1  FTX in May

May has been a busy month for FTX. We’ve rolled out an assortment of products, upgrades, and new feature requests. We continue to work on feedback provided by the community and are constantly looking for innovative new ways to serve our customer base.

**Mobile App**  We’ve officially launched our FTX Pro app for both iOS and Android. Find it on app stores worldwide. Improvements include speed, precision, usability and enhanced aesthetics.

**FTX US**  A new, regulated US exchange with ACH transfers, a powerful suite of tools, and industry leading margin trading. Brought to you by the color red.

**FTX Anniversary**  May makes our 1 year anniversary at FTX. To celebrate Sam has released a series of posts commemorating different aspects of the journey to this point. [Article 1], [Article 2], [Article 3]

**Hashrate futures**  These contracts are derived from Bitcoin’s future mining difficulty; since mining difficulty is inseparable from hashrate, trading these futures is a bet that Bitcoin’s hashrate will decrease or grow over the contract’s lifespan. FTX’s Hashrate futures expire to the average BTC mining difficulty over the contract’s life span. These contracts being quarterly mean that they represent the mining difficulty average from the start of the quarter to the end of the quarter divided by 1 trillion.

**BRL and BRZ**  We now accept fast Brazilian Real (fiat) deposits/withdrawals at near 0 fees, and support the BRZ stablecoin! Markets include BRL perpetual futures, BRL quarterly futures, BRL/USD, BRL/USDT and BTC/BRL.
2 Halving Lookback

This section is written by CryptoQuant: https://cq.live

2.1 Miner Position Index (MPI)

MPI (Miners’ position index) is the Z-score of the total USD miner outflow divided by MA 365 total USD miner outflow. MPI helps investors understand miners’ behavior and build related strategies. It highlights periods, where the value of bitcoin’s outflow by miners on a daily basis has historically been extremely high or low. MPI values above 2 indicate that most of the miners are selling bitcoin.

Lately, as the MPI value dropped below 0, miners are not enthusiastic about selling their BTC. If you look into the last 3 months’ data of the MPI, you can tell whether it’s a local bottom or local top.

As shown in the chart below, the MPI was below 0. It strongly suggests the majority of miners are not selling BTC.

Figure 1: Source on cq.live

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2.2 All Exchanges Inflows

If you look at All Exchange Inflows, you can tell there was a dramatic increase in Bitcoin inflows when the price was around 6K and 10K. For now, All Exchanges Inflows are still low, which means there’s no sign of Bitcoins held in personal wallets being sold.

These two indicators show that fewer whales and miners are moving Bitcoin from personal wallets to exchanges to sell them, which means that there is a high probability that Bitcoin will rise in the medium to long term. Even if the price drops in the short term, it will not cause a serious decline unless a large amount of bitcoin flows into the exchanges. However, what’s most feared is that the price would dramatically drop if a large amount of bitcoin flows into the exchange just like the March 12th crisis.

In conclusion, we can maintain an upward view by keeping an eye on whether the MPI is below zero and All Exchanges Inflows are rising or not. We were able to predict the prices in the past halving as well through our MPI data.
Let’s see how MPI was able to predict prices in the past Halvings.

In the second halving, the MPI value was lower than 0 as it is now. Afterward, as the price increased, you can see that the MPI rises to 2 or more, and the miners proceed to sell their Bitcoin. When this occurred, you can observe a price drop. This means that the miners did not sell at the time of the halving, but raised the price and monetized it.

Figure 3: Source on cq.live
In the first halving, the MPI value was lower than 0 as it is now. Even in the first halving, the miners did not sell at the time of the halving, but raised the price and cashed out on April 9, 2013.

3 Liquidations in Crypto and why they matter

Let’s create a mix drink called the Liquidation Special. The first ingredient is the cryptocurrency market, a spicy volatile element that seems to change its shape and texture daily with massive spikes and deep burrows. Next, let’s throw in an ACT (average crypto trader) moon shining from the eyes, deep-rooted hopes of lavish gains with dashes of vermouth, and poor risk management. Last but most definitely not least, a pour of some Binance 125x leverage. The recipe is complete; the wallets are empty.

So why do liquidations matter? Just as a few drinks don’t hurt us too bad, but too many do, a few liquidations don’t matter, but too many Liquidation Specials and the market begins to get drunk. For instance: an account that bought a hundred million dollars of Bitcoin on 10x leverage and then watched the markets go down 5%. When that account is in danger of going bankrupt, all the assets need to be sold off before it goes under. The closer that account is to bankruptcy at the beginning of this process, the more desperately it needs to sell off its assets. In crypto, often deep liquidations don’t even start until the account is only 1% from going under, which means that all of its assets need to be sold off almost immediately. This can have a huge impact, in fact enough that it often drives the price of Bitcoin down sufficiently that even more accounts are in danger of going bankrupt and need to get liquidated. This can cause a chain reaction where each series of liquidations moves markets down to the point that another set of accounts need to get liquidated. This domino effect can, in turn, drive markets down as much as 37% in a single day, causing this cascading set of liquidity failures, like what happened with Bitcoin on March 12th or banks in 2008.

