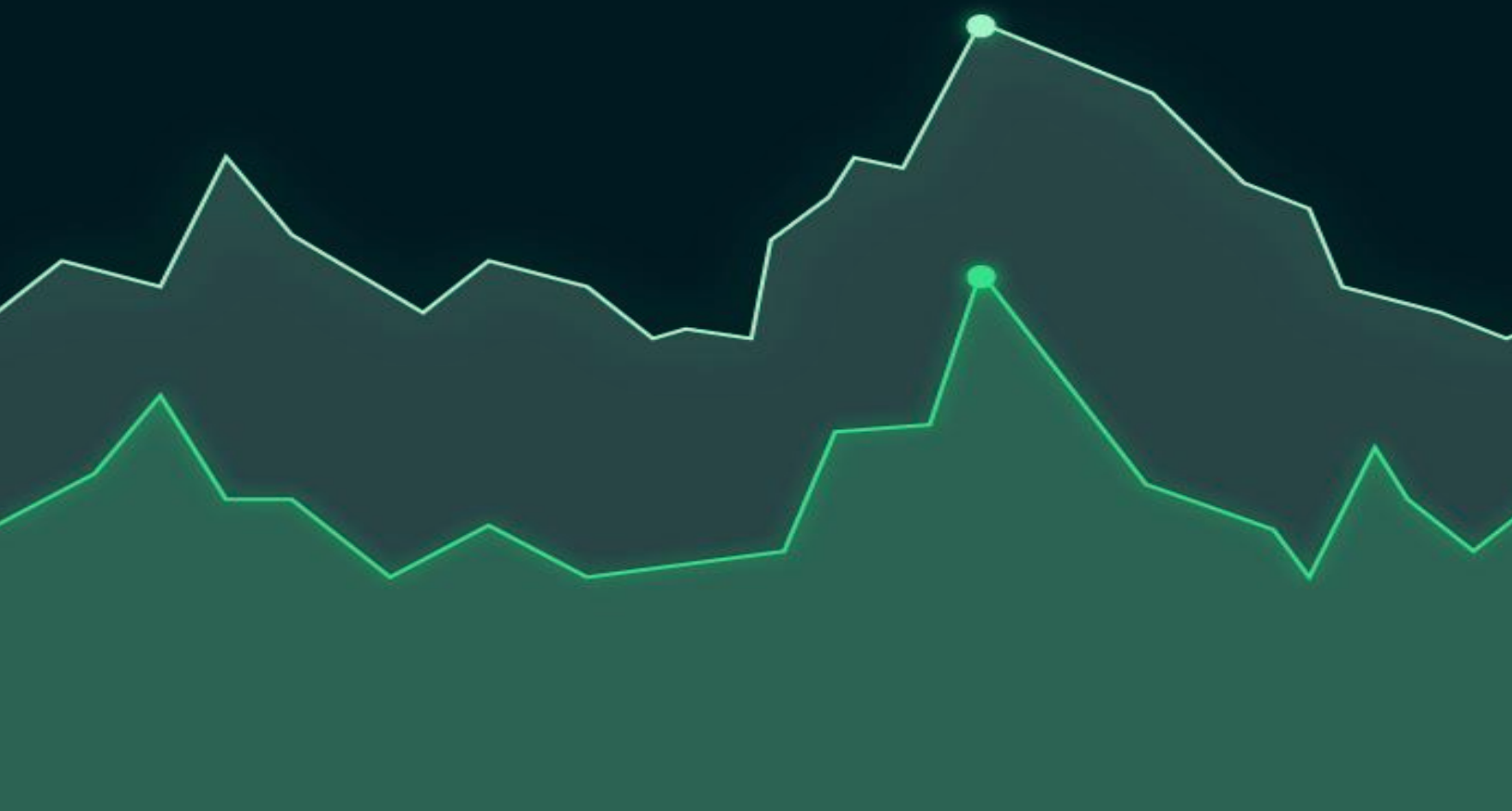
2022 Q3 Outlook:

Winter is Here



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 second quarter of 2022 saw the beginning of a bear market in the digital asset space, and what might be the first multi-year long bear market since the bubble burst of crypto in 2018. Idiosyncratic events within the industry, including the collapse of UST and Terra, and the insolvency of Three Arrows Capital and several centralized saving and lending platforms have been the trigger for this bear market. However, the macroeconomic landscape is also dire, as other risk-assets like equities experience similarly negative risk-adjusted returns. This report aims to capture, explain, and analyze these events and put into context what it might mean for cryptocurrencies over the next quarter and beyond. We cover macroeconomics, stablecoins, DeFi, NFTs, and more.

