Place your bets? The market consequences of investment research on Reddit's Wallstreetbets*

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October 2021

Abstract

We examine the market consequences of due diligence (DD) reports on *Reddit's Wallstreetbets* (*WSB*) platform. Over the 2018-2020 sample, we find that DD recommendations are significant predictors of one-month ahead returns, earnings forecast revisions, and earnings surprises. In addition, user comments are incrementally useful for predicting returns, and small retail trade informativeness increases following DD reports. However, all of these benefits reverse in the first half of 2021. Our findings are consistent with the surge in new *WSB* users following the Gamestop short squeeze significantly deteriorating its investment quality and usefulness for smaller investors.

Keywords: Reddit, Wallstreetbets, *WSB*, retail trading, social media; Gamestop

JEL classifications: G20, G23

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* We thank Gregory Eaton (discussant), and seminar participants at Stockholm Business School (Future of Financial Information Webinar) and the University of Kentucky.

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1. Introduction

On February 18, 2021 the CEOs of Reddit and Robinhood along with a Reddit user testified before Congress for their role in the well-publicized Gamestop (GME) short squeeze that sent shares to almost $500 before plummeting to around $50 a few days later.[1] With the explosion of social media platforms devoted to investment research in recent years, it is not surprising that regulators expressed concerns about the impact of social media on stock market efficiency and retail investor welfare.[2] While academic research on the impact of social media on retail trading behavior is limited, contrary to regulator concerns, some recent evidence suggests that social media contains value-relevant information (Chen, Du, Hu, and Hwang, 2014) and results in more informative retail trading (Farrell, Green, Jame and Markov, 2021). On the other hand, several studies suggest that social media can induce cognitive biases that harm investors and impede price discovery (Cookson, Engelberg, and Mullins, 2020; Jia, Redigolo, Shu, and Zhao, 2020).

In this paper, we focus on the investment research provided on Reddit's *Wallstreetbets (WSB)*, the forum targeted in the recent Congressional probe. *WSB* is a forum (called a subreddit) where users post investment analysis and the community comments on the idea. *WSB* is known for its brash culture and its emphasis on highly speculative trading strategies. It is by far the most popular finance-related subreddit experiencing explosive growth with currently over 10 million subscribers (10x increase year-over-year). On January 28, 2021, *WSB* generated more than 271 million pageviews,

[1] Represenatives from hedge funds Melvin Capital and Citadel also testified. For the transcript of the testimony, see https://www.c-span.org/video/?508545-2/GameStop-hearing-part-2

[2] While the GameStop event may be the most publicized recent example, policy makers have long been concerned about social media and financial markets. For instance, see https://www.nytimes.com/2013/04/29/business/media/social-medias-effects-on-markets-concern-regulators.html.

ranking it as the third most visited site that day (behind only Google (#1) and Youtube (#2), and ahead of Facebook (#4)).[3]

WSB tremendous growth, coupled with its emphasis on more speculative strategies has raised significant concern, particularly among regulators, that *WSB* induces uninformed trading that harms unsophisticated retail investors. For example, William Gavin, Secretary of the Commonwealth of Massachusetts proposed a trading halt in GME, the most popular stock on *WSB*, to protect "small and unsophisticated investors."[4] On the other hand, many people more familiar with *WSB* suggest that the posters and users are quite sophisticated. For example, *WSB* moderators write that, "Moderating *WSB* has taught us that retail investors can be every bit as sophisticated as institutional investors, and, in some cases even more so. We have researchers, mathematicians, momentum traders, gamblers, and so much more." [5]

Motivated by these competing views, our paper examines both the value of the investment research provided on *WSB*, and the impact of this investment research on retail trading. Our focus is exclusively on single firm 'Due Diligence" (DD) reports, which are reports identified by the poster (and verified by moderators) as containing some type of analysis and a clear buy or sell signal. Our sample includes 5,050 DD reports issued between July 2018 and June 2021. Consistent with the view that *WSB* emphasizes speculative investments, we find that DD reports tilt towards young, volatile stocks with low institutional ownership and high short interest. *WSB* preference towards speculative investments increases substantially in 2021, which is consistent with the Gamestop event attracting even more risk-seeking users.

[3] https://mashable.com/article/reddit-wallstreetbets-subreddit-record-traffic-gamestop/ As a reference, other prominent social finance sites such as Seeking Alpha, Motley Fool, and Estimize generate roughly 1.1 million, 13,000, and 6,500 average daily pageviews.

[4] https://www.cnbc.com/2021/01/27/gamestop-speculation-is-danger-to-whole-market-massachusetts-regulator.html

[5] https://www.bloomberg.com/news/articles/2021-01-29/wallstreetbets-mods-focus-on-growth-say-culture-misunderstood

After examining the determinants of *WSB* reports, we turn to the informativeness of DD recommendations. We allow for the value of DD reports to differ in the period before the GME event (pre-GME period) of 2018-2020 (2,333 DD reports) and the post-GME period (2,717 reports). In the pre-GME period, we find that DD reports are significant predictors of future returns. For example, an incremental DD buy recommendation is associated with a 6.04% increase in one-month ahead returns for the full sample and a 2.32% increase after excluding GME and AMC.[6] The significant predictability is robust to excluding DD reports that coincide with earnings announcements, abnormal media coverage, or recent DD reports suggesting that the informativeness of *WSB* research is not limited to reports that piggyback off other information events. However, the one-month return predictability fully reverses in the post-GME period.

We also examine whether readers' perception of the report quality, as measured by the extent to which the comments following the report agree with the report's recommendation, contains incremental predictive value for future returns. Across the full time-series, we find that future returns are larger following DD reports with higher comment agreement. This result is attributable to two effects. First, comment agreement declines in 2021, suggesting that at least some users recognize the decline in report informativeness in the post-GME period. Second, within the 2018-2020 sample, users were able to identify higher-quality reports. However, comment agreement has zero predictive ability in the 2021 sample period, consistent with user comments also declining in quality in the more recent sample period.

The positive returns following DD reports in the 2018-2020 period is consistent with DD reports containing value-relevant information that is not fully incorporated into prices (*information*). It

[6] AMC, along with GME, are widely publicized as two of the original meme stocks targeted by *WSB* users (https://www.cnbc.com/2021/07/14/amc-share-price-cut-in-half-as-reality-sets-in-for-meme-stock-investors.html). Consistent with this view, these two stocks represent close to 25% of our 2021 sample (top 2 in our data). We have also considered excluding all meme stocks, defined as the 50 stocks for which Robinhood imposed a trading halt (https://www.theverge.com/2021/1/29/22256419/robinhood-limits-wall-street-bets-stock-buys). Excluding other meme stocks apart from GME and AMC has a negligible impact on the results.

is also possible that DD reports incite uninformed demand shocks that push prices beyond fundamentals (*price pressure*). To differentiate between these views, we explore the ability of DD recommendations to predict cash flow news, as measured by either media sentiment, earnings surprises, or analyst earnings forecast revisions. We find that DD reports issued during the pre-GME period positively forecast all three measures of cash-flow news, consistent with DD reports disseminating value-relevant information that can potentially enhance market efficiency. However, these effects again fully reverse to zero (and sometimes become significantly negatively) in 2021.

The decline in report informativeness starting in 2021 is consistent with the GME event contributing to this decline. The remarkable success of the GME short squeeze may have caused users to place too much emphasis on coordinated trading strategies, possibly at the expense of analyzing firm fundamentals. To test this prediction, we develop a dictionary of words that measure the reports' emphasis on short squeezes or other forms of price pressure (e.g., short interest, squeeze, gamma, hedge, etc.) versus its emphasis on fundamentals (e.g., earnings, revenue, growth rate, store visits, etc.). We classify a report as price-pressure focused (*PP Report*) if the number of price pressure words exceeds the number of fundamental words. We find that the fraction of *PP Reports* increases from 8% in the pre-GME period to 31% in the post-GME period. The differences are highly significant and are robust to excluding GME and AMC from the sample. Moreover, consistent with price pressure strategies contributing to the deterioration in report informativeness, we find that the decline in return predictability of DD reports in the post-GME period is significantly stronger among *PP Reports*.

Our final set of tests examine how investors of differing sophistication levels trade following DD reports. We consider three groups of investors: institutional investors, large retail investors (as proxied by volume-based measures of retail order imbalance), and small retail investors (as proxied by trade-based measures of retail order imbalance). Institutional order imbalances are uncorrelated with DD report recommendations, large retail order imbalances are modestly correlated, and small retail

order imbalances exhibit a substantial correlation. Consistent with larger retail investors recognizing the recent decline in research quality, we find that large retail order imbalances become less correlated with DD reports in the post-GME period. We do not, however, observe a similar decline among smaller retail traders. In addition, we find that large retail investor order imbalances following DD reports forecast future returns, even in the post-GME period when *WSB* reports are, on average, uninformative. In contrast, small retail investor order imbalances following DD reports forecast future returns only in the pre-GME period. Our findings suggest that smaller, and presumably less sophisticated investors, more closely follow *WSB* report recommendations, but they are less able to discern report quality.

Our study adds to several strands of literature. First, we contribute to work on the value of investment research provided on social media. While some papers find a significant positive relation between investment opinions on social finance sites and future stock returns (e.g., Chen et al., 2014; Jame, Johnston, Markov, and Wolfe, 2016; and Crawford, Gray, Johnson, and Price, 2018), others do not (Tumarkin and Whitelaw, 2001; Kim and Kim, 2014; and Giannini, Irvine, and Shu, 2018). We offer a first look at the investment value of DD reports on *WSB*, which has recently become the most influential social finance site by many metrics. Our findings suggest that the investment research on *WSB* was predictive of future returns and fundamentals over the 2018-2020 period, but such predictive ability has been completely eliminated in the more recent sample period. Our findings are consistent with the increased investor attention stemming from the GME event resulting in a fundamental shift in the content of DD reports, and a decline in the informativeness of the site.

We also contribute to the literature on retail trading. Early work finds that retail traders are uninformed 'dumb money' (Hvidkjaer, 2008; Frazzini and Lamont, 2008). However, more recent evidence suggests that retail traders are informed (Kelley and Tetlock, 2013; Boehmer, Jones, Zhang, and Zhang, 2020) and are skilled at processing public information (Farrell et al., 2021). Our evidence

that *WSB* commenters and larger retail investors have the ability to discern the quality of *WSB* reports is consistent with this more recent evidence. However, the evidence that small retail trade order imbalances remain highly correlated with DD reports even after the significant decline in informativeness is consistent with many naïve investors being less adept at distinguishing report quality. The contrast between large and small retail investors is consistent with growing evidence of significant heterogeneity in skill across retail investors (Jones, Shi, Zhang, Zhang, 2020; Eaton, Green, Roseman, and Wu, 2021).

Finally, our study contributes to the nascent literature that explores the growing importance of *WSB* and its impact on financial markets. Several contemporaneous working papers focus on the dynamics between *WSB* activity and one-day ahead returns, trading volume, short interest, and volatility (e.g., Aharon, Kizy, Umar, and Zaremba, 2021; Winkler and Semenova, 2021; Hu, Jones, Zhang, and Zhang, 2021; Long, Lucey, and Yarovaya, 2021; and Eaton, Green, Roseman, and Wu, 2021). In contrast, our emphasis is on the informativeness of *WSB* research reports and the impact of *WSB* research on retail trading.

2. Data and Descriptive Statistics

2.1 Reddit and Wallstreetbets – Background

Reddit is a social media platform founded in June 2005. Like many other social media websites, contributors post content, and users can add comments in response to the original post. The Reddit community is a collection of forums, where each forum is dedicated to a particular topic called a subreddit. Each subreddit is then organized into several pages based on users' ranking criteria. For instance, the default page is the 'Hot Page,' which lists the currently most viewed posts or posts with the most active commentators. 'New Posts' lists posts based on the listing timestamp, and 'Top posts' lists posts with the most likes (upvotes) and comments over a specified period. When a new post is

written, it is only visible in the new post category. The post can then move up to the hot page if it reaches sufficient traffic.

Wallstreetbets (*WSB*) is one of many subreddits within the Reddit community. It was created on January 31, 2012, with a particular emphasis on highly speculative trading strategies. While this is not the only subreddit dedicated to investing strategies (i.e., r/Investing, r/Personalfinance, r/Stocks, etc.), we focus on this particular subreddit for two primary reasons. First, with over 10 million subscribers, it is much larger than other finance-related subreddits. Second, and perhaps most importantly, it is the subreddit that has recently attracted significant media and regulatory attention from its role in the GameStop short squeeze. The conventional view is that this forums' userbase is predominantly unsophisticated retail investors who are more interested in gambling than investing. There has also been significant concern that the "research" on *WSB* is at best uninformative, and at worst, a force that destabilizes stock prices and contributes to significant retail trading losses.

Importantly, the view of *WSB* as having a niche clientele that prioritizes speculative trading strategies over more traditional investment research, suggest that the impact of *WSB* on financial markets and retail investor trading may differ substantially relative to other social finance sites studied in the prior literature. For example, several studies on Seeking Alpha suggest that a large fraction of Seeking Alpha reports and contributors are skilled (see, e.g., Chen et al., 2014; Farrell, Jame, and Qiu, 2020), and Seeking Alpha research helps facilitate more informative retail trading (Farrell et al., 2021). However, apart from the fact that both *WSB* and Seeking Alpha have approximately the same number of subscribers, the two social finance platforms have very little in common. For example, there is limited quality control on *WSB*, whereas Seeking Alpha employs an editorial team to review all research reports to ensure quality. Further, *WSB* reports tend to be considerably less in-depth than the average

Seeking Alpha report, and the userbase of *WSB* is likely to have significantly less financial sophistication.[7]

Figure 1 here

Figure 1 shows the explosive growth trajectory in the *WSB* forum. In particular, the forum has grown from roughly 500,000 users in July of 2018 to roughly 10.7 million users as of June 2021. There is an obvious spike in growth in January of 2021, which corresponds to the timing of the GameStop short squeeze.

The dramatic increase in the userbase in January of 2021 likely had a significant impact on the culture of the site. For example, ample anecdotal evidence suggests that the increase in the size of the WSB platform has made it increasingly appealing to bad actors promoting pump and dump schemes.[8] In addition, the influx of new users has significantly altered the emphasis of the site. Original members of WSB, while focused on highly speculative and very short-term strategies, were apolitical and strictly focused on profitability. In contrast, new members tend to emphasize coordinated buy-and-hold strategies for a handful of meme stocks with little regard to the company's fundamentals.[9] As a result, many different spinoff subreddits, such as *WallStreetBetsOGs* and *WallStreetBetsnew*, were started by original *WSB* users to attempt to recreate *WSB* prior to the GME event. Given the dramatic shift in both the userbase and culture of *WSB* following the GME event, our analysis will separately examine *WSB* reports issued in the pre-GME period (July 2018-December 2020) and the post-GME period (January 2021- June 2021).

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[7] With respect to article depth, we find that the average *WSB* report in our sample is 352 words, which is roughly half of the length of a typical SA report (675 words), as reported in Chen et al., 2014. With respect to investor sophistication, the average Seeking Alpha user has a household income of $321,000 and roughly $1.5 million in investable assets (see https://static.seekingalpha.com/uploads/pdf_income/sa_media_kit_04_2020.pdf). While these figures are unknown for *WSB* users, anecdotal evidence suggests that these estimates would be substantially smaller.

[8] For example: https://www.marketwatch.com/story/froth-and-fomo-are-being-used-to-create-meme-stocks-and-fake-meme-stocks-11624373315?mod=thornton-mcenery&mod=article_inline and https://www.reddit.com/r/CryptoCurrency/comments/l9mgzl/lots_of_pump_and_dump_scams_being_promoted_and/

[9] For a summary of these competing views see: https://www.insider.com/wallstreetbets-reddit-forum-divided-as-new-users-flood-subreddit-2021-2

2.2 Reddit and Wallstreet Bets – Data Collection and Descriptive Statistics

We scrape all posts on *WSB* from July of 2018 through June of 2021 using the Pushshift API, which collects new posts and comments in almost real-time.[10] Posts can be deleted by the original author, moderator of the subreddit, or an "automod" (which is a spam filter robot operated and constructed by moderators). Deletions by the automod typically occur in less than a minute. Deletions of posts by moderators take longer (usually up to a day) if the post breaks the rules of the subreddit and was not already captured by the automod. Lastly, a post can be deleted by the author at any time. Importantly, the API retains posts deleted by the authors, and these posts are included in our sample.

WSB contains more than 100,000 different posts spanning several different categories including: *News* (links to news stories WSB users found interesting), *Discussion* (open-ended discussions, frequently on macroeconomic forces such as proposed regulations, supply chain disruptions, etc.), *Meme* (amusing videos and pictures), *YOLO* (posts reporting large upcoming bets), *Gains/Losses* (posts highlighting major investment successes and failures), and *Due Diligence* reports (posts that contain investment analysis and a clear investment recommendation). Our analysis focuses on due diligence (DD) reports because they are the only category that contain independent investment research. DD reports, which account for roughly 5.5% of all WSB posts (Buz and Melo, 2021), offer the cleanest test of the skill of WSB posters and commentators. They are also the most comparable to other forms of investment research studied in the past (e.g., sell-side analyst recommendations, Seeking Alpha reports, etc.).[11]

[10] There is a period between April 13th and August 4th of 2020 where DD reports are missing. This is likely due to an issue with Reddit's API.

[11] Non-research related posts (e.g., reporting a large gain on a recent investment) may also influence stock prices and retail investor trading. However, a detailed analysis of the impact of non-research related *WSB* posts is beyond the scope of this paper.

