

Sahil Chawla

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### Palantir Mania Case Study (PLTR) - \$27

I want to understand some of the recent mania which has gripped the market, especially with those companies that have a futuristic slant in their business descriptions. I've chosen Palantir (PLTR) as an example in isolation as it represents the average of its cohort in many senses. Critics call it a government contractor trading on price-to-sales while bulls view it as any other bastion of tech. Most interesting about this debate is that the company wasn't always under the wing of vocal futurists. After its IPO, the stock began to lament at about \$10, or ~10x fwd P/S - not a terrible deal given its 50% revenue growth. Many other IPOs from that time were up over 50%. Soon enough it caught up. In November alone it shot up to \$30 at peak, and is currently stationed above \$27.

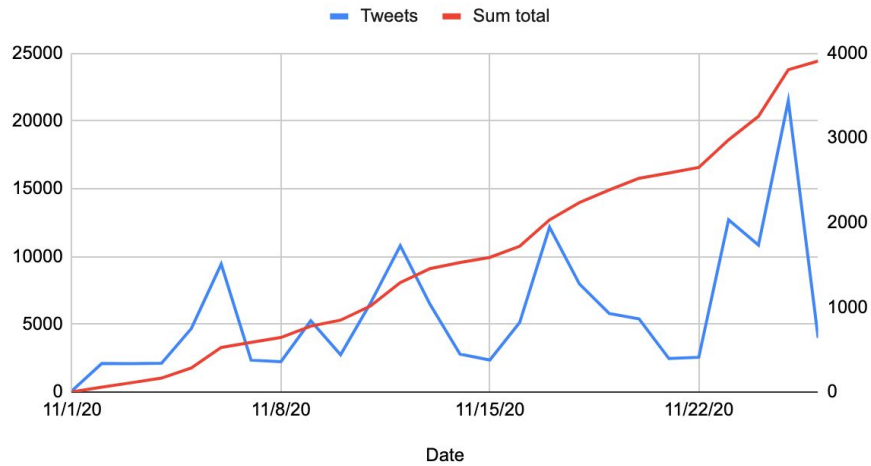
There are lots of explanations thrown out about why this is the case - from simple momentum to retail naivete. What fascinates me is that no one really knows what's going on here, or in the market at large. This, I argue, is a result of market reflexivity. The market acts to represent consensus expectations. As prices rise, so do expectations, increasing prices even more up until the elevator is waiting.

To gauge expectations, I have gathered every tweet mentioning Palantir's ticker symbol in the month of November. Using network analysis, I aim to understand what role public expectations play in fueling bubble-like conditions in stocks.

Tools used include Kibana, Excel Data Analysis, twint, and Gephi.

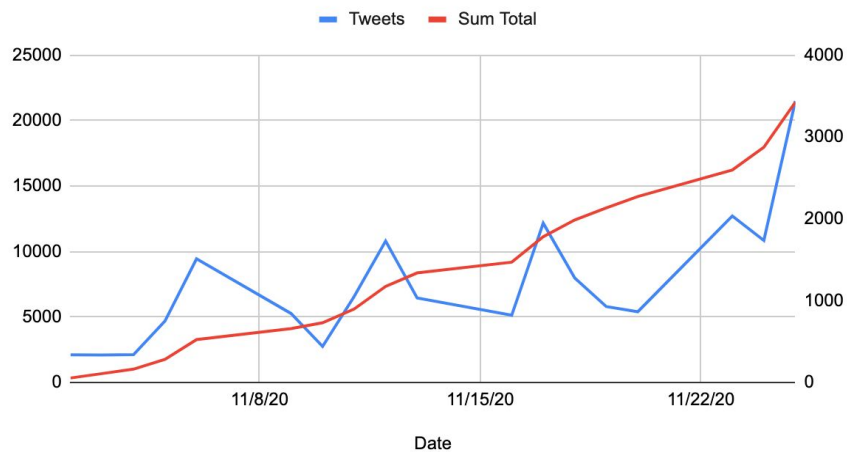
## Tweet Volume

Tweet Volume



Because the market is only open on weekdays we will emulate that in tweet volume.

