

EXTREMELY ABNORMAL  
NEGATIVE BETA  
OF GME  
EVIDENCE SHORTS HAVE  
NOT COVERED



BY U/ANIMASOUL



# EXTREMELY ABNORMAL negative beta of GME evidence that shorts have NOT covered - March 16, 2021

DD

**Update 17 March 2021:** Bloomberg publishes a response about beta on Yahoo

Finance <https://finance.yahoo.com/news/reddit-frenzy-stabilizes-meme-stocks-180055935.html> implying the beta never went lower than -0.7. *They are desperate.*

**TLDR** - the effect of short selling on a positive-beta stock will be to give the stock a negative beta. Otherwise, in normal situations, there cannot be a negative beta stock because it is only theoretically possible, not actually possible. What is GME's current beta? Depending on the source:

Financial Times: -1.7413

Yahoo Finance: -2.07

Nasdaq: -2.09

At 16 March 2021.

This is CRAZY. I am currently writing my dissertation for an MSc in Finance and Financial Law. I learned in Corporate Finance that a negative beta stock is like a mythical unicorn, so when I noticed a few weeks ago that GME's beta was -2.01, I interpreted this as some sort of perversion around what is happening with the stock right now but did not understand what it really meant. I have since been investigating this in my own time instead of my actual dissertation topic and this is what I have found - that short selling can create a negative beta - and now GME's beta has fallen even more to as much as -2.09 according to Nasdaq.

## Background theory - IMPORTANT

What is beta? Beta is a number that reflects the correlation between the price movement of a stock and the movement of the overall market. We do not have the data of the "real world market" so the "market" of GME is going to be the S&P500. Basically the "market" is the universe in which we and all stocks exist. That is why a negative beta is normally not possible. It is like saying that a certain species of animal will thrive and prosper the more the health of the Earth as an environment deteriorates. Yeah, it could happen in an abnormal situation, like an atomic bomb and the cockroach population coming out the winner, but it is not something normal as we all depend for our growth on the market/the Earth.

A beta of 0 means that there is no correlation between the market and the stock.

A beta of 1 means that the stock moves exactly the same as the market, e.g. if market is up 10%, the stock is up 10%.

A beta of more than 1 means that the stock amplifies the market's movement by that much, e.g. if market is up 10%, then a +1 beta stock would go up, e.g. 15%.

A beta of -1 is a perfect negative correlation, so the stock moves exactly the opposite of the market, e.g. if market goes down 10%, the stock goes up 10%.

A beta of less than -1 means this negative correlation is amplified, e.g. market goes down 10%, stock goes up 15%.

An easy online source:

'Negative beta: A beta less than 0, which would indicate an inverse relation to the market, is possible but highly unlikely. Some investors argue that gold and gold stocks should have negative betas because they tend to do better when the stock market declines.'

<https://www.investopedia.com/investing/beta-gauging-price-fluctuations/>

### **About GME specifically**

Here is the historical beta of GME from Zacks:

02/28/2021 -2.195

12/31/2020 1.404

09/30/2020 1.084

06/30/2020 1.038

03/31/2020 0.4512

You can see that GME's beta has only been negative since end of Feb 2021. Before that it had a very normal beta of over 1, meaning when the market was doing well, then its business did well too, i.e. people have money to spend on games, etc. Even during most of the lockdown its beta was still quite a bit above 1. But at the end of Feb, it suddenly went all the way down to -2.195. What happened at that time? The massive crash down to \$38. Plotkin himself said that the rapid rise in price was not due to shorts covering right? But have they covered since one way or the other? The beta would indicate no because now the beta is even lower, at -2.09. Since Yahoo confirms Nasdaq, I think the FT is sus and in the best case just doesn't update its data. -1.7413 is still remarkable though.

Here is a quote from an academic source by Fabozzi - the author whom I credit with helping me the most to prepare for my Corporate Finance exam - anything he writes is gold and written very clearly with no academic posturing or arrogance:

'So far the implications of systematic risk have been ignored. The beta of a short position is the negative of the beta of a long position, and is hence normally a negative number. In the capital asset pricing model, the required rate of return for an investment depends on the correlation of the return from the investment with the other securities in the portfolio, a characteristic that can be measured by its beta.'

