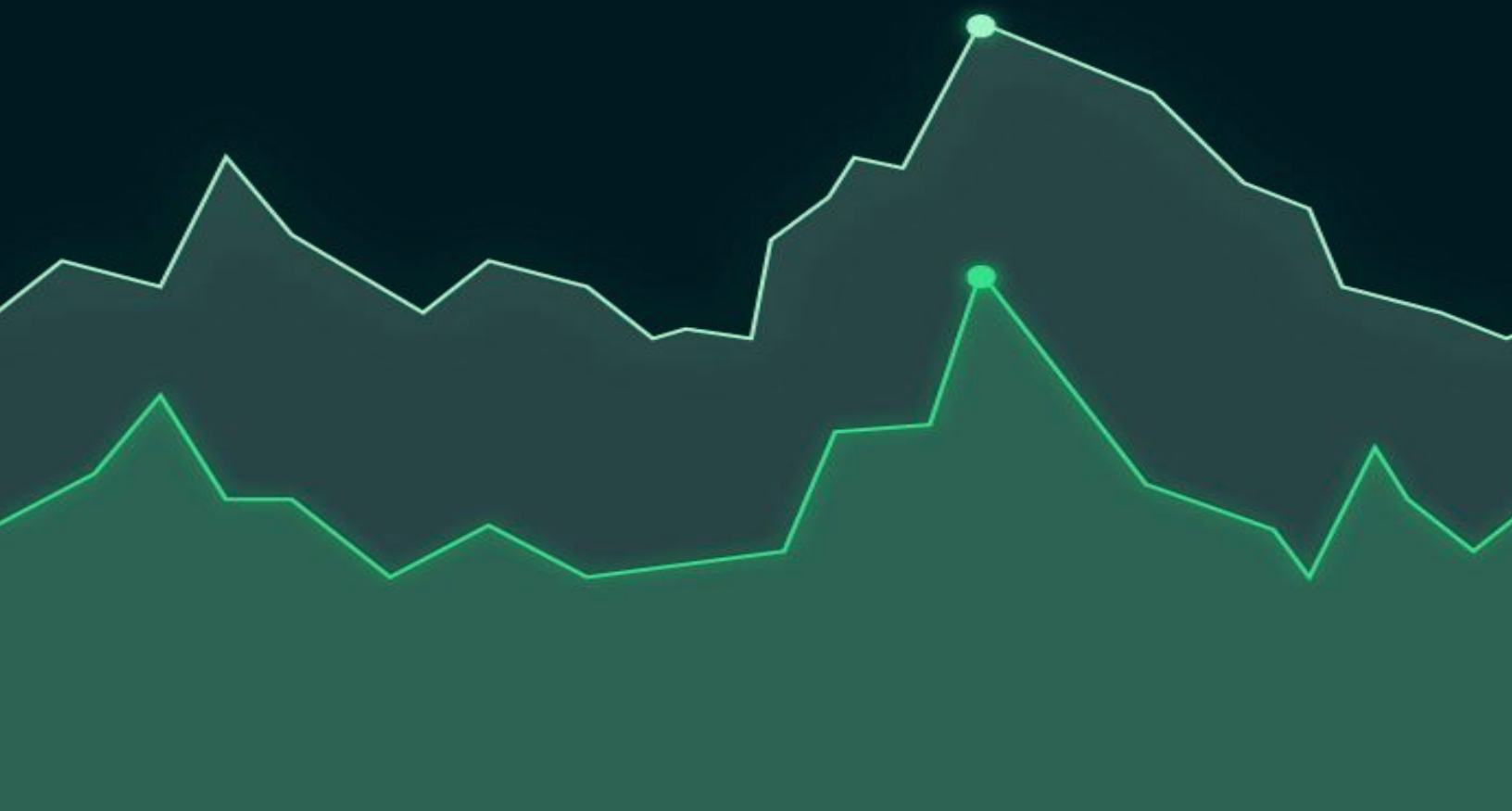
CryptoCompare

Exploring UST's Fall From Grace



About CryptoCompare

CryptoCompare is an FCA authorised and regulated global leader in digital asset data, providing institutional and retail investors with high-quality real-time and historical data. Leveraging its track record of success in data expertise, CryptoCompare's thought-leadership reports and analytics offer objective insights into the digital asset industry.

