

Title: A Visualisation of Short Volume Data of GME- DD post from u/SpiffyGrr

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Cheers everybody!

I have visualised the Short Volume Data (FINRA, NYSE, CBOE) and I want to share it for feedback and discussion. Any constructive comment is appreciated. So let's start.

****TLDR:****

>From a long-term point of view the reported accumulated Net Short Volume of GME is very unusual. It seems that the "market" is still short on GME. The run-ups (after January 2021) of the GME price, which seems to occur quarterly (every three months), do not affect the reported Short Volume. It seems that the short positions have not closed yet.

Feel free to share for feedback.

EDIT: 2022-01-19: BBBY and GME Zoom added (at the bottom).

0. Disclaimer

This is not a financial advise. I have no financial background. I just like math, numbers, colourful plots and crayons. I am holding some of the mentioned stocks and, therefore, my point of view is completely biased. The presented data could be inaccurate or completely incorrect. Do your own research. Actions and their consequences taken on the basis of this post are the sole responsibility of the respective executor. English is not my mother tongue so this post will contain various and several mistakes. My approach could be completely nonsense. Last but not least, my implementation and data extraction (Python, MATLAB) could not have worked as intended. The presented data may not belong to the stated stock symbol.

1. Database

- * FINRA short data
- * CBOE short data
- * NYSE short data
- * Nasdaq short data is not included, because of the low volume (see chart*exchange).

I have downloaded all the available data (csv text files) from 2008 (CBOE) and 2009 (FINRA, NYSE), respectively. All the data (Short Volume and Total Volume) were joined into a single dataset. The Short Exempt Volume will not be used since it's included in Short Volume (see finra website).

Furthermore, I gathered market data (price, outstanding shares, float, short interest etc.) from Yahoo Finance via python and yfinance. We know that these data are inaccurate.

2. Assumption / Method of calculation

First of all, Short Volume is not Short Interest.

From the data (section 1), we know that

>Total Volume T = Short Volume S + Long Volume L .

Let NetShort be a daily "Short Indicator" (in number of traded shares) with the following property

$$>\text{NetShort} := S - L = S - (T - S) = 2S - T.$$

This idea was already published somewhere, also on Reddit. I simply do not have the source ready...

NetShort can be positive or negative on a particular day. The approach is to integrate (accumulate) this quantity NetShort over a long time period.

>Short Indicator = Sum of all NetShort over a specific time period

In the following all presented SHI are integrated from beginning of the available data, i.e., 2008. Therefore, it should be possible to identify a trend or correlation if the market is "short" or "long" on a particular stock.

A long-term point of view of SHI should reveal the trend despite the fact that these data could be manipulated. And we know that Wall Street firms were "fined" for violation of the short reporting rules.

Since we do not know the initial state, i.e., the number of shorts at the beginning, the SHI are shifted by an unknown offset. Therefore, only the changing of the SHI curve (derivative, delta) is meaningful.

3. Results

The following plot shows the SHI (red curve) of GME in comparison with the price, volumes and fails-to-deliver FTD. YF Total = Total Volume from Yahoo Finance. Short&Total; = Short and Total Volume from Section 1. (mm = million)

[GME SHI 2008 - 2022, weekly prices](<https://preview.redd.it/1fyzen5rmob81.png?width=3000&format;=png&auto;=webp&s;=3180296fe0b4ab82179c9ff7277378acdb4c4bf3>)

- * The beginning can be neglected since in 2008 only CBOE data are available.
- * Starting in 2010 the SHI (accumulated net short volume) is rising more or less linearly.
- * In 2017 / 2018 the derivative $d(\text{SHI})/dt$ has changed from linear to exponential or at least faster than linear, i.e., the SHI is increasing significantly faster.
- * The SHI approaches a limit in 2020. The value has increased by over 1100 million (mm) shares from 2010 until 2020. The starting point is unknown and, therefore, a shift of the curve in y-direction is likely. But the change of 1100 mm shares remains unaffected.
- * During the events in January 2021, the SHI dropped by ca. 400 mm. Since then the SHI is rising again and has reached in January 2022 the same level as in January 2021.
- * This drop in January 2021 correlates with the SEC report stating that only a small amount of shorts were covered during this event.
- * There was a GME share dilution in 2021. And the SHI is still continuously increasing since February 2021.
- * The run-ups after January 2021 which seems to occur quarterly does not affect the SHI. The SHI is still increasing.
- * All these observations are indicators that the short positions may not have closed yet.
- * The size of the current float and the price must be taken into consideration while assessing the SHI.

The following plot shows a zoom of GME from 2019 to 2022.

[GME SHI 2019 - 2022, daily prices](<https://preview.redd.it/n2leq8usmob81.png?width=3000&format;=png&auto;=webp&s;=7082be1b862f9dee2fd0fd8737b5feef263c4a63>)

The SHI plot of GME looks very unusual. Unless you assume that the goal was/is to short GME into oblivion... It seems that the short sellers are not able or willing to close their short positions.

Is this behaviour unique for GME? What about other stocks? What are their trends?

[SHI: Popcorn](<https://preview.redd.it/p9o4rp9vmob81.png?width=3000&format;=png&auto;=webp&s;=6d065dc84cb7ee1cae7c3376903e3b2efdbf91d3>)

* The SHI of Popcorn Stock has reach a maximum level in December 2020. The delta of SHI from 2004 to 2020 is ca. 500 mm. Since then the SHI dropped by ca. 3500 mm shares. In particular, the drops occur at the two run-ups. This could be an indicator for (partial?) closing of short positions.

* It must be considered that the float of Popcorn Stock is much higher than GME (513 mm vs. 63 mm). Popcorn has a massive share dilution in 2021. Not mentioning the insider selling.

In the following, you will find other SHI plots for comparison without commentary.

****Be aware that correlation is not the same as causality!****

Further research topics

* Is there a correlation between the SHI and the reported Short Interest?

* Is there a correlation between the SHI and the fails-to-deliver?

* Linking the short volume with the (close) price

* On the other hand, how useful are these data if they are manipulated?

*****"Look behind you, a three-headed monkey!" \$Mic Drop\$ \$has left the island\$****

<https://preview.redd.it/frdgtfymob81.png?width=3000&format;=png&auto;=webp&s;=166e55f688d643ca6a190348ec5e31ad14141339>

<https://preview.redd.it/lblceue0nob81.png?width=3000&format;=png&auto;=webp&s;=741a01468a2a907636d63e35750b63769eec864c>

<https://preview.redd.it/md3avnd2nob81.png?width=3000&format;=png&auto;=webp&s;=abe56aae0b5d96c0290b0f480160bc388d0553f6>

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<https://preview.redd.it/8qt6ugf5nob81.png?width=3000&format;=png&auto;=webp&s;=477ab5094cac624f82136d84060f9f752c715ef4>

<https://preview.redd.it/3x7bma2bnob81.png?width=3000&format;=png&auto;=webp&s;=b4780b21a39568f75c5531c63779dc5cbca72894>

Added: BBY

<https://preview.redd.it/dq0p52wgimc81.png?width=3000&format;=png&auto;=webp&s;=682b2990d9f21b64817c6019cbaea6d1ed85659f>

Added: GME Zoom

<https://preview.redd.it/90wmrw8wgnc81.png?width=2850&format;=png&auto;=webp&s;=de3e34212167ab6131f43a294e497efe0514c5ad>