# Semi-Annual Presentation

## Undergraduate Student Investment Management Fund – Team B

# Team Introduction

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# Investment Strategy

# Investment Thesis

Panel A: Form Portfolios on the Previous Week's Marketable Retail Order Imbalance Based on Number of Shares Traded

| Holding | Full Sample | | | | Small | | Medium | | Big | |
|---|---|---|---|---|---|---|---|---|---|---|
| Period | Mean | *t*-Stat | alpha | *t*-Stat | alpha | *t*-Stat | alpha | *t*-Stat | alpha | *t*-Stat |
| 1 week | 0.092% | 2.66 | 0.084% | 2.43 | 0.403% | 9.16 | 0.170% | 6.24 | 0.067% | 1.78 |
| 2 weeks | 0.147% | 2.45 | 0.135% | 2.46 | 0.669% | 9.01 | 0.292% | 6.81 | 0.105% | 1.70 |
| 4 weeks | 0.223% | 1.89 | 0.208% | 2.00 | 1.124% | 10.43 | 0.423% | 6.36 | 0.143% | 1.22 |
| 6 weeks | 0.310% | 1.72 | 0.277% | 1.73 | 1.399% | 13.02 | 0.558% | 6.07 | 0.171% | 1.05 |
| 8 weeks | 0.448% | 1.92 | 0.460% | 2.26 | 1.709% | 17.13 | 0.623% | 4.18 | 0.342% | 1.69 |
| 10 weeks | 0.515% | 1.99 | 0.484% | 1.81 | 1.704% | 11.17 | 0.578% | 3.87 | 0.381% | 1.53 |
| 12 weeks | 0.588% | 2.09 | 0.629% | 1.89 | 1.857% | 7.65 | 0.556% | 3.20 | 0.477% | 1.48 |

Boehmer, Ekkehart, Jones, Charles M., Zhang, Xiaoyan, Zhang, Xinran. "Tracking Retail Investor Activity." The Journal of Finance, 76(5), 2249-2305. https://doi.org/10.1111/jofi.13033.

Portfolio returns using a long-short strategy

# Why Retail Activity Matters

**Retail Power in the Market**

- GameStop
- AMC

- Persistence in retail traders chasing stock returns moves stock prices

- We look to profit from the buying pressure of retail investors

THE WALL STREET JOURNAL.

MARKETS | FINANCE

**What Inflation? Small Investors Keep Piling Into Flashy Growth Stocks**

AMD, Nvidia and Apple still hold appeal for many, even as potentially higher interest rates prompt defensive moves by Wall Street pros

# Review of Retail Market Order Structure

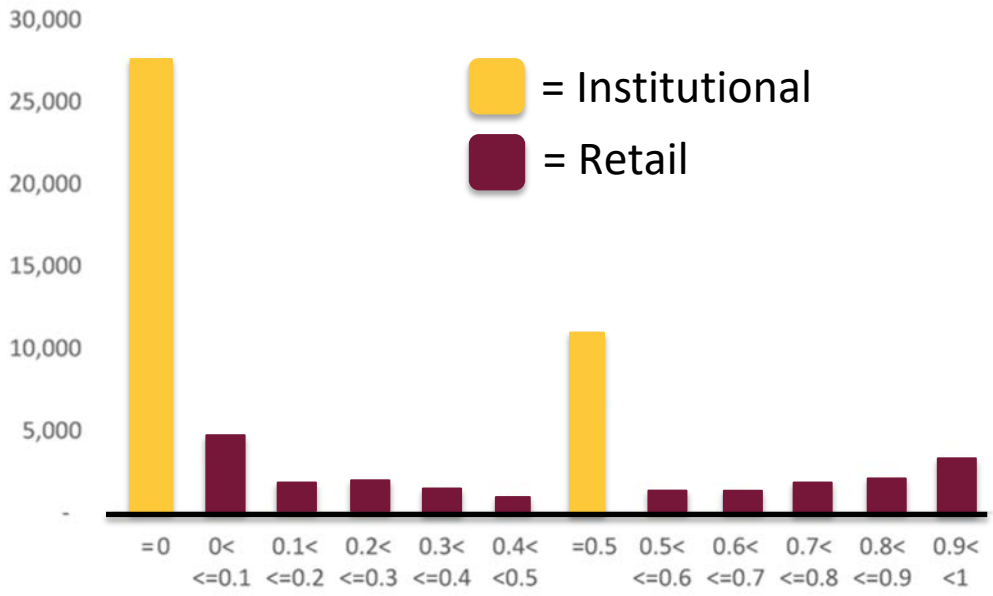
# Review of Marketable Retail Order Flow Structure

