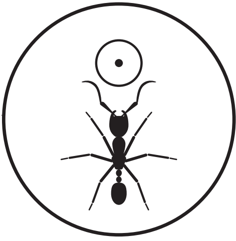

Myrmikan Research

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Crypto Contagion

Myrmikan's previous letter examined the carnage in the UK pension market and showed how LDI strategies enticed pension funds to create a bubble in the sovereign bond market. This month exhibits the dramatic collapse of the crypto exchange FTX.

The very promise of bitcoin and other crypto-assets was that the crypto technology makes it mathematically impossible for them to be subject to theft or fraud. Each crypto coin is stored in a wallet, and each wallet has a long, uncrackable code necessary to effect transactions. The transactions themselves occur on the blockchain and are a matter of public record, so everyone at all times can determine the precise location of each and every crypto asset and its entire trading history—only the identity of the wallet owner and its transaction code are uncrackable secrets (though they may be disclosed or stolen).

The market challenge is that holding crypto assets in pure mathematical form is illiquid—it is like holding a physical stock certificate. With such a certificate, a holder is entered into a company's books as a direct owner—there is no risk that a broker, such as MF Global, can abscond with the position. But it is virtually impossible to trade a physical certificate until it is deposited into a brokerage account, and so with crypto-assets. Once a customer has deposited his asset into a bank or brokerage account or exchange, he no longer owns that asset directly—he instead has a claim on that asset which is backed by the general pool of assets of the institution holding it.

The first large crypto-exchange was Mt. Gox, which at its peak processed 70% of all bitcoin transactions. Its 28 year-old CEO Mark Karpeles was famous for his aloofness, and to alleviate the boredom of running the company he engaged in long, expensive lunches, played fantasy video games, and designed the first cafe at which bitcoin could be tendered as payment. He cultivated his artist image, indifference to his sudden wealth, and disdain for corporate culture and controls.

In 2011, the Mt. Gox transaction key was embezzled or stolen, and over the ensuing three years approximately 800,000 bitcoins, then worth $460 million, were stolen. The public blockchain would have broadcast that bitcoin was leaving the Mt. Gox wallet to go to other wallets, but customers would have had no way of knowing that these were thefts and not legitimate depositor withdrawals.

And thus the flaw in the bitcoin ecosystem: many early adopters bought bitcoin to protect their wealth from the fiat-based fractional reserve banking system in which banks do not store customer deposits but invest them and then carry deposits as their own liabilities. But holding bitcoin on an exchange is the same thing: the exchange owes

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bitcoin to its depositors yet may not have them and, as with a bank, cannot withstand concentrated withdrawals.

As long as Mt. Gox customers continued to deposit funds at a rate faster than withdrawals, the exchange could continue to function despite the loss of its reserves. As with any Ponzi scheme, however, as soon as withdrawals exceeded deposits, Mt. Gox had to suspend redemptions and declare bankruptcy.

One might have thought that this glaring flaw in the crypto-market architecture would have ended the market entirely or at least forced the remaining players to impose radical transparency on their reserves. But, no, new exchanges proliferated along with the kind and quantity of additional crypto-tokens.

FTX was a relatively new player in the space, having been formed only in 2019. Its 28 year-old founder and majority shareholder, self-styled as “SBF” (Sam Bankman-Fried), was a graduate of MIT and low-level ETF trader at Jane Street. He then established a two-year track record trading crypto assets through his personal hedge fund, Alameda Research, and launched FTX as a ultra liquid trading platform for professional traders. FTX did not have a board of directors. Its auditor has an office in the “Metaverse.” Yet FTX managed to attract investments from some of the largest players in Wall Street and swiftly became the second-largest crypto exchange.

FTX began by offering trading services on a variety of crypto assets at low fees that declined further with volume. In addition, users that held FTX’s token, FTT, received commission discounts: the more FTT a user held, the greater the discount. FTX also offered ETF-like baskets of crypto-assets, such as the “Shitcoin Index Perpetual Futures” and pre-IPO futures for not-yet public companies such as Coinbase and Airbnb. The site allowed leverage up to 101 times, much higher than other exchanges.

The crazy assets and insane leverage naturally attracted the largess of world government COVID transfer payments. The firm’s rise was meteoric. Trading fees soared as did interest revenue on the margin loans FTX advanced to its customers.

The $8 million seed round in early 2019 was followed by a $70 million investment that December by competitor Binance. By February 2020, FTX was the fifth largest crypto exchange, and its capital raise a month later, just nine months after its founding, valued the firm at $1 billion.

Flush with cash, the company began to invest heavily in other crypto and virtual payment companies. Some acquisitions were strategic: Blockfolio provided FTX with a population of retail traders; LedgerX was a CFTC-regulated platform, the acquisition of which put FTX’s U.S. operation under the same regulatory framework; its attempted acquisition of Blockfi was motivated to exploit that firm’s settlement with the SEC that allowed it to issue the first SEC-registered crypto interest-bearing security.