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Executive Summary

The second quarter of 2022 was catastrophic for the digital asset space. Bitcoin and Ethereum fell 56.3% and 67.4% respectively, recording one of the worst quarterly performances in their history. The collapse of UST and the Terra ecosystem, which could be interpreted as a black swan event, and the subsequent contagion that led to the bankruptcy of Three Arrows Capital and the insolvency of multiple centralized yield providers like Celsius, have undoubtedly sent the industry into a bear market.

The macroeconomic landscape has also been a key headwind, as record high inflation plagues the world economy – 9.1% YoY in the United States as of June 2022. This has led to panic in financial markets – most major asset classes are down, with the famed 60/40 portfolio falling 16.1%, its worst start of the year since records began in 1976. Having said this, real-rates have turned severely negative, putting into perspective the potential of risk assets like cryptocurrencies, as fiat monies continue to devalue at a faster pace.

Primarily due to the fall in price of digital assets, Total Value Locked (TVL) in DeFi has fallen 65.7% this quarter. Major DeFi protocols have been at the forefront of the latest stress events in the space, and have proven the value of a decentralized financial system. We believe that this bear market will lead to the development of innovations that will lead the next bull run in digital assets, similarly to the innovations that occurred in traditional markets following the 2008 financial crisis, and in cryptocurrencies following the bubble burst in 2018.

Stablecoins have also been a focal point of the digital asset industry following the collapse of UST and Terra, showcasing the innate flaws of algorithmic stablecoins. We believe, however, that collateralized stablecoins are sufficiently liquid to endure a bank run, as shown by a scenario analysis on page 14. Other areas of the industry have also seen important developments. Stablecoins were a focus of attention following the collapse of UST and Terra, however, we believe collateralized stablecoins are sufficiently liquid to endure a bank run, as shown by a scenario analysis.

Q2 2022 Recap

The digital asset space has been hard hit over the last quarter. Q2 was Bitcoin's second-worst quarterly performance in its history, returning -56.3%, while Ethereum declined by -67.4% over the same period. This negative performance can be attributed to a trifecta of intensifying market conditions, a liquidity & credit crunch within the sector, and a revaluation of risk assets across financial markets.

Having said this, it is important to put Bitcoin into context with other risk-assets. While the volatility of Bitcoin and cryptocurrencies has long been understood, traditional assets have also performed extremely poorly this quarter. This goes as far as strategies that have been the pillar of investment principles for decades. For example, the famed 60/40 portfolio, comprising 60% equities (S&P 500) and 40% bonds (Bloomberg US Aggregate Bond Index) has returned -16.1% so far this year - the worst year-to-date performance of the portfolio since the launch of the fixed income index in 1976.

Thus, it is unsurprising that a high-risk asset class such as crypto has seen severely negative returns amid negative market conditions. What is striking is the performance of various growth stocks which have underperformed Bitcoin, even with much lower volatility. Figure 1.1 below illustrates some of these equities, along with Bitcoin and the NASDAQ index, while Figure 1.2 summarizes the quarterly performance of various assets since the beginning of 2021.