**Retail market orders**

- Market orders
- Limit orders

**Brokerage houses & Wholesalers**

- Internalization
- Retail small-price improvement



# Where We Find Retail Trades

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**Retail Trade Execution**

- Retail orders are typically executed by wholesalers or via internalization
- Reported on FINRA TRF
- Executions included in “consolidated tape” of the TAQ

**Reg NMS**

- Requires limit orders be priced at round pennies
- We only identify marketable retail orders and not limit orders

| Timestamp | SharesTraded | TransactionPrice | NBO | NBB | TICKER | PRIMEXCH |
|---|---|---|---|---|---|---|
| 9:30:00.939206912 | 60596 | 163.01 | 163.4 | 161.2 | A | N |
| 9:30:00.939210496 | 60596 | 163.01 | 163.4 | 161.2 | A | N |
| 9:30:00.942568448 | 10 | 162.89 | 163.39 | 162 | A | N |
| 9:30:00.942668544 | 7 | 163 | 163.39 | 162 | A | N |
| 9:30:00.942723840 | 3 | 163 | 163.39 | 162 | A | N |
| 9:30:00.944282368 | 3 | 162.92 | 163.39 | 162 | A | N |
| 9:30:00.944292352 | 3 | 162.84 | 163.39 | 162 | A | N |
| 9:30:00.944402688 | 3 | 162.9 | 163.39 | 162 | A | N |
| 9:30:00.944713728 | 2 | 162.92 | 163.39 | 162 | A | N |
| 9:30:00.944713728 | 2 | 162.92 | 163.39 | 162 | A | N |
| 9:30:01.035429888 | 16 | 162.93 | 163.39 | 162.57 | A | N |
| 9:30:01.036231168 | 22 | 162.93 | 163.39 | 162.57 | A | N |
| 9:30:01.164956160 | 2 | 162.99 | 163.39 | 162.57 | A | N |
| 9:30:01.183876352 | 8 | 162.93 | 163.39 | 162.57 | A | N |
| 9:30:01.201424128 | 109 | 162.93 | 163.39 | 162.57 | A | N |
| 9:30:01.264407808 | 142 | 162.93 | 163.39 | 162.57 | A | N |
| 9:30:01.272305920 | 100 | 162.92 | 163.39 | 162.57 | A | N |
| 9:30:01.273143808 | 101 | 162.92 | 163.39 | 162.57 | A | N |
| 9:30:01.273184768 | 110 | 162.92 | 163.39 | 162.57 | A | N |
| 9:30:01.273208320 | 38 | 162.84 | 163.39 | 162.57 | A | N |
| 9:30:01.273208320 | 42 | 162.84 | 163.39 | 162.57 | A | N |

# Measuring Retail Order Imbalances

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**Marketable retail buy volume**

- Calculates order imbalance using the volume of shares being traded

$$mroibvol\ (i,t) = \frac{mrbvol\ (i,t) - mrsvol\ (i,t)}{mrbvol\ (i,t) + mrsvol\ (i,t)}$$