About This Report

The cryptocurrency market has been in disarray over the last week – the events that have transpired between May 8th and May 12th have sent shockwaves throughout the cryptocurrency industry. Previously a top 10 asset in crypto, with a peak market capitalization of over $40bn, the LUNA token has crashed to under 1 cent at the time of writing, with its flagship stablecoin TerraUSD seeing what looks to be a significant permanent depegging. The rest of the crypto space has also been hard-hit by this event, with significant sell-side pressure on other stablecoins, as well as Bitcoin and Ethereum. Many entities across DeFi and even traditional financial services firms have exposure to Terra's ecosystem. We believe the consequences of this blowup will become more clear over the coming weeks. Coupled with a pessimistic macroeconomic environment, the digital asset space is undoubtedly in a bear market. Having said this, crypto markets have persevered in similar crashes in the past, and this will be no different. For long-term investors and believers of the space, the coming months may prove to be a valuable buying opportunity.

Explore the data on the CryptoCompare API

For those interested in accessing CryptoCompare's data for their own purposes, including cryptocurrency trade data, order book data, blockchain data, social data or historical data across thousands of cryptocurrencies and 200+ exchanges, please take a look at CryptoCompare's API here: https://min-api.cryptocompare.com.

For questions related to our research or any potential requests, feel free to contact our research department at research@cryptocompare.com.

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TerraUSD's Fall From Grace

The recent blowup in the Terra ecosystem has been one of the most impactful events in the history of crypto - comparable with the collapse of Mt. Gox in 2014 and the sharp market crash in January 2018 and in March 2020. The aim of this note is to summarize how and why this has occurred, and to assess the ripple effects of this event.

The events of the last few days began on May 8th following a slight depeg of Terra's flagship UST stablecoin to 0.9888. While this seemed like a slight hiccup, things went from bad to worse and on May 10th when the stablecoin fell to a low of $0.755 (based on CryptoCompare's CCCAGG pricing). On May 13th, this fell to an all-time low of $0.078.

Figure 1 – Depegging of UST, May 6th – May 13th (Hourly Data)