Tweet Volume - Weekdays

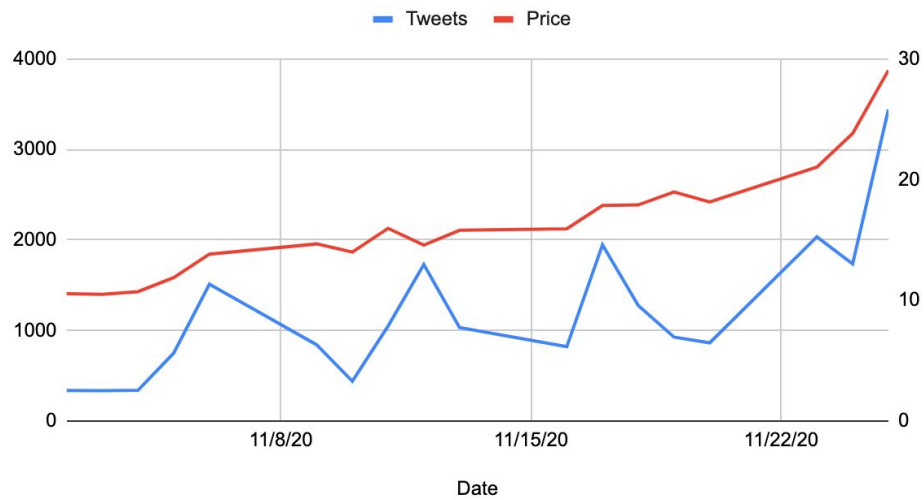


Now we see it steadily climbing into November as it captured the attention of more and more people.

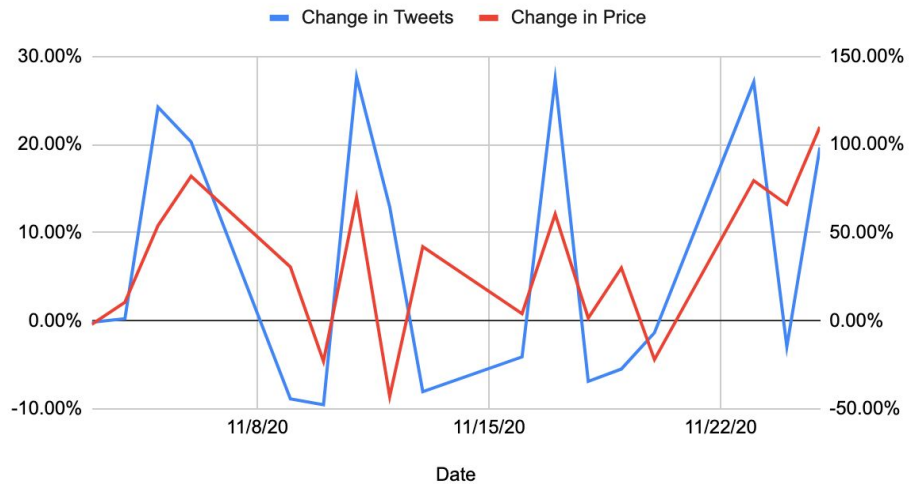
The largest spikes never occurred on either Mondays or Tuesdays.