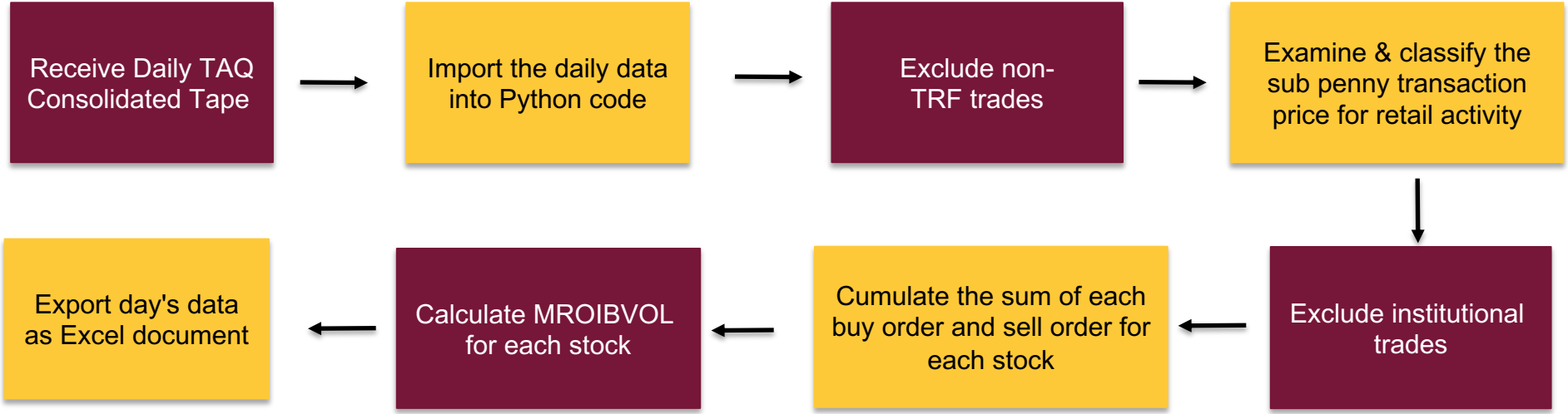
**Marketable retail buy by trades**

- Calculates order imbalance using the number of trades being executed

$$mroibtrd\ (i,t) = \frac{mrbtrd\ (i,t) - mrstrd\ (i,t)}{mrbtrd\ (i,t) + mrstrd\ (i,t)}$$