[http://www.dmf.unisalento.it/~straf/allow\\_listing/fabio/fabio3.pdf](http://www.dmf.unisalento.it/~straf/allow_listing/fabio/fabio3.pdf)

See also this author:

'Although the data used in this research consist of net short positions and the tax regulation in the Netherlands is different from USA regulation, a small negative beta is expected to account for end of the year, tax-motivated short selling.'

[https://essay.utwente.nl/66633/1/Klamer\\_MA\\_MB.pdf](https://essay.utwente.nl/66633/1/Klamer_MA_MB.pdf)

Both authors mention this very casually and by the way because it is so obvious to them. Logically, if the true beta is, say, 1.4 then its beta when shorted must be a negative number. This is very significant for apes who like GME because

they keep telling us that there is no more short interest, here's the data, etc. but they can't manipulate the beta. I don't know how the beta is calculated by these news outlets but I think it must be done automatically by the bots and even if FT were a shill and not simply inaccurate, the beta of -1.7413 is still crazy.

For comparison, this academic says:

'Every time I have found a negative beta in practice, there was either a data error or the sample size was too small for the negative beta to be statistically significant...But now there is an interesting real life case of a negative beta stock: Zoom Video Communications, Inc....A better example of beta changing dramatically (going from around two to negative and then back to around two) within a few months without any change in the business mix of the company would be hard to find. **Negative betas may be a once in a 100-year event [emphasis added].'**

<https://jrvarma.wordpress.com/2020/08/23/negative-beta-stocks-the-case-of-zoom/>

To me, this is all very strong evidence that the shorts have not covered and are desperate. Due to the absence of reporting requirements for short positions and the other myriad and innovative ways that HFs may be shorting GME that we cannot see, no one has hard numbers for the actual short interest in GME, but **the beta cannot lie**. Since HFs have been shorting GME since forever and the beta was still more than 1 even during the pandemic, it must have been safe for them **so long as a large number of investors were not buying up GME and holding**.

**EDIT 22 March 2021:** My follow-up post will be about why the beta only changed in February even though GME has been shorted for much longer than that. In this post I tried to make the concept of beta as simple as possible but in my new post I will have to go into more detail about what beta is and the implications of this for GME and the market.

So long story short

**FREQUENTLY ASKED QUESTIONS** - *I know this is a very long DD but please check the edits if you have any questions. I notice that most of the new questions are variations on the edits.*

**EDIT 1:** To clarify because it is coming up in the comments, a negative beta which is less than -1 is not very unusual and it means that the stock is resistant to a market downturn but doesn't actually go as far as doing the opposite of the market, i.e. -1 or less. But -1 is considered not to exist, although academics never like to say never.

**EDIT 2:** Also in response to comments - a negative beta does not mean that the stock never ever goes down when the market goes up. It is a general trend and is also only backwards looking - it doesn't predict what will happen. If things change the beta will recalculate.

**EDIT 3:** The overall market does not need to crash for GME to go up. GME's true beta is around 1.02. That's why the negative beta strongly indicates short selling. Until the beta returns to normal, GME is probably still being short sold. I am not promising the moon apes, although I hope for it. This is all just maths, we don't know what will actually happen, we can just make our own best decision and then we have to accept the outcome of our decision. But I am personally

**EDIT 4:** If you would like to know the beta of any stock, you can easily google this. Financial news websites like Yahoo will give this to you for free under the price chart. I also found beta figures on Nasdaq.

**EDIT 5:** My future post summarising Fabozzi's research on why, in realistic situations, optimists set the price and not pessimists will offer an explanation of why the previous short selling did not affect the beta and why short selling looks like it has increased sharply as reflected in the very negative beta since apes started diamond handing. I also work and am not only a student so this might take me some time but I think it is super important, I was also floored when I read this and want to share with other apes.

Disclaimer: not financial advice, etc. Please cross-post if you find this useful because my account is not old enough to post in [r/GME](#). Thank you to everyone for the awards and upvotes on my FT post, it warmed this ape's heart. Tendies to all - and not just to the 1%!