For each DD report, we manually review the report to identify the investment recommendation and ticker. Although the author's investment recommendation is clear to anyone reading the report, there is no standardized format for listing recommendations which necessitates a manual review of each report. The manual review of tickers is also needed for two reasons. First, users may place special characters before or after a ticker symbol that a program would misclassify. Second, users sometimes intentionally report a wrong ticker to misdirect hedge funds and other institutional investors that monitor message boards using algorithms.[12]

We limit the sample to DD reports focused on a single ticker (e.g., we eliminate DD reports that focus on market-wide or industry analysis) and to common stocks (CRSP share codes 10 and 11) with available data in the CRSP-Compustat merged database. Appendix A provides an example of a DD report in our sample. The header of the report includes the username, firm name, and ticker. Although not visible in Appendix A, each DD report also includes the timestamp of the report (i.e., 3/20/2020 18:54:53 EST). For DD reports that occur outside of trading hours, we set the date of the report equal to the date on which an investor could have first traded on the report.[13]

For each report, we also collect all the comments that are posted in response to the report. We limit the sample to comments that are posted between the publication of the report and the start of the subsequent trading day. This filter helps eliminate comments that are potentially influenced by ex-post returns (i.e., comments praising the author for a buy recommendation that earned subsequently high returns) while still retaining the majority of comments.

We also develop a measure to quantify the extent to which commenters agree with the DD recommendation. The language of *WSB* users is very different from typical financial market

[12] For an example of WSB users attempting to mislead hedge funds, see: https://www.reddit.com/r/wallstreetbets/comments/ly0d4m/how_to_beat_hedge_fund_algorithms_on_wsb_a/

[13] For example, if a report was issued at 5 pm on Wednesday January 6, we would classify the date of the post as Thursday, January 7, and we would define the [1,5] day return as the return from Friday January 8 through Thursday January, 14. We exclude the Day [0] return to reduce the impact of potentially confounding news that could influence both the DD report and the Day [0] return.

participants (e.g., greater use of sarcasm, slang, jokes, and emojis), making traditional measures of text analysis (e.g., Loughran and McDonald, 2011) not well suited for measuring *WSB* user sentiment. Instead, we develop our own data dictionary based on common *WSB* expressions which we describe in greater detail in Appendix B. Using this data dictionary, we define *Commenter Agreement* equal to one if the number of keywords in agreement with the DD report are greater than or equal to the number of keywords that disagree with the DD report, and zero otherwise.

When examining whether DD reports contain value-relevant information, one concern is that reports may simply repeat major information announcements (hereafter: confounded reports). We classify a report as *confounded* if the firm announced earnings or had abnormally high media coverage (as defined in Appendix D) on the day prior to the DD report or the day of the DD report. Since many users may also "piggyback" off other DD reports, we also classify a report as *confounded* if there was a DD report issued on the previous day.[14]

Table 1 here

Panel A of Table 1 provides summary statistics. The sample includes 5,050 DD reports covering 3,811 firm days and 909 different firms.[15] The overwhelming majority of DD reports (88%) are buy recommendations. The average report receives 65 comments between the time of the report and the start of the subsequent trading day, and *Commenter Agreement* averages 53% suggesting that users are slightly more likely to endorse the *WSB* recommendation than disagree. Roughly 30% of all DD reports are classified as *Confounded*. We also partition the sample into the pre-GME period (July 2018-December 2020) and the post-GME period (January 2021-June 2021). Although the post-GME period is substantially shorter in calendar time, it accounts for a slight majority (~54%) of all DD

[14] DD reports issued on the same day as an existing DD report are not problematic since the unit of observation for most tests is the firm-day.

[15] In unreported analysis, we also examine summary statistics by username. The sample includes 3,814 unique usernames, however 82% issue only one DD report, and only 3% issue more than three reports. These estimates likely significantly understate the number of reports per person since users often get temporary bans for violating moderator rules and circumvent the ban by joining the forum with a different username.

reports. DD reports in the post-GME period attract more comments (81 versus 45), but *Comment Agreement* is somewhat lower (51% versus 55%). Post-GME DD reports are also more likely to be *Confounded* (35% versus 26%), and they are more likely to recommend a long position (95% versus 81%). The substantial differences in report characteristics in the pre- and post-GME period are consistent with the GME event resulting in a significant shift in the culture of *WSB*.

Given the extreme returns of GME and AMC, we explore whether our central conclusions are robust to including/excluding GME and AMC. Panel B of Table 1 reports the summary statistics after excluding GME and AMC, while Panel C reports the results for the GME/AMC subsample. Reports on GME and AMC account for 12% of all reports (609/5,050), but they are far more prevalent in the post-GME period (19% of all reports) relative to the pre-GME period (3% of all reports). GME and AMC reports also garner significantly greater attention (154 comments versus 52 comments) and are much likely to be *Confounded*.

2.3 Other Variable Construction

We obtain financial statement data, including book value of equity, book value of debt, book value of assets, short interest, and total common shareholders from Compustat. We obtain financial market data, including daily data on share price, shares outstanding, volume, and stock returns from CRSP. Earnings announcement dates and sell-side analyst earnings forecast data are from the I/B/E/S unadjusted US detail history file and sell-side analyst recommendations are from the I/B/E/S detail recommendations file. We collect the number of shares held by institutions from the Thomson Reuters Institutional Holdings database, and media coverage data is collected from Bloomberg.

We identify retail trading from TAQ data using the approach of Boehmer, Jones, Zhang, and Zhang (BJZZ, 2020). Specifically, we classify trades with TAQ exchange code "D" and prices just below a round penny (fraction of a cent between 0.6 and one) as retail purchases, while trades with

exchange code "D" and prices just above a round penny (fraction of a cent between zero and 0.4) are classified as retail sales. This classification is conservative in the sense that it has a low type 1 error (i.e., trades classified as retail are very likely to be retail). However, this classification does omit retail trades that occur on exchanges as well as limit orders that are not immediately executable.

2.4 Determinants of WSB Coverage

We next examine the characteristics of firms with DD reports. We expect that many of the determinants of research coverage on other social finance sites (e.g., Seeking Alpha) are likely to be relevant on *WSB* as well. For example, we expect that *WSB* will also have a significant tilt towards stocks more heavily owned by retail investors. However, relative to Seeking Alpha, we expect that *WSB* users will tend to issue reports on more speculative stocks, including stocks with greater volatility.

To facilitate a comparison with Farrell et al. (2021) (hereafter FGJM), who study the determinants of SA coverage, we use a similar set of firm characteristics to those studied in FGJM as potential determinants of WSB coverage. Specifically, we estimate the following panel regression:

$$WSB\ Coverage_{it} = \alpha + \beta_1 Chars_{it-1} + Month_t + \varepsilon_{it.} \quad (1)$$

The dependent variable, *WSB Coverage*, is the natural log of 1 plus the total number of DD reports issued for firm *i* during month *t*. *Chars* contains the vector of firm characteristics used in FGJM, namely the percentage of the firm's shares held by institutional investors at the end of the prior year (*Inst. Ownership*), the number of common shareholders (*Breadth of Ownership*), market capitalization (*Size*), book to market (*BM),* return volatility (*Volatility*), share turnover (*Turnover*), past one-month returns ($Return_{m-1}$), past returns over the prior two to twelve months ($Ret_{m-2,\ m-12}$), the number of unique media articles mentioning the firm the prior year (*Media Coverage*), and the number of sell-side analysts issuing a forecast for the firm in the prior year (*IBES Coverage*). In addition, given the ample anecdotal evidence that *WSB* users target heavily shorted stocks and stocks that recently went public, we add indicator variables equal to one if the firm is in the top decile of short interest in the previous month

(*Heavy Short*) or if the firm went public in the past six months *(Recent IPO*). See Appendix D for detailed definitions. We log all continuous variables other than *Return*, and we standardize all variables to have zero mean and unit variance. We include month fixed effects and cluster standard errors by firm and month.

Table 2 here

Specification 1 of Table 2 reports the results for the full sample period. We find that the determinants of *WSB* coverage are typically similar to those of SA coverage. For example, consistent with SA coverage, we find that *WSB* coverage is increasing in firm size, turnover, volatility, and decreasing with institutional ownership. In most cases, the magnitude of the estimates for *WSB* is amplified. For example, FGJM document that a one standard deviation increase in institutional ownership is associated with a 27% decline in SA coverage, whereas we estimate a decline of 50%. Further, consistent with *WSB* preference for more speculative stocks, we find that a one-standard-deviation increase in past volatility is associated with a 152% increase in *WSB* coverage, which is more than seven times the corresponding estimate in FGJM of 21%. Finally, consistent with the anecdotal evidence, we confirm that *WSB* coverage is significantly greater for stocks with high short interest and stocks that recently went public.

In Specification 2, we test whether the determinants of *WSB* coverage changes in the Post-GME period by interacting all of the firm characteristics with an indicator for the 2021 sample period. We find that retail investors' preference for speculative stocks, including stocks with higher volatility, higher shorter interest, and recent IPO stocks, are significantly greater in the post-GME sample. This finding is consistent with the extreme GME returns attracting even more speculative investors. In Specification 3, we repeat Specification 2 after excluding GME and AMC from the sample, and we find qualitatively similar results. In Table IA.1 of the Internet Appendix, we repeat Specifications 1 - 3 after replacing *WSB Coverage* with *Net DD*, defined as the number of buy DD recommendations less

the number of sell DD recommendations during the month. The results of this analysis are very similar, which is perhaps unsurprising since nearly 90% of all DD reports are buy recommendations.

3. The Informativeness of WSB Research

3.1 WSB Research and the Cross-Section of Stock Returns

In this section, we examine whether DD report recommendations forecast future stock returns. We estimate the following panel regression:

$$R_{it+1,t+x} = \beta_1 Net\ DD_{it} + \beta_1 Net\ DD \times 2021_{it} + Controls_{it} + Day_t + \varepsilon_{it.} \quad (2)$$

The dependent variable is the stock return measured over the subsequent week (i.e., $x = 5$ trading days) or the subsequent month ($x = 21$ trading days). *Net DD* is the number of buy DD recommendations for stock *i* on day *t* less the number of sell DD recommendations for stock *i* on day *t*. We also include *Net DD× 2021,* which interacts *Net DD* with an indicator equal to one for the post-GME period (January-June 2021) and zero otherwise. Thus, *Net DD* captures the average predictive ability of DD reports over the July 2018 – December 2020 period, and *Net DD × 2021* captures the incremental predictive ability of DD reports in the post-GME period. Following Kelley and Tetlock (2013), the controls include *Size, Book-to-Market*, returns measured from days [0], [-5, -1], and [-26, -6] and media sentiment measured from [0], [-5, -1], and [-26, -6]. See Appendix D for detailed definitions. *Day* denotes calendar-day fixed effects. To account for the overlapping holding periods, we cluster standard errors by both firm and month.[16]

Table 3 here

Specifications 1 and 2 of Table 3 report the results for the full sample, and Specifications 3 and 4 report the results after excluding GME and AMC. Across all four specifications, the coefficient

[16] A similar approach that avoids overlapping holding periods is to examine daily returns and measure *Net DD posts* over different horizons (e.g., the previous five or 21 trading days). The results of this analysis, reported in Table IA.2, are qualitatively similar.

on *Net DD* is positive and at least marginally significant ($p < 0.10$). The economic magnitudes are also sizeable. For example, after excluding the extreme returns of GME and AMC, an incremental buy DD report issued over the 2018-2020 period is associated with a 0.92% increase in one-week ahead returns and a 2.32% increase in one-month ahead returns.[17]

In contrast, the coefficient on *Net DD× 2021* is significantly negative at the one-month holding period. In particular, in the full sample, DD reports predictive ability declines by 5.21% (to 0.83%), and in the sample that excludes GME and AMC the estimate declines by -3.83% (to -1.51%). Both the 0.83% and the -1.51% estimate are not significantly different from zero, suggesting that DD reports in the post-GME sample are uninformative.

Figure 2 here

We also consider the relation between *Net DD* and stock returns over longer horizons. We estimate Equation (2) for horizons ranging from one-week (i.e., $x = 5$) through 12 weeks (i.e., $x = 60$). Figures 2A and 2B report the results for the full sample and the sample that excludes GME and AMC. For both samples, we see that predictive ability of WSB reports in the pre-GME period does not reverse over longer horizons. In addition, the decline in the predictive ability of DD reports in the post-GME period remains sizeable over longer horizons. For example, at the end of 12 weeks, the coefficient on *Net DD× 2021* is -5.94% for the full sample and -5.00% for the sample that excludes GME and AMC.

3.2 WSB Research and the Cross-Section of Stock Returns – Time Series Patterns

To better understand the time-series dynamics of the decline in the predictive ability of DD reports, in Figures 3A and 3B, we estimate Specifications 2 and 4 of Table 3 for each quarter over the 2020-2021 sample period and for the pre-2020 sample. We combine the pre-2020 sample because

[17] As a benchmark, Chen et al. (2014) find that a one-standard deviation decrease in the fraction of negative words in an SA article is associated with a roughly 0.30% increase in one-month-ahead returns (see their Figure 3).

there are relatively small number of DD reports (606) prior to 2020. After excluding GME and AMC (Figure 3B), we see that the predictive ability of DD reports was stable across all four quarters of 2020, with point estimates ranging from 2.08% to 3.68%.[18] We also observe a sharp decline in informativeness in Q1 of 2021 (-0.71%), which further deteriorated in Q2 of 2021 (-1.42%).

Figure 3 here

The decline in return predictability beginning in Q1 of 2021 points to the possibility that the rapid growth of the *WSB* userbase following the GME short squeeze contributed to the deterioration in the quality of WSB research. An alternative view is that macroeconomic environment in 2021, for whatever reason, made it more difficult to conduct high-quality investment research. To explore this possibility, we repeat the analysis in Figure 3 after replacing net DD recommendations with net sell-side analyst recommendations. Specifically, for each firm and each day, we define *Net Upgrade* as the number of I/B/E/S analysts issuing an upgrade less the number of the number of I/B/E/S analysts issuing a downgrade. We then estimate Equation (2) quarter-by-quarter, after replacing *Net DD* with *Net Upgrade*. Figure 4 reports the estimates on *Net Upgrade* for the 21-day holding period for the full-sample of firms (excluding GME and AMC has a negligible impact on results).[19] We find no evidence that analyst recommendation changes become less informative in the post-GME period. In fact, the largest estimate occurs in the post-GME period (Q1 of 2021).[20] This finding alleviates the concern that the documented decline in WSB research informativeness is a consequence of broad economic forces that impact all forms of investment research.

Figure 4 here

3.3 WSB Research and the Cross-Section of Stock Returns – Confounding Information Events

[18] Including GME and AMC (Figure 3A) generally yields similar results except that the return predictability in Q4 of 2020 is substantially larger (12.64%) due to the very large returns of GME in January of 2021.

[19] To stay consistent with the analyst literature, we include the day 0 return when measuring the return predictability of sell-side analyst recommendations (see, e.g., Womack, 1996).

[20] In addition, in untabulated analysis, we find that the mean estimate in the post-GME period (2.79%) is slightly larger than the pre-GME period (2.35%), and the estimates are not reliably different from each other.

We next examine whether the return predictability results are concentrated in DD reports that coincide with major information events (*Confounded Sample*) or reports that are independent of major information events (*Non-Confounded Sample).* If the return predictability following DD reports in the pre-GME period is primarily a consequence of DD reports piggybacking off of other news events (e.g., Altinkilic and Hansen, 2009) or skillfully interpreting public news (e.g., Engelberg, Reed, and Ringgenberg, 2012), then we would expect the results to be significantly stronger around *Confounded Reports*. On the other hand, if *WSB* users are primarily adept at independently producing novel information, then the return predictability results may be stronger in the non-confounded sample. While both channels are potentially valuable to users who rely on *WSB* for investment research, distinguishing these explanations provides insight into the source of *WSB* investment value in the pre-GME period.[21]

Table 4 here

Table 4 reports the results from Equation (2) after partitioning *Net DD* into *Net DD Processing*, defined as the number of confounded buy DD recommendations for stock *i* on day *t* less the number of confounded sell DD recommendations for stock *i* on day *t*, and *Net DD Production*, defined as the number of non-confounded buy DD recommendations for stock *i* on day t less the number of non-confounded sell DD recommendations for stock *i* on day *t*. In the pre-GME period, we find that the coefficients on both *Net DD Processing* and *Net DD Production* are always positive and the estimates are both significantly different from zero for the one-month horizon. The evidence suggests that both information production and information processing contribute to the predictive ability of *WSB* in the

[21] As emphasized in footnote 13, our analysis excludes the Day [0] return of the DD report. Thus, while *WSB* users may piggyback off other information events, if market efficiency incorporates major news announcements into prices on the day of its release, piggybacking should not be associated with abnormal returns. If the market does not immediately incorporate this information, then *WSB* reports that bring this news to investors' attention are still providing value to investors.

pre-GME period. We also find that both components reverse in the post-GME period, and there is some evidence that the reversal is larger for information processing reports.

3.4 WSB Research and the Cross-Section of Stock Returns – Comment Agreement

A unique aspect of social finance research, relative to professional research (e.g., sell-side analyst recommendations), is that users on the platform can immediately provide comments in response to the report. As shown in Table 1, the average *WSB* research report induces a sizeable number of comments (65) within the first day of the report. Even if the average commenter is relatively uninformed, aggregating the opinions of many diverse commenters may contain independently useful information (i.e., the wisdom of crowds). To explore this possibility, we recompute *Net DD* after partitioning the sample into DD reports where user comments agree with the DD reports (i.e., *Comment Agreement* equals one) and all other DD reports.

There are at least two ways in which comments can add incremental value to DD reports. First, comment agreement could decline in the 2021 period as users recognize the deterioration in research quality in the post-GME period (*time-series skill*). Second, within the pre-GME or post-GME period, commenters may be able to identify higher-quality reports (*cross-sectional skill*). To account for both cross-sectional and time-series skill, we explore the impact of comment agreement over the full time-series. To isolate cross-sectional skill, we also separately estimate the value of comment agreement in the pre- and post-GME period. We limit the analysis to the one-month holding period.

Table 5 here

Specification 1 of Table 5 reports the results for the full time-series. We find that the coefficient on *Net DD Agree* (6.59%) is marginally significant, while the coefficient on *Net DD Disagree* (1.10%) is insignificant. In addition, the difference between *Net DD Agree* and *Net DD Disagree* is also marginally significant (t = 1.87). Further, excluding GME and AMC from the sample (Specification

4) results in a much more reliable statistical difference (t =3.32). Collectively, this evidence suggests that user comments contain incrementally useful information for predicting one-month ahead returns.