# Implementation

# Daily Security Analysis Process

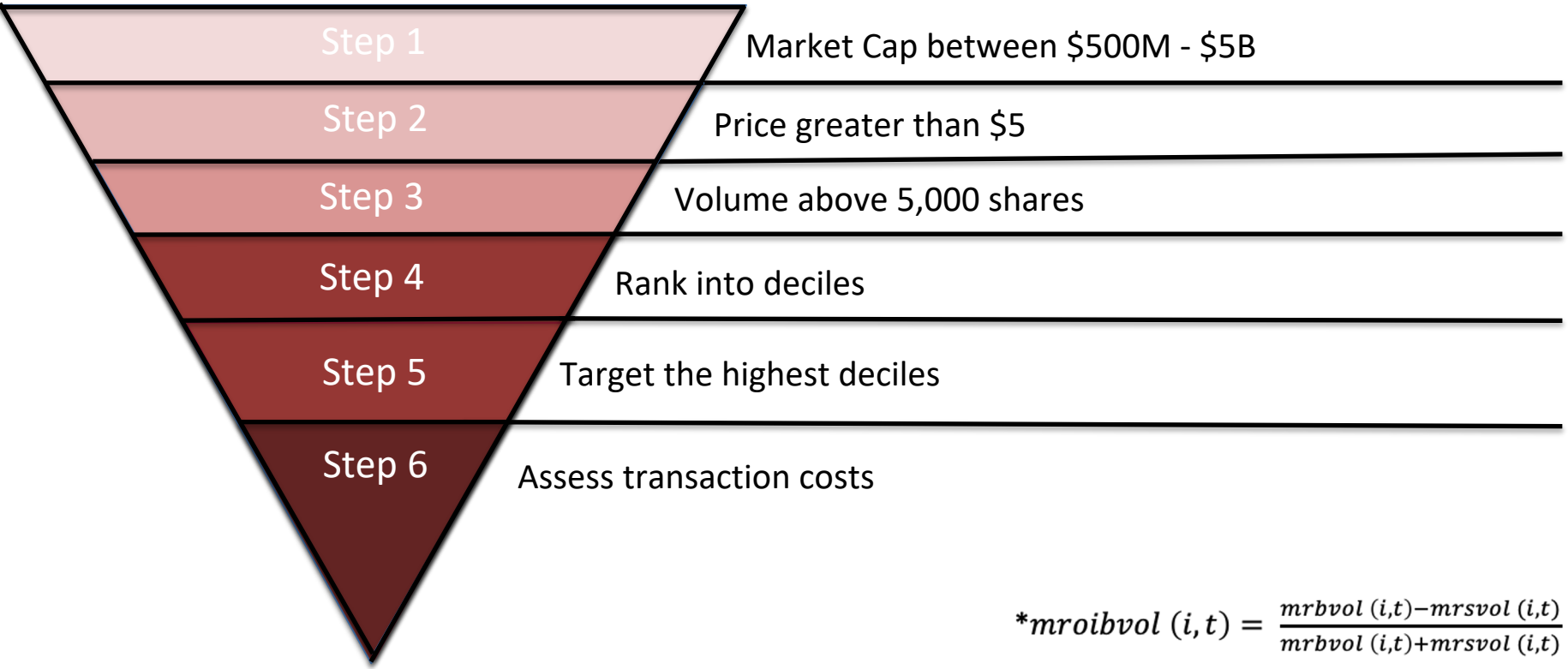


# Weekly Order Imbalance

| | Monday | Tuesday | Wednesday | Thursday | Friday | Weekly Average Decile Rank |
|---|---|---|---|---|---|---|
| Decile | $a$ | $b$ | $c$ | $d$ | $e$ | $\frac{a+b+c+d+e}{5}$ |

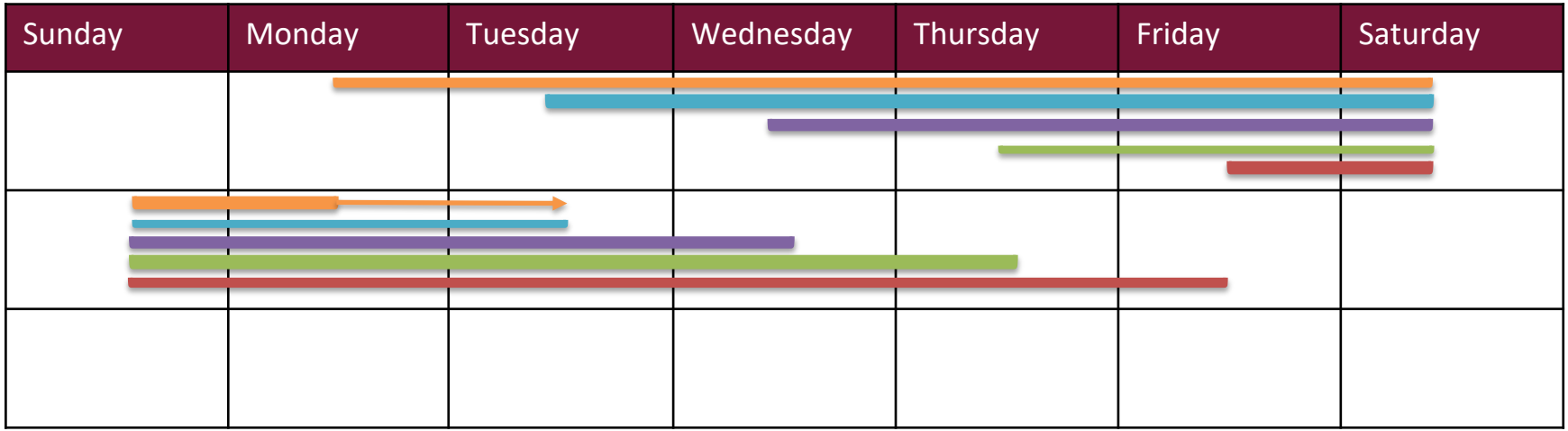
Rank by Highest Average Decile to Lowest

# Daily Security Selection Process and Criteria




$$*mroibvol\ (i,t) = \frac{mrbvol\ (i,t) - mrsvol\ (i,t)}{mrbvol\ (i,t) + mrsvol\ (i,t)}$$

# Concatenated Portfolios




Holding 10 securities per day, with a maximum of 50 at any period

# Trading Cost Optimization

$$\frac{\textit{Amount invested in Stock "A" per day}}{\textit{Previous day closing price}} = \text{Equal weighted shares purchased}$$

$$\textit{Equal weighted shares purchased} \times .02 = \textit{Transaction Cost Stock "A"}$$