Data from CryptoCompare's Hourly Candlestick Data Endpoint

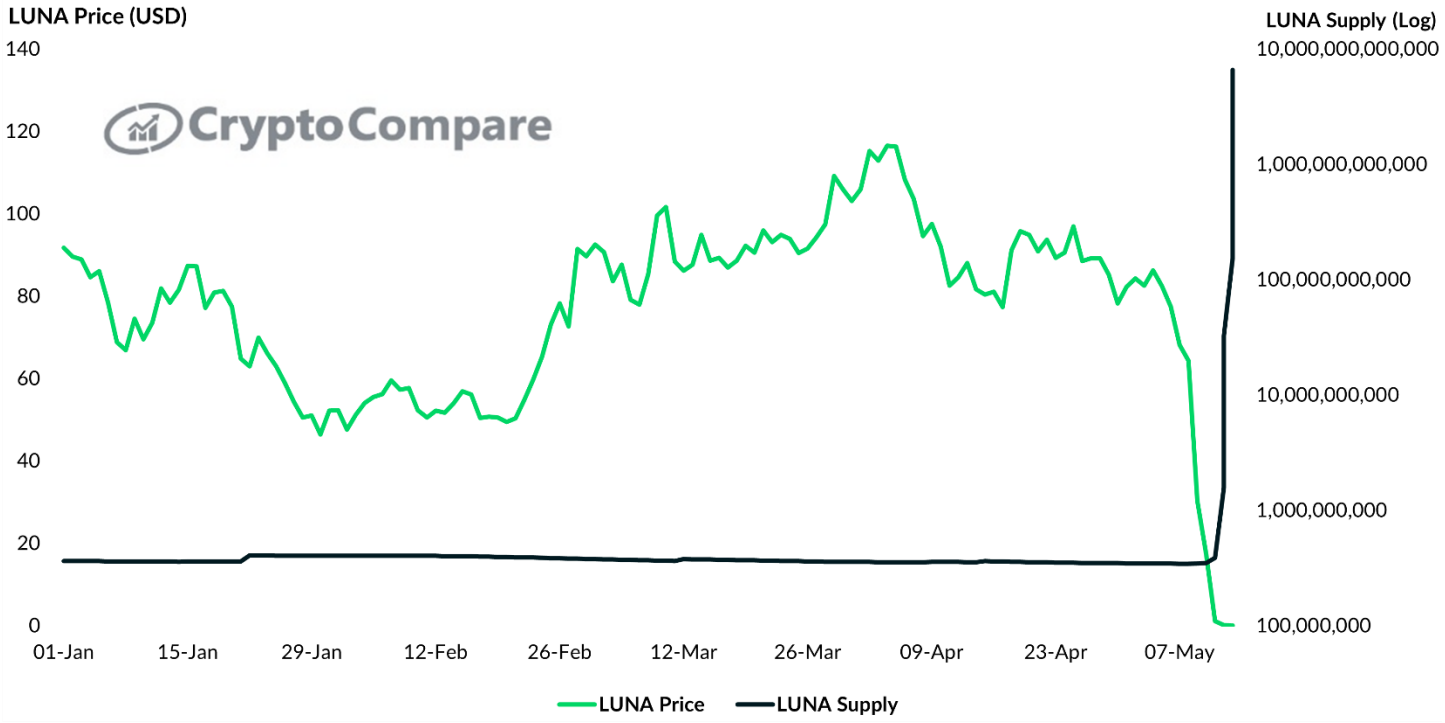
The reason for the depegging of UST revolves around the mechanisms behind Terra's algorithmic stablecoin. This type of stablecoin is uncollateralized in nature, and primarily relies on an arbitrage mechanism to sustain the peg, where $1 of LUNA can be exchanged for 1 UST and vice versa. Thus, if UST falls below the peg, arbitrageurs are able to redeem this for $1 of LUNA and pocket a risk-free profit. Thus, LUNA's supply (and therefore, price) can be dependent on this arbitrage mechanism and acts as a volatility absorber for Terra's stablecoin.

Importantly, there are other significant factors at play, including the available liquidity of UST on both centralized and decentralized exchanges such as Binance and Curve respectively.

Over the last few days, there has been significant sell-side pressure on UST across different crypto channels - withdrawals from Terra's Anchor protocol, Curve's Liquidity Pool, and sell orders from Binance and other centralized exchanges. This severe sell-side pressure showcased that the above arbitrage mechanism was not sufficient to maintain the peg. A temporary depeg led to FUD in the Terra ecosystem (Fear, Uncertainty, and Doubt) which thereafter caused a loop between further selling of UST, which exacerbates the depegging of the stablecoin, and thereafter leads to more FUD and more selling – hence the reference of a 'death spiral'.

At the time of writing, UST's peg has fallen as low as $0.078. There have been over 6 trillion new LUNA tokens minted, which has diluted its price down to $0.00000953. Overall, since the peak in early April LUNA's market capitalization has fallen from $41.2bn to $6.6mn, the largest destruction of wealth in this amount of time in a single project in crypto's history. Historically, algorithmic stablecoins have always suffered a 'death spiral' - which is a fair description of the events of the last few days.

