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Claims That DeFi is Unraveling or Structurally Flawed are Unfounded

CeFi Models Have Stumbled Exposing Flaws, While DeFi Has Worked, As Expected

Amidst the severe contraction in cryptocurrencies and the near or actual insolvency of prominent crypto-infrastructure companies (BlockFi, Celsius, Voyager), there is a school of thought that DeFi is in decline and its foundational structure is weak. In our opinion, that observation is misguided, ill-informed, and outright false. The problems we are witnessing began with a steep, sudden, and broad market decline in all cryptocurrencies which triggered problems in "algorithmic" Stablecoins like Terra Luna (and not the fully fiat-backed Stablecoins like USDC or USDT), and a consequent deleveraging that ensued at major CeFi companies which has pushed many trading and prime brokers towards insolvency. But these problems are almost entirely emblematic of CeFi companies and in no way a reflection on the foundational principles and the soundness of operation of DeFi platforms. The DeFi infrastructure and underlying models have performed very well, just as expected, despite being subjected to severe market pressures. This Viewpoint clears the misunderstanding that DeFi is unraveling or that its core underpinnings are faulty and explains where the problems started and propagated from the current market dislocation. The notion that DeFi is somehow to blame for the current problems in Crypto partly originates from a lack of fundamental understanding of the differences between traditional finance, CeFi, and DeFi, and how DeFi actually works.

Getting the Nomenclature Right: TradFi, CeFi, and DeFi

Traditional Finance or TradFi is built around an "intermediated" model, where retail and institutional customers go through intermediaries (banks, insurers, asset managers, brokers, exchanges, custodians, etc.) to execute the four basic financial activities: payments, borrowing/lending, investing, and insurance. Centralized Finance or CeFi also operates on a centralized finance model just like traditional finance, except that it involves cryptocurrencies and digital tokens. Just like in TradFi, the CeFi model relies on an individual identity for underwriting and managing risk through intermediation, which is the source of most of the problems plaguing CeFi models in the current market.

In sharp contrast, Decentralized Finance or DeFi is built on a fully decentralized, blockchain-based financial structure with smart contracts and programmable code replacing intermediaries' role in underwriting, executing, and managing the risk of financial transactions prevalent in traditional finance and CeFi. The Smart contracts in DeFi are immutable and controlled via on-chain governance. Notably, the parameters (what is deemed to be acceptable collateral, or the actual interest rate or yield paid) in DeFi agreements can be set by the Community, but not the core risk parameters, which are programmatically embedded inside the protocol. For a platform to be deemed pure DeFi, the settlement layer must be fully decentralized. True DeFi models must possess three essential characteristics: 1) the financial assets in the model must be controlled by the user, 2) no single entity can unilaterally alter the execution of a transaction, and 3) no single entity can unilaterally

change the execution of the protocol. Every change must be approved by the Community and reflected on the Blockchain.

The truth is those true DeFi models (exemplified by companies like Aave, Compound, DyDx, MakerDAO, Synthetix, Uniswap, etc.) are working robustly and performing as expected. Sure, these platforms do experience stress in terms of volumes and a decline in value-locked stats. However, this is no different than the market cap losses on equity exchanges like NYSE or Nasdaq, which may impact the revenue-generating ability of the venue, but it doesn't mean that the underlying market infrastructure is broken. Many of the problems we are seeing in CeFi businesses today are classic traditional finance issues, which are largely avoided by core DeFi principles.

Putting the Last Few Months of Crypto Events in Perspective

The crisis kicked into high gear in April 2022 as Bitcoin declined 50% from 46,000 in April to 20,000 by June (its all-time high was 68,789 on Nov 18, 2021). Similar precipitous price declines in other cryptocurrencies created a cascading effect across the entire crypto market. In May 2022, a large sell order of Luna, a crypto-token backed by the algorithmic Stablecoin Terra (UST, which was partially backed by BTC and not by fiat) prompted other holders of Luna to seek immediate liquidity, putting pressure on the Terra foundation (which was backing Luna using UST) to put gates on customer withdrawals to try and stabilize the token. But as the confidence deteriorated rapidly, the Terra foundation couldn't keep up with withdrawals which eventually broke the UST-Luna peg, resulting in a Luna wipeout, which briefly put pressure even on fully-fiat-backed Stablecoins like Tether's USDT and Circle's USDC.