By mid-2021, FTX revealed it had over a million users and transacted $10 billion in trading volume per day. In July, FTX raised another $900 million at an $18 billion valuation. Participants included Third Point, Paul Tudor Jones, Thoma Bravo, SoftBank, and Sequoia Capital. Sequoia was so entranced by the investment that it published an obsequious endorsement of Bankman-Fried:

> Nothing is a sure bet in crypto, but just the possibility that FTX could join—or even eclipse—the big four of American banking (JPMorgan Chase, Bank of America, Wells Fargo and Citibank) means it’s already valued at $32 billion. SBF himself has amassed more wealth in a shorter period of time than anyone else, ever.…

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> Though he earned top marks [at school], he kept to himself, spending most of his free time playing computer games (*StarCraft, League of Legends*) and a trading card game, *Magic: The Gathering*.…
>
> Michelle Bailhe, a young gun at Sequoia Capital admits … "I thought they were just minting money and had absolutely no need for investors." Learning otherwise, they quickly contacted SBF and organized a last-minute Zoom call between him and the partners at Sequoia.... Ramnik Arora, FTX's head of product and another ex-Facebook engineer, remembers the meeting clearly: "We're getting all these questions from Sequoia toward the end. He's absolutely fantastic." Arora locks eyes with me, and I am mesmerized. Arora is intense—calling to mind a Bollywood version of Adrian Brody. "Unbelievably fantastic," he says, shaking his head.
>
> Bailhe remembers it the same way: "We had a great meeting with Sam, but the last question, which I remember Alfred asking, was, 'So, everything you're building is great, but what is your long-term vision for FTX?'"
>
> That's when SBF told Sequoia about the so-called super-app: "I want FTX to be a place where you can do anything you want with your next dollar. You can buy bitcoin. You can send money in whatever currency to any friend anywhere in the world. You can buy a banana. You can do anything you want with your money from inside FTX."
>
> Suddenly, the chat window on Sequoia's side of the Zoom lights up with partners freaking out.
>
> "I LOVE THIS FOUNDER," typed one partner.
>
> "I am a 10 out of 10," pinged another.
>
> "YES!!!" exclaimed a third.
>
> What Sequoia was reacting to was the scale of SBF's vision. It wasn't a story about how we might use fintech in the future, or crypto, or a new kind of bank. It was a vision about the future of money itself—with a total addressable market of every person on the entire planet.
>
> "I sit ten feet from him, and I walked over, thinking, Oh, shit, that was really good," remembers Arora. "And it turns out that that fucker was playing *League of Legends* through the entire meeting."
>
> "We were incredibly impressed," Bailhe says. "It was one of those your-hair-is-blown-back type of meetings."[1]

Sequoia invested $214 million into FTX. And then Bankman-Fried returned the favor by investing $200 million in Sequoia, a curious circle.

Reported revenues continued to soar, increasing from $89 million in 2020 to $1.02 billion in 2021.[2] That October, FTX raised another $420 million at a $25 billion valuation, this time including Ontario Teachers' Pension Plan and Tiger Global. Three months later, FTX and FTX US each raised $400 million, including from Softbank, giving the firm a $32 billion valuation.

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1 https://web.archive.org/web/20221109230422/https://www.sequoiacap.com/article/sam-bankman-fried-spotlight/

2 https://www.cnbc.com/2022/08/20/ftx-grew-revenue-1000percent-during-the-crypto-craze-leaked-financials.html

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Bankman-Fried cultivated a slovenly image, with unkempt hair, appearing in his trademark shorts, sneakers, and t-shirt in interviews and at meetings with Bill Clinton, Tony Blair, and other global celebrities. He eschewed a bed for a bean bag. He had a video made in which he showcased his Toyota Corolla: "his goal as a human is to make as much money as possible just to give it away: earn to give," all while living in a $35 million penthouse in the Bahamas. In other words, Bankman-Fried was a virtual clone of Mark Karpeles.

Bankman-Fried's activities at FTX did not distract him from his original, personal trading vehicle Alameda. He hired 28 year-old Caroline Ellison as CEO both because she was his girlfriend and because her father, Glenn, is the department head of Economics at MIT, to whom current SEC Chairman Gary Gensler reported when he was an MIT economics professor.

Caroline Ellison had met Bankman-Fried at Jane Street. As CEO of Alameda, she bragged: "I use very little math, a lot of elementary-school math. Being comfortable with risk is very important... We tend not to have things like stop-losses—I think those are not necessarily great risk-management tools."

According to an alleged Alameda marketing document made public on Twitter, Alameda offered investors a single product: 15% annualized loans, payable in fiat or crypto. "These loans have no downside—we guarantee full payment the principal and interest [sic]." The pitch touted annualized investment performance of 110.6%.