Figure 2 – LUNA Price vs. Supply, 2022



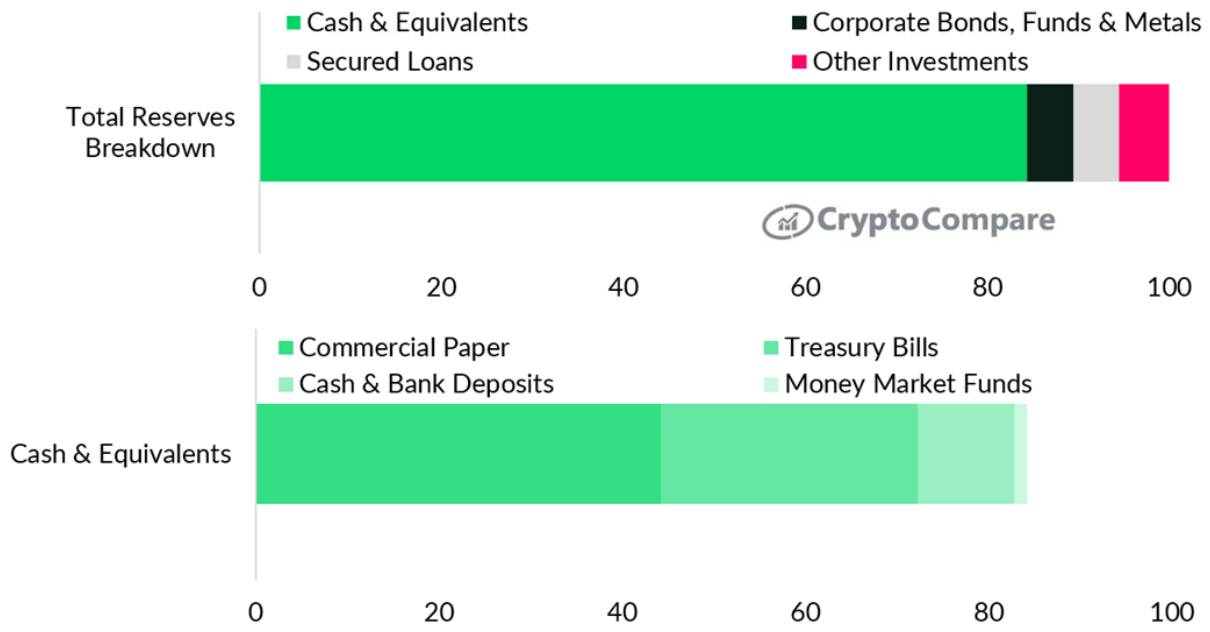
Stablecoin Market: How Fragile Is It?

Recently, the FUD surrounding TerraUSD has gravitated into other stablecoins, which have also been subject to extreme sell side pressure over the last few days. FRAX – a partial algorithmic stablecoin – saw a slight depeg on May 9th, and has been depegged for the majority of the past two days. Most recently, Tron launched its own algorithmic stablecoin - USDD – which has also experienced some depegging since its launch on the 2nd of May.

The most significant follow up case, however, has been the depegging of USDT, due to similar sell-side pressure across different crypto avenues - most importantly the USDT liquidity pool in Curve, one of the largest DeFi protocols by Total Value Locked. It is a protocol used for stablecoin trading and yield generation.

Contrary to TerraUSD, USDT is a collateralized stablecoin, and is thus fully backed by reserves including cash and cash equivalents like commercial paper:

Figure 3 – USDT Reserves, December 31 2021



In theory, collateralized stablecoins like USDT should not suffer a similar crash as TerraUSD - given they are fully backed and should have sufficient reserves to redeem any USDT for fiat currency. However, Tether has depegged in multiple instances in the past, most notably in 2018 when it fell to $0.861 - it then took 3 weeks for the peg to be restored. Given USDT's reserves, we do not believe there is a risk of a permanent depeg of the stablecoin,

but rather, fear in the markets has had contagion effects on the entire sector. We believe volatility in markets will subside over the coming weeks, and USDT's peg will be restored.