When we examine the pre- and post-GME periods separately, we find some evidence that comments add value in the pre-GME period. However, we find no evidence that comments are useful in the post-GME period. In fact, the point estimates on *Net DD Agree* are in the wrong direction. Thus, in addition to DD report quality declining in the post-GME period, the value of user comments also declines.

3.5 WSB Research and Future Cash Flow News

The results from the prior section are consistent with DD reports issued in the pre-GME period containing value-relevant information that is subsequently impounded into prices over the subsequent month (*information*). However, an alternative view is that DD reports cause (or are correlated with) uninformed demand shocks that induce significant price pressure over the subsequent month (*price pressure*). The lack of reversal over the 12-week holding period is inconsistent with the temporary price pressure explanation, but it is still possible that *WSB* induces price pressure that persists for even longer holding periods. To further differentiate between *information* and *price pressure,* we examine whether *WSB* DD reports also forecast cash flow news.

We estimate the following panel regression:

$$Y_{it+1,t+x} = \beta_1 Net\ DD_{it} + \beta_1 Net\ DD_{it} \times 2021 + Controls_{it} + Day_t + \varepsilon_{it.} \quad (3)$$

The dependent variable is a measure of cash flow news measured over the subsequent week (i.e., x = 5 trading days) or subsequent month (x = 21 trading days). We consider three proxies for cash flows news. The first is *Media Sentiment* obtained from *Bloomberg*. Specifically, for each firm day, *Bloomberg* assigns a sentiment score ranging from -1 (very negative news) to 1 (very positive news), with a median value of 0 (neutral articles). We assign firms with no media coverage a value of 0, and we sum the daily media sentiment over the five-day or 21-day holding period. Our second measure is *Positive Forecast*

Error, which equals one if realized earnings exceed the median quarterly forecast across all I/B/E/S analysts as of day *t,* and zero otherwise. The five-day (21-day) sample is limited to firms that will announce earnings within five (21) trading days of day *t*, and we also require that the firm have at least one I/B/E/S earnings forecast. While *Positive Forecast Error* is a common proxy for cash flow news (e.g., Kelley and Tetlock, 2013), one limitation is that it restricts the sample to firms that will shortly announce earnings. As a broader measure of earnings-related news, we also compute *Positive Forecast Revision*, which equals the total number of upward revisions scaled by the total number of revisions. In computing this measure, we consider both quarterly and annual earnings forecast revisions. We exclude firms with zero I/B/E/S coverage, and we set *Positive Forecast Revision* to 50%, the median value across the sample, for firms with I/B/E/S coverage but no forecast revisions over the holding period.[22] *Controls* and *Day* are defined as in Equation (2), and standard errors are clustered by firm and month.

Table 6 here

Table 6 reports the results for the full sample, and Table IA.3 reports the results after excluding GME and AMC.[23] In all six specifications, the estimates on *Net DD* are positive and at least marginally significant ($p < 0.10$). The economic magnitudes are also sizeable. For example, the estimate in Specification 3 indicates that an incremental buy DD recommendation issued within 5 days of the earnings announcement is associated with a 5.4% percentage points higher likelihood of beating the sell-side consensus forecast, which corresponds to roughly a 10% increase relative to the sample mean of 60%. On the other hand, the estimates on *Net DD* × 2021 are always significantly negative, indicating the ability of *WSB* DD reports to predict fundamentals declines significantly in the post-GME period. These findings, coupled with the return predictability evidence in Table 3, suggest that

[22] The results are robust to excluding all firm with zero forecast revisions.
[23] Neither GME nor AMC have extreme measures of cash flow news, so excluding them from the analysis has a negligible impact on the results.

in the pre-GME period, DD reports contained value-relevant information that could potentially enhance market efficiency, but the informativeness of DD reports is completely eliminated in the post-GME period. Further, in the case of *Media Sentiment* and *Positive Forecast Error*, the post-GME estimate (i.e., *Net DD* + *Net DD* × *2021*) is significantly less than zero suggesting that *WSB* reports in the post-GME period are negative predictors of fundamentals.

3.6 Price Pressure Reports and the Decline in WSB Report Informativeness in the Post-GME Period

The existing evidence is consistent with the GME event altering the culture of the site and contributing to a decline in the informativeness of *WSB* DD reports. While the impact of the GME event on the culture of *WSB* is likely far-reaching and multifaceted, anecdotal evidence suggests that a particularly important change was that the site become more focused on identifying potential profit opportunities due to short-squeezes and other forms of coordinated price pressure strategies, possibly because the massive (and salient) success of the GME short-squeeze resulted in upwardly biased expectations of the profitability of this strategy. [24] In this section, we explore where there is an increase in *WSB* reports emphasizing price pressure following the GME event and whether this change at least partially contributes to the decline in average informativeness of *WSB* reports.

We conduct textual analysis to identify whether the report focuses on price pressure-related strategies. We develop a list of price pressure words, and as a benchmark, we also create a list of words related to fundamentals. Both lists are available in Appendix C. We define a report as focusing on price pressure if the number of price pressure words exceeds the number of fundamental words (*PP Report*).[25]

Figure 5 here

[24] For example, one user laments about the increasing frequency of posts discussing short squeezes here: https://www.reddit.com/r/wallstreetbets/comments/nujffg/not_every_stock_is_a_short_squeeze/

[25] As a robustness check, we also classify a report as focusing on price pressure if there is at least one price pressure word in the report (*PP Report2)*. The results using this alternative classification are very similar (see Table IA.4).

Figure 5A plots the fraction of *PP Reports* by quarter for the full sample of firms. We find that the fraction of *PP Reports* never exceeds 10% for any quarter in the pre-GME period. However, the estimates jump to 32% and 30% in Q1 and Q2 of 2021, respectively. In unreported analysis, we confirm that the difference between the pre-GME mean of 8% and the post-GME mean of 31% is highly significant (t =6.09) based on standard errors double-clustered by firm and month. The differences after excluding GME and AMC (Figure 5B) are less dramatic, but still economically large, and the difference between the pre-GME mean of 7% and the post-GME mean of 24% remains significant (t = 4.38).

We next examine whether the increase in *PP Reports* in the post-GME period contributes to the decline in report informativeness. We repeat Equation (2) after partitioning *Net DD* into *Net DD PP*, defined as the number of buy DD recommendations for stock *i* on day *t* less the number of sell DD recommendations for stock *i* on day *t* computed over the subset of *PP Reports*, and *Net DD Non-PP*, defined as the number buy DD recommendations for stock *i* on day *t* less the number of sell DD recommendations for stock *i* on day *t* computed over all reports that are not classified as *PP Reports*.

*** Table 7 here***

Specifications 1 and 2 of Table 7 report the results for the five-day and 21-day holding period for the full sample of stocks, and Specifications 3 and 4 report analogous results after excluding GME and AMC. In the pre-GME period, the coefficients on *Net DD PP* and *Net DD Non-PP* are always positive (albeit not always statistically significant) and the estimates are not significantly different from each other. In other words, there is no evidence that *PP Reports* are less informative than other reports prior to the GME event. In contrast, we find the decline in report informativeness in the post-GME period is significantly larger for *PP Reports* relative to *Non-PP Reports*. For example, Specification 3 indicates that the relation between *Net DD* and five-day ahead returns declined by 3.09% for *PP Reports* in the post-GME period compared to a 0.60% decline for *Non-PP Reports*; and the difference between

the two estimates (2.49%) is significant. The findings are consistent with the GME event resulting in a significant increase in the number of uninformative price-pressure reports, which contributed to the reduced return predictability of DD reports in the post-GME period.

4. Investor Trading following DD Reports

4.1. Investor Order Imbalances following DD Reports

A concern among regulators is that WSB induces uninformed trading that is potentially harmful to investors, particularly less-sophisticated investors. In this section, we explore this concern by investigating how investors of varying sophistication levels trade following the report release. We consider three groups of investors: small retail investors, large retail investors, and institutional investors. We proxy for small retail traders by equally weighting retail trades, which tends to be dominated by relatively smaller traders. We proxy for large retail traders by examining retail share volume, which is heavily influenced by large trades. Finally, any trade not classified as retail is classified as an institutional trade. We sign retail trades using the algorithm of Boehmer, Jones, Zhang, and Zhang (2020), and we sign institutional trades using the Lee and Ready (1991) algorithm.

We begin by examining the relationship between investor order imbalances and DD report recommendations.[26] Specifically, we estimate the following panel regression:

$$OIB_{it} = \beta_1 Net\ DD_{it-1,t} + \beta_2 Net\ DD_{it-1,t} \times 2021 + Controls_{it} + Day_t + \varepsilon_{i,t.} \quad (4)$$

OIB is one of three measures of directional trading for firm *i* on day *t: Inst. Vol OIB, Retail Vol OIB,* or *Retail Trade OIB*. *Inst Vol OIB* is defined as institutional buy share volume less institutional sell share volume scaled by total institutional share volume. *Retail Vol OIB* and *Retail Trade OIB* are defined analogously after replacing *Institutional Share Volume* with *Retail Share Volume* and *Retail Number of Trades,*

[26] We focus on the direction of trading, rather than the level of trading since trading direction is more directly linked to the concern that investors naively follow the DD report recommendation. In Table IA.5 of the Internet Appendix, we also confirm that DD reports are significantly correlated with the level of trading.

respectively. *Net DD* is the number of buy DD recommendations for stock *i* across days *t* and *t-1* less the number of sell DD recommendations for stock *i* on days *t* and *t-1*. We include DD reports on both day *t* and *t-1* to account for the fact that some investors likely respond to DD reports with a delay. *Net DD×2021* interacts *Net DD* with an indicator equal to one for the post-GME period. Controls include the same set of controls as in Equation (2) with two exceptions. First, we add the lag of all the order imbalance variables measured over the previous five trading days, which helps control for persistence in order imbalances (BJZZ, 2020). Second, we exclude the contemporaneous return and contemporaneous media since they are measured at the same time as investor order imbalances.[27]

*** Table 8 here***

We report the results for the full sample in Specifications 1-3 of Table 8 and the sample that excludes GME and AMC in Specifications 4-6. In the pre-GME period, we find that *Inst Vol OIB* is uncorrelated with *Net DD*. Both *Retail Vol OIB* and *Retail Trade OIB* are significantly correlated with *Net DD*, but the estimate for *Retail Trade OIB* is more than three times as large as the estimate on *Retail Vol OIB*. These findings are consistent with *WSB* recommendations influencing retail investors, particularly smaller retail investors, during the pre-GME period. We also observe that the correlation between *Retail Vol OIB* and *Net DD* declines in the post-GME period, consistent with larger, and presumably more sophisticated, retail investors recognizing the decline in report quality in the post-GME period. In contrast, there is no evidence that smaller retail traders are less reliant on DD reports in the post-GME period.

4.2. DD Reports and Trade Informativeness

We next examine whether trade informativeness changes following DD reports. We examine the informativeness of order imbalances following *WSB* research by estimating the following panel regression:

[27] Including contemporaneous returns and/or contemporaneous media sentiments yields virtually identical estimates.

$$Ret_{it+1,t+x} = \beta_1 OIB_{it} + \beta_2 OIB_{it} \times 2021 + \beta_3 OIB_{it} \times DD_{it-1,t} + \beta_4 OIB \times 2021 \times DD_{it-1,t} + Controls_{it} + Day_t + \varepsilon_{it.} \quad (5)$$

The dependent variable is either the one-week or one-month ahead return. *OIB* is either *Inst. Vol OIB, Retail Vol OIB,* or *Retail Trade OIB*, as defined in Equation (4). *OIB×2021* interacts *OIB* with an indicator equal to one for the post-GME period and zero otherwise. *OIB×DD* interacts *OIB* with an indicator equal to one if there was a DD report issued for firm *i* on day *t* or day *t-1,* and *OIB×2021× DD* is defined analogously. Thus, *OIB×DD* tests whether retail trade informativeness following DD reports is different from non-report days during the pre-GME period, and OIB×*2021×DD* examines whether this relation varies in the post-GME period. *Controls* and *Day* are defined as in Equation (2), and standard errors are clustered by firm and month.

*** Table 9 here***

Table 9 presents the results. Specifications 1-3 report the results for one-week ahead returns for institutional investors, large retail investors, and small retail investors, respectively. We find no evidence that institutional trade informativeness changes following DD reports. The estimates in Specification 2 indicate that large retail investor trade informativeness following DD reports increase in the pre-GME period (*OIB×DD* > 0), and this relation does not significantly change in the post-GME period (i.e., *OIB×2021×DD =0).* Further, large retail trade informativeness in the post-GME period (i.e., *OIB×DD* + *OIB×2021×DD*) remains economically large.[28] This finding, coupled with the lack of informativeness of *WSB* reports in the post-GME period, is consistent with larger retail investors having some ability to discern report quality.

The estimates from Specification 3 indicate that small retail trade informativeness also increases following DD reports in the pre-GME period. Consistent with the decline in report

[28] The estimate is, however, only marginally significant (t=1.93). This reduced statistical significance is attributable to the very volatile returns of GME and AMC. After excluding these two stocks (see Table IA.7), the point estimate remains virtually unchanged (4.14%) but the statistical significance becomes much stronger (t=4.84).

informativeness in the post-GME period, small trade informativeness following DD reports in the post-GME period (i.e., *OIB×DD* + *OIB×2021×DD*) is statistically insignificant. The results from Tables 8 and 9 suggest that smaller retail traders follow DD report recommendations but are not skilled in discerning report quality. As a result, small trade informativeness increases when the average report informativeness is positive (i.e., the pre-GME period) and is unchanged when reports are uninformative (i.e., the post-GME period).

The results using the one-month holding period, reported in Specifications 4-6, are generally similar, although large retail trade informativeness in the pre-GME period is no longer reliably different from zero.[29] The results are also similar after excluding GME and AMC (reported in Table IA.7). In sum, the evidence suggests that large retail trade informativeness increased following *WSB* research, particularly over shorter horizons, while small retail trade informativeness increased in the pre-GME period but reverted to zero in the post-GME period. This evidence casts doubt on regulators' concerns that *WSB* research results in significant trading losses for retail investors.[30]

5. Conclusion

Wallstreetbets (*WSB*) has become an increasingly prominent source of investment research, particularly for risk-seeking retail investors. This paper offers a first look at the investment value of *WSB* due-diligence (DD) reports. We find that prior to the GME short squeeze event, *WSB* was a source of valuable investment research. In particular, over July 2018 – December 2020, *WSB* DD reports positively forecasted one-month ahead returns, and this effect was particularly strong when

[29] However, the estimate remains reliably different from zero in the post-GME period. In addition, in Table IA.6 of the Internet Appendix, we estimate trade informativeness for the full time series by dropping *OIB × 2021 and OIB × 2021 × DD,* and we confirm that large retail trade informativeness following *WSB* reports for the full time series is significantly greater than zero.

[30] We acknowledge, however, that our analysis is limited to the informativeness of retail investor equity trading. Whether this translates into better (or worse) trading performance is an empirical question which can only be addressed with more granular account-level data.

commenters agreed with the DD report. *WSB* research also positively forecasted media sentiment, earnings surprises, and earnings forecast revisions suggesting that *WSB* research contained useful information about future cash flows news. In addition, the informativeness of smaller retail investor trading increased following DD reports. However, all of the above benefits were eliminated in the post-GME sample period of January 2021 – June 2021. We find that one factor that contributed to the decline in informativeness following the GME event was the dramatic increase in reports placing a greater emphasis on price-pressure rather than fundamentals. Collectively, the evidence is consistent with the surge in new users stemming from the GME short squeeze event significantly altering the content of reports, deteriorating the informativeness of *WSB* research, and consequently, its potential benefits to less sophisticated investors.

Our findings should be of relevance to both regulators and investors. From a regulatory perspective, we believe the collective evidence suggests that the negative impact of *WSB* research on financial markets is likely to be relatively modest. For example, despite regulators' concern that *WSB* research is harming small investors, we find little evidence to suggest that DD reports are resulting in a significant decline in retail trade informativeness, even in the post-GME period. On the other hand, the declining informativeness of *WSB* research in the post-GME period should provide caution to the 10 million *WSB* subscribers who turn to *WSB* for investment research. Indeed, our evidence cast doubt on the view that simply following all DD report recommendations will generate significant abnormal returns going forward. However, *WSB* may still be a useful source of information for investors who are adept enough to discern between higher and lower quality *WSB* research. Our findings suggest that users should be particularly cautious of reports that focus on price-pressure strategies. Identifying additional attributes of *WSB* reports that are associated with better performance, particularly in the post-GME period, is a potentially interesting area for future research.

References

Altınkılıç, O. and Hansen, R.S., 2009. On the information role of stock recommendation revisions. *Journal of Accounting and Economics 48*(1), 17-36.

Aharon, D. Y., Kizys, R., Umar, Z., & Zaremba, A., 2021. Did David Win a Battle or the War Against Goliath? Dynamic Return and Volatility Connectedness between the GameStop Stock and the High Short Interest Indices. Working paper.

Boehmer, E., Jones, C.M., Zhang, X. and Zhang, X., 2020. Tracking retail investor activity. *Journal of Finance*, forthcoming.

Buz, T., and de Melo, G., 2021. Should you take investment advice from Wallstreetbets? A data-driven approach. Working paper.

Chen, H., De, P., Hu, J., and Hwang, B.H., 2014. Wisdom of the crowds: The value of stock opinions transmitted through social media. *Review of Financial Studies* 27 (5), 1367-1403.

Cookson, J. A., Engelberg, J. E., & Mullins, W., 2020. Echo Chambers. Working Paper.

Crawford, S., Gray, W., Johnson, B., and Price, R., 2018. What motivates buy-side analysts to share recommendation online? *Management Science* 64 (6), 2473-2972.

Eaton, G.W., Green, T.C., Roseman, B. and Wu, Y., 2021. Zero-Commission individual investors, high frequency traders, and stock market quality. Working paper.

Engelberg, J. E., Reed, A. V., & Ringgenberg, M. C., 2012. How are shorts informed?: Short sellers, news, and information processing. *Journal of Financial Economics* 105(2), 260-278.

Farrell, M., Green, T.C., Jame, R. and Markov, S., 2021. The democratization of investment research and the informativeness of retail investor trading. *Journal of Financial Economics*, forthcoming.