It turns out that part of the stellar performance was due to Alameda's front-running FTX announcements. The firm would amass crypto tokens and then FTX would announce plans to add the tokens to its platform. The tokens would surge in price from the additional liquidity and industry legitimacy that FTX-sponsorship implied.[1]

Front-running other tokens led to an even more insidious practice called "yield farming." Let us allow Bankman-Fried to describe the practice in his own words:

> You start with a company that builds a box dress[ed] up to look like a life-changing, world-altering protocol that is going to replace all the big banks in 38 days [i.e., Sequoia's investment thesis]. For now ignore what it does. Or pretend it does literally nothing: it's just a box.... And then this protocol issues a token, we'll call it X Token. And X Token promises that anything cool that happens because of this box is going to ultimately be usable by a governance vote of holders of the X Tokens. So far we haven't given a compelling reason for why there ever would be any proceeds from this box—I don't know, maybe there will be.
>
> So that's where you start: we've got this box, and we've got X Token, and the box protocol declares or (maybe votes) that what they're going to do is they are going to take two-thirds of all the X Tokens, and they are going to give them away for free to everyone who uses the box. So anyone who goes, takes some money, and puts it in the box, each day they [the protocol] are going to airdrop 1% of the X Tokens pro-rata to everyone who has put money in the box.
>
> And now what happens, well, X Tokens have some market cap, right? It's probably not zero. Let's say it's $20 million... You might think that in like five minutes with an internet connection you could create such a box and such a token and that it should be worth, like, a $180 market cap for that effort you put into it. In the world that we're in, if you do this,

1 https://www.wsj.com/livecoverage/stock-market-news-today-11-14-2022/card/alameda-amassed-crypto-tokens-ahead-of-ftx-listings-public-data-shows-z6KFN051ToEpFohTXA89?mod=Searchresults_pos1&page=1

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everyone is going to be like, Woo, Box Token, maybe it's cool. Have you bought in to Box Token? That's going to appear on Twitter, and it will have a $20 million market cap. And one thing that you could do is make the float very low; maybe there hasn't been $20 million that has flowed into it yet, maybe that's its mark-to-market, fully-diluted valuation [in other words, the sponsor designs the protocol such that there are 1 billion Box Tokens, but only 1 million in circulation, the remainder kept in reserve to be distributed later—FTX could buy enough of those 1 million tokens to set the price at 20 cents (with a maximum expenditure of $200,000), and 20 cents times the 1 billion total supply of tokens equals $20 million market cap for the protocol]. I acknowledge that it's not totally clear that this thing should have market cap, but empirically I claim it would. Already we're hiding some of the magic; some of the magic is in how to get that market cap to start with, but we're going to move on.

So X Tokens are being given out each day—all these sophisticated firms are like: huh, that's interesting. Like, if the total amount of money in the box is $100 million [because investors such as Sequoia have invested in the box], then it's going to yield $16 million this year in X Tokens being given out for it [this is the 1% bring distributed]; that's a 16% return. That's pretty good. We'll put a little bit more in, right? And so maybe that happens until there is $200 million in the box. So sophisticated traders and/or people on crypto-Twitter or other similar parties go and put $200 million in the box, collectively, and they start getting these X Tokens for it.

And now all of a sudden everyone is like: wow! People just decided to put $200 million in the box. This is a pretty cool box, right? Like, this is a valuable box as demonstrated by all the money that people have apparently decided should be in the box, and who are we to say that they're wrong about that. I mean, boxes can be great.

What happens now is that all of a sudden people are recalibrating: like, $20 million [market cap], that's it? And it's been like 48 hours, and it already has $200 million in flowing from sophisticated players in it. C'mon, that [market cap] is too low, right? They look at TVL ratios, total-value-locked-in-the-box as a ratio to the market cap of the box's token, and they're like, 10X (times)? That's insane! One X is the norm.

So then X Token price goes way up and now it's a $130 million market cap token because of the bullishness of people's usage of the box. And the smart money is like, oh wow. This thing is now yielding like 60% a year in X Tokens [because of X Token distributions marked to market]. Of course I'll take my 60% yield, right? They go and pour another $300 million in the box, and then it goes to infinity. And everyone makes money....

So what's the end game? This box is worth zero, obviously, and you can't keep this market cap. But on the other hand, if everyone now thinks that this box token is worth about a billion dollar market cap, that's what people are pricing it at, and it sort of has that market cap, everyone is going to mark it to market—in fact, you could even finance things. You could put X Token in a borrow/lending protocol and borrow dollars with it—if you think it's worth less than two-thirds, you could even put some in there, take the dollars out, never give the dollars back and just get liquidated eventually.

It is real monetizable stuff in some senses, and if the world never decides that we're wrong about this in a coordinated way, right?—like, if you're the

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> guy calling bullshit and saying, no, this thing is actually worthless, in what sense are you right? ... You could see something get market cap in the way that Dogecoin or Shib Coin have, right? Where people are just kinda like, ha, ha, and then they buy it. And if you're like, that's dumb, it has no cash flow, I'm going to short sell it, you lose all your money.[1]

Bankman-Fried provides us with one of the most perfect descriptions of a Ponzi scheme ever verbalized and in a way that shows how Ponzi economics apply to all bubble companies, whether the internet companies of the 1990s, mortgage companies of the 2000s, railroad companies of the 1860s, and so on. He said these words in public, on Bloomberg, last April, and yet $16 billion of client funds sat on FTX's balance sheet.

