends in Figure 4 for meme (as compared to non-meme) stocks. However, the consistent downward trend in for meme companies does indicate a real trend in profitability for these firms.[105]

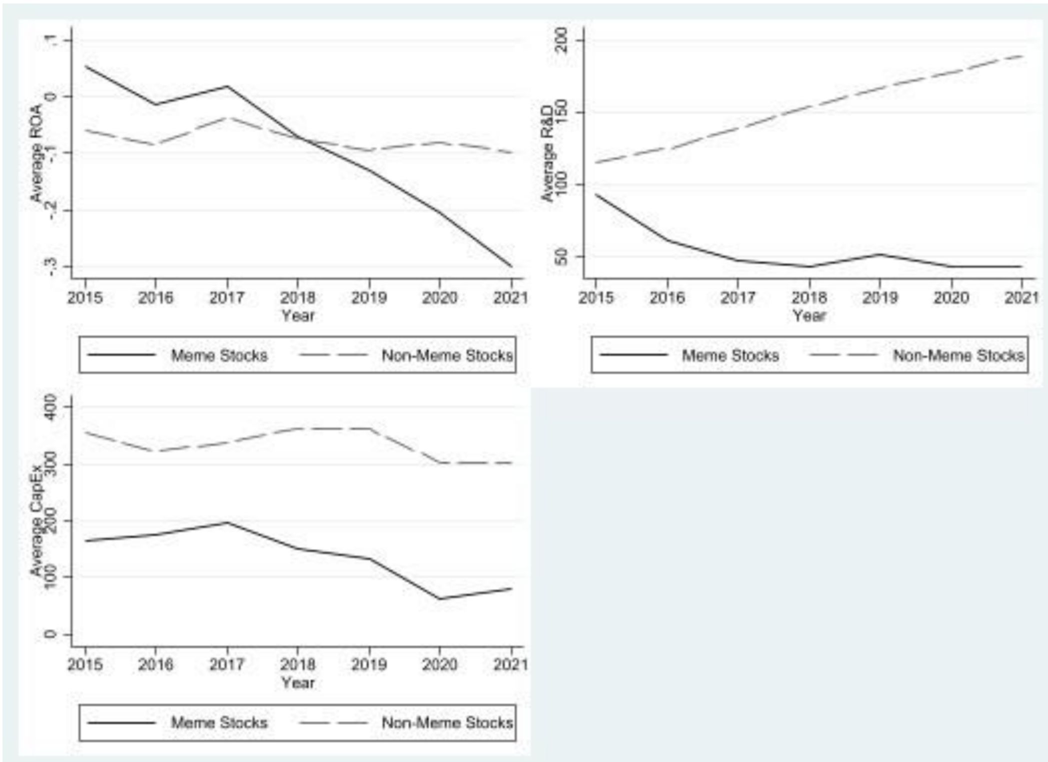

Figure 4. Average Return on Assets, R&D expenses, and Capital Expenditures for Meme and Non-Meme Stocks. This figure presents three separate graphs, mean return on assets (ROAs), R&D expenses, and Capital Expenditures, between 2015 and 2021, separately for meme and non-meme companies.

To get a better understanding of meme companies' performance, we take a closer look at the two operational measures: R&D and capital expenditures (CapEx). At least two theories of R&D spending may be relevant to meme companies. First, financial economists have explored the link between an increase in firms' market valuation and innovation activity. Specifically, a study by a group of financial economists, using mutual fund inflows as a measure of market's optimistic valuation, finds

[105] Because we have used return on assets (ROAs) as an independent variable in our regression models throughout the paper, we do not report the regression results that examine the effect of meme surge and zero-commission trading on ROAs. However, consistent with the figure, the coefficient estimates on ROAs of meme companies are statistically significantly negative with respect to both post zero-commission trading and post meme surge.

a "very strong and robust association" between firm overvaluation and R&D spending.[106] They find that R&D spending is more sensitive to firm overvaluation than to growth in company sales and cash flow.[107] The underlying reasoning seems to be that corporate managers respond to higher market valuations by becoming more optimistic and engaging in more creative (and higher-risk) forms of innovation. If this theory applies to meme companies, one might expect that meme surges would have encouraged executives at these companies to increase R&D spending.