Farrell, M., Jame, R. and Qiu, T., 2020. The cross-section of non-professional analyst skill. Working paper.

Frazzini, A., and Lamont, O. A., 2008. Dumb money: Mutual fund flows and the cross-section of stock returns. *Journal of Financial Economics* 88(2), 299-322.

Giannini, R., Irvine, P., and Shu, T., 2018. Nonlocal disadvantage. An examination of social media sentiment. *Review of Asset Pricing Studies* 8(2), 293-336.

Hu, D., Jones, C. M., Zhang, V., & Zhang, X., 2021. The rise of reddit: How social media affects retail investors and short-sellers' roles in price discovery. Working paper.

Hvidkjaer, S., 2008. Small trades and the cross-section of stock returns. *The Review of Financial Studies*, 21(3), 1123-1151.

Jame, R., Johnston, R., Markov, S., and Wolfe, M., 2016. The value of crowdsourced earnings forecasts. *Journal of Accounting Research* 54(4), 1077-1110.

Jones, C. M., Shi, D., Zhang, X., & Zhang, X., 2020. Heterogeneity in Retail Investors: Evidence from Comprehensive Account-Level Trading and Holdings Data. Working paper.

Jia, W., Redigolo, G., Shu, S. and Zhao, J., 2020. Can social media distort price discovery? Evidence from merger rumors. *Journal of Accounting and Economics* 70(1), 101334.

Kelley, E.K. and Tetlock, P.C., 2013. How wise are crowds? Insights from retail orders and stock returns. *Journal of Finance* 68(3), 1229-1265.

Kim, S.H., and Kim, D., 2014. Investor sentiment from internet message positives and the predictability of stock returns. *Journal of Economic Behavior and Organization* 107, 728-729.

Lee, C. M., & Ready, M. J., 1991. Inferring trade direction from intraday data. *Journal of Finance* 46(2), 733-746.

Long, C., Lucey, B. M., & Yarovaya, L., 2021. " I Just Like the Stock" versus" Fear and Loathing on Main Street": The Role of Reddit Sentiment in the GameStop Short Squeeze. Working paper.

Loughran, T., & McDonald, B., 2011. When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks. *Journal of Finance* 66(1), 35-65.

Tumarkin, R. and Whitelaw, R.F., 2001. News or noise? Internet postings and stock price, *Financial Analyst Journal* 57, 41-51.

Winkler, J., & Semenova, V., 2021. Reddit's self-organised bull runs: Social contagion and asset prices. Working paper.

Womack, K., 1996. Do brokerage analysts' recommendations have investment value? *Journal of Finance* 51(1), 137-167.

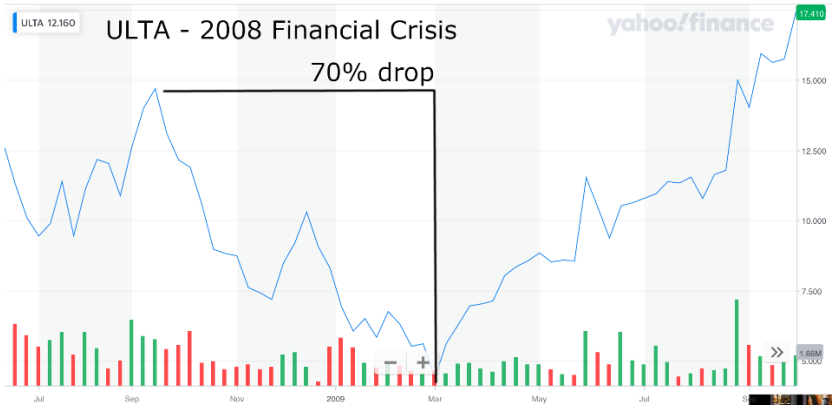
Appendix A. Sample report

Posted by u/swaggymedia Today after the bell: DP 11 months ago 2

For anybody that followed ULTA today. Here is some DD on ULTA Beauty and some info from their conference calls/earnings reports.

DD

Yesterday someone posted on how ULTA was a good short going into a possible recession, so I decided to dig deeper. In spring 2019 ULTA reached a 52-week high of $368.83.. going into this February 21 and the first day of the beginning of the downtrend ULTA was sitting at $300 per share. After today's close it is now at $148. Is there more to squeeze to the downside on this one? I'm not sure, but my opinion is yes. Let's compare ULTA now to the 2008/2009 financial crisis. Keep in mind, ULTA has very strong brand loyalty and also has rights to the Kylie Jenner line, which they didn't have back in 2008. From peak to trough during the financial crisis ULTA went from $15 to $4.50, a 70% drop.



ULTA during 2008/2009 crisis.

From peak to trough during the current corona virus crisis, ULTA has gone from $300 to $148 what it closed at today. Let's say a 50% drop, already pretty hefty!

ULTA during Corona Virus Feb/Mar chart.

What makes me think there might be more to squeeze? Well I went through there financial reports and it looks like during all of fiscal year 2019 they spent almost ALL of their profits re-purchasing stock (at all time highs). Take a look at this, from there earnings release.

Outlook

For fiscal 2020, the Company plans to:

- open approximately 75 net new stores, execute approximately 15 remodel or relocation projects, and complete approximately 42 store refreshes;
- increase total sales by approximately 7.0% to 8.0%;
- achieve comparable sales growth of approximately 3.0% to 4.0%;
- deleverage operating income margin rate in the range of 70 to 80 basis points;
- deliver diluted earnings per share in the range of $12.55 to $12.75, including the impact of approximately $1.3 billion in share repurchases and assuming an effective tax rate of between 24% and 24.5%;
- incur capital expenditures between $280 million and $300 million;
- incur depreciation and amortization expense between $310 million and $320 million; and
- incur net interest expense of approximately $9.0 million.

The Company's guidance does not include assumptions for any impact related to Coronavirus.

ULTA outlook 2020 from financial report.

Not only that, but the board had approved a new share authorization program of up to 1.6 billion. This is including the share re-purchase program already in place of $875 million re-purchase program initiated in 2019. ULTA's new re-purchase program will be a total of $725 million for fiscal year 2020. To put this into perspective, in 2019 ULTA did $7.21 billion in sales at an approximate profit margin of 10% for a total profit of $594 million.

Share Repurchase Program

During the fourth quarter of 2019, the Company repurchased 681,458 shares of its common stock at a cost of $174.1 million. During fiscal 2019, the Company repurchased 2,320,896 shares of its common stock at a cost of $681.0 million. As of February 1, 2020, $214.6 million remained available under the $875.0 million share repurchase program announced in March 2019.

On March 10, 2020, the Company's board of directors approved a new share repurchase authorization of $1.6 billion, which replaces the prior authorization implemented in March 2019. Under the new program, as under the previous program, the Company may repurchase outstanding shares of the Company's common stock from time to time through accelerated share repurchases, privately negotiated transactions, or open market transactions, including under plans complying with Rule 10b5-1 under the Securities Exchange Act of 1934. The new program has no expiration date but may be terminated by the Board at any time. Since 2014, Ulta Beauty has returned $2.2 billion to shareholders through its share repurchase program, while continuing to make strategic growth investments.

ULTA's announcement of adjusted re-purchase program for 2020.

Now, something interesting happened to ULTA stock today March 20th. The stock opened up about +8% and remained there for most of the day. Until the final 10 minutes of trading hours it was sitting at +10% for the day. At 3:54pm there was a huge sell-off. Look at the volume of the sell-off compared to the volume for the entire day. Long red candles that were held up with some big buying power just to keep it afloat. What are my thoughts on this? It is my opinion that a big fish sold off a significant position of the stock, which was then propped up by market makers to keep the stock afloat. It ended up closing up only 0.71% for the day. Please note this is only speculation and my opinion.

ULTA's daily chart from today Mar 20, 2020.

Disclaimer: I have a short position on the stock.

Summary

1. ULTA has fairly strong balance sheet (with not much debt) sitting at $208 million cash or roughly 2.47% of the value of their market cap.
2. ULTA has strong brand loyalty, including Kylie Jenner's line of cosmetics.
3. However, if recession is looming cosmetics generally don't fare well during these times.

4. In 2019 they spent nearly all their free cash flow after running operations and expansions on the re-purchase of stock.
5. In 2019 they did $660 million worth of share re-purchases and logged $594 million revenue for the year.
6. In 2020 they announced they've increased the buy-back program from $875 million to $1.6 billion, an increase of $725 million.
7. In their March 2020 conference call they also stated that there current numbers have NOT taken any of the CoronaVirus factors into effect.
8. In 2008 their stock crashed nearly 70% from peak to trough.
9. Currently in 2020 during corona virus outbreak, they have had a 50% decline in stock price.

TLDR; they literally spent most of their money on share buy-backs last year when the stock was at ATH and this thing still has room to drop.

DISCLAIMER: NOT FINANCIAL ADVICE. MODS R GAY

106 Comments
Report
95% Upvoted

Appendix B: List of Keywords in Sentiment Analysis

This table reports the list of keywords assigned as bullish and bearish. Words in red are substitutes for more vulgar expressions typically used on the *WSB* forum. Small spelling differences are not included in the list but are counted when conducting keyword analysis. For example, "calls are gonna print", "calls are going to print", and 'calls gonna print" are all classified as a bullish keyword. For buy recommendations, we define comment agreement equal to one if the number of bullish words in the comments exceeds the number of bearish words, and zero otherwise. For sell recommendations, comment agreement equals one if the number of bearish words in the comments exceeds the number of bullish words, and zero otherwise.

Bullish Words	**Bearish Words**
Calls are gonna print	Puts are gonna print
Buy calls	Buy puts
Buy more calls	Buy more puts
Mentions Call Option Contract	Mentions Put Option Contract
Bulls emoji	Bear emoji
Bears are in trouble	Bulls are in trouble
Moon	Crash
Pluto	Fraud
Get in	Pump and Dump
Undervalued	Hold bags
Rocket emoji	Drill Team
Can't go belly up	

Appendix C: List of Keywords in Price Pressure Analysis

This table reports the list of keywords assigned as "price pressure" words or "fundamental" words.

Price Pressure Words	**Fundamental Words**
Squeeze	Earnings
Short Interest	EPS
Short Sellers	Revenue
Short volume	Sales
Gamma	Growth Rate
Float	Cash Flow
Hedge Funds (HFs)	Net Income
Hedge	Customers
Melvin	Competitors
Robinhood (RH)	Market Share
Dealers	Store Visits
"HODL"[32]	P/S Ratio
	P/E Ratio
	Guidance
	Analysts

[32] HODL originated as misspelling of "Hold" in a 2013 WSB post, and it has become a popular inside joke on the site. Many users now also view HODL as an acronym for Hold On for Dear Life.

Appendix D: Variable Definitions

D.1 Outcome Variables

- *WSB Coverage (Table 2)* – the total number of Wallstreetbets (*WSB*) due diligence (DD) reports written for a firm during the calendar month. (Source: WSB).
- $Ret_{t+1,t+x}$ *(Tables 3,4,5,7, and 9*) – the buy and hold return for the DD report recommendation starting on the day after the report and ending on day x, where x typically equals five or 21 trading days. We define the day of the report as the first trading day in which an investor could have traded on the report.
- *News Sentiment*$_{t+1, t+x}$ *(Table 6)*- the sum of a daily sentiment score starting on the day after the report and ending on day x. The sentiment scores are obtained from Bloomberg and range from -1 (very negative news) to 1 (very positive news), with a median value of 0 (neutral articles). We assign firms with no media coverage a value of 0. (Source: Bloomberg).
- *Positive Forecast Error*$_{t+1, t+x}$ *(Table 6)* – An indicator equal to one if the realized quarterly earnings reported within x days of the DD report exceed the median forecast across all I/B/E/S analysts. The value is set missing for firms that do not have I/B/E/S coverage or for firms that will not announce earnings over the forecast horizon being analyzed (i.e. five or 21 trading days). (Source: I/B/E/S).
- *Positive Forecast Revision*$_{t+1, t+x}$ *(Table 6)* – the total number of upward revisions issued within x days of the DD reports scaled by the total number of revisions issued over the same period. In computing this measure, we consider both quarterly and annual earnings forecast revision. This value is set to missing for firms that do not have I/B/E/S coverage, and the value is set to 50%, the median value across the sample, for firms with IBES coverage but no forecast revisions over the holding period. (Source: I/B/E/S).
- *Inst. Vol OIB (Table 8)* – institutional buy share volume less institutional sell share volume scaled by total institutional share volume. Institutional trades are assigned as buys or sells based on the Lee and Ready (1991) algorithm. (Source: TAQ Intraday Indicators).
- *Retail Vol OIB (Table 8)* – retail buy share volume less retail sell share volume scaled by total retail share volume. Retail trades are assigned as buys or sells based on the Boehmer, Jones, Zhang, and Zhang (2020) algorithm. (Source: TAQ Intraday Indicators).
- *Retail Trade OIB (Table 8)* – retail buy trades less retail sell trades scaled by total retail share trades. Retail trades are assigned as buys or sells based on the Boehmer, Jones, Zhang, and Zhang (2020) algorithm. (Source: TAQ Intraday Indicators).

D.2 Other Variable

- *Net DD* – the total number of WSB due diligence (DD) reports that recommend buying the firm over a time period (e.g., one day) less the total number of DD reports that recommend selling the firm during the time period. (Source: WSB).
- *D2021* – an indicator equal to one for the January 2021 June 2021 sample period and zero otherwise.
- *DD*– an indicator equal to one if there was at least one DD report issued during time period *t*. (Source: WSB).
- # *Comments* – the total number of comments issued in response to a DD report. The sample is limited to comments that are posted between the publication of the report and the start of the next trading day. (Source: WSB).

- *Comment Agreement* – an indicator equal to one if the number of agreement keywords in the comments is at least as large as the number of disagreement keywords in the comments. The analysis is limited to comments that are posted between the publication of the report and the start of the next trading day. The list of agree/disagree keywords are reported in Appendix B. (Source: WSB).
- *Net DD Agree* – The *Net DD* measure computed using only for the subset of reports where *Comment Agreement* =1.
- *Net DD Disagree* – The *Net DD* measure computed using only for the subset of reports where *Comment Agreement* =0.
- *Confounded Report* – an indicator equal to one if the report is issued around a confounding information event, defined as a DD report issued on the previous day (i.e. -1), an earnings announcement issued on the previous or current day (-1, 0) or abnormal media coverage on the previous or current day (-1, 0).
    - *Earning Report* –a quarterly or annual earnings announcement *(*Source: I/B/E/S).
    - *Abnormal Media Coverage* – an indicator equal to one if the number of articles on the firm, as reported by Bloomberg, is in the top 20% relative to the firm's typical media coverage over the previous 60 days [-60, -1]. (Source: Bloomberg).
- *Net DD Processing* –*Net DD* computed using only the subset of reports where *Confounded Report* =1.
- *Net DD Production* – The *Net DD* computed using only the subset of reports where *Confounded Report* =0.
- *PP Report* – an indicator equal to one if the number of *price pressure* words in the report exceeds the number of *fundamental* words in the report. The list of *price pressure* and *fundamental* words are available in Appendix C.
- *Net DD PP* – *Net DD* computed using only the subset of reports where *PP Report = 1*.
- *Net DD Non-PP* – *Net DD* computed using only the subset of reports where *PP Report = 0*.
- *Net Upgrade* – the total number of I/B/E/S analysts issuing an upgrade for a firm over a time period (e.g., one day) less the total number of I/B/E/S analysts issuing a downgrade. (Source: I/B/ES).
- *Size* – the market capitalization computed as share prices times total shares outstanding at the end of the year. (Source: CRSP).
- *Book-to-Market (BM)* – the book-to-market ratio computed as the book value of equity during the calendar year scaled by the market capitalization at the end of the calendar year. Positive values are winsorized at the 1st and 99th percentile. Negative value and missing values are set equal to zero and we include a corresponding "Missing BM" indicator. (Source: CRSP/Compustat).
- *Volatility* – the standard deviation of daily returns during the month (Source: CRSP).
- *Turnover* – the average daily turnover (i.e., share volume scaled by shares outstanding) during the month.
- *Ret [0]* – the buy-and-hold return on the current day. (Source: CRSP).
    - *Ret [-5, -1]* - the buy-and-hold return on five trading days.
    - *Ret [-26, -6]* - the buy-and-hold return over the previous six to 26 trading days.
    - *Return (m-1)* – the buy-and-hold return in the previous calendar month. (Source: CRSP).
    - *Return (m-2, m-12)* – the buy-and-hold return over the previous two to twelve calendar months. (Source: CRSP).

- *Sentiment [0]* – The average sentiment scores across all news articles on the current day, where the score ranges from -1 (very negative news) to 1 (very positive news), with a median value of 0 (neutral articles). Firms with no media coverage are assigned a sentiment score of 0.
    - *Sentiment [-5, -1]* – the sum of the sentiment score over the previous 1 to 5 trading days prior to the report release.
    - *Sentiment [-26, -6]* – the sum of the sentiment score over the previous six to 26 trading days prior to the report release.
- *Institutional Ownership* – the percentage of the firm's shares held by institutions at year end. (Source: Thomson Reuters Institutional Holdings S34).
- *Breadth of Ownership* – the total number of common shareholders (Source: Compustat).
- *IBES Coverage* – the number of unique brokerage houses issuing earnings forecast for a firm during the calendar year. (Source: I/B/E/S).
- *Media Coverage* – the total number of media articles about a firm during the calendar year. (Source: Bloomberg).
- *Heavy Short* – an indicator equal to one if the firm is in the top decile of short interest, defined as the number of shares that have been sold short scaled by shares outstanding. (Source: Compustat).
- *Recent IPO* – an indicator equal to one if the firm went public in the past six months. (Source: CRSP).
- *Retail Trade OIB [-5, -1]* – retail buy trades less retail sell trades scaled by total retail share trades average across the previous five trading days. Retail trades are assigned as buys or sells based on the Boehmer, Jones, Zhang, and Zhang (2020) algorithm. (Source: TAQ Intraday Indicators).
- *Retail Vol OIB [-5, -1]* – retail buy share volume less retail sell share volume scaled by total retail share volume, average across the previous five trading days. Retail trades are assigned as buys or sells based on the Boehmer, Jones, Zhang, and Zhang (2020) algorithm. (Source: TAQ Intraday Indicators).
- *Inst. Vol OIB [-5, -1]* – institutional buy share volume less institutional sell share volume scaled by total institutional share volume, average across the previous five trading days. Retail trades are assigned as buys or sells based on the Boehmer, Jones, Zhang, and Zhang (2020) algorithm. (Source: TAQ Intraday Indicators). Institutional trades are assigned as buys or sells based on the Lee and Ready (1991) algorithm. (Source: TAQ Intraday Indicators).