Bankman-Fried introduced the above discussion as a "toy model that has a surprising amount of legitimacy." But Ellison admitted that this was Alameda's main activity: "[We had] a big argument about should we do yield farming at all. I said this whole thing seems weird and risky.… I lost that argument.… Every week or so something weirder than the previous week would happen.… I managed to get away from my initial skepticism and have been embracing the mindset of going out and looking for the weirdest, dumbest thing people are talking about today."[2] This is, in fact, the best strategy during a bubble, at least while it is inflating. Alameda was soon a crypto behemoth with $14.6 billion in assets which it used to invest in and acquire companies all across the crypto sector with little discrimination.

At the peak of the Ponzi scheme, Bankman-Fried's net worth reached $26 billion. How did he do it? And how so fast? Bankman-Fried's father is a Stanford professor who habitually lobbies Congress on behalf of hedge fund interests and drafted tax legislation for Elizabeth Warren. His mother is also a Standford professor who advocates for "distributive justice" and "feminist class politics." She co-founded the Mind the Gap super PAC, which solicits funds from Silicon Valley executives to fund radically left-wing Democratic political candidates. His aunt is a member of the World Economic Forum.

Bankman-Fried quickly amassed enough cash to exert his own political influence: his $5 million donation to the 2020 Biden campaign was the largest save for Bloomberg's, and his $40 million donation to the Democrats for the 2022 mid-term elections was second only to Soros.

The Bankman-Fried family, deeply entrenched Democrat party players, were able to entice other network operatives to join. Bankman-Fried lured Sullivan & Cromwell partner Ryne Miller to be general counsel; Miller had been legal counsel to Gary Gensler when he was chairman of the CFTC. Obama's CFTC Commissioner Mark Wetjen joined FTX as Head of Policy and Regulatory Strategy. Wetjen in turn hired another former CFTC commissioner, Jill Sommers, for the FTX US Derivatives board.

His government contacts and donations allowed him to start bidding on sovereign business: reports indicate that Ukraine deposited a considerable sum of the foreign aid from the U.S. into FTX, which then funneled part of it back to Democratic politicians. His political allies also arranged invitations to appear on Capitol Hill. On February 9, 2022, Bankman-Fried testified in the Senate:

> This patchwork of regulations … reveals gaps in federal market oversight due to the interplay of the CFTC and SEC regimes … [and] there is no clear market oversight for spot trading of (non-security) digital commodities....
>
> The following are recommendations for this committee that would achieve those goals: Expand the CFTC's jurisdiction over digital-asset

1 Bloomberg, Odd Lots podcast, "Sam Bankman-Fried and Matt Levine on How to Make Money in Crypto," 25 Apr 2022 @ 23:26.

2 Interview with Caroline Ellison: https://twitter.com/MilkRoadDaily/status/1591137605613408256

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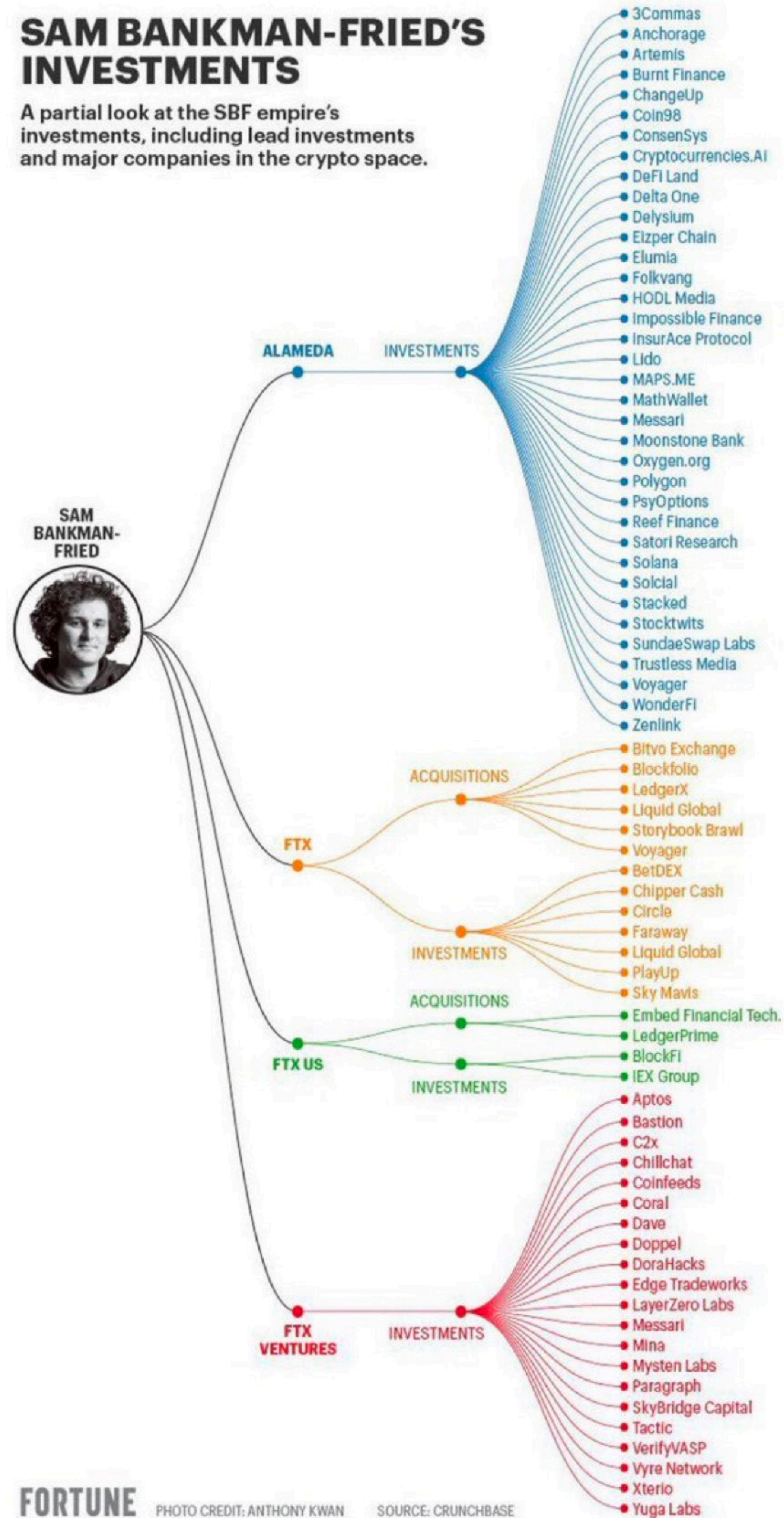