On the other hand, others have documented increase in R&D spending (and other innovative activities) associated with a larger fraction of institutional ownership.[108] As the institutional ownership increases, one can argue that this will increase shareholder monitoring (and a lower agency costs) and induce the firm managers to engage in more innovative activities (and not shirk) which, in turn, should correlate with various measures of innovation and long-term investment, such as R&D spending and capital expenditures. To the extent that this theory applies to meme stock companies, one might expect that the influx of retail investors and the resulting transformation of the stockholder base at these companies[109] would lead to these companies *decreasing* their R&D spending. Accordingly, examining how R&D spending has changed at meme stock companies could shed light on which of the two theories are more likely at play.

We explore this question by conducting the standard difference-in-difference regression as in the rest of this Article, and using R&D and capital expenditures (CapEx) as alternate dependent

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[106] *See* Ming Dong et al., *Misvaluation and Corporate Inventiveness*, 56 J. FIN. & QUANT. ANALYSIS 2605, 2609 (2021) (showing how "overvaluation" of firm stock, driven by an exogenous increase in mutual fund inflows, increase a firm's innovation activity, including R&D spending, through both financing (equity and debt financing) and non-equity (managerial confidence and insulation from a possible takeover) channels). At the same time, however, because the authors rely on mutual fund inflows (or outflows) to proxy for an increase in firm valuation, it is more difficult to establish whether the increase in innovation activity is due to the increase in valuation or to the increase in institutional ownership. If the effect is strong with respect to the latter, that would be consistent with the alternate hypothesis, and our finding will also be consistent with the institutional ownership hypothesis.
[107] *See id.*
[108] *See* Bushee, *supra* note16; Aghion et al., *supra* note 16; Appel et al., *supra* note 16.
[109] *See supra* note 11 and accompanying text.

variables.[110] Table 8 presents the results of these regressions. As seen by the negative coefficient estimates on two interaction dummy variables, 2019-20 x Meme and 2021-22 x Meme, the regression results show that there was a significant decrease in both R&D and capital expenditures at the meme companies both after the 2019 abolition of commissions and the meme surge of 2021.[111] Except for the coefficient estimate on the 2021-22 x Meme in capital expenditures regression, which is significantly negative at the 10% level, the other estimates are significant at the 5% level. These results indicate that, unlike the case for more traditional measures of cash inflows, such as mutual fund flows, meme surges are not associated with increases in either R&D spending or capital expenditure. Rather, the results support the existing findings in the literature that an increase in institutional ownership is correlated with more R&D and capital expenditure spending. Therefore, when meme companies swapped institutional investors for meme traders in recent years, managerial incentives to spend on innovation may have decreased.

[110] Following the financial economics and accounting literature, we replace missing values for R&D spending with zeroes. *See* Dong et al., *supra* note 106; Ping-Sheng Koh & David M. Reeb, *Missing R&D*, 60 J. ACCT. & ECON. 73 (2015) (showing that about 10.5% of the firms who do not accurately report R&D expenditures in their financial statements file and receive patents which is 14 times larger than those firms that report zero R&D).

[111] In these regressions, we do not control for firm financials in these models since, for example, R&D spending and capital expenditure could be codetermined with other financial measures. However, our results do not change when we additionally control for firm financials, including return on assets, cash and debt ratios, and ln(assets).