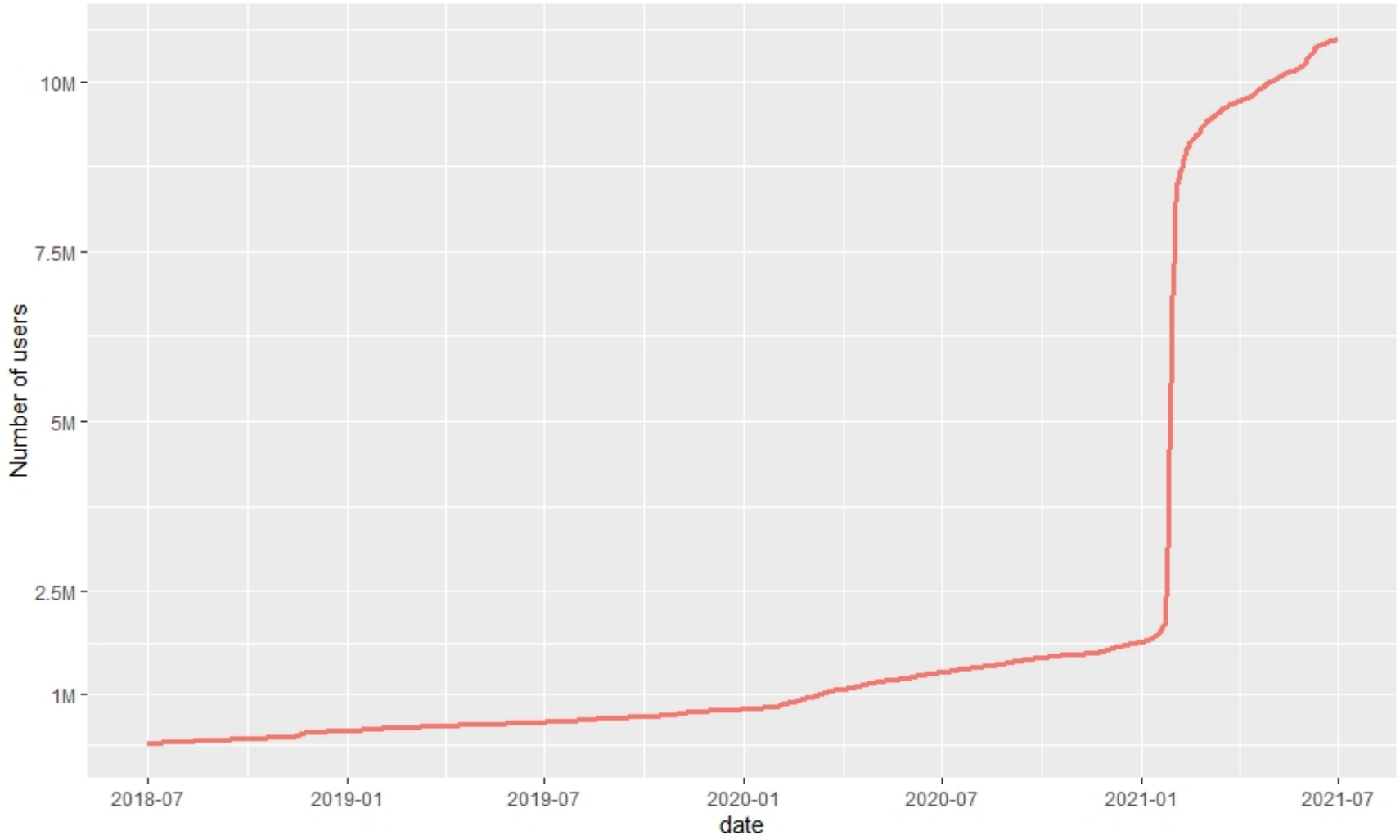
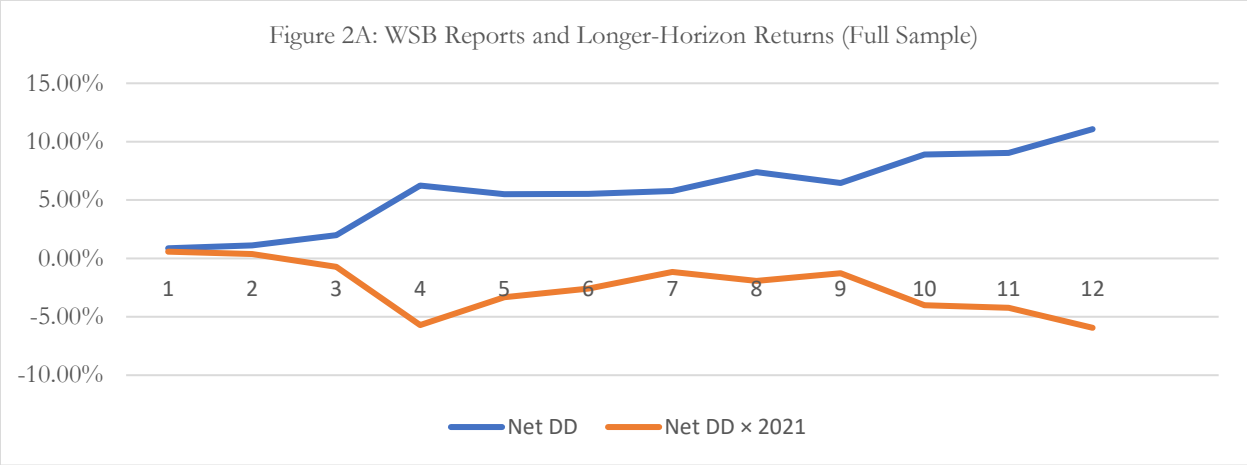


Figure 1: Growth in Reddit's Wallstreetbets (WSB)
This figure plots the total number of users on WSB from July 2018 through June 2021. This data can be found at https://subredditstats.com/r/wallstreetbets.



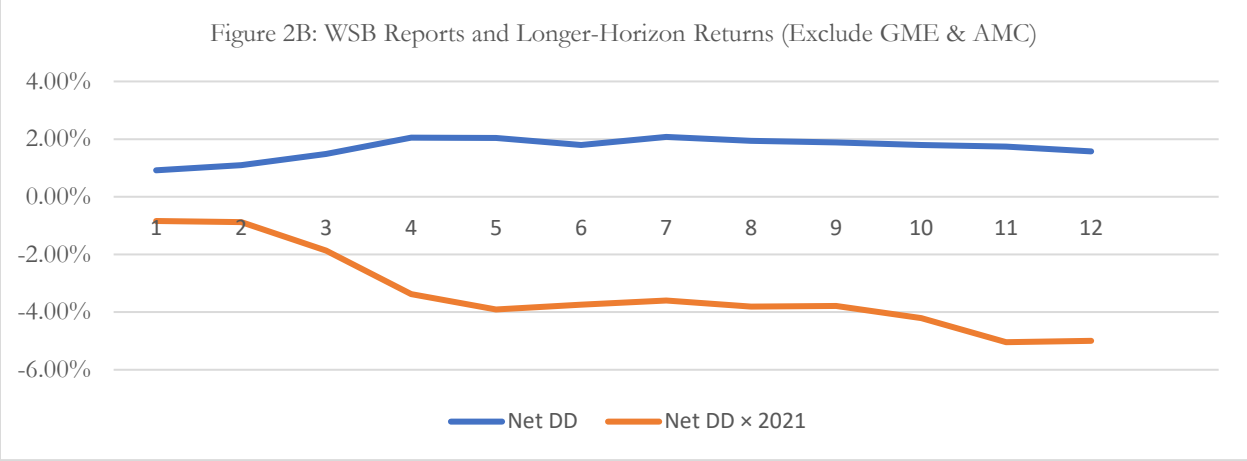
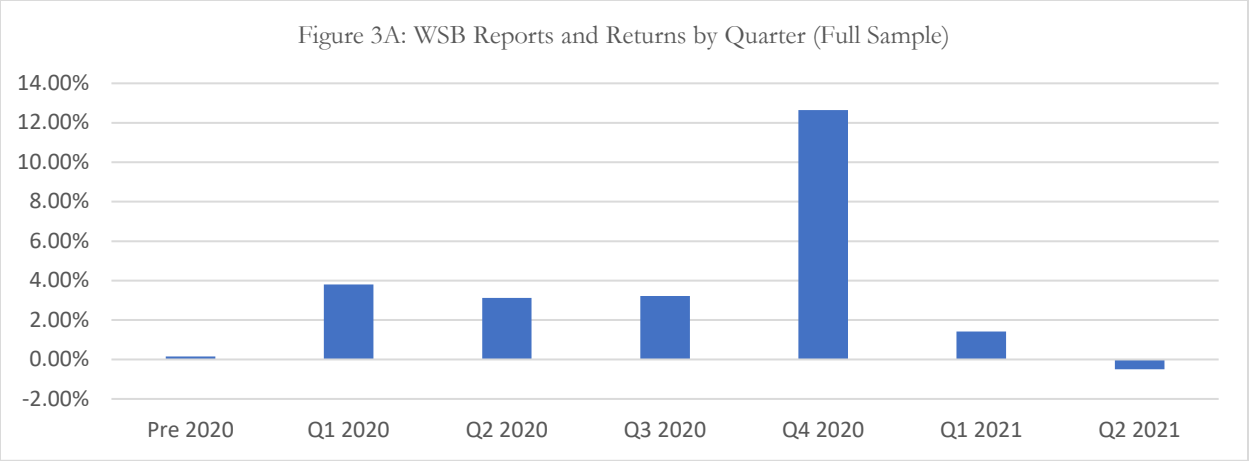


Figure 2: WSB Reports and Future Returns – Longer Horizons
This table repeats the estimates from Table 3 for horizons ranging from one-week (i.e., x =5) through 12 weeks (i.e., x = 60). We report the coefficient estimates on *Net DD* and *Net DD × 2021* for each horizon. Figures 2A and 2B report the results for the full sample and the sample that excludes GME and AMC.



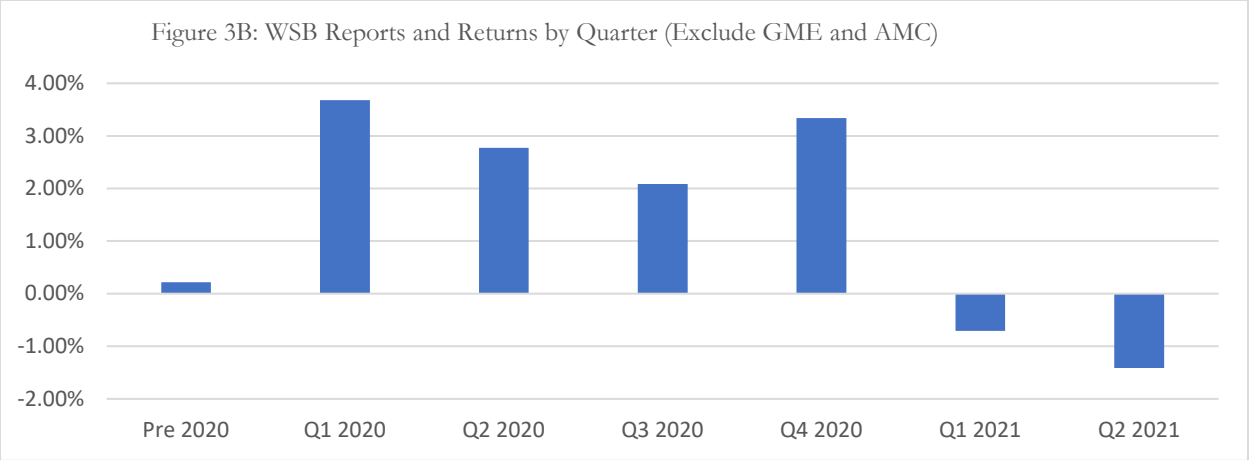


Figure 3: WSB Reports and Future Returns – Quarterly Estimates
This figure reports the estimates on *Net DD* from Table 3 for each quarter from Q1 of 2020 through Q2 of 2021. It also reports the estimates for all reports prior to 2020 (*Pre 2020*). Figure 3A reports the results for one-month holding period and the full sample of firms (i.e., Specification 2 of Table 3), and Figure 3B reports the results for the one-month holding period and the sample that excludes GME and AMC (i.e., Specification 4 of Table 3).

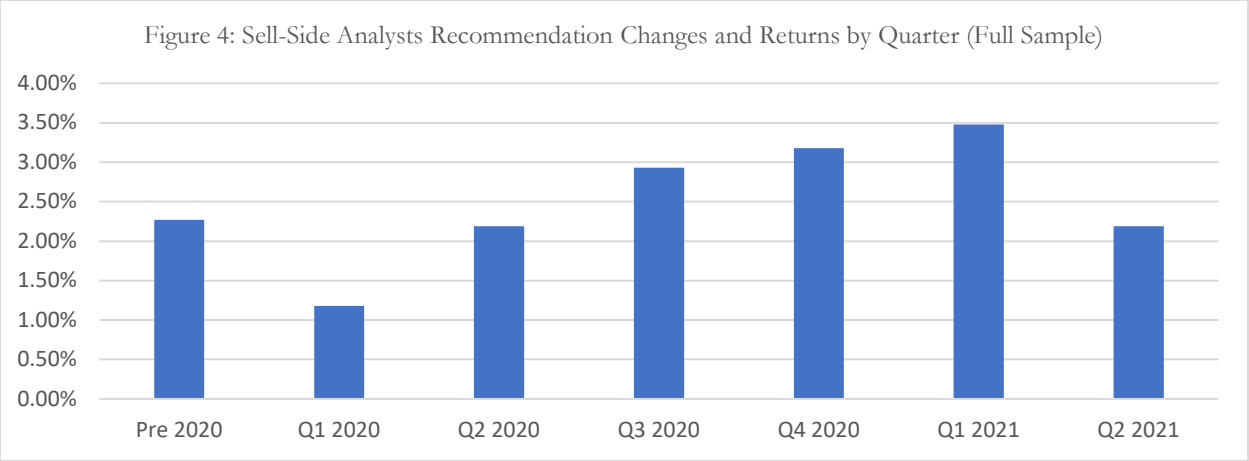
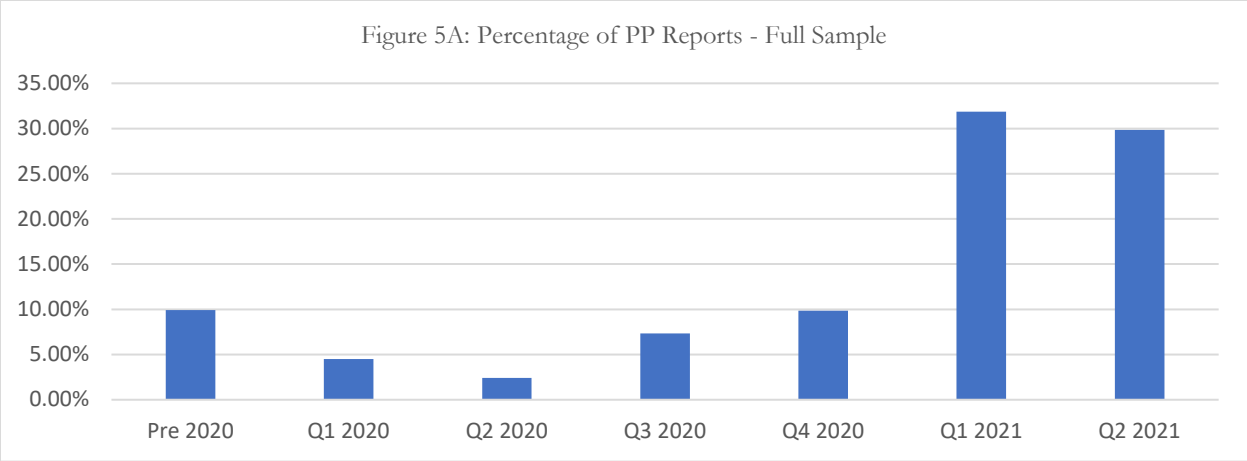


Figure 4: WSB Reports and Future Returns – Quarterly Estimates
This figure repeats the analysis in Figure 3 after replacing *Net DD* with *Net Upgrade*, defined as the number of I/B/E/S analysts issuing an upgrade for firm *i* on day *t* less the number of I/B/E/S analysts issuing a downgrade for firm *i* on day *t*.



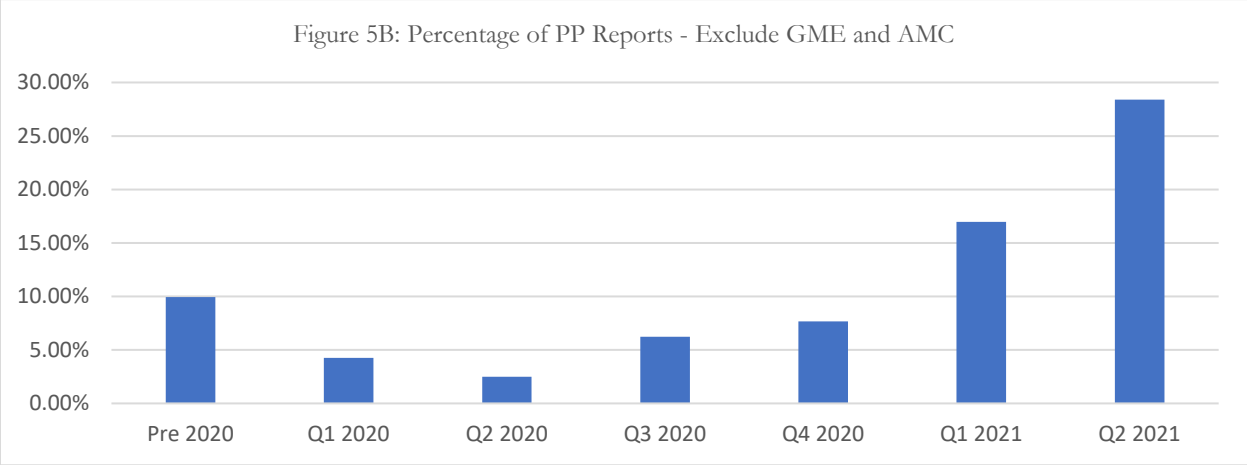


Figure 5: WSB Reports and Future Returns – Quarterly Estimates
This figure reports the percentage of reports where the number of "price pressure" words exceed the number of "fundamental" words (see Appendix C for the list of "price pressure" and "fundamental" words) for each quarter from Q1 of 2020 through Q2 of 2021. It also reports the estimates for all reports prior to 2020 (*Pre 2020*). Figure 5A reports the results for the full sample, and Figure 5B reports the results for the sample that excludes GME and AMC.