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> spot transactions … ensure the safety and soundness of stablecoins … [and] adequately fund the CFTC to ensure resources to protect digital-asset investors.[1]

Bankman-Fried with Maxine Waters, Chairwoman of the House Committee on Financial Services

It may seem strange that the head of a firm dedicated to housing and trading assets billed as an escape from government-sponsored fiat currency would invite regulation, until one reads last week's announcement by Congressman Tom Emmer: "Reports to my office allege he [Gary Gensler] was helping SBF and FTX work on legal loopholes to obtain a regulatory monopoly. We're looking into this."[2]

Suddenly, the play, the political patronage, the marquee investors, the overnight success, it all makes sense: in addition to his Ponzi, Bankman-Fried was constructing a "regulatory monopoly," and everyone wanted a piece.

But Bankman-Fried's play for U.S. dominance threatened its original investor and leading competitor, Binance. On November 2, Coindesk.com reported that it had received a leaked snapshot of Alameda's balance sheet. Of its $14.6 billion in assets, $3.7 billion were FTT (the FTX token), $2.2 billion were "FTT collateral," and another $3.4 billion were in "crypto held." This latter bucket included $1.2 billion in the Solana token, which was created by a company backed by Bankman-Fried. Alameda's position represented 10% of the total supply of Solana, and 20% of tradable supply.[3] In other words, Alameda balance sheet was a collection of "boxes" worth zero. Events began to move quickly:

November 6, morning—Binance CEO and billionaire Changpeng Zhao Tweets: "As part of Binance's exit from FTX equity last year, Binance received roughly $2.1 billion USD equivalent in cash (BUSD and FTT). Due to recent revelations that have came to light, we have decided to liquidate any remaining FTT on our books." There is no reason for Zhao to Tweet this other than to bring down FTX: a real seller would sell secretly.

November 6, afternoon—Caroline Ellison Tweets: "if you're looking to minimize the market impact on your FTT sales, Alameda will happily buy it all from you today at $22!" She has no choice: if the FTT box falls in value, then Alameda becomes immediately insolvent.

November 6, evening—Bankman-Fried Tweets: "A bunch of unfounded rumors have been circulating.... FTX keeps audited financials etc. And though it slows us down

1 https://www.agriculture.senate.gov/imo/media/doc/Testimony_Bankman-Fried_0209202211.pdf
2 https://twitter.com/RepTomEmmer/status/1590717374801809409?
3 https://www.coindesk.com/business/2022/11/02/divisions-in-sam-bankman-frieds-crypto-empire-blur-on-his-trading-titan-alamedas-balance-sheet/

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sometimes on product, we're highly regulated." But the auditor is in the Metaverse and the market is spooked, prompting $5 billion in withdrawals. The market has decided, "in a coordinated way," that FTX's boxes are empty.

November 8—Zhao Tweets: "This afternoon, FTX asked for our help. There is a significant liquidity crunch. To protect users, we signed a non-binding LOI, intending to fully acquire FTX and help cover the liquidity crunch. We will be conducting a full DD in the coming days." Bankman-Fried Tweets: "All assets will be covered 1:1. This is one of the main reasons we've asked Binance to come in. It may take a bit to settle, and we apologize for that. But the important thing is that customers are protected.... Note that FTX.US's withdrawals are and have been live, is fully backed 1:1, and operating normally."[1]

November 9—Ellison tells employees in a video meeting that she, Bankman-Fried and two other executives were aware that customer funds from FTX has been used by Alameda for speculative purposes.[2] Bankman-Fried confirms to potential investors that FTX lent $10 billion of client funds to Alameda.[3]

November 9—Binance announces: "As a result of corporate due diligence, as well as the latest news reports regarding mishandled customer funds and alleged US agency investigations, we have decided that we will not pursue the potential acquisition of FTX."