All in all, the stablecoin sector will see a drastic change over this period. While TerraUSD had threatened the status quo of collateralized stablecoins, these have and will grow stronger from this event. We see two clear winners from this crisis:

- **First, USDC**, a collateralised stablecoin which has had little controversy in the past, unlike its main rival USDT. It has a clear governance process and has been subject to monthly attestations by Grant Thornton LLP which assess the value held as reserves for the stablecoin. While USDT provides similar reports on a quarterly basis, its exposure to unknown commercial paper provides a source of concern for investors.

- **Second, DAI**, a decentralized stablecoin which is fully collateralized by a range of digital assets. Its governance token MKR is used by holders to make decisions on the direction of the protocol. In this sense, DAI was a direct competitor to TerraUSD, both aiming to be the leading decentralized stablecoin, albeit via different stablecoin models.

Following TerraUSD's debacle, USDC comes out as the clear winner in terms of centralized stables and the wider market. To a smaller extent, DAI has also benefited and will be the leading decentralized stablecoin in the medium term, unless another competitor rises to the challenge.

Ripple Effects

The entire crypto market has been hard hit by the blowup in UST and LUNA. Unsurprisingly, Bitcoin and Ethereum were down -15.0% and -22.5% from May 8th to May 12th, and have seen a slight recovery on May 13th. Since the start of the year, the entire crypto ecosystem has lost $1tn of its market capitalization – an almost 50% decline. Apart from the FUD created by these recent events, individuals with leveraged positions to the LUNA ecosystem have been liquidated, leading to the forced selling of other digital assets like Bitcoin and Ethereum.

More importantly, there is significant exposure to UST in much of DeFi, as well as traditional finance products that provided depositors with high yields via Terra's Anchor protocol. Magic Internet Money (MIM), another stablecoin created by Daniele Sesta saw its native token SPELL fall 56.6% on May 11th, due to the fact that the stablecoin was backed by around 1.3bn of UST. This was later swapped for MIM, restoring its peg to $1. Many of these protocols and end-users will suffer the consequences of the bank run on Anchor and UST. We believe these effects will become more clear once market volatility subsides and the ecosystem begins to process these events. The table below outlines some major protocols, applications and firms which had exposure.

