

Title: FTR/FTD and the Algorithm: The Counterfeit Share System

Author: semicollider

Created 2022-01-10 17:21:45 UTC

Permalink: /r/GME/comments/s0p8fe/frftd_and_the_algorithm_the_counterfeit_share/

Url: https://www.reddit.com/r/GME/comments/s0p8fe/frftd_and_the_algorithm_the_counterfeit_share/

****FTR/FTD and the Algorithm: The Counterfeit Share System****

Will not all of these take up a taunt-song against him,
Even mockery and insinuations against him
And say, 'Woe to him who increases what is not his—
For how long—
And makes himself rich with loans?'
Will not your creditors rise up suddenly,
And those who collect from you awaken?
Indeed, you will become plunder for them.
Because you have looted many nations,
All the remainder of the peoples will loot you—
Because of human bloodshed and violence done to the land,
To the town and all its inhabitants. Habakkuk 2:6-20

****TL;DR:**** The FTR/FTD (Failure to Receive/Failure to Deliver) system and the algorithm that controls them makes up the backbone of the counterfeit share system. It produces a way for naked shorts to have a changing series of *free indefinite share loans* that are often involuntary, but still cover any gaps in the obligations of themselves and retail brokers that require real shares. FTRs and FTDs are not opened and closed at the same time. So naked shorts can convert to free borrowed shorts as shares are traded, and there are no hard time limits for how long this fee free shorting may last. When a naked short is forced to buy in ****ALL the oldest FTDs (Failures to Deliver) of the same date are likewise forced to buy in.**** The algorithm makes this unlikely to happen, and helps to hide the effects of excessive naked shorting and DRS until a tipping point is reached, leading to cascade failure (something that would look like the MOASS). As FTRs appear mostly the same as normal long positions, except for not having voting rights, this has some interesting implications that may confirm parts of our thesis. FTRs are roughly equal to shares held - shares outstanding, but who has an FTR and who has real stock changes as shares are traded, with any new long position or position that hasn't been verified otherwise a possible FTR.

This is a companion piece to my earlier post **All Shorts Must Close** that goes in to a little more detail on the system. Another user (u/TwoStonksPlease) is working on the voting rights issue and published some of their findings here:
https://www.reddit.com/r/GME/comments/s0fqyy/computershare_is_the_only_place_you_have_company/

I'm going to try to be as direct as possible with this to not waste your time, but I'm going to go over some terms you might be very familiar with. I think it's important because there's some things that could be reasonably assumed that are not in fact the case. A lot of these terms could be explained for pages, and still not be much closer to a factual description, but simplification introduces a lot of opportunity for misunderstandings. It's possible my understanding is incorrect, so I've included links to sources I'm working from. I'm hoping to give people an accurate picture, and introduce some interesting implications to be verified from here. A few assumptions will be made to simplify:

1. All FTDs and FTRs will be for GME unless otherwise mentioned.
2. All FTDs will be from naked short selling.

****DTCC:**** The Depository Trust and Clearing Corporation

****DTC:**** DTCC Subsidiary, The Depository Trust Company

****NSCC:**** DTCC Subsidiary, National Securities Clearing Corporation

****FTD (Failure to Deliver)****

When a naked short seller fails to deliver the security they've sold to the NSCC, an FTD position is created in their account. The DTCC takes collateral from their account, on margin if necessary, and marks it to market so the cash amount changes with the price of the security on the market. When borrowing is hard or expensive, this can be an attractive option for shorts. An FTR is created at the same time, but not only is it not necessarily the buyer who receives the FTR, but the computer at the DTCC doesn't treat which FTR was created with which FTD as important (they aren't "married" in the system, in the sense that they aren't opened and closed at one time).

Information that is stored about the FTD and considered the most important is the date of failed settlement (the age), the issuer of the security, and the closing price. We'll come back to how they are settled, and what happens, but importantly they typically resolve by oldest age first, and can be settled by a participant buying in or converted in to a loan through the stock borrow program facilitated by the DTCC.

There is no set date by which they must be closed, and the firms involved are typically lenient with one another. So FTDs that took place a long time ago could still very well be active in the system. Buy ins are rare, because even when a buy in order is submitted it's treated like a high priority order for real stock by the algorithm that distributes FTRs (IOUs) and real stock, and decides who gets which in a semi random process. If an FTR becomes a real long position through the algorithm without a buy in being executed the FTD it was created with, and the FTR itself remain open in the system. The FTD stays in the short sellers account and the FTR is transferred to a lower priority order. So while an FTD results from a seller not delivering stock, a buyer later receiving real stock does not necessarily resolve the FTD or the seller's delivery obligation. And the buyer who purchased their stock from the naked short seller who got an FTD does not necessarily receive the FTR.