## Price

### Tweets and Price

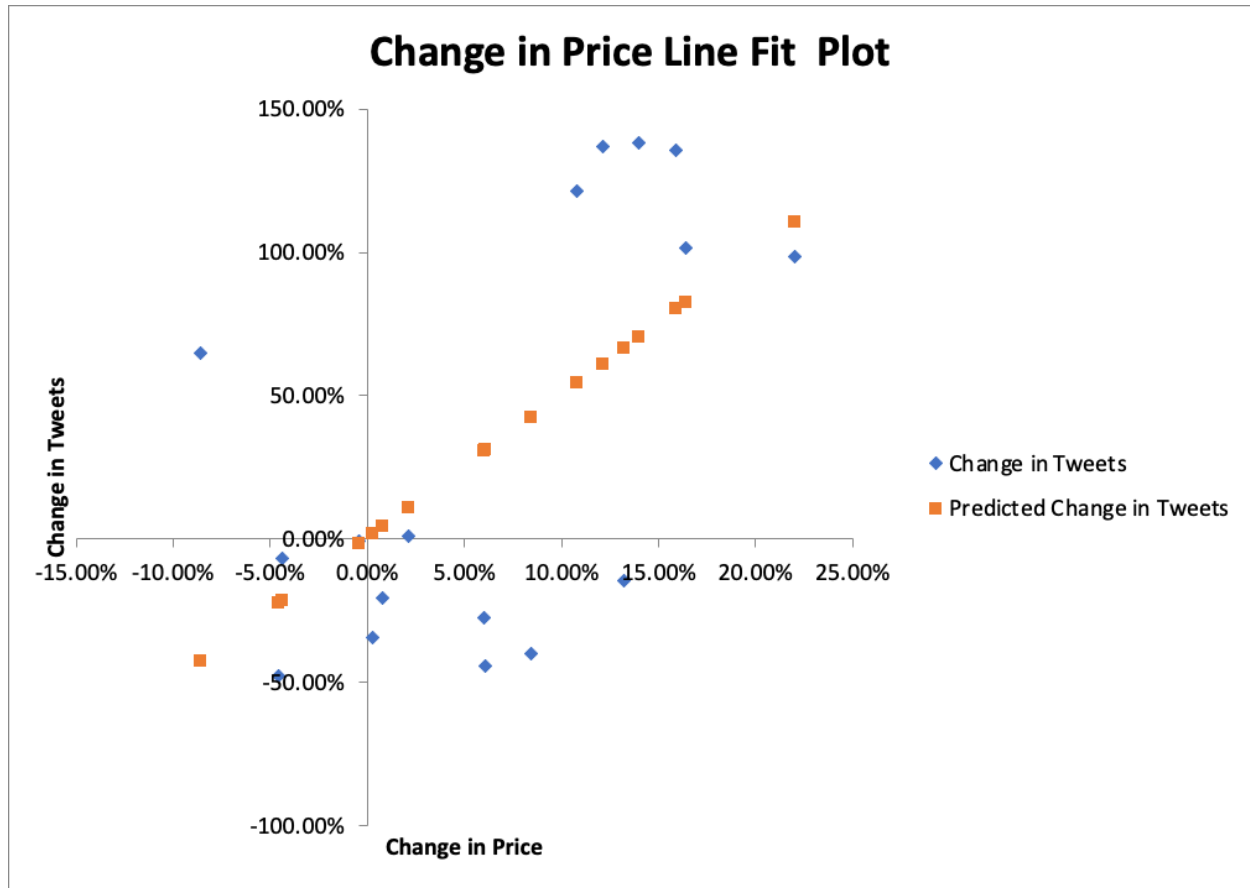


### Change in Tweets and Change in Price



Here we see the interaction between price and tweet volume. It appears that they move in a similar fashion but, using this data, it would be impossible to discern causation.

## Correlation



Unfortunately pure volume of tweets does not have any prediction power regarding market price. A more sophisticated analysis may restrict the subject to market movers, include more websites like reddit, add sentiment, take into account purchase volumes, have a timescale at the minute level (or lesser), and tease out larger market moves (beta).

## Tweet Interaction



Likes and replies show up in volume well before retweets. I use likes as bookmarks. This may demonstrate people generating interest early by saving tweets and engaging with the ideas.