This caused widespread loss of confidence, and the contagion spread to all market participants. One of the firms highly levered to the Terra-Luna debacle was Three Arrows Capital (3AC), which had accumulated massive exposure by acquiring leverage from leading crypto prime brokers, including Celsius, Voyager, and BlockFi. The 3AC founders declined to return margin calls from these prime-broker lenders.

To protect their customers and prevent a "run on the bank," the Crypto lenders put up gates on customer withdrawals, creating panic and forced selling on other venues that were still operating, further decimating market confidence.

The common problem has been CeFi companies taking Crypto deposits from customers, promising above-market yields, depositing this Crypto into DeFi, and utilizing massive leverage. This strategy worked very well as Crypto prices kept rising during 2019-2021 and VC/PE investors kept financing these CeFi companies at ever higher valuations. But as crypto prices precipitously declined and pushed Stablecoins to de-peg, the weak business models and excessive leverage of CeFi companies got exposed, thrusting them into insolvency.

Importantly, almost all crypto-related companies in crisis today are companies with CeFi models, not DeFi. The continuing turmoil in Crypto is centered around CeFi companies characterized by centralization, weak business models, low transparency, lack of regulatory oversight and supervision, misrepresentation, and outright fraud. In contrast, DeFi infrastructure has performed remarkably well due to its decentralized, programmatic structure with almost no human involvement or judgment. This explains why none of the major DeFi companies are facing insolvency or under undue financial stress.

One of the most revealing developments from this mayhem is that despite their dire financial situation, CeFi companies (e.g., Celsius, Voyager Capital) have been repaying their loans to DeFi protocols in full because that is the only way they can release the underlying collateral, which is typically set at 150% of the value of the loan and will be ultimately used to generate a partial recovery for their customers. This shows the ultimate power of DeFi platforms that command the highest priority in the liquidation waterfall generating total payback for their community members! All this was possible as the rules of engagement were programmatically codified, and no

individual risk officer could override these risk parameters. This demonstrates the power of DeFi platforms to manage risk and collect dues without ever stepping into a courtroom.

The Crypto Crisis and Similarities to 2008

There are strong similarities between the current Crypto crisis and the global financial crisis of 2008. Just like big bets in the real estate market combined with high leverage unraveled once home prices began correcting in 2008, the current crisis in the broader Crypto market was precipitated by a sudden decline in Crypto prices which became a spark that set the highly leveraged crypto market ablaze. The assets involved were different – real estate in 2008 and crypto in 2022 - but the market conditions marked by excessive risk-taking with massive leverage, poor risk management, and weak business models were very similar. So when real estate and crypto declined in 2008 and 2022, respectively, the entire market unraveled with significant collateral damage to adjacent sectors and market segments. Just like Lehman Brothers became the poster child for the GFC in 2008, Celsius and Voyager have come to epitomize the Crypto crisis of 2022. In 2008, market stress caused some money market funds to break the buck and de-peg, severely hurting investor confidence. This de-pegging caused basis risk, which turned into liquidity risk, and in turn, caused credit risk, eventually resulting in broad contagion, systemic instability, steep declines, and a widespread loss of confidence. Similarly, the dramatic decline in crypto in Spring 2022 caused Stablecoins like Terra Luna to de-peg and pressured Tether and USDC. This reverberated through the entire crypto market, causing counterparty issues, forced liquidations, and market unrest. Luna's collapse was the spark that lit the whole crypto market ablaze, with Three Arrows Capital receiving the brunt of it all due to high leverage. Just like Lehman bet big on real estate derivatives, 3AC had made highly leveraged bets on crypto using LUNA, which all suddenly collapsed. The 3AC saga is also eerily similar to the hedge fund, Archegos, which created systemic exposure, as the banks weren't aware of the risk Archegos had accumulated from loans from their prime-broking units.