	(1) R&D Expenses	(2) Capital Expenditures
2019-20	14.38***	2.485
	(1.574)	(3.943)
2019-20 x Meme	-28.59**	-62.43***
	(12.85)	(20.67)
2021-22	30.10***	18.58***
	(2.801)	(5.872)
2021-22 x Meme	-46.20***	-91.18*
	(15.10)	(48.18)
Constant	95.81***	273.9***
	(0.896)	(1.967)
Observations	28,247	34,519
R-squared	0.969	0.957
Firm Fixed Effects	Yes	Yes

Table 8. Meme Stocks and Expenditures on Innovation. This table presents the results of a linear regression model where the dependent variable is annual corporate R&D spending in column (1) and capital expenditures in column (2). *2019-20* equals 1 for years 2019 and 2020, while *2021-22* equals 1 for 2021 and 2022. Columns (1) and (2) include firm fixed effects, and all standard errors are clustered at the firm level. The ***, **, and * denote significance at the 1%, 5%, and 10% levels.

VII. CONCLUSION

This Article has examined the impact of the dramatic influx of retail shareholders (from the "meme surge" of 2021) on various corporate governance and financial metrics at meme stock companies. The analysis suggests that retail shareholders could be the leopards that failed to change their spots. For one, during the same time period as retail investor ownership of meme stocks has increased, the rates of non-voting have significantly risen at meme companies. Although we cannot directly measure that the non-votes were coming more from retail investors, since non-participation is generally attributed to retail investors,[112] the result supports the hypothesis that the surge of retail investor interest in these companies is linked to the rise in non-voting. Importantly, we observe that the increase in non-votes began in 2019, the same year major brokerages abolished trading

[112] *See* Geoffroy, *supra* note 61 and Brav et al. (2022).

commissions. The result is also consistent with the event-study evidence presented in Part III that the 2019 advent of zero-commission trading could have stirred retail investor interest in meme stocks (along with others). Retail investors as a whole have also failed to affect corporate governance at meme companies through the shareholder proposal process.

The Article also explored possible indirect avenues through which retail investors could have influenced meme companies. Foremost, we find that the retail investors have been unable to translate their preferences into concrete improvements in the firms' ESG scores or board gender diversity. Furthermore, meme surges have not had an indirect effect on corporate innovation through R&D spending and capital expenditure. This finding is in contrast to the earlier scholarship that showed positive correlation between increased valuation (e.g., from mutual fund inflows) and R&D spending but is consistent with the findings that showed a positive correlation between an increase in institutional ownership and innovative activities. In sum, all evidence to date suggests that meme trading may be a social phenomenon that remains largely orthogonal to the aspirations of retail investors.

One explanation consistent with our findings is that the segment of retail investors that entered the market as the result of the abolition of commission fees is not representative of the previously existing retail investor base. Rather, they represent a particular subset of investors—those that were highly sensitive to then-existing low transaction fees and attuned to social media platforms.

The Article's primary target has been on a handful of meme stock companies, such as GameStop, AMC, and Bed Bath & Beyond, with the principal finding that the new retail shareholders at these companies do not seem to be active in engaging with the management or in influencing the companies' governance outcomes. Given that the Article's focus is on a small number of companies that went through an unusual experience of facing a sudden surge of retail investors' interest, one needs to be cautious about generalizing the results to other companies or making overarching conclusions. At the same time, these companies were chosen precisely because they were the primary targets of meme trading. Thus, to the extent we should have observed a new paradigm of corporate governance associated with meme surges, these companies would have been the most promising ones. Furthermore, particularly with respect to retail investors who remained loyal to the meme companies long after the "meme surge" was over, one would have expected them to be much more active in corporate governance and improving firm performance. Accordingly, we believe that the Article's findings are informative in getting a better understanding of retail shareholders' engagement and potential, democratizing benefits of allowing more retail investor participation. To get a better understanding of the importance of retail investor base on corporate governance, a future research project may take a closer look at how technological changes, including the introduction of zero-commission trading, may have had a broader effect on the capital markets and also the more general impact of retail investors on corporate governance across a larger segment of the market.

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