Figure 4 – Entities with Exposure to LUNA and/or UST

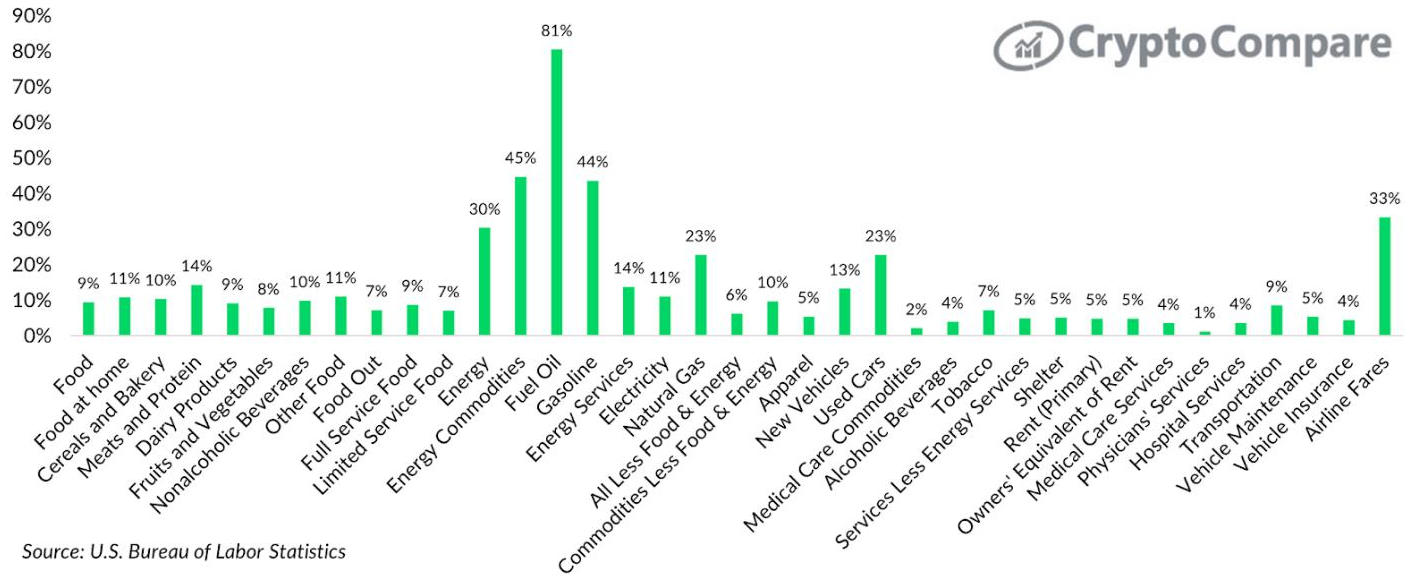
Entity	Type of Entity	Exposure to LUNA/UST
Celsius Network	Financial Services	Offers 18%+ yield on deposits via Anchor protocol.
Alice Pay	Personal Finance	Offers 20%+ yield on deposits via Anchor Protocol.
Cosmos Ecosystem	Layer-1 Blockchain	Terra is a Cosmos Blockchain. UST and LUNA can thus be used throughout the entire Cosmos ecosystem. Moreover, UST was the only stablecoin that is currently available in the ecosystem.
Avalanche Ecosystem	Layer-1 Blockchain	Avalanche and Terra announced a partnership to bolster their DeFi ecosystems in April this year, exchanging $100mn worth of AVAX for LUNA at the time of the agreement. Terra Labs purchased an additional $100mn of AVAX for its reserves.
Delphi Digital	Crypto Research and Investments	Delphi Digital, a well renowned crypto research and investment firm, had investments in LUNA and Anchor's ANC token. It has also worked with some of Terra's largest protocols, such as Astroport, a Terra decentralized exchange.
Hashed	Venture Capital	A VC firm based in Singapore, Hashed was an early backer of Terra Labs.
Arca	Asset Management	The co-founder and CEO, Rayne Steinberg confirmed the fund had exposure to both LUNA and UST as their core holdings.

Entity	Type of Entity	Exposure to LUNA/UST
Arrington Capital	Crypto Native Investments	In November, Arrington Capital announced the $100m Anchor Yield Fund to provide institutional investors with insured exposure to yields from Anchor. On May 11th, they removed all mention of the fund from their website.
Galaxy Digital	Financial Services	The firm and its founder, Mike Novogratz were one of the most prominent backers of LUNA. They participated in the Terraform Lab's $150m raise in July 2021.
Jump Crypto	Crypto Native Investments and Infrastructure	Jump Crypto and 3AC Capital led Luna Foundation Guard's $1bn raise in February.

Lastly, an important consequence of the UST depeg will be the increasing attention from regulators. While previous crashes in cryptocurrency markets have all revolved around volatile and speculative assets and infrastructure - Mt. Gox, and Bitconnect for example - this crash revolves around stablecoins, which have never seen a debacle of such magnitude. On May 11th, Janet Yellen raised the UST depeg during her Senate hearing, and the federal government's executive order over a month ago will undoubtedly cover stablecoin regulation, particularly following the latest crash. According to CoinDesk, the EU commission has even looked at potentially banning large-scale stablecoins. We believe this event will lead to more stringent mandates from regulators, particularly in the realm of stablecoins. More importantly, it will further encourage Central Banks to expedite the process of issuing CBDCs. Unfortunately, this is the reason why a decentralized stablecoin like TerraUSD would be needed - to avoid excessive censorship and a centralized control on stablecoins and non-volatile currencies.