1

First 10 stocks that meet criteria

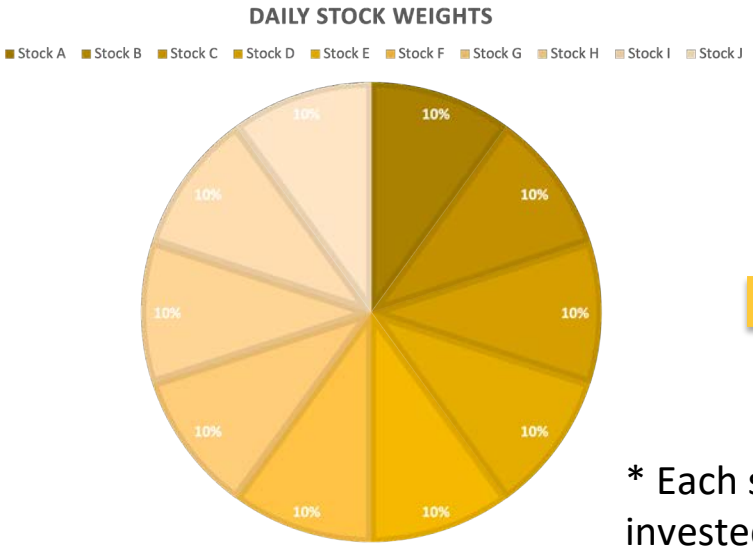
2

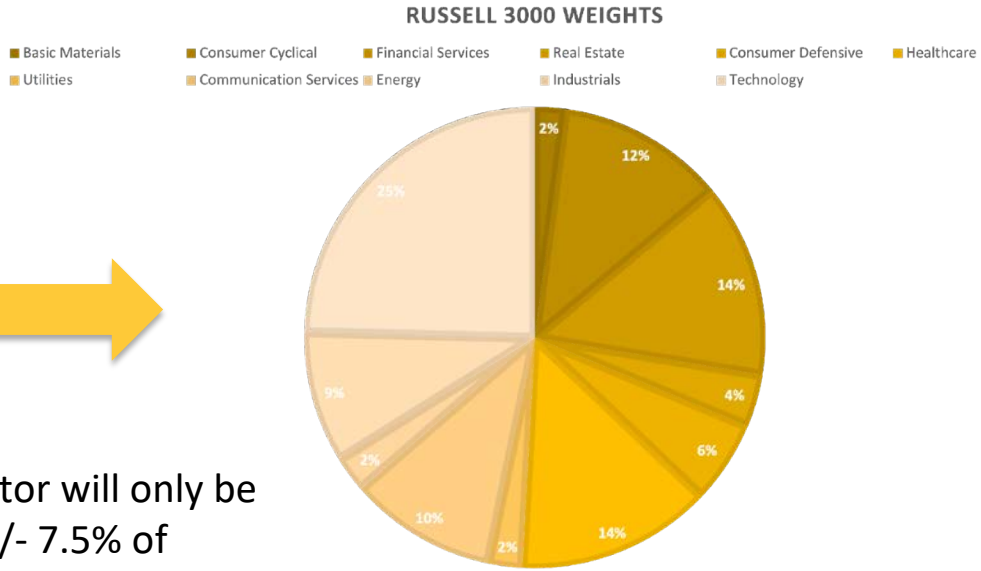
Top 10 decile ranked stocks

3

Lowest costing within top decile that meet criteria

# Daily Portfolio Weighting




* Each sector will only be invested +/- 7.5% of Russell 3000 sector weightings

# Market News

Assign securities to watch for the holding period and research on Bloomberg

# Questions?

# Appendix

# Predicting Returns “k” Weeks Ahead

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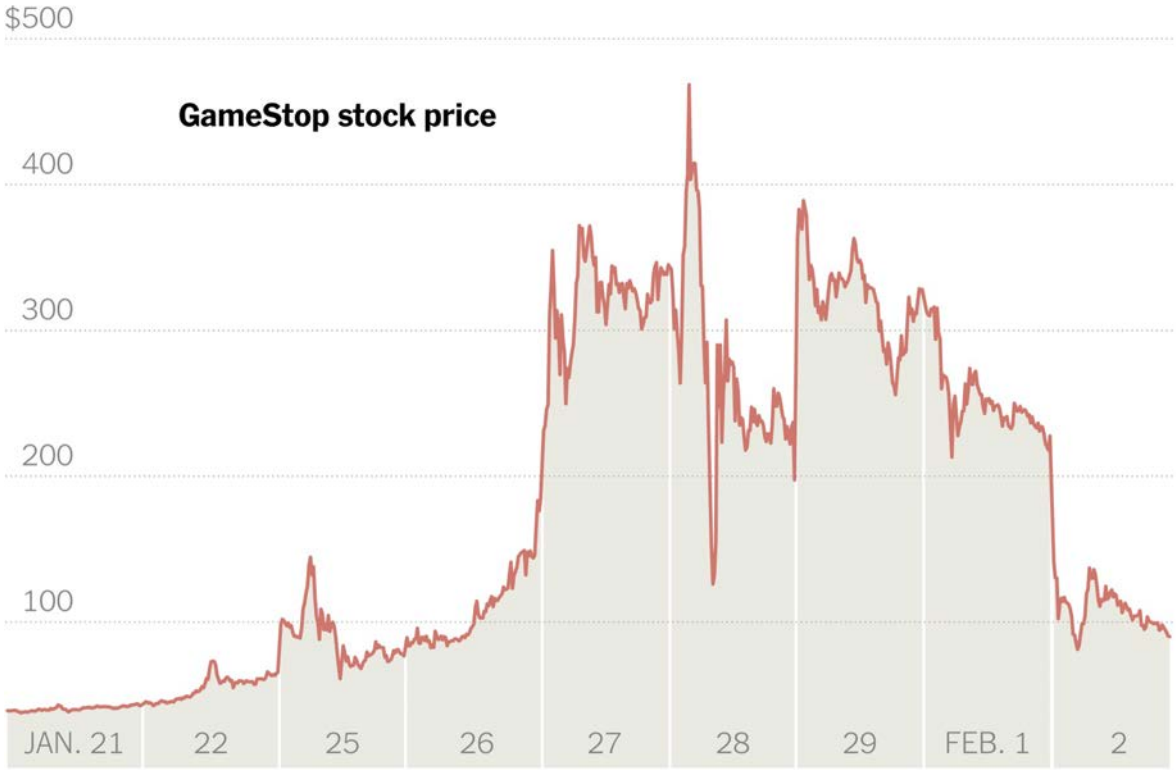
Panel A: Predict Bid-Ask Average Return $k$ Weeks Ahead

| | Mroibvol | | Mroibtrd | |
|---|---|---|---|---|
| # of Weeks Ahead | Coef. | $t$-Stat | Coef. | $t$-Stat |
| 1 week | 0.00092 | 15.60 | 0.00076 | 12.30 |
| 2 weeks | 0.00055 | 9.35 | 0.00048 | 7.89 |