Likes, RTs, and replies



## Central Users

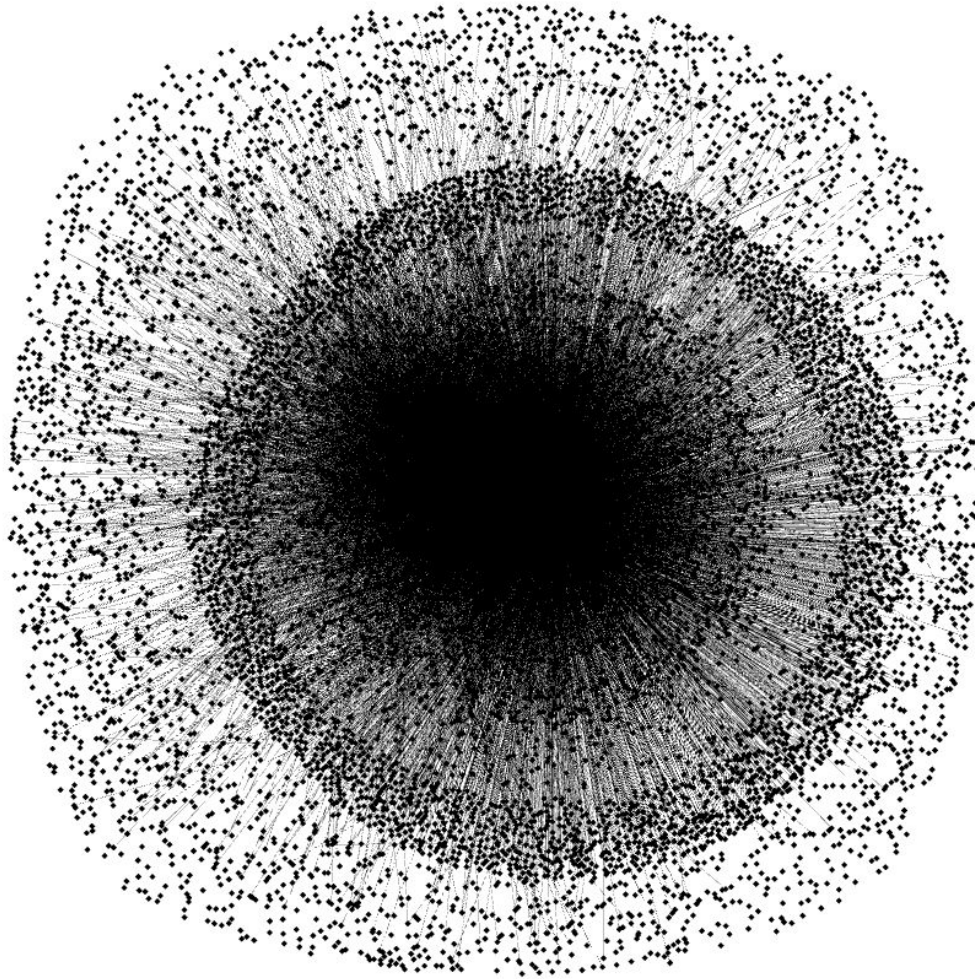


## Users with the most liked tweets - Count

When we analyze how these likes are distributed, it's clearly to a small subset of users who command an interested following that may put their own money on the line as a result of mentioned stocks. Below are the most liked users and their followings.