****FTR (Failure to Receive)****

A failure to receive is an IOU the purchaser of a stock receives when they involuntarily fail to receive a security. Most buyers are unaware they have one, because to them it functions like any other long equity position, but participants with the DTCC are aware when a position is an FTR. The two primary differences between an FTR (IOU) and a normal long position are a lack of voting rights, and the inability to be lent out like other shares. Who receives an FTR is not determined by who the security is purchased from, it's determined pseudorandomly by an algorithm when the NSCC distributes stock to holders of long positions. The algorithm decides who receives stock, and who gets an IOU, with new holders of long positions receiving lower priority by the algorithm to receive real stock. FTRs can be resolved by the holder of an FTD buying in, and also by the DTCC facilitating a loan through a participant enrolled in the Stock Borrow Program. In that case, the FTR is resolved, and an FTD becomes an equity loan from the Stock Borrow Program. A holder of an FTR who submits a buy in request receives a high priority in the algorithm that distributes stock, and if they receive stock by algorithm before the buy in is executed the FTR and FTD remain open, with the FTR transferring to a buyer, usually with lower priority in the algorithm.

****Stock Borrow Program****

The Stock Borrow Program is a mechanism where participants enroll to offer the extra stock in their DTCC accounts for borrowing by the NSCC for satisfying deliveries that wouldn't normally be satisfied by normal methods. Of total FTRs approximately 20% are resolved in this way, with the other 80% typically existing in perpetuity to be traded among buyers of stock as shares are traded. When the Stock Borrow Program has stock to loan they credit the cash value of the collateral they took from the holder of an FTD to the participant who provided the stock, and resolve the FTD in to a free share loan. The Stock Borrow Program is attractive to those with stock to loan because they can invest the collateral they receive.

****Buying In****

Anyone who holds an FTR position can submit a request for a buy in. For three days the order stands in the system, with a high priority of being filled by algorithm. If the FTR holder receives stock in this way their FTR merely transfers to someone else via the algorithm. On the morning of the third day, if the buy in was

not filled by algorithm, the holders of the oldest dated short positions receive a notice to buy in. Even if there are several members with long positions the same date. If the buy in remains unfilled by 3:00 PM on the third trading day since the request was submitted the DTCC buys in themselves and takes cash or margin from the holders of the oldest short positions. This rarely happens due to the nature of the algorithm.

****Conclusions****

It's complex, because the NSCC algorithm has some randomization to it. It seems like every day when stocks are transferred, everyone sends in their stock to the NSCC to be transferred, they collect all the stock, money and orders, and then they run it through this algorithm to determine who is getting stock and who gets an FTR.

There's a list of priority groups and a random number generator, but participants can place standing or override orders for real stock by placing a special order that almost guarantees they get real stock ASAP, unless there's too many buy in orders that receive top priority with T+2 buy ins highest priority of all, then T+1 on down to overrides, then normal orders. Then at the end of the day the Fed's wire transfer system nets all the cash. Only if there are no shares undelivered to the NSCC does no one get FTRs, otherwise almost anyone could get one but the chances follow this system.

My research suggests about 1.5%-5% transactions fail in a trading day on a normal security. Of those who receive FTRs about 20% are able to get an indefinitely long loan from the Stock Borrow Program, that every day those enrolled submit a list of stock they are willing to borrow for this purpose that the NSCC uses to cover fails and they earn interest on the collateral value, but the loan is otherwise free, and the remaining 80% of FTRs basically last forever, until there's a buy in or loan, trading among participants as stocks are traded.

This presents a number of challenges if you're trying to force a buy in. In frequently traded, easy to borrow, stocks it's almost impossible, because once the broker submits an override or buy in order they are >95% likely to get real stock in the trade algorithm before an FTD buy in would need to take place, and someone else would just get their FTR. However, in thinly traded, heavily naked shorted stocks that are difficult or impossible to borrow these FTRs could build up, but the brokers could still paper over their deficiencies by letting the FTRs aggregate in clients who weren't pressuring them for real stock, yet would still be able to get one if they had to, for some reason, by assuming high priority in the algorithm as long as some real shares are still traded.

One other note about FTRs, while in many ways they are indistinguishable from a normal long position, they don't have voting rights. This makes 100% turnout highly anomalous, as every real stock would have to be voted. I believe clients of brokers should have a right to know if their position is FTR. On the other hand with a heavily shorted stock, where holders don't sell, once you can be sure you have actual stock if you just don't sell and enough do that and request buy ins once things tip there could be a cascade failure where all of a sudden all the buy ins start to go through and trigger multiple FTD buy ins for every one executed, worsening the problem for shorts and increasing the likelihood of new buy ins being executed. In other words, a massive short squeeze.

[1] Naked Short Sales and Fails to Deliver: An Overview of Clearing and Settlement Procedures for Stock Trades in the US: https://www.researchgate.net/publication/228260887_Naked_Short_Sales_and_Fails_to_Deliver_An_Overview_of_Clearing_and_Settlement_Procedures_for_Stock_Trades_in_the_US

[2] Failure is an Option: Impediments to Short Selling and Options Prices, SEC: <https://www.sec.gov/comments/4-520/4520-6.pdf>