To visually represent this phenomenon we recorded all the liquidations that happened during the month of May on Binance Futures, BitMEX and FTX. We have focused on May 7th, where Bitcoin saw a 10% price increase.

3.1 Example May 7th

In this section we will dive into May 7th liquidations.

The day started with sideways action where some small liquidations were triggered. Around 13:00UTC Bitcoin’s price increased significantly triggering a series of liquidations and topped at $9,650 before pulling back to $9,500. It is interesting to notice that on the pullback longs were liquidated, a prime example of Liquidation Special drunk traders late to the party trying to long Bitcoin on this move to the upside.
Then at 15:26 UTC within a few minutes the price of BTC dumped to $9,330 liquidating a significant number of longs before continuing its way to the upside. This move created a series of liquidations that kept the price moving up.

While it’s not possible to know exactly what caused this move to the upside, it’s quite clear that it has been amplified by a chain reaction of liquidations that drove the price of Bitcoin even further up.

Zooming in on the spike that triggered liquidations we can see that the spike from $9,400 to $9,600 in a few hours was sparked by ~$2 millions liquidations. The price stabilized once the liquidations finished.

When comparing the volume of BTC liquidations and Alt liquidations on Binance, it can be seen that Alt liquidations seem to happen more often, even during sideways markets showing that high leverage and poor risk management seem to be more present in Altcoins markets.
How is FTX different from other exchanges when it comes to liquidations?
Let’s have a look at the figure 7 below.
Figure 7: Percentage of liquidations volume compared to overall daily volume for May 7th and 10th

Compared to other exchanges, FTX has very little liquidation volume. In the next section we will explain how our liquidation engine is different from other exchanges and how that prevents chain liquidation cascades.

3.1.1 FTX liquidation engine

Like most liquidation engines, the one FTX uses starts by detecting when a user has dropped below maintenance margin. Unlike many other platforms it chooses intelligent, efficient values for these — some other platforms, like OKEx, are fucked by the time a liquidation starts because their maintenance margin was too low and there is no way for them to liquidate such a large position so quickly.

We send reasonable, volume-limited liquidation orders to close down positions that drop below maintenance margin (which starts at 4.5% and increases with position size). We don’t sell so quickly that the liquidation orders themselves will crash the market; that would be dooming the entire process. We also don’t give up if the price looks ‘bad’ — it might only get worse from there and you have to do the best you can liquidating an account rather than hoping things magically reverse (as OKEx does).

Usually this is enough. But if there’s a large liquidation — say a long position (position B) that needs to get sold off — and markets are moving down too quickly, it might become clear that the normal liquidation orders in FTX’s orderbooks are unlikely to successfully close down position B before the account goes bankrupt.

In that case, the backstop liquidity provider system kicks in. In this situation, liquidity providers who have opted in to the system will internalize position B, taking over the whole obligation and collateral. They’ll do this before the account actually goes bankrupt so they have a chance to successfully manage
the position. They will then go hedge their books on other venues. This effectively allows the backstop liquidity providers to instantly inject liquidity from other exchanges into FTX in an emergency, removing the dangerous account’s position from FTX’s books and preventing a likely bankruptcy.

Hopefully, the backstop liquidity provider program will be enough to prevent any clawbacks from occurring. In our testing, even market moves of 40% in a 20 minute period were not enough to cause clawbacks; the combination of on-exchange liquidity and backstop liquidity providers were able to provide to all of the nearly bankrupt accounts before they went under. In fact the insurance fund actually gained about $1m in most of these scenarios.

But there needs to be a worst case scenario. And if all else fails, FTX will do what other exchanges do — it will auto-delever an account’s position against accounts that have the opposite position on, and attempt to cover any losses out of the insurance fund; and if the insurance fund runs dry then there will be clawbacks.

3.1.2 Liquidation Monitor

Liquidations are public information that can be accessed via API, however, it can be quite difficult for non-technical people to access this data stream. This is why we made a liquidation monitor that displays all the liquidations happening on Binance Futures, BitMEX and FTX. This can be downloaded on our Blog in the May Monthly Digest section.