Macroeconomic Backdrop

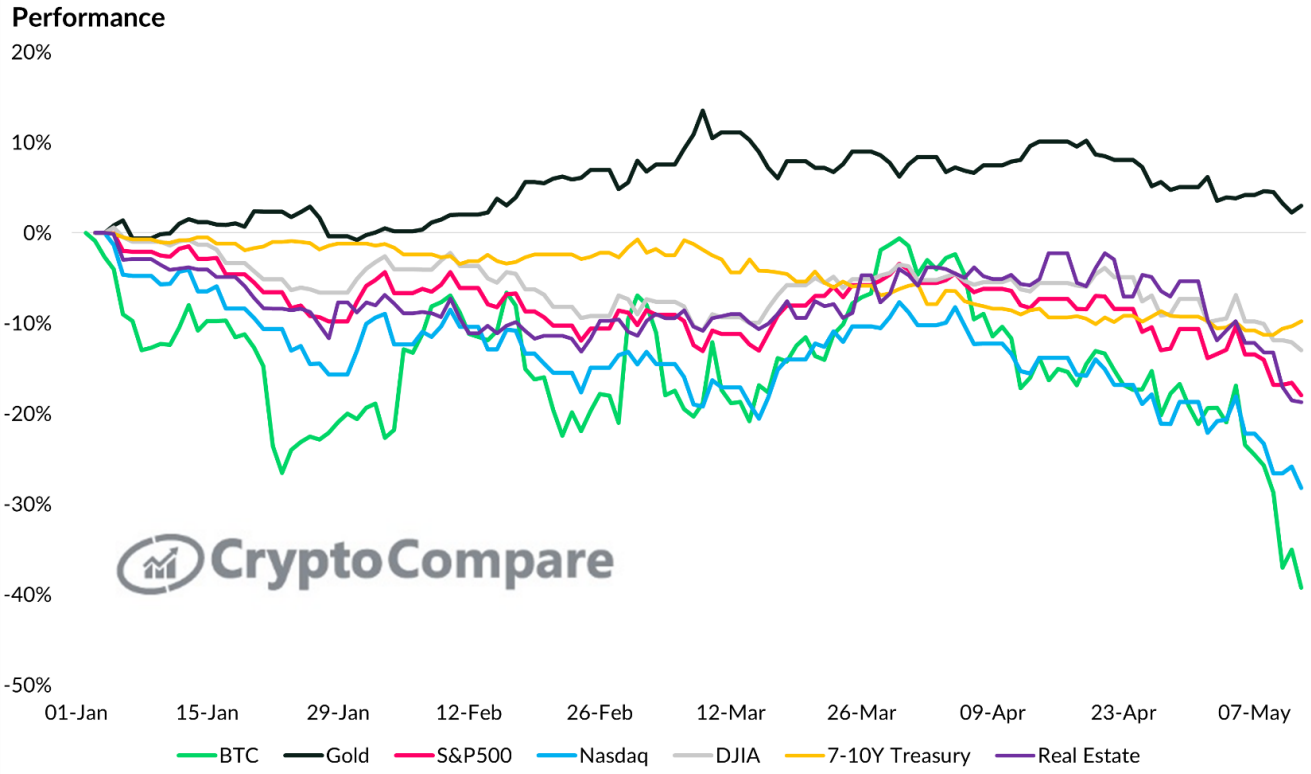
Figure 5 – US CPI Breakdown, April 2022



Inflation is very much at the forefront of the current macroeconomic landscape as CPI data released from April shows an 8.3% year-over-year increase, with energy commodities up as much as 81%. The widespread inflation fears and subsequent tightening of monetary policies around the world has led to a heavily risk-off global sentiment, as the world weighs the possibilities of recessions. The Federal Reserve has already executed two interest rate hikes so far this year - of 25bps in March, and 50bps in May, with the latter being the largest interest rate hike since 2000. Chairman Jerome Powell has also been vocal on the Fed's plans for multiple more 50bps rate hikes in the next year, and unsurprisingly equities, real estate, and even gold have suffered so far as all market sectors price in these hawkish monetary policies.