Table 1: Descriptive Statistics

This table reports summary statistics on the sample of Due Diligence (DD) reports on Reddit's Wallstreetbets (*WSB*). DD reports are reports identified by the poster (and verified by the moderator) as containing some analysis and offering a clear buy or sell signal. We report the number of DD reports for the full sample (July 2018-June 2021), the July 2018 – December 2020 sample (*pre-GME*), and the January 2021-June 2021 sample (*post-GME*). We also report the number of firms-days and firms with at least one DD report, the percentage of reports recommending a long position (*Buys*), the total number of comments issued between the DD report and the subsequent trading day (*# Comments*), whether the total number of agreement keywords in the comments is at least as large as the number of disagreement keywords (*Comment Agreement*), and the percentage of the DD reports that coincide with a confounding information event (*Confounded)*, defined as an earnings announcement or abnormal media coverage over the [-1,0] window or another DD report on day *-1*. We limit the sample to DD reports that focus on a single common stock ticker. Panel A tabulates the results for the full sample. Panel B excludes GME and AMC from the sample, and Panel C limits to the sample to just GME and AMC.

Panel A: Full Sample

	DD Reports	Firm-Days	Firms	% Buys	# Comments	Comment Agreement	Confounded
Full Sample	5050	3811	909	88%	65	53.44%	30.69%
July 2018-2020	2333	2016	617	81%	45	54.69%	26.15%
Jan–June 2021	2717	1795	527	95%	81	50.50%	34.60%

Panel B: Exclude GME & AMC

	DD Reports	Firm-Days	Firms	% Buys	# Comments	Comment Agreement	Confounded
Full Sample	4441	3642	907	88%	52	53%	26.88%
July 2018-2020	2252	1956	615	80%	43	54%	25.71%
Jan–June 2021	2189	1686	525	95%	62	51%	28.10%

Panel C: GME & AMC Only

	DD Reports	Firm-Days	Firms	% Buys	# Comments	Comment Agreement	Confounded
Full Sample	609	169	2	93%	154	49%	58.46%
July 2018-2020	81	60	2	89%	108	63%	38.27%
Jan–June 2021	528	109	2	94%	161	47%	61.55%

Table 2: Determinants of WSB Coverage

This table presents the estimates from Equation (1):

$$WSB\ Coverage_{it} = \alpha + \beta_1 Chars_{it-1} + Month_t + \varepsilon_{it.}$$

The dependent variable is total *WSB Coverage* defined as Log (1 + DD Reports) for firm *i* during month *t*. *Chars* include the following firm characteristics: the percentage of the firm's shares held by institutional investors at the end of the prior year (*Inst. Ownership*), the number of common shareholders (*Breadth of Ownership*), market capitalization (*Size*), book to market (*BM),* return volatility (*Volatility*), share turnover (*Turnover*), returns over the prior month (Ret_{m-1}), returns over the prior two to twelve months ($Ret_{m-2,\ m-12}$), the number of media articles mentioning the firm in the prior year (*Media Coverage*), the number of sell-side analysts issuing a forecast for the firm in the prior year (*IBES Coverage*), an indicator equal to one if the firm is in the top decile of short interest (*Heavy Short*), and an indicator equal to one if the firm went public in the past six months *(Recent IPO*), and *Month* denotes calendar-month fixed effects. All independent variables are standardized to have mean zero and unit variance. More detailed variable definitions are in Appendix D. Specification 1 reports the estimates for the full sample and full time-series. Specification 2 allows the estimates to vary in the pre-GME and post-GME period by interacting the firm characteristics with *2021,* an indicator equal to one for the 2021 sample period and zero otherwise. Specification 3 repeats Specification 2 after excluding GME and AMC. Standard errors are clustered by firm and month, and *t*-statistics are reported in parentheses.

	WSB Coverage	*WSB Coverage*	*WSB Coverage*
	[1]	[2]	[3]
Inst Ownership	-0.50	-0.35	-0.36
	(-4.07)	(-3.85)	(-3.94)
Inst Ownership × 2021		-0.47	-0.61
		(-1.27)	(-1.67)
Log (Breadth of Ownership)	0.06	0.08	0.09
	(0.54)	(0.73)	(0.82)
Log (Breadth of Ownership) × 2021		-0.10	-0.11
		(-0.48)	(-0.52)
Log (Size)	0.95	0.69	0.73
	(5.17)	(4.39)	(4.49)
Log (Size) × 2021		1.13	1.34
		(3.27)	(4.15)
Log (BM)	-0.14	-0.20	-0.25
	(-1.15)	(-1.95)	(-2.45)
Log (BM) × 2021		0.42	0.32
		(1.81)	(1.42)
Log (Vol)	1.52	1.15	1.19
	(5.05)	(4.70)	(4.84)
Log (Vol) × 2021		1.84	1.93
		(2.75)	(2.98)
Log (Turn)	0.58	0.10	0.03
	(2.33)	(0.77)	(0.27)
Log (Turn) × 2021		1.86	1.54
		(3.74)	(3.39)
Ret (m-1)	0.58	0.41	0.34
	(2.00)	(2.30)	(2.28)
Ret (m-1) × 2021		0.85	0.41
		(0.75)	(0.57)
Ret (m-2, m-12)	0.04	0.19	0.19
	(2.30)	(2.98)	(3.01)
Ret (m-2, m-12) × 2021		-0.16	-0.17
		(-2.64)	(-2.81)
Log (Media Coverage)	0.72	0.68	0.64
	(3.91)	(3.76)	(3.69)

Log (Media Cov.) × 2021		0.39	0.11
		(1.34)	(0.48)
Log (IBES Coverage)	-0.33	-0.05	-0.06
	(-2.13)	(-0.52)	(-0.58)
Log (IBES Cov.) × 2021		-0.95	-0.98
		(-2.48)	(-2.53)
Heavy Short	1.33	0.89	0.73
	(2.67)	(2.83)	(2.68)
Heavy Short × 2021		5.24	3.97
		(4.18)	(4.03)
Recent IPO	10.17	7.28	7.35
	(4.87)	(3.73)	(3.74)
Recent IPO × 2021		14.57	15.25
		(3.46)	(3.75)
Obs. (Firm-Months)	117,519	117,519	117,452
Month FE	Yes	Yes	Yes
Sample	Full	Full	Exclude GME/AMC
R-square	3.87%	4.65%	4.44%

Table 3: WSB Reports and Future Returns

This table reports results from the estimation of Equation (2):

$$R_{it+1,t+x} = \beta_1 Net\ DD_{it} + \beta_2 Net\ DD_{it} \times 2021 + Controls_{it} + Day_t + \varepsilon_{it.}$$

The dependent variable, *R*, is the stock return measured over the subsequent week (i.e., x = 5 trading days) or the subsequent month (x=21 trading days). *Net DD,* is the number of buy DD recommendations for stock *i* on day *t* less the number of sell DD recommendations for stock *i* on day *t* and *Net DD × 2021,* interacts *Net DD* with *2021,* an indicator equal to one for the 2021 sample period and zero otherwise. *Controls* includes market capitalization (*Size*), book-to-market (*BM*), prior returns and prior media sentiment measured on the day of the DD report [0], the five days prior to the DD report [-5,-1], and the 6 to 26 days prior to the DD reports [-26,-6]. *Day* denotes date fixed effects. More detail variable definitions are available in Appendix D. Specifications 1 and 2 report the results for the full sample for five-day and 21-day returns, respectively. Specifications 3 and 4 report analogous results after excluding GME and AMC. Standard errors are clustered by firm and month, and t-statistics are reported below each estimate. Below the regression estimates, we also report a formal test of whether the *Net DD + Net DD × 2021* is significantly different from zero.

	Ret [1,5]	*Ret [1,21]*	*Ret [1,5]*	*Ret [1,21]*
	[1]	[2]	[3]	[4]
Net DD	0.86%	6.04%	0.92%	2.32%
	(1.80)	(2.19)	(1.92)	(2.21)
Net DD × 2021	0.58%	-5.21%	-0.84%	-3.83%
	(0.55)	(-2.61)	(-1.39)	(-2.54)
Log (Size)	-0.08%	-0.27%	-0.08%	-0.27%
	(-1.58)	(-1.26)	(-1.58)	(-1.27)
Log (BM)	-0.07%	-0.25%	-0.08%	-0.26%
	(-0.95)	(-0.84)	(-0.97)	(-0.86)
Ret [0]	-7.22%	-9.35%	-7.28%	-9.30%
	(-5.15)	(-4.67)	(-5.23)	(-4.54)
Ret [-5, -1]	-2.50%	-3.32%	-2.50%	-3.38%
	(-2.27)	(-2.30)	(-2.27)	(-2.36)
Ret [-26, -6]	-0.38%	-0.81%	-0.38%	-0.82%
	(-1.48)	(-0.85)	(-1.48)	(-0.85)
News Sentiment [0]	0.08%	0.08%	0.06%	0.06%
	(2.74)	(0.82)	(1.69)	(0.72)
News Sentiment [-5, -1]	0.01%	0.01%	0.00%	0.01%
	(0.22)	(0.14)	(-0.09)	(0.11)
News Sentiment [-26, -6]	0.01%	0.05%	0.01%	0.07%
	(0.47)	(0.84)	(0.73)	(1.09)
Net DD + Net DD × 2021	1.45%	0.83%	0.08%	-1.51%
	(1.49)	(0.92)	(0.18)	(-1.31)
Obs. (Firm-Days)	2,782,100	2,782,100	2,780,590	2,780,590
Day FE	Yes	Yes	Yes	Yes
Sample	All		Exclude GME & AMC	

Table 4: WSB Reports and Future Returns - Information Processing vs. Information

This table repeats the analysis in Table 3 after partitioning all DD reports into *Confounded* and *Non-Confounded Reports*. *Confounded Report* is an indicator equal to one if the report is issued around a confounding information event, defined as a DD report issued on the previous day (-1), an earnings announcement issued on the previous or current day (-1, 0), or abnormal media coverage on the previous or current day (-1, 0). *Net DD Processing* is the *Net DD* measure computed for the subset of reports where *Confounded Report = 1,* and Net *DD Production* is the *Net DD* measure computed for the subset of reports where *Confounded Report = 0.* All other variables are defined in Table 3 (with more detailed variable definitions in Appendix D). Standard errors are clustered by firm and month, and t-statistics are reported below each estimate. Below the regression estimates, we also report a formal test of whether *Net DD Processing - Net DD Production* and *Net DD Processing × D2021 - Net DD Production × D2021* are significantly different from zero.

	Ret [1,5]	*Ret [1,21]*	*Ret [1,5]*	*Ret [1,21]*
	[1]	[2]	[3]	[4]
Net DD Processing	0.48%	7.91%	0.39%	3.22%
	(0.90)	(2.11)	(0.79)	(2.17)
Net DD Processing × 2021	-2.11%	-11.77%	-1.85%	-6.80%
	(-2.43)	(-2.71)	(-2.39)	(-2.73)
Net DD Production	1.06%	5.17%	1.18%	1.88%
	(1.88)	(2.24)	(2.09)	(2.08)
Net DD Production ×2021	0.53%	-4.12%	-0.90%	-3.11%
	(0.46)	(-2.59)	(-1.28)	(-2.26)
Log (Size)	-0.08%	-0.27%	-0.08%	-0.27%
	(-1.60)	(-1.27)	(-1.60)	(-1.27)
Log (BM)	-0.08%	-0.25%	-0.08%	-0.26%
	(-0.97)	(-0.84)	(-0.99)	(-0.86)
Ret [0]	-7.21%	-9.35%	-7.27%	-9.30%
	(-5.13)	(-4.63)	(-5.21)	(-4.54)
Ret [-5, -1]	-2.49%	-3.34%	-2.49%	-3.38%
	(-2.26)	(-2.31)	(-2.26)	(-2.36)
Ret [-26, -6]	-0.38%	-0.82%	-0.38%	-0.82%
	(-1.48)	(-0.85)	(-1.48)	(-0.85)
News Sentiment [0]	0.08%	0.08%	0.06%	0.06%
	(2.73)	(0.82)	(1.67)	(0.72)
News Sentiment [-5, -1]	0.01%	0.01%	0.00%	0.01%
	(0.22)	(0.15)	(-0.09)	(0.11)
News Sentiment [-26, -6]	0.01%	0.05%	0.01%	0.07%
	(0.46)	(0.84)	(0.72)	(1.09)
Net DD Processing - Net DD Production	-0.58%	2.74%	-0.80%	1.34%
	(-0.97)	(1.86)	(-1.44)	(1.57)
Net DD Process 21 - Net DD Prod. 21	-2.64%	-7.65%	-0.96%	-3.69%
	(-1.03)	(-2.96%)	(-0.92%)	(-1.91)
Obs. (Firm-Days)	2,782,100	2,782,100	2,780,590	2,780,590
Day FE	Yes	Yes	Yes	Yes
Sample	Full		Exclude GME & AMC	

Table 5: WSB Reports and Future Returns - Comment Agreement

This table reports the estimates of future one-month ahead returns on Net *DD Agree, Net DD Disagree*, and controls. *Net DD Agree* is the *Net DD* measure computed for the subset of reports where *Comment Agreement = 1,* and Net *DD Disagree* is the *Net DD* measure computed for the subset of reports where *Comment Agreement* = 0. All other variables are as defined in Table 3 (with more detailed variable definitions in Appendix D). Specification 1-3 report the results for all firms for the full time series, the 2018-2020 sample period, and the 2021 sample period, respectively. Specifications 4 through 6 report analogous results after excluding GME and AMC. Standard errors are clustered by firm and month, and t-statistics are reported below each estimate. Below the regression estimates, we also report a formal test of whether the *Net DD Agree - Net DD Disagree* is significantly different from zero.

	Ret [1,21]	*Ret [1,21]*	*Ret [1,21]*	*Ret [1,21]*	*Ret [1,21]*	*Ret [1,21]*
	[1]	[2]	[3]	[4]	[5]	[6]
Net DD Agree	6.59%	8.33%	-2.31%	2.10%	2.84%	-1.80%
	(1.76)	(2.11)	(-0.76)	(1.79)	(2.51)	(-0.62)
Net DD Disagree	1.10%	2.82%	1.10%	-0.81%	1.44%	-1.06%
	(1.45)	(2.50)	(1.21)	(-0.81)	(1.39)	(-0.72)
Log (Size)	-0.27%	-0.26%	-0.32%	-0.27%	-0.26%	-0.32%
	(-1.27)	(-1.21)	(-0.40)	(-1.26)	(-1.21)	(-0.40)
Log (BM)	-0.25%	-0.51%	0.81%	-0.26%	-0.51%	0.78%
	(-0.84)	(-1.88)	(0.72)	(-0.86)	(-1.88)	(0.69)
Ret [0]	-9.35%	-9.85%	-7.88%	-9.30%	-9.81%	-7.69%
	(-4.63)	(-4.12)	(-3.19)	(-4.54)	(-4.07)	(-2.86)
Ret [-5, -1]	-3.33%	-4.12%	-0.02%	-3.38%	-4.16%	-0.05%
	(-2.30)	(-2.42)	(-0.05)	(-2.36)	(-2.47)	(-0.18)
Ret [-26, -6]	-0.81%	-1.08%	-0.07%	-0.82%	-1.08%	-0.07%
	(-0.85)	(-0.87)	(-1.10)	(-0.85)	(-0.87)	(-1.14)
News Sentiment [0]	0.08%	0.16%	-0.59%	0.06%	0.14%	-0.58%
	(0.82)	(1.78)	(-2.67)	(0.72)	(1.68)	(-2.88)
News Sentiment [-5, -1]	0.01%	0.08%	-0.51%	0.01%	0.06%	-0.39%
	(0.16)	(0.91)	(-1.93)	(0.12)	(0.70)	(-1.59)
News Sentiment [-26, -6]	0.05%	0.06%	-0.08%	0.07%	0.07%	-0.06%
	(0.85)	(0.90)	(-0.34)	(1.10)	(1.14)	(-0.26)
Agree - Disagree	5.49%	5.51%	-3.41%	2.91%	1.40%	-0.73%
	(1.87)	(1.71)	(-1.54)	(3.32)	(1.94)	(-0.33)
Obs. (Firm-Days)	2,782,100	2,274,064	508,036	2,780,590	2,272,802	507,788
Day FE	Yes	Yes	Yes	Yes	Yes	Yes
Time-Series Sample	Full	2018-2020	2021	Full	2018-2020	2021
Firm Sample		Full Sample			Exclude GME/AMC	

Table 6: WSB Reports and Cash Flow News

This table reports results from the estimation of Equation (3):

$$Y_{it+1,t+x} = \beta_1 Net\ DD_{it} + \beta_1 Net\ DD \times 2021_{it} + Controls_{it} + Day_t + \varepsilon_{it.}$$

The dependent variable, *Y*, is a measure of cash flow news over the subsequent week (i.e., x = 5 trading days) or the subsequent month (x = 21 trading days). Cash flow news is measured as either *Media Sentiment (Media*), computed as the sum of the daily Bloomberg sentiment score; *Positive Forecast Error* (*Pos FE*), an indicator equal to one if the realized earnings exceed the median quarterly forecast across all I/B/E/S analysts as of day *t,* and *Positive Forecast Revision* (*Pos FR*) computed as the number of upward revisions by I/B/E/S analysts scaled by the total number of revisions. All other variables are defined as in Table 3. More detailed variable definitions are available in Appendix D. Specifications 1 and 2 report the results for the full sample for five-day and 21-day measures of *Media Sentiment*. Specifications 3 and 4 and 5 and 6 report analogous results for *Positive Forecast Error* and *Positive Forecast Revision,* respectively. Standard errors are clustered by firm and month, and t-statistics are reported below each estimate. Below the regression estimates, we also report a formal test of whether the *Net DD + Net DD × 2021* is significantly different from zero.

