Title: Seeing the trees in the forest
Author: GlowyHoein
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Edit just realized that some of the pictures were wrong (oops).

Disclaimer: Not a financial adviser. I'm just a person with enough autism to go trawl through data, read other people's DD and put together my own theory and thoughts. I am not a data analyst or expert in coding/excel (I had to google how to make graphs and no-where as capable as other DD authors)

This post is looking to cover how we got to where we are now, and understanding the price movement ("cycles") we have in GME, and what we might expect.

TA/DR Previous wrinkle brains have realized that options volume was associated with price action in GME. If we split the options further, expiring put open interest from DOOMP's is more likely the part which made a difference. The time period before the Futures contracts roll date, or the subsequent ETF FTD spike also leads to upwards price movement. More research is still needed to finish the puzzle.

Pre-amble

This data is retrospective and therefore prone to bias, but at least it gives us a hypothesis to look at prospectively going forward. The best theories are the ones that others can independently corroborate and show to be true. By the end of this, other apes should be able to look at this data and come to the same hypothesis.

There has been a lot of data and teasing out the signal from the noise is difficult, it is a bit like trying to find the correct trees in a forest.

Would like to thank and reference u/Bobsmith808 for sharing his data

I will also be referencing u/Leenixus (regarding SLD), u/gherkinit (regarding futures), u/zinko83 (variance swaps), u/criand (DOOMP's and also futures)

Transaction day, settlement day

This has been covered before in my previous DD (https://www.reddit.com/r/DDintoGME/comments/s96seg/understanding_transaction_settlement_days/) but the TL/DR is

T+0 is the day the order is made

T+2 is when the money and equity need to be exchanged by (technically T+2.5 with the 0.5 being the aftermarket and pre-market before the 3rd day)

T+5 (technically 4.5) is when bonafide market making activity needs to be settled by (and it needs to be settled before market open on the 5th day, hence the 0.5)

C+35 35 calendar days from T+0 (technically 34.5 as it must be satisfied before the beginning of the 3th Calendar day)

Bobsmith808 reminded me of something important, is that even though they may close out their FTD's on C+35, that creates a new T+0 which has up to 2 days to settle (or longer if it's bonafide activity)

We will be using the above terminology throughout the rest of this discussion

Current Theory of Price movement from bobsmith808

https://preview.redd.it/riok8jrjp7e81.png?width=944&format;=png&auto;=webp&s;=05cda9a30f7230783a8afb1d3337ca25eeb99bd6

It is quite clear that price improvement is associated with T+2 C+35 from dates with large volume. (N.B. these black lines refer to TOTAL options calls + puts, ITM and OTM)

Also please note that the black line is missing for Jan 2021

https://preview.redd.it/mlzfzi8kp7e81.png?width=944&format;=png&auto;=webp&s;=812bb4f42a799267d979e7ba24c038fb62c2b10e

On discussion with bobsmith808 it turns out that the data was just not entered

This finding of options volume causing price movement generated a significant amount of debate again about options (in particular calls), whether it was beneficial or if it was FUD, there was a significant amount of conflict on the subs regarding this.

However, it did not make sense to me to only look at total options volume given that there are anomalies we have identified called DOOMP’s (Deep out of the money puts).

Hence I started this analysis

Split Call/Put Analysis

[Total Calls ITM+OTM](https://preview.redd.it/asgqfkqtp7e81.png?width=944&format;=png&auto;=webp&s;=b121ce954584981780b1397a153e4802495f4a99)

This is a graph of TOTAL call options open interest over time. The volume of calls is relatively consistent with respect to the price movement of GME.

It would also only make sense for call options to drive upward price movement in the background of an ascending price movement (

[Total Puts ITM+OTM](https://preview.redd.it/zcpdiuvup7e81.png?width=944&format;=png&auto;=webp&s;=57b22901f14af41127406ef17382c0ed85be89e3)

Here is a graph of TOTAL put Open interest over time. As you can clearly see there is a much larger range of open interest with puts, with significant amounts in the first half of the year and much less until July.

[Total Put OI overlaid onto Price](https://preview.redd.it/gciwhwhxp7e81.png?width=946&format;=png&auto;=webp&s;=e7c4f63145d293083df9d03393649a0e2fe22fa6)

Here is a graph of put OI overlaid onto Price (closing) movement. The period of highest volatility has always been the first half of the year when there was a lot of put options (note that not all these puts will have been DOOMP’s or from hedge funds).

I do not know how to do the date shifting to account for the T+2 C+35 on excel quickly but I can take you through on my trading app the shift.