| 4 weeks | 0.00031 | 5.56 | 0.00026 | 4.66 |
| 6 weeks | 0.00022 | 3.90 | 0.00015 | 2.60 |
| 8 weeks | 0.00021 | 3.47 | 0.00011 | 1.75 |
| 10 weeks | 0.00010 | 1.82 | 0.00002 | 0.35 |
| 12 weeks | 0.00007 | 1.29 | 0.00009 | 1.52 |

Panel B: Predict CRSP Return $k$ Weeks Ahead

| | Mroibvol | | Mroibtrd | |
|---|---|---|---|---|
| # of Weeks Ahead | Coef. | $t$-Stat | Coef. | $t$-Stat |
| 1 week | 0.00096 | 16.29 | 0.00081 | 13.20 |
| 2 weeks | 0.00058 | 9.99 | 0.00052 | 8.57 |
| 4 weeks | 0.00032 | 5.92 | 0.00028 | 5.05 |
| 6 weeks | 0.00024 | 4.18 | 0.00017 | 2.93 |
| 8 weeks | 0.00021 | 3.50 | 0.00011 | 1.80 |
| 10 weeks | 0.00011 | 2.04 | 0.00005 | 0.81 |
| 12 weeks | 0.00008 | 1.39 | 0.00010 | 1.76 |

# GME Chart


GameStop stock price
$500
400
300
200
100
JAN. 21
22
25
26
27
28
29
FEB. 1
2

# Weekly portfolio return difference