

Online Appendix:

Did the Game Stop for Hedge Funds?

Table A1: **Changes in WSB activity after the disclosure of short interest data: sensitivity analyses**

In this table, we present robustness checks for our main results in Table 2 by removing January and February 2021 – the peak of the GameStop episode (Panel A), excluding stocks with market equity below the NYSE market equity 30th percentile (Panel B) and focusing on posts that reference the stocks in the title as opposed to those that either reference the stock in the title or in the body (Panel C). The table reports coefficient estimates from regressions of changes in WSB activity on an indicator of whether the corresponding stock is a highly shorted stock. The dependent variable represents the change in one of our five measures of WSB activity at the stock level: the number of posts (Column 1), comments (Column 2), unique posters (Column 3), emojis (Column 4), and meme stock lingos (Column 5). We compare WSB activity on day $t + 1$ relative to the average WSB activity from days $t - 3$ through $t - 1$, where day t is the short interest publication date. There are situations where none of the posts on a particular stock from days $t - 3$ through $t - 1$ come with comments or contain emojis or meme stock lingos, which prevents us from computing changes. Consequently, the regressions in Columns 2, 4 and 5 are estimated for a smaller number of observations. Our independent variable is *High Short Interest*, which equals one if the stock’s short interest resides in the top one percentile as of the corresponding settlement cycle. We include firm and settlement cycle fixed effects. Statistical inferences are based on White (1980) robust standard errors clustered by firm and settlement cycle to account for serial- and cross-correlation as well as heteroskedasticity. The sample period is from January 1, 2020 to March 31, 2022. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Independent variable	#Posts (1)	#Comments (2)	#Posters (3)	#Emojis (4)	#Lingos (5)
Panel A: Removing the peak of the Gamestop episode (Jan and Feb 2021)					
<i>High Short Interest</i>	0.513* (1.94)	0.586** (2.12)	0.603** (2.55)	0.963** (2.47)	0.577** (2.31)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Settlement Cycle Fixed Effects	Yes	Yes	Yes	Yes	Yes
Adj. R ²	0.136	0.072	0.160	0.085	0.142
#Observations	1,712	1,568	1,712	593	615
Panel B: Excluding stocks with market equity below the NYSE market equity 30th percentile					
<i>High Short Interest</i>	1.047*** (2.84)	1.397** (2.64)	1.179*** (3.87)	2.590*** (5.80)	0.938*** (3.32)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Settlement Cycle Fixed Effects	Yes	Yes	Yes	Yes	Yes
Adj. R ²	0.242	0.099	0.274	0.220	0.206
#Observations	1,495	1,312	1,495	549	546
Panel C: Focusing on posts that reference the stocks in the title only					
<i>High Short Interest</i>	0.535* (1.88)	0.030 (0.20)	0.598** (2.37)	1.394*** (2.82)	1.099** (2.66)
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes
Settlement Cycle Fixed Effects	Yes	Yes	Yes	Yes	Yes
Adj. R ²	0.216	0.143	0.245	0.258	0.198
#Observations	2,091	1,726	2,091	683	605