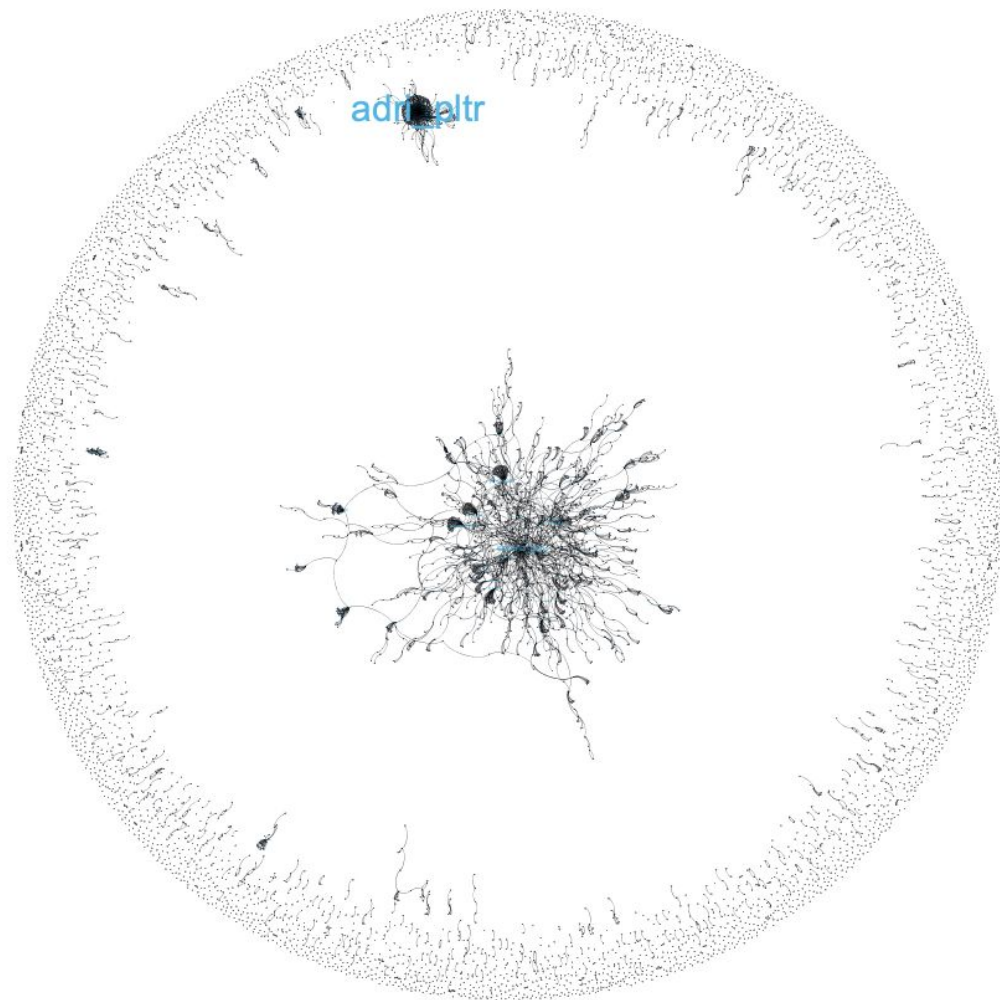
<u>User</u>	<u>Followers (000s)</u>
cperruna	51.1
saxena_puru	113.2
traderstewie	231.1
hedgemind	42.4
soumyazen	6

## The Full Network



Twitter has a feature akin to hashtags called cashtags which work the same way - just for stocks. Above we see the entire universe by users in the discussion and of related companies. Essentially nodes closest to the center are either users who tweet about Palantir a lot or nodes representing frequently mentioned companies in the same PLTR tweets. Companies like ZAL - a european ecommerce platform - who were mentioned twice find themselves on the outskirts. PLTR was mentioned 17,000 times as a cashtag and would be the center. @stockmktnews tweeted about it 78 times so it would be close to PLTR. NIO was mentioned 2343 times - the closest stock because it was mentioned the most.