November 10—Bankman-Fried Tweets: "THIS IS ALL ABOUT FTX INTERNATIONAL, THE NON-US EXCHANGE. FTX US USERS ARE FINE! FTX International currently has a total market value of assets/collateral higher than client deposits (moves with prices!). But that's different from liquidity for delivery--as you can tell from the state of withdrawals. The liquidity varies widely, from very to very little. FTX US, the US based exchange that accepts Americans, was not financially impacted by this. It's 100% liquid. Every user could fully withdraw (modulo gas fees etc)."

November 11, morning—FTX, FTX US, and Alameda file for Chapter 11 bankruptcy. Users' assets are frozen. Bankman-Fried appoints John Ray as CEO; Ray previously managed the bankruptcies of Enron and Nortel Networks. Perhaps Bankman-Fried thinks that with enough political clout, he can pull a Jon Corzine and avoid prison. The companies' filing lists more than 100,000 creditors with liabilities exceeding $10 billion. Ray would state: "Never in my career have I seen such a complete failure of corporate controls and such a complete absence of trustworthy financial information as occurred here."[4]

November 11, evening—hundreds of millions of dollars worth of crypto-assets began moving from FTX accounts to unknown wallets, presumably to an insider with access to the crypto-codes, leaving FTX with almost no liquid assets. Ray confirms the transfers are unauthorized.[5]

In the middle of this turmoil, *The Financial Times* received a copy of FTX/Alameda's balance sheet prepared by Bankman-Fried.[6] He shows that before the run, the companies'

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1 https://twitter.com/SBF_FTX/status/1590012124864348160

2 https://finance.yahoo.com/news/alameda-ftx-executives-knew-crypto-161537854.html

3 https://www.wsj.com/articles/ftx-tapped-into-customer-accounts-to-fund-risky-bets-setting-up-its-downfall-11668093732?mod=e2tw

4 DECLARATION OF JOHN J. RAY III IN SUPPORT OF CHAPTER 11 PETITIONS AND FIRST DAY PLEADINGS. IN THE UNITED STATES BANKRUPTCY COURT FOR THE DISTRICT OF DELAWARE. Case No. 22-11068 (JTD). Filed 17 Nov 2022.

5 https://www.theverge.com/2022/11/12/23454702/ftx-unauthorized-transactions-drained-millions-from-the-exchange-hack-bankruptcy-cryptocurrency

6 https://www.bloomberg.com/opinion/articles/2022-11-14/ftx-s-balance-sheet-was-bad?sref=lsNUbNMA

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assets were $24.5 billion against liabilities of $14 Billion. So, in his view, the firm was entirely solvent, and the $10 billion loan to Alameda was entirely covered (i.e., Alameda if lost all of it, FTX could still cover liabilities to clients).

But then FTX paid out $5 billion in withdrawals, which reduced liquid assets to $900 million against remaining liabilities of $9 billion. Bankman-Fried lists the remaining non-liquid assets at $18.6 billion, including $5.9 billion in FTT tokens, $5.4 billion in Serum tokens, and $2.4 billion in Solana tokens. Since then, FTT has plunged by 95%; Serum's *total market cap* was only $6 billion, of which only $180 million were unlocked and tradable, allowing FTX to set the price (this was the "magic" of having a small float); Solana miraculously is down by only two thirds.

In his bankruptcy filing on November 17, Ray lists a cash balance of $564 million plus crypto-assets with a current market value of $740 million. As for the value of Alameda's investments, he told the court: "the main companies in the Alameda Silo and the Ventures Silo did not keep complete books and records of their investments and activities." These investments, even if they can located, will have questionable if any value as the crypto contagion spreads. One of the assets listed is a $1 billion loan to Bankman-Fried. Creditors and clients will recover little to nothing after the professional fees to the bankruptcy administrators are paid.

FTX's liabilities include not just $5 billion U.S. dollars but also crypto assets which it does not have. The firm, for example, listed 0 bitcoins in assets yet lists $1.4 billion in bitcoin liabilities.[1] As with Mt. Gox, all those users who thought they had escaped the fiat-based fractional banking system were in the exact same system, except that the crypto banks are run by young criminals and based on assets vastly more volatile than US dollars.

It turns out many other crypto-exchanges held their own reserves in FTX, such as Huobi, Jump, Multicoin, Galaxy, Genesis, Blocktower, and Blockfi. The story of the latter, a now defunct depository with $3.9 billion in client funds, is particularly instructive. Blockfi had moved its reserves to FTX after FTX provided the firm with a $400 million credit facility to bail it out from an $80 million loss from its investment in Three Arrows Capital.[2] Three Arrows imploded in June when it suffered a $200 million loss after the cryptocurrency Luna collapsed, causing it to default on a loan from Voyager Digital (Three Arrows owes creditors $3.5 billion). Voyager itself then declared bankruptcy, listing $5.7 billion in liabilities.[3] Among Voyager's assets was a $377 million loan to Alameda. In September, FTX agreed to paid $1.4 billion to acquire Voyager.