	Media [1,5]	*Media [1,21]*	*Pos FE [1,5]*	*Pos FE [1,21]*	*Pos FR [1,5]*	*Pos FR [1,21]*
	[1]	[2]	[3]	[4]	[5]	[6]
Net DD	4.75%	16.33%	5.41%	3.88%	2.83%	2.42%
	(1.94)	(1.84)	(3.40)	(1.91)	(2.23)	(1.90)
Net DD × 2021	-6.12%	-26.17%	-15.31%	-10.00%	-2.97%	-2.57%
	(-2.40)	(-2.84)	(-6.36)	(-4.55)	(-2.34)	(-2.06)
Log (Size)	0.64%	3.18%	3.00%	3.51%	-0.10%	0.13%
	(5.44)	(5.62)	(10.05)	(10.79)	(-0.46)	(0.46)
Log (BM)	-0.85%	-4.24%	-1.37%	-0.89%	-0.52%	-1.16%
	(-6.60)	(-6.71)	(-2.05)	(-1.13)	(-3.27)	(-3.69)
Ret [0]	18.71%	30.47%	14.87%	12.77%	9.06%	12.85%
	(8.03)	(7.71)	(3.11)	(5.84)	(7.56)	(8.62)
Ret [-5, -1]	2.87%	6.51%	7.32%	7.96%	5.29%	8.82%
	(4.59)	(2.87)	(2.10)	(3.51)	(6.77)	(7.33)
Ret [-26, -6]	0.61%	3.21%	6.36%	4.58%	3.73%	6.39%
	(1.76)	(1.94)	(3.71)	(2.71)	(4.91)	(5.21)
News Sentiment [0]	33.24%	86.97%	2.22%	2.14%	2.45%	2.55%
	(34.16)	(24.96)	(3.24)	(4.07)	(8.05)	(10.31)
News Sentiment [-5, -1]	15.50%	56.17%	1.03%	1.66%	1.05%	1.38%
	(22.75)	(20.88)	(1.94)	(4.10)	(10.75)	(10.56)
News Sentiment [-26, -6]	7.89%	30.74%	0.97%	0.76%	0.33%	0.62%
	(18.59)	(16.15)	(3.97)	(3.17)	(5.60)	(6.36)
Net DD + Net DD × 2021	-1.37%	-9.84%	-9.90%	-6.12%	-0.14%	-0.15%
	(-2.14)	(-3.95)	(-4.97)	(-4.33)	(-1.23)	(-1.05)
Obs. (Firm-Days)	2,782,100	2,782,100	164,081	643,752	1,967,098	1,965,704
Day FE	Yes	Yes	YES	YES	YES	YES

Table 7: WSB Reports and Future Returns - Price Pressure Reports

This table repeats the analysis in Table 3 after partitioning all DD reports into *Price Pressure (PP) Reports* and *Non-PP Reports*. *PP Report* is an indicator equal to one if the number of "price pressure" words in the report exceeds the number of "fundamental" words in the report (see Appendix C for the list of "price pressure" and "fundamental" words). *Net DD PP* is the *Net DD* measure computed for the subset of reports where *PP Report = 1,* and Net *DD Non-PP* is the *Net DD* measure computed for the subset of reports where *PP Report = 0.* All other variables are defined in Table 3 (with more detailed variable definitions in Appendix D). Standard errors are clustered by firm and month, and t-statistics are reported below each estimate. Below the regression estimates, we also report formal tests of whether *Net DD PP - Net DD Non-PP* and *Net DD PP × D2021 - Net DD Non-PP PP × D2021* are significantly different from zero.

	Ret [1,5]	*Ret [1,21]*	*Ret [1,5]*	*Ret [1,21]*
	[1]	[2]	[3]	[4]
Net DD PP	0.89%	36.70%	0.96%	3.84%
	(1.24)	(1.93)	(1.14)	(2.73)
Net DD PP × D2021	-3.33%	-42.02%	-3.09%	-8.62%
	(-4.49)	(-2.18)	(-3.52)	(-3.91)
Net DD Non-PP	0.86%	2.76%	0.92%	2.19%
	(1.80)	(2.91)	(1.98)	(1.98)
Net DD Non-PP × D2021	0.73%	-1.70%	-0.60%	-3.34%
	(0.70)	(-1.83)	(-0.97)	(-2.21)
Log (Size)	-0.08%	-0.27%	-0.08%	-0.27%
	(-1.60)	(-1.27)	(-1.60)	(-1.27)
Log (BM)	-0.08%	-0.25%	-0.08%	-0.26%
	(-0.97)	(-0.84)	(-0.99)	(-0.86)
Ret [0]	-7.21%	-9.34%	-7.27%	-9.30%
	(-5.13)	(-4.62)	(-5.21)	(-4.54)
Ret [-5, -1]	-2.49%	-3.34%	-2.49%	-3.38%
	(-2.26)	(-2.31)	(-2.26)	(-2.36)
Ret [-26, -6]	-0.38%	-0.82%	-0.38%	-0.82%
	(-1.48)	(-0.85)	(-1.48)	(-0.85)
News Sentiment [0]	0.08%	0.08%	0.06%	0.06%
	(2.73)	(0.82)	(1.68)	(0.72)
News Sentiment [-5, -1]	0.01%	0.01%	0.00%	0.01%
	(0.22)	(0.10)	(-0.09)	(0.11)
News Sentiment [-26, -6]	0.01%	0.05%	0.01%	0.07%
	(0.46)	(0.81)	(0.72)	(1.09)
Net DD PP - Net DD Non-PP	0.03%	33.94%	0.04%	1.65%
	(0.05)	(1.77)	(0.07)	(1.04)
Net DD PP × 21 - Net DD Non-PP × 21	-4.07%	-40.32%	-2.49%	-5.28%
	(-3.28)	(-2.01)	(-3.02)	(-2.84)
Obs. (Firm-Days)	2,782,100	2,782,100	2,780,590	2,780,590
Day FE	YES	YES	YES	YES
Sample	Full		Exclude GME & AMC	

Table 8: Investor Order Imbalances Following WSB Reports

This table reports results from the estimation of Equation (4):

$$OIB_{it} = \beta_1 Net\ DD_{it-1,t} + \beta_2 Net\ DD_{it-1,t} \times 2021 + Controls_{it} + Day_t + \varepsilon_{it}.$$

The dependent variable, *OIB*, is one of three measures of directional trading for firm *i* on day *t: Inst. Vol OIB, Retail Vol OIB,* or *Retail Trade OIB. Inst Vol OIB* is defined as institutional buy share volume less institutional sell share volume scaled by total institutional share volume. *Retail Vol OIB* and *Retail Trade OIB* are defined analogously after replacing *Institutional Share Volume* with *Retail Share Volume* and *Retail Number of Trades,* respectively. *Net DD* is the number of buy DD recommendations for stock *i* across days *t* and *t-1* less the number of sell DD recommendations for stock *i* on days *t* and *t-1*. Detailed definitions of all control variables are available in Appendix D. Standard errors are clustered by firm and month, and t-statistics are reported below each estimate. Below the regression estimates, we also report a formal test of whether *Net DD* + *Net DD* × *2021* is significantly different from zero.

	Inst. Vol OIB	*Ret Vol OIB*	*Ret Trade OIB*	*Inst. Vol OIB*	*Ret Vol OIB*	*Ret Trade OIB*
	[1]	[2]	[3]	[5]	[5]	[6]
Net DD	-0.32%	1.37%	5.04%	-0.38%	1.24%	4.93%
	(-1.10)	(3.36)	(6.72)	(-1.39)	(2.93)	(6.74)
Net DD × 2021	0.50%	-1.42%	-0.48%	0.51%	-1.32%	0.45%
	(1.36)	(-3.36)	(-0.45)	(1.32)	(-2.92)	(0.60)
Log (Size)	0.70%	0.27%	0.14%	0.70%	0.27%	0.14%
	(17.22)	(10.17)	(3.20)	(17.22)	(10.16)	(3.19)
Log (BM)	0.02%	-0.03%	-0.17%	0.02%	-0.03%	-0.18%
	(0.50)	(-0.65)	(-3.72)	(0.47)	(-0.70)	(-3.82)
Ret [-5, -1]	0.71%	-2.36%	-2.40%	0.71%	-2.36%	-2.39%
	(2.18)	(-5.53)	(-5.38)	(2.18)	(-5.53)	(-5.35)
Ret [-26, -6]	0.32%	-0.85%	-0.96%	0.32%	-0.85%	-0.96%
	(2.26)	(-4.80)	(-5.01)	(2.26)	(-4.80)	(-5.01)
News Sentiment [-5, -1]	0.10%	0.11%	0.06%	0.10%	0.11%	0.06%
	(3.88)	(2.00)	(1.34)	(3.83)	(2.01)	(1.41)
News Sentiment [-26, -6]	-0.01%	0.03%	0.01%	-0.01%	0.03%	0.01%
	(-0.91)	(1.34)	(0.51)	(-0.88)	(1.40)	(0.59)
Retail Trade OIB [-5, - 1]	1.00%	10.26%	26.64%	1.00%	10.25%	26.57%
	(3.82)	(31.75)	(26.89)	(3.81)	(31.67)	(26.98)
Retail Vol OIB [-5, - 1]	-1.27%	4.46%	-5.72%	-1.27%	4.46%	-5.69%
	(-7.82)	(12.34)	(-14.27)	(-7.81)	(12.32)	(-14.28)
Inst Vol OIB [-5, - 1]	30.40%	-1.88%	-1.45%	30.39%	-1.88%	-1.45%
	(60.95)	(-4.64)	(-4.57)	(60.96)	(-4.64)	(-4.58)
Net DD + Net DD × 2021	0.18%	-0.05%	4.56%	0.13%	-0.08%	5.38%
	(0.75)	(-0.67)	(5.85)	(0.45)	(-0.66)	(15.64)
Obs. (Firm-Days)	2,705,492	2,705,492	2,705,492	2,703,986	2,703,986	2,703,986
Day FE	Yes	Yes	Yes	Yes	Yes	Yes
Sample		Full Sample			Exclude GME & AMC	

Table 9: Trade Informativeness Following WSB Reports

This table reports results from the estimation of Equation (5):

$$R_{it+1,t+x} = \beta_1 OIB_{it} + \beta_2 OIB_{it} \times 2021 + \beta_3 OIB_{it} \times DD_{it-1,t} + \beta_4 OIB_{it} \times 2021 \times DD_{it-1,t} + Controls_{it} + Day_t + \varepsilon_{it.}$$

The dependent variable, *R*, is the stock return measured over the subsequent week (i.e., x = 5 trading days) or the subsequent month (x = 21 trading days). *OIB* is either *Inst. Vol OIB, Retail Vol OIB,* or *Retail Trade OIB*, as defined in Table 8. *OIB × 2021* interacts *OIB* with an indicator equal to one for the post-GME period and zero otherwise. *OIB × DD* interacts *OIB* with an indicator equal to one if there was a DD report issued for firm *i* on day *t* or day *t-1* and *OIB × 2021 × DD* is defined analogously. *Controls* and *Day* are defined as in Table 3. Standard errors are clustered by both firm and month and t-statistics are reported below each estimate. Below the regression estimates, we also report a formal test of whether *OIB × DD + OIB × 2021 × DD* is significantly different from zero.

	Dep Var = Ret [1,5]			Dep Var = Ret [1,21]		
	Inst. Volume	Retail Volume	Retail Trades	Inst. Volume	Retail Volume	Retail Trades
	[1]	[2]	[3]	[4]	[5]	[6]
OIB	0.22%	0.16%	0.18%	0.15%	0.29%	0.46%
	(3.69)	(5.38)	(3.74)	(0.78)	(4.15)	(2.78)
OIB × 2021	-0.17%	0.03%	0.03%	-0.49%	-0.04%	-0.33%
	(-1.50)	(0.85)	(0.39)	(-1.14)	(-0.37)	(-0.67)
OIB × DD	0.04%	3.94%	8.59%	-8.91%	8.81%	39.95%
	(0.03)	(3.30)	(2.08)	(-0.77)	(1.56)	(2.20)
OIB× 2021 × DD	-1.11%	0.44%	-0.71%	14.25%	4.85%	-31.04%
	(-0.30)	(0.15)	(-0.09)	(1.09)	(0.97)	(-1.30)
Log (Size)	-0.08%	-0.08%	-0.08%	-0.27%	-0.27%	-0.27%
	(-1.61)	(-1.58)	(-1.58)	(-1.26)	(-1.25)	(-1.25)
Log (BM)	-0.07%	-0.07%	-0.07%	-0.25%	-0.25%	-0.25%
	(-0.94)	(-0.94)	(-0.94)	(-0.83)	(-0.83)	(-0.82)
Ret [0]	-7.03%	-6.96%	-6.96%	-9.01%	-9.02%	-9.05%
	(-4.93)	(-4.92)	(-4.92)	(-4.33)	(-4.41)	(-4.43)
Ret [-5, -1]	-2.52%	-2.51%	-2.51%	-3.30%	-3.29%	-3.30%
	(-2.24)	(-2.23)	(-2.23)	(-2.26)	(-2.26)	(-2.27)
Ret [-26, -6]	-0.35%	-0.35%	-0.35%	-0.72%	-0.72%	-0.72%
	(-1.36)	(-1.35)	(-1.35)	(-0.75)	(-0.75)	(-0.75)
News Sentiment [0]	0.08%	0.08%	0.08%	0.06%	0.06%	0.06%
	(2.50)	(2.48)	(2.46)	(0.65)	(0.64)	(0.62)
News Sentiment [-5, -1]	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
	(0.17)	(0.17)	(0.16)	(0.11)	(0.11)	(0.10)
News Sentiment [-26, -6]	0.01%	0.01%	0.01%	0.05%	0.05%	0.05%
	(0.44)	(0.44)	(0.45)	(0.86)	(0.86)	(0.87)
OIB × DD + OIB × 2021 × DD	-1.07%	4.38%	7.88%	5.34%	13.66%	8.91%
	(-0.99)	(1.93)	(1.21)	(1.03)	(2.06)	(0.39)
Obs. (Firm Days)	2,705,492	2,705,492	2,705,492	2,705,492	2,705,492	2,705,492
Day FE	Yes	Yes	Yes	Yes	Yes	Yes

Internet Appendix

In this appendix, we tabulate results from select robustness tests referenced in the paper. The set of tables are as follows:

- Table IA.1. Determinants of WSB Recommendations
- Table IA.2.WSB Reports and Future Returns – Robustness
- Table IA.3. WSB Reports and Cash Flow News – Exclude GME and AMC
- Table IA.4. WSB Reports and Future Returns – Price Pressure Reports Robustness
- Table IA.5. Investor Trading Intensity Following WSB Reports
- Table IA.6. Trade Informativeness following WSB Reports – Full Time Series
- Table IA.7. Trade Informativeness following WSB Reports – Exclude GME and AMC

Table IA.1: Determinants of WSB Recommendations

This table repeats the determinants analysis reported in Table 2 of the paper after replacing the dependent variable (previously *WSB Coverage*) with *Net DD*, defined as the total number of WSB buy recommendations for firm *i* in month *t* less the total number of WSB sell recommendations for firm *i* in month *t*. All other variables are defined as in Table 2.

	Net DD	*Net DD*	*Net DD*
	[1]	[2]	[3]
Inst Ownership	-0.35	-0.16	-0.17
	(-3.18)	(-2.96)	(-3.14)
Inst Ownership × 2021		-0.72	-0.81
		(-1.94)	(-2.21)
Log (Breadth of Ownership)	-0.02	0.00	0.00
	(-0.21)	(-0.05)	(0.01)
Log (Breadth of Ownership) × 2021		0.00	-0.01
		(-0.02)	(-0.05)
Log (Size)	0.65	0.38	0.40
	(4.29)	(3.44)	(3.57)
Log (Size) × 2021		1.22	1.37
		(4.05)	(4.90)
Log (BM) × 2021	-0.02	-0.04	-0.07
	(-0.26)	(-0.52)	(-1.03)
Log (BM)		0.25	0.19
		(1.18)	(0.89)
Log (Vol)	1.07	0.77	0.78
	(4.36)	(3.82)	(3.88)
Log (Vol) × 2021		1.67	1.79
		(3.00)	(3.27)
Log (Turn)	0.53	0.10	0.06
	(2.52)	(1.11)	(0.75)
Log (Turn) × 2021		1.61	1.41
		(3.46)	(3.13)
Return (m-1)	0.44	0.31	0.23
	(1.96)	(2.15)	(2.23)
Return (m-1) × 2021		0.66	0.46
		(0.78)	(0.71)
Return (m-2, m-12)	0.03	0.15	0.15
	(2.27)	(2.87)	(2.89)
Return (m-2, m-12) × 2021	0.03	-0.13	-0.13
	(2.27)	(-2.53)	(-2.70)
Log (Media Coverage)	0.51	0.45	0.41
	(3.74)	(3.38)	(3.36)
Log (Media Coverage) × 2021		0.45	0.27
		(1.85)	(1.22)
Log (IBES Coverage)	-0.32	-0.07	-0.07
	(-2.50)	(-0.85)	(-0.84)
Log (IBES Coverage) × 2021		-0.85	-0.89
		(-2.58)	(-2.68)
Heavy Short	0.88	0.44	0.33
	(2.14)	(2.51)	(2.26)
Heavy Short × 2021		4.95	4.16
		(4.76)	(4.43)

Recent IPO	7.18	3.82	3.88
	(3.99)	(3.15)	(3.17)
Recent IPO × 2021		16.24	16.70
		(3.98)	(4.21)
Observations (Firm-Months)	117,519	117,519	117,452
Fixed Effects	Month	Month	Month
R-square	3.53%	1.29%	2.63%
Sample	Full	Full	Exclude GME & AMC

Table IA.2: WSB Reports and Future Returns – Robustness

This table reports results from the estimation of the following equation:

$$R_{it+1} = \beta_1 Net\ DD_{it-1,t-x} + \beta_1 Net\ DD_{it-1,t-x} \times 2021 + Controls_{it} + Day_t + \varepsilon_{it.}$$

The dependent variable is the one-day ahead stock return. *Net DD* is the number of buy DD recommendations for stock *i* computed over days *t-1* through *t-x* less the number of sell DD recommendations for stock *i* over the same horizon. We measure *Net DD* over the prior week (i.e., x =5) or the prior month (i.e. x = 21). All other variables are defined as in Table 3. Standard errors are clustered by firm and month, and t-statistics are reported below each estimate. Below the regression estimates, we also report a formal test of whether *Net DD* + *Net DD* × *2021* is significantly different from zero.