The irony is that Satoshi Nakamoto's efforts and the core idea of cryptocurrencies were motivated by a desire to eliminate or largely address the problems of the traditional, centralized financial system, which caused so much damage in 2008. But a decade later, crypto has been utilized by CeFi firms with excessive risk-taking and poor risk management to lever up, aggressively market, and misrepresent its benefits to millions of naive investors, in a very lightly-regulated setup, to create an explosive market situation which strongly resembles what happened in 2008.

Six Observations About the Current Crisis and DeFi

Here are important observations about the current crypto crisis, particularly about DeFi.

- ***CeFi has faltered, DeFi has not:*** If you look at the mayhem in the broader crypto market, the problems are centered around centralized finance models, but not in DeFi. The companies under stress, facing insolvency and liquidation are classic CeFi companies - BlockFi, Celsius, Three Arrows Capital, and Voyager. Severe declines in the crypto market and the resulting demise of algorithmic Stablecoins like Terra Luna (and the de-pegging of Tether) have hit these CeFi companies hard. But classic DeFi companies – Uniswap, Aave, Compound, dYdX - have their business models remain intact, are conducting business as usual, and demonstrating strength. Their revenue may be contracting or the value of their tokens declining, but they are still in business and surviving this extreme market dislocation with robustness. Companies like Aave and Polygon have even announced major product releases and are continuing their infrastructure build-up.
- ***CeFi models masquerade as DeFi, but they are not:*** CeFi models often masquerade as DeFi and can confuse market participants. But they are centrally-driven, prone to excessive risk-taking, and have often been poorly-risk-managed traditional finance platforms. As they utilize the Blockchain for some of their activity, deal with crypto, and loan funds to DeFi protocols, they can be mistakenly considered as DeFi. But they are not. That explains why prominent media like the Wall Street Journal and the

Financial Times have mistakenly described DeFi as failing and in demise when in fact, the examples they refer to are CeFi companies.

- ***Classic TradFi problems are surfacing in CeFi:*** A lot of the issues surfacing in CeFi today are classic problems encountered in traditional finance, including a lack of transparency, high leverage, and centralization. The market disruption in crypto involving CeFi companies is exposing weaknesses that are problems we have seen in traditional finance: very high leverage, a lack of transparency, bad human judgment, and outright greed. The 2008 financial crisis involved mortgage-related derivatives hidden in opaque balance sheets, which during a real estate correction, caused liquidity problems that quickly became credit issues and eventually materialized into systemic problems and contagion for the entire market. There are strong parallels to that in CeFi today, as a broad decline in cryptocurrencies has exposed opaque balance sheets, weak business models, and the insolvency of companies such as Celsius and Three Arrows Capital.
- ***Loans to DeFi have emerged as senior secured debt:*** Because DeFi models are programmatic, driven by smart contracts that auto-execute when certain conditions prevail and are over-collateralized, funds lent to DeFi are proving to be more secure and emerging as senior secured debt, ahead of common stock and preferred debt. Contrast that to traditional finance and CeFi where deposits are loaned out with high leverage, while human judgment and willingness to pay often determine who gets paid. In contrast, loans to DeFi protocols are automatically paid when certain conditions are met, it is programmatically driven and automatic, with no human subjectivity. Despite problems at CeFi companies, they have returned funds lent to DeFi protocols, even while not returning client deposits or repaying other lenders. Celsius has fully paid its $800 million of loans owed to Aave, Compound, and MakerDao while its 1.8 million customers are still waiting to recover their $4.2billion in deposits. So, funds loaned to DeFi protocols are emerging more secure than in TradFi/CeFi, essentially as senior secured debt, much higher up the capital structure than regular debt.
- ***Don't confuse market declines with structural issues:*** It is important to understand the distinction between a cyclical decline in asset prices and structural problems in a market. Just like equities and other assets decline from time to time, crypto prices have also been contracting. Across all assets, such market disruptions expose business model weaknesses, sub-par balance sheets, and bad management. We see this happening in the Crypto market today. But asset price declines don't always mean that the market is broken or that there are underlying structural problems in an asset class. Just like the current bear market in equities is not raising concerns about the soundness of the underlying equity market structure, the downturn in Crypto doesn't mean there are structural issues with DeFi.
- ***The market downturn will spur Regulatory action:*** Regulators are often spurred into action due to political pressure, which inevitably comes after a market downturn hurts investors and public sentiment sours. The dismal performance of Crypto and the ensuing bankruptcies that have left scores of investors in the lurch will push politicians to act, and that will, in turn put pressure on regulators to take action. This will be a shot in the arm for this entire sector. We can expect regulators to act in three areas: 1) further clarify whether Crypto and derived instruments are securities or not and under whose regulatory jurisdiction they fall, 2) impose much greater transparency, investor education, and disclosure requirements on both CeFi and DeFi providers (although DeFi is vastly more transparent with all the data on-chain and publicly available, and 3) significantly enhance supervision of CeFi exchanges (e.g., Binance, Coinbase, and Kraken), DeFi exchanges, and other market participants, to rein-in market manipulation and other infractions.