Importantly, with higher interest rates even fixed income assets have performed negatively - bonds are negatively correlated with interest rates, as future cash flows are discounted at a higher rate. We are thus in a rare market dynamic where there seems to be no clear safe haven for investors. As aforementioned, the expectation of continued rate hikes this year suggests this dilemma will drag on until the end of the year. The real world economy will also be impacted, as borrowers with variable rates will see their interest costs rise, and real estate prices will theoretically decline when the cheap financing we have seen over the last decade disappears. Indeed, it is likely that this marks a change in the paradigm of monetary policy, cheap financing, and high liquidity

Figure 6 – Performance of Major Assets, 2022 YTD



Market wide risk-off sentiment has led to YTD performances of -39.2%, -28.2% and -18.0% for Bitcoin, Nasdaq and S&P 500 respectively, with the Dow Jones only marginally outperforming at -13.0%. As markets begin to price in a recession, eyes turn to gold which has only returned 3% in the same period. This has culminated in the worst start to a trading year for the S&P 500 since 1932 (which returned -26.1%), in the first 90 trading days of 2022, the index had dropped 17.4%.

What may be surprising is that the long heralded bitcoin inflation hedge has not come to fruition. As a risk-asset, Bitcoin has correlated highly with the tech heavy Nasdaq index this year, due to the similar attitude of investors towards the two instruments (in terms of risk). While knowledge of crypto has been growing exponentially, the understanding and underlying ideology may not be as widely known - Bitcoin serves as an alternative, decentralized and constant monetary policy against the centralized actions of central banks. In a sense, similar to the value proposition of gold - which provides an alternative source of value than cash backed by simply the trust on government. There are many that still believe that the Bitcoin blockchain technology seeks to replace cash as per Satoshi's vision of peer-to-peer payment, However, Bitcoin's use case is evolving away from that and toward a store of value, and thus to a certain extent seeks to replace, or even coexist, with gold rather than cash. So although many investors, retail and institutional alike, hold Bitcoin, some may do so purely for speculative reasons rather than for its value proposition.

What's Next?

The debacle in TerraUSD has stunned the entire crypto community. It is worth noting that many investors saw the flaws of the algorithmic stablecoin system, with pseudonymous individuals betting millions with Do Kwon on the future price of LUNA. These investors, as well as those who have shorted LUNA, have seen significant profits.

Looking forward, the digital asset space is undoubtedly in a bear market. The Terra ecosystem, which was previously the second biggest by Total Value Locked (TVL) just under Ethereum (with a peak TVL of $21.7bn on May 5th) has been dismantled – any projects that raised funds in LUNA or UST will close or be in disarray for the foreseeable future. As aforementioned, we believe it will take time for the market volatility in the ecosystem to subside - in these coming weeks we will find out the true cost of this crash. Many projects that were launched during the bull market of the last two years will struggle to survive, specifically those that provide no long-term value, and that may not have access to further capital. Thus, it is very possible, even probable, that crypto markets have some more downside to go, particularly amidst a restrictive macroeconomic environment.

Having said this, the digital asset space has forever experienced these volatile events. The drawdowns we are currently seeing in Bitcoin and Ethereum, over 50% down from all-time highs, have been experienced on many previous occasions - the COVID-19 crash, the bubble burst of 2018, and the bankruptcy of Mt. Gox in 2014 are some important examples. Cryptocurrencies persevered following all of these events, and we believe this will be no different. Digital assets are an important technological innovation, and the vast amount of intellectual capital flowing to the sector from financial services and web2.0, typically seen as the most prestigious industries for recent graduates, provides comfort in the future of the industry.

In fact, the need for a decentralized alternative to traditional financial systems is as important as ever. With global inflation rates at 40-year highs, and an incoming recession with increasing interest rates, the traditional financial system and the real world economy is heading into a downturn. Digitalization will continue to consume backdated industries, and this will only benefit digital assets. This crash points towards the beginning of a possible year(s) long bear cycle, where developers will continue to build and come up with new innovative services in the space. For investors with a long-term timeframe (i.e. 10 years +), the next few months may prove to be a valuable buying opportunity.