This is a simple executable that will display all liquidations in real time. It’s available for Windows (amd64 and 386), Mac OS (darwin amd64) and Linux (amd64).
4 FTT Sentiment analysis

This section is written by: Tom Rae

Scraping Twitter to Determine the Effect of Social Media Sentiment upon Price. A leading or Lagging indicator?

As has been show by (Jawed and Chakrabarti, 2018) algorithmic trading may account for more than 40% of the volume traded, and more than 80% of the orders placed upon certain stock exchanges.

By measuring the time taken for the price of an asset to adjust to new information, before and after the introduction of algorithmic trading, the authors were able to show that post the introduction of algorithmic trading, the persistence of "old news" decreased while the speed of information adjustment into prices increased.

This suggests that increased algorithmic trading activity has a statistically significant impact upon price changes, with the introduction of algorithmic trading being a pivotal factor in the speed at which the markets will react to new information.

This is all very interesting, and if this is a viable indicator in the traditional world of finance, it might be applicable to crypto.

To find out if that is the case, we must first gather the data. The raw data was sourced from a combination of different queries mentioning, including tags for the tokens FTT and mentioning FTX.

After scraping a total of 37,727 unique raw tweets. We began to dedupe, based on the tweet text itself, this left us with a total of 29332 unique tweet strings based on our query set. As we expect, the exchange and the token are mentioned together.

Once we had the raw data we were able to train a Naive Bayes Classifier on a pre-tagged set of tweets, (See reference). This allowed us to then able to assign each tweet either a positive or a negative sentiment flag.

Aggregating on a daily time, we are then able to the ratio of positive tweets to negative tweets against the price;

4.1 Testing Twitter Ratio as an Indicator

Due to the trend of the asset, we might do better to remove the trending nature of the timeseries. in order to do this, we shift and calculate the % change between each point;

With this done, we can create a boolean target variable which represents whether the next days % change is greater or lower than 0. This allows us to phrase the problem in terms of a categorical classification.
In order to check of statistical significance of our new indicator, we can fit a Logistic Regression model with percent change $\delta=\theta$ as our categorical $y$.

### 4.2 Results

Once we have wrangled the data through this process, we are able to apply an analysis of binary classification. Sklearn’s classification report provides the F1 score (also F-score or F-measure) which is a measure of a test’s accuracy. It considers both the precision $p$ and the recall $r$ of the test to compute the
score: $q/p$ is the number of correct positive results divided by the number of all positive results returned by the classifier, and $r$ is the number of correct positive results divided by the number of all relevant samples (all samples that should have been identified as positive).

The F1 score is the harmonic mean of the precision and recall, where an F1 score reaches its best value at 1 (perfect precision and recall). The F1 score is also known as the Sørensen–Dice coefficient or Dice similarity coefficient (DSC).

4.3 Conclusion

- FTX has mean positive to negative tweet ratio of 2.13 since the beginning of our complete data series.
- The amount of social volume on Twitter is increasing over time (along with the price).
- We were able to predict rising prices more consistently as we can see with our f-1 score of 0.65.
• The ratio of positive to negative sentiment expressed on twitter may help to indicate future price moves.

• However, due to our data being skewed, this result may not persist.

• Increased Granularity of the data may provide more insight as the data was resampled on a 1d basis.

• Better classification of tweets, with more advanced techniques might allow for a more granular classification of tweets.

4.4 FTT tomorrow

FTX has burned over 4.3% of the circulating supply of FTT and the insurance fund holds 5.25 million FTT, almost 5% of the circulating supply. Removing 9.43% of the circulating supply of FTT from the ecosystem has been achieved in a year. When looking at the graph below, comparing fees between exchanges, it is a noteworthy accomplishment.
5 FTX Favorites

CMS Holding
- On coinbase dipping into the Tether flow: Read the full thread here
- What is going on with OTC desks and futures: Read the full thread here

Sam Trabucco On Running Tests to Check Theories at Alameda: Read the full thread here

Ranjan Roy On Doordash and Arbitraging Ghost Pizzas: Read the full article here

Matt Levine On Senator Stock Shenanigans: Read the full article here
6 Readers’ Questions

e-mail: research@ftx.com with questions you would like answered about the cryptocurrency and blockchain ecosystem. We shall select certain questions and dedicate a section to them in next months digest.
7 Appendix

7.1 Halving Lookback

Figure 9: Unknown Mining Pool 1 Outflows surged at May 20, 14:35(UTC)

Figure 10: Unknown Mining Pool 1 Outflows surged at May 20, 14:35(UTC)
Figure 11: The volatility of BTC surged up right after more than 2K BTC flows into exchanges at once.

Figure 12: All exchanges reserves increased until March 12th and then decreased by almost 28.8% as prices increased.