And, of course, there are other, non-crypto bodies floating to the surface: Galois Capital, for example, a hedge fund whose founder is credited with predicting the collapse of Luna, disclosed his fund had close to half its assets at FTX.[4] Another fund, Ikigai Asset Management, admitted a "large majority" of its assets were at FTX. There will be others.

If FTX's early acquisitions were driven by regulatory capture, the latter were a desperate gambit to survive. By acquiring exchanges that held FTT and other balances, FTX could bring those assets onto its balance sheet, which Alameda could then loot. The more it executed this strategy, the more fragile its balance sheet became. In the end, it took only a Tweet to start perhaps the fastest bank run in history. SBF, the Sequoia analyst boasted, had "amassed more wealth in a shorter period of time than anyone else, ever." He lost it in similar fashion.

1 https://twitter.com/BurggrabenH/status/1591812091358642176/photo/1

2 https://www.bloomberg.com/news/articles/2022-11-11/blockfi-pauses-withdrawals-says-can-no-longer-operate-as-usual?sref=lsNUbNMA

3 https://www.pymnts.com/cryptocurrency/2022/reckless-crypto-lending-opaque-operations-paved-voyager-digitals-path-to-bankruptcy/

4 https://www.ft.com/content/726277bb-35a1-4d35-9df9-3e1cca587b77?list=intlhomepage

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The implosion of FTX exhibits in concentrated form many of the bubble attributes so familiar to history. First are the clients. An observer of the greenbank inflationary period noted: “Money easily won is recklessly spent.” Trump then Biden sent free money to those forbidden to work. Many then used those funds to speculate wildly both through greed and to protect against the rapidly depreciating currency.

FTX was first and last a political project, as was the Bank of England, formed to fund the King’s wars, and the Federal Reserve, which the banks demanded to protect them from panics caused by their own malinvestments.

The crypto market coalesced around major nodes, with smaller players depositing funds in larger players for efficiency and safety. But then the larger players used the deposited capital for speculation. This is exactly how the banking system functioned after the passage of the National Banking Acts. As Senator Glass reflected in 1913:

> Under existing law we have permitted banks to pyramid credit upon credit and to call these credits reserves. It is a misnomer; they are not reserves. And when financial troubles come and the country banks call for their money with which to pay their creditors, they find it all invested [by the large city banks] in stock gambling operations. There is suspension of payment, and the whole system breaks down under the strain, causing widespread confusion and almost inconceivable damage.

When banks are not collaborating, they compete. In eighteenth-century Scotland and early nineteenth-century America, for example, banks attacked each other by accumulating the notes of a rival and then presenting them all at once for redemption to drive them out of business. Adam Smith pointed out that this competition: “obliges all of them to be more circumspect in their conduct, and, by not extending their currency beyond its due proportion to their cash, to guard themselves against those malicious runs, which the rivalship of so many competitors is ready to bring upon them.” This is exactly what Binance did to FTX.

Bankman-Fried himself fell victim to what Nicholas Biddle correctly called: “the general error of Banks, who do not always discriminate between two things essentially distinct in Banking, a debt ultimately secure, and a debt certainly payable.” Of course, this is being too charitable: Biddle was talking about mortgages on real estate, which, even assuming they are ultimately secure, cannot be liquidated fast enough to prevent a bank run (as Lehman Brothers discovered). Bankman-Fried’s investments were neither secure nor payable.

When his scheme began to unravel, Bankman-Fried copied a chapter from the collapse of Ayr Bank in 1772. That bank’s “avowed principle,” Adam Smith recorded, was “to advance, upon any reasonable security, the whole capital which was to be employed in those improvements of which the returns are the most slow and distant, such as the improvements of land.” In other words, the bank attempted to finance investments in long-term capital by issuing short-term liabilities. When the inevitable bank run appeared, the directors published a notice in the paper:

> Whereas [Ayr Bank has] for these two days past had an immense demand for specie, from the lower class of people, in exchange for notes, owing, as it is suspected, to some ill-grounded reports raised by foolish or malicious persons respecting said branch, a reward is therefore offered of one hundred pounds sterling, to any one who will discover the person or persons who have been concerned in raising such an infamous report.

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Bankman-Fried did Tweet about "A bunch of unfounded rumors," though he forgot to offer a reward for the discovery of the malefactors.

As for the deployment of capital by Bankman-Fried and Ellison, we can think only of Walter Bagehot's description of Overend, Gurney, and Co.:

> Ten years ago that house stood next to the Bank of England in the City of London; it was better known abroad than any similar firm—known, perhaps, better than any purely English firm. The partners had great estates, which had mostly been made in the business. They still derived an immense income from it. Yet in six years they lost all their own wealth, sold the business to the company, and then lost a large part of the company's capital. And these losses were made in a manner so reckless and so foolish, that one would think a child who had lent money in the City of London would have lent it better.

The public's attitude toward Bankman-Fried when was still living in his Bahamian estate brings to mind the obsequious behavior towards John Law, progenitor of the Mississippi Bubble: The roads to his house were jammed with carriages of the highest nobility begging an audience; several of the best families in Europe sent their sons to propose marriage to Law's eight-year-old daughter; the public would shout *Long Live Mr. Law!* when he passed.