Future Course for DeFi: Where Do We Go From Here

Where does the current dislocation in crypto leave DeFi? As discussed, problems in the Crypto market today overwhelmingly originate from CeFi companies and not DeFi, and don't cast a shadow on core DeFi infrastructure. But the collateral damage is bound to engulf the entire sector and stymie DeFi's growth. As

crypto prices decline and customer confidence in this whole space dwindles, Total Value Locked (TVL) in DeFi is shrinking, down 70% from its peak in December 2021. This could further erode customer confidence and delay institutional acceptance, involvement, and adoption of these models. It may also hinder or delay much-needed investment in the continued growth of DeFi infrastructure.

However, over the long term, we see tremendous potential for DeFi and more growth ahead. It is built on sound technology and infrastructure and addresses key drawbacks of TradFi and CeFi, including opacity, decentralization, and human folly/greed. For sure, it will have to address regulatory concerns about AML/KYC and other risks. Sill, innovations like Zero Knowledge Proofs, Subnet-based fully validated DeFi, etc., present innovations that hold promise to address these concerns. We see continued interest from institutions in applying this technology in their businesses across every major finance function. The triumvirate of smart capital, institutional interest, and the best programming talent moving in DeFi's direction is bound to maintain the momentum. We don't consider DeFi as a replacement for TradFi and don't think DeFi will necessarily disrupt TradFi. Instead, both models will continue side by side, and there will be many meaningful bridges built between TradFi and DeFi. DeFi will be especially useful to address pointed limitations of TradFi in areas like cross-border payments, P2P lending/borrowing and insurance, and the creation of synthetic Derivatives.

Conclusion

Major market corrections are always confusing to understand and drive extreme emotions. It is difficult to predict their start/end, and people interpret them in ill-informed and outright wrong ways. The current crypto downturn is being interpreted as a structural problem with DeFi by some people, which this Viewpoint has explained is simply not true. All the problems discovered and the entities in trouble are classic CeFi companies. The DeFi model has worked remarkably well, just as expected. The core elements of DeFi – decentralization, transparency, replacement of human involvement with programmable code, and over-collateralization have proved resilient to crisis, and had they been followed, may have spared us the crisis we are witnessing in the CeFi world. But here we are, with Crypto shrinking to a third of its value, billions of customer deposits lost, and significant collateral damage to DeFi (TVL down from $240 Billion in Dec 2021 to $77 billion today). The good news is that prior downturns in crypto have ended up improving the ecosystem, wrung out excesses, and instead of being a fatal blow, have helped it progress towards a better future. This market downturn has been a massive stress test for DeFi models and their infrastructure, and they have performed very well. So despite the contraction in the crypto market, liquidations, insolvency, and a shot to confidence, we hope to emerge from this better, stronger, with renewed promise for DeFi to address the classic weaknesses of traditional finance.

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