	Ret [1]	Ret [1]	Ret [1]	Ret [1]
	[1]	[2]	[3]	[4]
Net DD [1,5]	0.11%		0.12%	
	(2.17)		(2.48)	
Net DD [1,5] × 2021	-0.04%		-0.12%	
	(-0.45)		(-1.87)	
Net DD [1,21]		0.06%		0.06%
		(2.75)		(2.78)
Net DD [1,21] × 2021		-0.03%		-0.06%
		(-1.23)		(-2.17)
Log (Size)	-0.02%	-0.02%	-0.02%	-0.02%
	(-2.38)	(-2.40)	(-2.38)	(-2.39)
Log (BM)	-0.01%	-0.01%	-0.01%	-0.01%
	(-0.95)	(-0.94)	(-0.96)	(-0.96)
Ret [0]	-3.29%	-3.29%	-3.29%	-3.29%
	(-5.23)	(-5.23)	(-5.22)	(-5.22)
Ret [-5, -1]	-0.90%	-0.90%	-0.90%	-0.90%
	(-2.90)	(-2.90)	(-2.89)	(-2.89)
Ret [-26, -6]	-0.08%	-0.08%	-0.08%	-0.08%
	(-1.64)	(-1.67)	(-1.64)	(-1.66)
News Sentiment [0]	0.07%	0.07%	0.07%	0.07%
	(3.71)	(3.73)	(3.50)	(3.50)
News Sentiment [-5, -1]	0.00%	0.00%	0.00%	0.00%
	(0.08)	(0.10)	(-0.28)	(-0.29)
News Sentiment [-26, -6]	0.00%	0.00%	0.00%	0.00%
	(0.34)	(0.30)	(0.57)	(0.54)
Net DD + Net DD × 2021	0.07%	0.03%	0.00%	0.00%
	(1.02)	(1.77)	(0.12)	(-0.03)
Obs. (Firm-Days)	2,782,100	2,782,100	2,780,590	2,780,590
Day FE	YES	YES	YES	YES
Sample	All		Exclude GME & AMC	

Table IA.3: WSB Reports and Cash Flow News – Exclude GME & AMC

This table repeats the analysis in Table 6 after excluding GME and AMC.

	Media [1,5]	*Media [1,21]*	*Pos FE [1,5]*	*Pos FE [1,21]*	*Pos FR [1,5]*	*Pos FR [1,21]*
	[1]	[2]	[3]	[4]	[5]	[6]
Net DD	4.79%	16.30%	4.93%	3.66%	3.07%	2.72%
	(2.08)	(1.74)	(2.88)	(1.63)	(2.38)	(2.08)
NET_DD × 2021	-5.00%	-23.90%	-16.02%	-11.80%	-3.49%	-3.05%
	(-2.18)	(-2.51)	(-3.68)	(-4.05)	(-2.74)	(-2.19)
Log (Size)	0.64%	3.18%	3.00%	3.51%	-0.10%	0.13%
	(5.44)	(5.62)	(10.05)	(10.79)	(-0.47)	(0.46)
Log (BM)	-0.84%	-4.21%	-1.35%	-0.87%	-0.52%	-1.15%
	(-6.56)	(-6.67)	(-2.01)	(-1.10)	(-3.24)	(-3.66)
Ret [0]	18.47%	30.53%	14.88%	12.86%	9.06%	12.92%
	(8.09)	(8.08)	(3.13)	(5.87)	(7.53)	(8.67)
Ret [-5, -1]	2.84%	6.44%	7.36%	7.93%	5.29%	8.83%
	(4.54)	(2.85)	(2.11)	(3.50)	(6.79)	(7.34)
Ret [-26, -6]	0.60%	3.16%	6.33%	4.58%	3.73%	6.42%
	(1.74)	(1.92)	(3.69)	(2.68)	(4.91)	(5.21)
News Sentiment [0]	33.21%	86.97%	2.24%	2.15%	2.46%	2.54%
	(33.80)	(24.92)	(3.28)	(4.06)	(8.01)	(10.22)
News Sentiment [-5, -1]	15.51%	56.23%	1.07%	1.67%	1.05%	1.38%
	(22.78)	(20.96)	(1.99)	(4.12)	(10.76)	(10.65)
News Sentiment [-26, -6]	7.90%	30.77%	0.96%	0.75%	0.33%	0.62%
	(18.68)	(16.17)	(3.96)	(3.14)	(5.64)	(6.34)
NET DD + Net DD × 2021	-0.21%	-7.60%	-11.09%	-8.14%	-0.42%	-0.33%
	(-0.40)	(-3.17)	(-2.81)	(-3.73)	(-0.97)	(-0.49)
Obs. (Firm-Days)	2,780,590	2,780,590	163,969	643,126	1,965,704	1,965,704
Day FE	Yes	Yes	YES	YES	YES	YES

Table IA4: WSB Reports and Future Returns - Price Pressure Reports Robustness

This table repeats the analysis in Table 7 using an alternative definition of *price pressure (PP)* report. In this table, *PP Report* is an indicator equal to one if report contains at least one "price pressure" word, and zero otherwise. See Appendix C for the list of "price pressure" words.

	Ret [1,5]	*Ret [1,21]*	*Ret [1,5]*	*Ret [1,21]*
	[1]	[2]	[3]	[4]
Net DD PP	1.23%	22.10%	1.41%	3.91%
	(2.31)	(2.00)	(3.15)	(12.27)
Net DD PP × D2021	-2.73%	-25.65%	-2.73%	-7.16%
	(-4.44)	(-2.25)	(-4.73)	(-3.07)
Net DD Non-PP	0.77%	2.01%	0.81%	1.98%
	(1.45)	(1.60)	(1.58)	(1.55)
Net DD Non-PP × D2021	0.83%	-0.95%	-0.52%	-3.21%
	(0.77)	(-0.69)	(-0.80)	(-2.03)
Log (Size)	-0.08%	-0.27%	-0.08%	-0.27%
	(-1.60)	(-1.27)	(-1.60)	(-1.27)
Log (BM)	-0.08%	-0.25%	-0.08%	-0.26%
	(-0.97)	(-0.84)	(-0.99)	(-0.86)
Ret [0]	-7.21%	-9.34%	-7.27%	-9.30%
	(-5.13)	(-4.62)	(-5.21)	(-4.54)
Ret [-5, -1]	-2.49%	-3.33%	-2.49%	-3.38%
	(-2.26)	(-2.31)	(-2.26)	(-2.36)
Ret [-26, -6]	-0.38%	-0.81%	-0.38%	-0.82%
	(-1.48)	(-0.85)	(-1.48)	(-0.85)
News Sentiment [0]	0.08%	0.08%	0.06%	0.06%
	(2.73)	(0.83)	(1.67)	(0.72)
News Sentiment [-5, -1]	0.01%	0.01%	0.00%	0.01%
	(0.22)	(0.13)	(-0.09)	(0.11)
News Sentiment [-26, -6]	0.01%	0.05%	0.01%	0.06%
	(0.46)	(0.82)	(0.72)	(1.09)
Net DD PP - Net DD Non-PP	0.46%	20.09%	0.59%	1.93%
	(0.79)	(1.86)	(1.34)	(1.50)
Net DD PP × 21 - Net DD Non-PP × 21	-3.56%	-24.70%	-2.21%	-3.95%
	(-3.09)	(-1.96)	(-3.31)	(-1.91)
Obs. (Firm-Days)	2,782,100	2,782,100	2,780,590	2,780,590
Day FE	YES	YES	YES	YES
Sample	Full		Exclude GME & AMC	

Table IA.5: Investor Trading Intensity Following WSB Reports

This table reports results from the following equation

$$Vol_{it} = \beta_1 DD_{it-1,t} + \beta_2 DD_{it-1,t} \times 2021 + Controls_{it} + Day_t + \varepsilon_{it.}$$

The dependent variable, *Vol*, is the natural log of 1 + either institutional trading share volume (*Inst Vol)*, retail trading share volume (*Retail Vol*), or the total number of retail trades (*Retail Trades*). *DD* is an indicator equal to one if there was at least one DD recommendations for stock *i* across days *t* and *t-1* and *DD* × *2021,* interacts *DD* with *2021,* an indicator equal to one for the 2021 sample period and zero otherwise. Detailed definitions of all control variables are available in Appendix D. Standard errors are clustered by firm and month, and t-statistics are reported below each estimate. Below the regression estimates, we also report a formal test of whether *DD* + *DD* × *2021* is significantly different from zero.

	Log (Inst. Vol)	*Log (Retail Vol)*	*Log (Retail Trades)*	*Log (Inst. Vol)*	*Log (Retail Vol)*	*Log (Retail Trades)*
	[1]	[2]	[3]	[4]	[5]	[6]
DD	16.60%	27.82%	28.20%	16.50%	28.41%	28.40%
	(6.99)	(8.85)	(10.75)	(6.93)	(9.25)	(10.82)
DD × *2021*	-4.80%	-18.68%	-7.80%	-4.70%	-16.89%	-8.50%
	(-2.02)	(-5.18)	(-2.72)	(-2.05)	(-5.14)	(-3.10)
Log (Size)	3.60%	-9.27%	0.40%	3.60%	-9.29%	0.50%
	(19.08)	(-21.93)	(3.07)	(19.09)	(-22.06)	(3.13)
Log (BM)	0.50%	-1.51%	-1.20%	0.50%	-1.49%	-1.20%
	(3.39)	(-6.50)	(-11.07)	(3.35)	(-6.43)	(-11.12)
Ret [-5, -1]	8.60%	-1.02%	13.00%	8.60%	-1.03%	13.00%
	(4.46)	(-0.40)	(5.33)	(4.47)	(-0.40)	(5.32)
Ret [-26, -6]	-5.50%	-9.50%	-5.10%	-5.50%	-9.51%	-5.10%
	(-6.69)	(-6.69)	(-6.48)	(-6.69)	(-6.71)	(-6.48)
News Sentiment [-5, -1]	-2.30%	-3.06%	-1.90%	-2.30%	-3.07%	-1.90%
	(-10.52)	(-9.92)	(-9.59)	(-10.49)	(-9.91)	(-9.67)
News Sentiment [-26, -6]	-0.10%	-0.03%	0.10%	-0.10%	-0.03%	0.10%
	(-1.75)	(-0.35)	(1.73)	(-1.70)	(-0.33)	(1.83)
Retail Trades [-5, - 1]	4.60%	23.12%	94.40%	4.60%	23.18%	94.40%
	(7.43)	(20.69)	(236.15)	(7.43)	(20.82)	(237.20)
Retail Vol [-5, - 1]	5.00%	68.38%	-2.00%	5.00%	68.34%	-2.00%
	(9.87)	(63.60)	(-6.38)	(9.86)	(63.69)	(-6.35)
Inst Vol [-5, - 1]	(0.86)	(0.18)	(0.05)	(0.86)	(0.18)	(0.05)
	(109.32)	(23.71)	(18.92)	(109.30)	(23.71)	(18.91)
DD + *DD* × *2021*	11.80%	9.14%	20.40%	11.80%	11.52%	19.90%
	(10.33)	(4.21)	(14.87)	(10.82)	(8.36)	(17.40)
Obs. (Firm-Days)	2,705,492	2,705,492	2,705,492	2,703,986	2,703,986	2,703,986
Day FE	Yes	Yes	Yes	Yes	Yes	Yes
Sample		Full Sample			Exclude GME & AMC	

Table IA.6: Trade Informativeness following WSB Reports - Full Time Series

This table repeats the analysis in Table 9 after dropping $OIB \times 2021$ and $OIB \times 2021 \times DD$.

	Dep Var = Ret [1,5]			Dep Var = Ret [1,21]		
	Inst. Vol OIB	*Ret Vol OIB*	*Ret Trade OIB*	*Inst. Vol OIB*	*Ret Vol OIB*	*Ret Trade OIB*
	[1]	[2]	[3]	[4]	[5]	[6]
OIB	0.19%	0.16%	0.18%	0.07%	0.28%	0.41%
	(3.47)	(6.36)	(4.21)	(0.42)	(4.54)	(2.59)
*OIB * DD*	-0.50%	4.16%	8.21%	-2.64%	11.11%	22.85%
	(-0.27)	(4.18)	(2.06)	(-0.37)	(1.97)	(1.24)
Log (Size)	-0.08%	-0.08%	-0.08%	-0.27%	-0.27%	-0.27%
	(-1.61)	(-1.58)	(-1.58)	(-1.26)	(-1.25)	(-1.25)
Log (BM)	-0.07%	-0.07%	-0.07%	-0.25%	-0.25%	-0.25%
	(-0.94)	(-0.94)	(-0.94)	(-0.83)	(-0.83)	(-0.82)
Ret [0]	-7.03%	-6.96%	-6.96%	-9.01%	-9.02%	-9.05%
	(-4.93)	(-4.92)	(-4.92)	(-4.34)	(-4.41)	(-4.43)
Ret [-5, -1]	-2.52%	-2.51%	-2.51%	-3.30%	-3.29%	-3.30%
	(-2.24)	(-2.23)	(-2.23)	(-2.26)	(-2.26)	(-2.26)
Ret [-26, -6]	-0.35%	-0.35%	-0.35%	-0.72%	-0.72%	-0.72%
	(-1.36)	(-1.35)	(-1.35)	(-0.75)	(-0.75)	(-0.75)
News Sentiment [0]	0.08%	0.08%	0.08%	0.06%	0.06%	0.06%
	(2.50)	(2.48)	(2.47)	(0.65)	(0.64)	(0.62)
News Sentiment [-5, -1]	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
	(0.17)	(0.17)	(0.16)	(0.11)	(0.11)	(0.10)
News Sentiment [-26, -6]	0.01%	0.01%	0.01%	0.05%	0.05%	0.05%
	(0.44)	(0.44)	(0.45)	(0.86)	(0.86)	
Day FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs. (Firm Days)	2,705,492	2,705,492	2,705,492	2,705,492	2,705,492	2,705,492

Table IA.7: Trade Informativeness Following WSB Reports – Exclude GME and AMC

This table repeats the analysis in Table 9 after excluding GME and AMC from the sample.

	Dep Var = Ret [1,5]			Dep Var = Ret [1,21]		
	Inst. Volume	Retail Volume	Retail Trades	Inst. Volume	Retail Volume	Retail Trades
	[1]	[2]	[3]	[4]	[5]	[6]
OIB	0.22%	0.16%	0.18%	0.01%	0.16%	0.18%
	(3.71)	(5.39)	(3.76)	(0.59)	(5.36)	(3.76)
OIB × 2021	-0.18%	0.03%	0.02%	0.02%	0.03%	0.02%
	(-1.54)	(0.79)	(0.28)	(0.88)	(0.81)	(0.30)
OIB × DD	-0.17%	3.76%	9.31%	-1.37%	4.21%	10.75%
	(-0.09)	(3.43)	(2.37)	(-0.71)	(1.96)	(2.38)
OIB× 2021 × DD	1.28%	0.38%	-9.43%	2.48%	0.65%	-9.98%
	(0.33)	(0.28)	(-2.04)	(0.72)	(0.23)	(-1.85)
Log (Size)	-0.08%	-0.08%	-0.08%	-0.06%	-0.09%	-0.09%
	(-1.61)	(-1.58)	(-1.58)	(-0.91)	(-1.61)	(-1.61)
Log (BM)	-0.08%	-0.08%	-0.07%	-0.06%	-0.07%	-0.07%
	(-0.96)	(-0.96)	(-0.95)	(-0.72)	(-0.93)	(-0.92)
Ret [0]	-7.10%	-7.02%	-7.02%	-5.69%	-6.85%	-6.85%
	(-5.01)	(-5.00)	(-4.99)	(-4.35)	(-4.86)	(-4.85)
Ret [-5, -1]	-2.52%	-2.50%	-2.51%	-2.38%	-2.49%	-2.50%
	(-2.24)	(-2.23)	(-2.23)	(-2.21)	(-2.21)	(-2.21)
Ret [-26, -6]	-0.35%	-0.35%	-0.35%	-0.24%	-0.36%	-0.36%
	(-1.35)	(-1.34)	(-1.35)	(-0.89)	(-1.34)	(-1.34)
News Sentiment [0]	0.05%	0.05%	0.05%	0.03%	0.05%	0.05%
	(1.43)	(1.42)	(1.41)	(0.94)	(1.39)	(1.37)
News Sentiment [-5, -1]	-0.01%	-0.01%	-0.01%	-0.02%	-0.01%	-0.01%
	(-0.15)	(-0.15)	(-0.15)	(-0.63)	(-0.15)	(-0.15)
News Sentiment [-26, -6]	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
	(0.72)	(0.71)	(0.71)	(0.50)	(0.69)	(0.70)
OIB × DD + OIB × 2021 × DD	1.11%	4.14%	-0.12%	1.11%	4.86%	0.77%
	(0.33)	(4.84)	(-0.05)	(-0.31)	(1.93)	(1.17)
Day FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	2,703,986	2,703,986	2,703,986	2,703,986	2,703,986	2,703,986