All of this would be new information to Bankman-Fried. He boasted to Sequoia: "I don't want to say no book is ever worth reading, but I actually do believe something pretty close to that. I think, if you wrote a book, you fucked up, and it should have been a six-paragraph blog post."

Finally, let us examine Bankman-Fried's pledge to give his money to charity, what Sequoia called his "earn-to-give logic": "[SBF] was going to get filthy rich, for charity's sake.... SBF is a Peter Singer–inspired utilitarian in a sea of Robert Nozick–inspired libertarians. He's an ethical maximalist in an industry that's overwhelmingly populated with ethical minimalists. I'm a Nozick man myself, but I know who I'd rather trust my money with: SBF, hands-down."

It was worse than a con. In an unfettered market, value is defined by marginal utility interacting with scarcity. Nearly everyone is near-satiated with their supply of water. Therefore, while water itself is the most useful of things, the additional unit of water does not add much or any additional utility, so water is cheap. By contrast, whale oil was also useful, but the supply was far less than demand, making the marginal unit highly valuable.

In 1854, Henry Huttleson Rogers, the 21 year-old son of a whaleship captain, invested $1,200 in a business refining Pennsylvania petroleum. He made $30,000 the first summer, equivalent to a three-year whaling expedition. As the supply of oil massively increased through such innovation, the *value* of oil collapsed as it became less scarce even as its *utility* soared. Living standards improved not because Rogers donated his riches; he got rich because he improved living standards. And so with all innovation. Since economic value can be defined only by scarcity interacting with consumer demand, only a free market system that allows consumer preference to be broadcast clearly can orient entrepreneurs and investors to satisfy those economic needs that are most pressing.

This little history lesson exposes the flaw and, indeed, the evil in the Bankman-Fried version of utilitarianism and all left-wing thought: Mankind is not improved by the select personality directing capital, whether by a megalomaniac grown rich or by government bureaucrats. Famines are caused by politics not scarcity. And those who do desire to direct

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capital through political force are monsters, as the history of communism demonstrates. Bankman-Fried admits as much—when prompted by a journalist a week after the collapse, "you were really good at talking about ethics," he responded: "ya. hehe. I had to be. It's what reputations are made of."[1]

What could have produced such a creature? Perhaps his mother can answer: "The study of the brain is in its infancy; as it advances, the evidence for determinism will surely grow.... The reality is that we are all at best compromised agents, whether by biology, social circumstance, or brute luck."[2] Our actions are determined by Keynes' animal spirits, nothing more.

In addition to general lessons, the FTX saga has more immediate implications for investors. First, it is yet another signal that the COVID bubble is collapsing and at an accelerating pace. The COVID bubble rests atop the QE bubble, which sits on the shadow banking system bubble, which relies on the banking bubble, which depends on the currency bubble. The questions are at what layer of bubble will the Fed make a determined defense and will it be successful.

The second revelation of FTX is just how long it takes for wildly insolvent institutions to fail. Panics always start at the periphery. In the nineteenth century they would start in places like Argentina and take a whole year to reach back to London. Sub-prime housing exhibited the same phenomenon, taking eighteen months to travel from trailer parks to Wall Street.

Each institution scrambles to survive: Bear Stearns fails, then Fannie Mae, then Lehman, then AIG, then Citigroup; Luna, Three Arrows, Voyager, FTX, Blockfi. It sells equity, borrows money, supports asset prices in the market, perhaps misappropriates funds, and then fails. And that only starts the process for the next company in the chain. It is, perhaps, remarkable that the entire crypto universe did not collapse Monday morning. But, as the above shows, it takes time for contagion to spread.

The panic will at some point jump to more traditional financial institutions, and not just those involved in crypto. We can use the same analysis as above to understand why no major institution has yet failed from the vertical spike in interest rates.

Much recent investment chatter points out that nearly all mortgages in the U.S. are fixed-rate, as opposed to those in the U.K., Canada, and Australia. But someone is on the hook for the money. No one ties up money for thirty years to lend at a fixed 2.7% interest rate. The shadow banking system allows short-term capital to fund long-term investments in the same way that demand deposits at banks are used to finance mortgages and industrial loans. Given that mortgage rates were mostly below 4% since 2012 and nearly the entire U.S. Treasury bond yield curve is mostly above 4% (and lenders have to pay a premium above that yield to access capital), someone is taking persistent losses: especially for recent mortgages, they are getting 3% yield on their capital while paying 5% or 6% to access capital.

We will hazard a guess that it is the pension funds and insurance companies, those who were buying the equity tranches of CMOs, that will suffer the greatest losses. Their balance sheets are huge, and they will be able to stagger on for a time. Others will provide additional capital knowing that they are systemically critical. In the end the Fed will not allow them to fail. It will have to print. This time when capital panics out of the dollar and dollar assets, there is one fewer exit.

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1 Piper, Kelsey. "Sam Bankman-Fried tries to explain himself." Vox.com. 16 Nov 2022.
2 Fried, H. Barbara. "Beyond Blame." Boston Review. July/August 2013.

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