[Example of Jan 15th T+2C+35](https://preview.redd.it/ta9eycl2q7e81.png?width=944&format;=png&auto;=webp&s;=4d128205c0578f419b86089b43a5d91328afb011)

Jan 15th, T+2 C+35 (MLK day shifts the T by 1 further than usual), with our resultant green bar on time C+35 and significant volume activity over the next 2 days (which is T+2 from the C+35).

This can be repeated with most of the other high put volume quarterly days (march 19th, April 15th) (notable anomalies being Jan 29th, Feb 5th, Feb 12th Feb 19th put OI)

[March 19th T+2 C+35](https://preview.redd.it/8ruivltvq7e81.png?width=944&format;=png&auto;=webp&s;=a978026073a45be06553445e890625412bf6da24)

July 16th is insane

[July 16th T+2 C+35](https://preview.redd.it/yzrz72eyq7e81.png?width=944&format;=png&auto;=webp&s;=738c9c1a4def1fcdfb5c520d3ed16ab733f44292)

To hammer home a point, here is a painstakingly difficult graph I made of Date shifted (T+2 C+35) OTM Puts & ITM Calls from monthly/quarterly overlaid onto price. This is not a graph of TOTAL Puts and Calls.

[OTM Puts \(Red\) ITM Calls \(Green\)](https://preview.redd.it/jmo0bevzq7e81.png?width=944&format;=png&auto;=webp&s;=4f11f77900199dee498daa2f86286d160c50306f)

You can see that a lot of upward price movement (qualitatively speaking) is related to puts. If you’re having trouble seeing the small green bars for calls, it is because they are tiny compared to the put OI

Significant price upward price action is much more likely related to expiration of put options rather than call options. (Furthermore, the majority of retail does not actually exercise their calls for shares)

Buying calls is great for riding the wave and making some money, but it is equivalent to a drop in the ocean.

At this point I must add an interjection, I will be honest, I did buy some Jan 28, as well as Feb 18 and March 18 after watching Gherkinit’s videos on Youtube, as well from the hype of his prediction of price action.

[Gherkinit predicted price action](https://preview.redd.it/q4mff935r7e81.png?width=944&format;=png&auto;=webp&s;=84e6e664509f328e8cbfd82f639b86b33b6140f3)

However it was because some of his theory did not add up that I started diving deep into this topic to create this DD. Luckily I also bought a whole lot of shares which are very safe and have been averaging down.

If you have been paying attention up to this point, then you may have noticed some glaring anomalies

[anomalies](https://preview.redd.it/32ofy9axcce81.png?width=944&format;=png&auto;=webp&s;=eae4f0bcf6f4fdb6c6ff3926d7d01fa557bcbfa8)

1. There are no puts or calls to account for our price action (the sneeze) in January from December 2020 leaps
2. There was significant increasing price action following the January 15th T+2 C+35 and April 16th T+2 C+35.
3. There is a spike in price on Nov 3rd without corresponding put activity
4. The flash crash and rise of March 23rd and 24th

I will now breakdown the other factors which may partially account for GME price movement, points 1, 2, 3. But I still do not have a good explanation yet for March 23rd and 24th.

1. **Before the sneeze & RC's buy in**

GME is part of an ETF basket which was being shorted due to the high likelihood that retail stores were on the decline due to COVID-19 pandemic. This is likely related to the bankruptcy jackpot mentioned in other author's DD.

This likely would have worked had it not been for RC who made 3 share buy ins.

· 5.8Million shares in Late August

· 1.7Million shares in September

· 2.5 Million shares in Mid December

https://preview.redd.it/k6fdo4i7r7e81.png?width=944&format;=png&auto;=webp&s;=ed20217da0bf23e280e8c3124a7b251049501564

His buy in, in combination with retail FOMO caused the stock to run up before the sneeze. Once more people heard about the increasing price activity and seeing the insane Short Interest of >100%, more and more people started buying in and the volumes were insane (multiple times the float) in January. This most likely caused significant liquidity issues for brokers and led to the price sky rocketing out of control as brokers were unable to internalize orders themselves.

There may be an element of SLD (as per leenixus but I am not convinced that every green bar is related to SLD as the date shifting of T+2 due to public holidays works better with put expiration than SLD Tuesdays, reference Feb 24th 2021 Wednesday), as well as gamma hedging for options for January's options activity as a sub of degenerates YOLO'd in. (The SEC report p28-29 would suggest that the price action was not due to a gamma or short squeeze if this can be trusted).

However it is clear that December LEAP options activity did not account for January's price action.

2. **Futures Roll/Expiration**

Sustained price increase following an FTD date only happened twice for GME, in Feb March & May June. This part relates to Gherkinit's theory and I do think this part has merit (I am not entirely convinced about rolls and fail cycles yet, certainly the 3 part series DD he did with a predicted price action has not come to fruition).