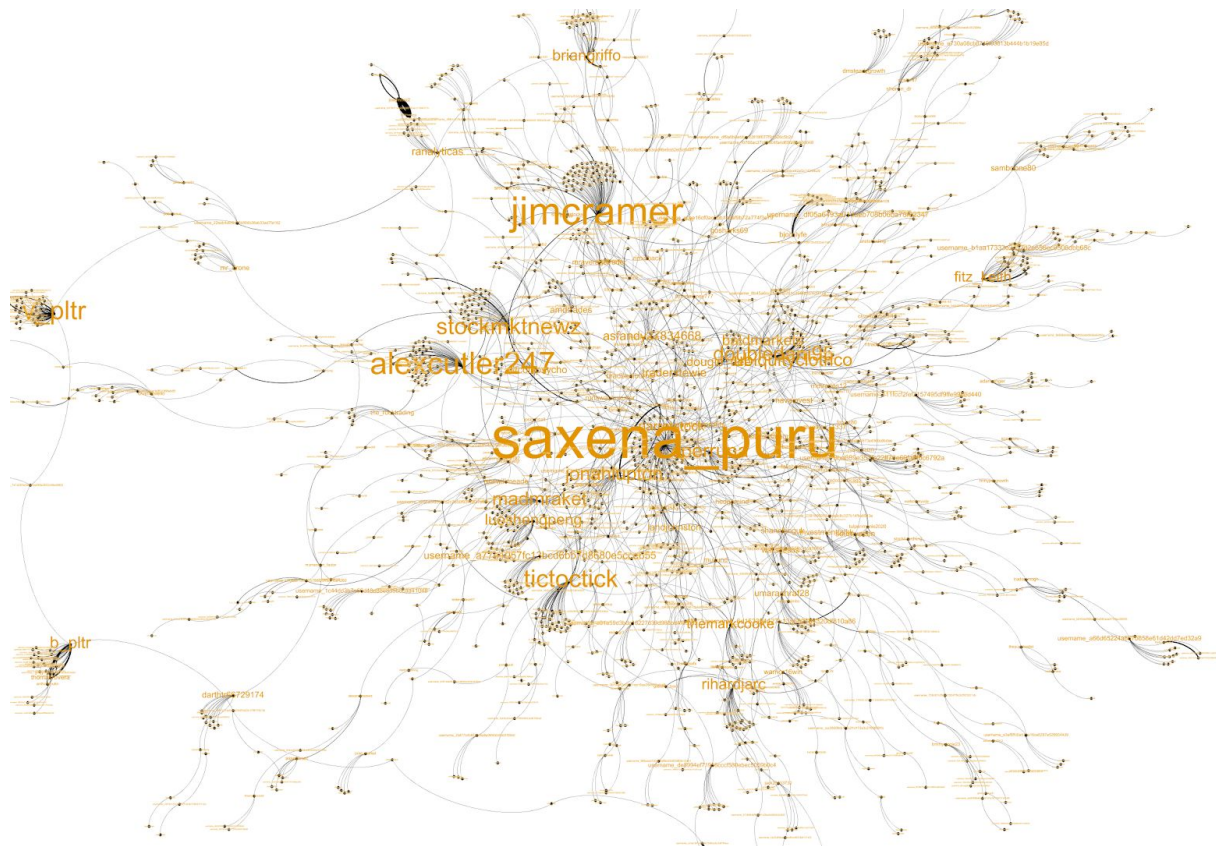
## Reply Networks



The network can be filtered to just replies in order to get a sense of the discussion. Remember that every tweet mentions “PLTR”. Those unconnected to the central node aren’t discussing PLTR with many others - either using the letters to mean something else - like `adri_pltr`, a French soccer fan - or are likely bots.



## Power Users



This is the center of the above image - the most interconnected section. By weighting the nodes of users on interactions to their tweets we see power users again who spur discussion in replies. Puru Saxena shows again, a growth investor who frequently publishes his new positions and rationale to his 113,200 followers. Jim Cramer, the iconic host of Mad Money also spurred significant discussion. By the time Cramer is in the mix it is clear that the stock has amassed significant retail interest. The outstanding question is how do we predict Jim Cramer's next tweet?

Note that this isn't regarding one tweet but the sum total over the month. Puru could tweet about PLTR 5 times, each generating 10 replies and this would count it as 1 node weighted at 50.

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## **Conclusion**

Twitter has crept into a position of relevance for retail traders who use the platform to interact with like-minded individuals who share the same goals and interests in the stock market. Because it has become influential in the minds of traders, it has the power to shape expectations, reflexively driving manias.

Prior to November Palantir only gained 5% before, in the span of the month, rocketing upwards by almost 200%. Using twint to scrape tweets over this timeframe, I was able to amass some insights into how the mania manifested. The relevant conclusions were that there is a small group of power users whose tweets are far more influential than average. Second, retail traders anchor the expected or actual success of one stock in order to drive price action in other holdings.

This work was meant more as a survey of some of the phenomena that happen under the surface of drastic price movements. Further research should take heed to those two conclusions in order to attempt to make first contact with causality that can be used to act on these phenomena and incorporate data from reddit, Robintrack, Google trends, and any other retail-emulating sources.