Table A2: **WSB activity and stock returns: sensitivity analyses**

In this table, we present robustness checks for our main results in Table 4 by removing January and February 2021 – the peak of the GameStop episode (Panel A), excluding stocks with market equity below the NYSE market equity 30th percentile (Panel B) and focusing on posts that reference the stocks in the title as opposed to those that either reference the stock in the title or in the body (Panel C). The table reports coefficient estimates from regressions of returns on measures of WSB activity and a high short-interest indicator. The dependent variable is either the daily raw stock return (Columns 1-5) or the daily Fama and French (2015) five-factor adjusted return (Columns 6-10) of a stock. Our key independent variables are the interaction between *WSB Activity* and *High Short Interest*. *WSB Activity* represents one of our five measures for WSB activity, all at the stock level and as of day t : the number of posts (Columns 1 and 6), comments (Columns 2 and 7), unique posters (Columns 3 and 8), emojis (Columns 4 and 9), and meme stock lingos (Columns 5 and 10). *High Short Interest* is an indicator variable that takes a value of one if the stock is in the top one percentile of stocks based on the most recently disclosed short interest. Firm controls include: *Dow Jones*, an indicator variable that takes a value of one if the stock is mentioned by any Dow Jones Newswire that day; *Sentiment*, the Dow Jones Newswire daily sentiment; *Analyst Rec Changes*, the number of analyst recommendation upgrades minus the number of recommendation downgrades on a stock on a day; and *Size*, the firm's market capitalization. We include firm and year-month-day fixed effects. Statistical inferences are based on White (1980) robust standard errors clustered by firm and year-month-day. The sample period is from January 1, 2020 to March 31, 2022. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Regressions based on raw stock returns (%)		Regressions based on Fama and French (2015) five-factor adjusted returns (%)							
		WSB activity							
#Posts	Comments	#Posters	#Emojis	#Lingos	#Posts	Comments	#Posters	#Emojis	#Lingos
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Removing the peak of the Gamestop episode (Jan and Feb 2021)									
0.606** (2.43)	0.193* (1.74)	0.615** (2.23)	0.622** (2.08)	1.010* (1.95)	0.700*** (2.67)	0.245** (2.02)	0.714** (2.48)	0.657** (2.14)	1.095** (2.09)
Panel B: Excluding stocks with market equity below the NYSE market equity 30th percentile									
1.121*** (3.01)	0.696*** (3.37)	1.151*** (3.00)	1.192*** (3.46)	1.832*** (6.83)	1.128*** (3.45)	0.704*** (3.85)	1.156*** (3.47)	1.206*** (3.77)	1.791*** (7.02)
Panel C: Focusing on posts that reference the stocks in the title only									
0.760*** (4.06)	0.368*** (3.75)	0.781*** (4.03)	0.938*** (4.60)	1.516*** (6.06)	0.726*** (5.83)	0.372*** (4.88)	0.744*** (5.96)	0.855*** (6.31)	1.364*** (8.42)

Table A3: **WSB tone and stock returns**

In this table, we present coefficient estimates from regressions of returns on measures of WSB tone and a high short-interest indicator. The dependent variable is either the daily raw stock return (Columns 1 and 2) or the daily Fama and French (2015) five-factor adjusted return (Columns 3 and 4) of a stock on day $t + 1$. Our key independent variables are *WSB Tone* and *High Short Interest*. *WSB Tone* represents the difference between the fraction of positive words and the fraction of negative words, averaged across all posts referencing a given stock on day t . *High Short Interest* is an indicator variable that takes the value of one if the stock is in the top one percentile of stocks based on the most recently disclosed short interest. Firm controls include: *DowJones*, an indicator variable that takes the value of one if the stock is mentioned by any Dow Jones Newswire on day t ; *Sentiment*, the Dow Jones Newswire daily sentiment; *Analyst Rec Changes*, the number of analyst recommendation upgrades minus the number of recommendation downgrades issued for a stock on day t ; and *Size*, the firm's market capitalization. We include firm and year-month-day fixed effects. Statistical inferences are based on White (1980) robust standard errors clustered by firm and year-month-day. The sample period is from January 1, 2020 to March 31, 2022. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Independent variable	Dependent variable			
	<i>Raw stock returns</i> (%) (1)	<i>Raw stock returns</i> (%) (2)	<i>Five-factor adjusted returns</i> (%) (3)	<i>Five-factor adjusted returns</i> (%) (4)
<i>High Short Interest</i>	0.016 (0.17)	-0.129 (-1.15)	0.093 (0.79)	-0.013 (-0.10)
<i>WSB Tone</i>	0.364 (1.02)	0.620* (1.85)	0.062 (0.16)	0.455 (1.22)
<i>WSB Tone*High Short Interest</i>	2.640* (1.96)	3.028** (2.29)	3.928*** (2.73)	4.388*** (3.16)
Firm Controls	No	Yes	No	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Adj. R ²	0.102	0.111	0.007	0.018
#Observations	384,625	384,625	372,365	372,365