Futures are like options but are a fixed contract where rather than having the option of exercising the contract, the contract must take place unless rolled forward.

The dates for futures can be found on https://www.cmegroup.com/trading/equity-index/rolldates.html

I am not sure how to find data on trades with futures, nor has anyone covered futures in depth, however my suspicion is that an institution which is short GME is using futures to hedge their position/acquire shares.

The Roll date is the last day that can allow futures to be rolled, after the roll date the contract will be exercised and the goods exchanged. However, until the roll date ends, one does not know if the counterparty will be rolling or the exchange will happen, and hedging will be needed should the contract expire.

Hence in the days leading up to the roll date, an institution (not necessarily a short hedge fund, but may be someone who was on the poor end of a trade) is acquiring shares leading to positive price movement.

3. **ETF FTD**

November 3rd was an unusual day as it was an unexpected green day. However it did not take long for wrinkle brains to find out that on September 21st there was a spike in ETF FTD's.

https://preview.redd.it/9lhbgy79r7e81.png?width=944&format;=png&auto;=webp&s;=119edb5fe77c122c5db168801a045132b3e0e1cc

November 3rd could potentially be considered as:

· 21st September was an FTD date that needed to be closed by Hedgefund A

· Hedge fund A finds/uses bona fide privileges T+4 (either redeem shares from an ETF or making a bona fide transaction)

· Hedgefund A then trading with Party B (who is deemed to own the assets) and therefore has C+35 days to settle the trade

· Party B on C+35 makes a transaction, and now has T+2 (1st/2nd/3rd November the days of increased volume) to acquire the shares and settle the balance

[September 21st and subsequent spike in price](https://preview.redd.it/nzby7q5ar7e81.png?width=944&format;=png&auto;=webp&s;=252e7c1b15bb636839c8625bdfa7281e38d2cea1)

I would wonder if the ETF FTD spike is related to someone using an ETF to redeem for GME shares to satisfy a futures contract, rather than acquiring shares to hedge contract (hence there is no upward price movement before the futures roll date). This would also explain why when there is upward price movement there is no significant ETF FTD afterwards

Alternatively, we could just be one part of an equity basket and being carried up as part of the basket.

Future prospectus/theories

You may have seen wtfpwnbbq's (you go data girl!) post regarding the 25th of January as being a potential day, unfortunately it fell flat but that was just T+0 for T+2 C+35 from December 17th Leaps. We definitely saw some movement today on 26th Jan around lunch time. However the stock moved back down and closed only slightly above open (likely related to variance swaps with the close to close variance theory by zinko). 27th Jan would be the T+2 to settle for the T+0 of 25th Jan, so this might be exciting. I would temper the excitement with the fact that there were not many puts in December, less than the months in the first half of the year.

I believe Jan 2021 was unique with the rapidly increasing price due to RC's buy in leading to MM's being side swiped and scrambling to hedge/cover. With variance swaps likely happening I think the price is being suppressed and we would need a significant volume to see price rise.

We might see this significant volume on 1st to 3rd February. This would be T+4 C+35 from the 21st of December, which you can see has a significant ETF FTD spike.

https://preview.redd.it/27exj3hdr7e81.png?width=944&format;=png&auto;=webp&s;=63c91895a8bc8358cd6952348f6dbd35fa36c957

If you refer back to my first put graph, we had a large number of total puts on Jan 21st which just expired, (some of which are DOOMP's). Fitting into the previous data point, we would expect increased volume on March 1st

Please note that the amount of price action that happens relative to the amount of FTD's and OTM put open interest is purely qualitative, I have no idea how high the stock will go/the amount of volume we can expect for a given amount of FTD/put OI. However it definitely appears that we need to reach a critical mass of FTD/OTM Put OI to "break through" some kind of internalization.

The next month will be quite exciting to see if the theories add up, or whether we will be given more observational data to build up the theory further.

Further study/research

I think if we have any wrinkle brains among us, further efforts should be directed at looking at:

1. Futures equity index data with volume and who is making the trades
2. The amount of volume we need to make things happen
3. The anomaly of March 23rd and 24th
4. How we are being shorted down in between cycles with low volume
5. How puts expiring can cause the price rise & How puts can be used to hide/cover short interest
6. Why did the high put volume in Jan 29th to Feb 19th not cause any significant price action at T+2 C+35 (unless it exacerbated the price action due to futures or the March 23rd/24th)

Conclusion

TA/DR Previous wrinkle brains have realized that options volume was associated with price action in GME. If we split the options further, expiring put open interest from DOOMP's is more likely the part which made a difference. The time period before the Futures contracts roll date, or the subsequent ETF FTD spike also leads to upwards price movement. More research is still needed to finish the puzzle.