Figure 1 – Growth Asset Returns, H1 2022

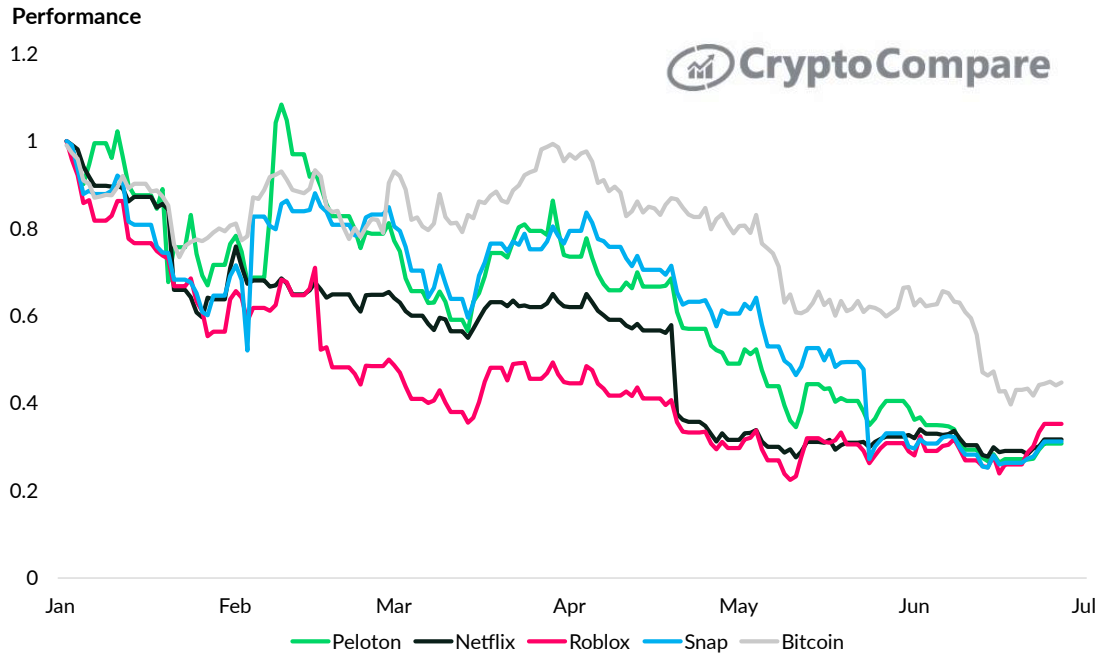


Figure 2 – Quarterly Returns of Assets and Markets, 2021 – H1 2022

Date	21Q1	21Q2	21Q3	21Q4	22Q1	22Q2
BTC	100.1%	-40.4%	5.7%	5.4%	-1.5%	-56.3%
ETH	162.7%	18.6%	18.5%	22.5%	-10.7%	-67.4%
LUNA	2779.5%	-65.1%	262.3%	119.9%	20.6%	-99.9%
SOL	953.7%	83.0%	284.6%	20.2%	-27.7%	-72.5%
XRP	139.6%	23.8%	27.8%	-13.0%	-1.7%	-59.2%
NASDAQ	2.8%	9.5%	-1.5%	8.3%	-9.1%	-22.4%
GOLD	-9.5%	3.3%	-3.2%	4.1%	6.7%	-7.4%
10YR BOND ETF	-13.4%	6.4%	0.5%	2.6%	-9.8%	-4.5%

While the performance of digital assets has been far from positive, it is important to view this on a relative basis compared to the rest of the investable asset universe. As mentioned, digital assets have also borne multiple catastrophic events which have caused contagion amongst the ecosystem, thereby worsening performance. Two, in particular, come to mind.

First, is the collapse of the Terra ecosystem, along with their native token and stablecoin LUNA and UST. In this example, the deppeging of the UST stablecoin and subsequent death spiral led to the collapse of what was previously a top 5 asset by market capitalization in LUNA. This event erased over $40.0bn in wealth in a matter of days and led to cascading selling pressure across the industry, with Bitcoin falling 15.0% during the week following. More importantly, this initiated a chain of contagion within the industry which contributed to bringing down Three Arrows Capital (3AC), previously one of the largest crypto-native hedge funds in the space. It was reported that 3AC held 10.9mn locked-LUNA worth $560mn at its peak, roughly $670 as of writing.

Second, is the bankruptcy of 3AC, and the continued contagion effects brought about by the collapse of the Terra ecosystem. Centralized crypto lending platforms (Celsius and BlockFi) had significant exposure to 3AC, while DeFi platforms (AAVE, MakerDao) were also used by 3AC for leverage.

3AC also had exposure to many other projects and ecosystems throughout the crypto space, with many still being in seed or early stages of development when 3AC invested – this may lead to a dump of assets during the

liquidation of 3AC, causing prices to plummet further. These public events will have also gained the attention of regulators – how this will precipitate will only be revealed with time. A table listing some of 3AC's loan obligations has been illustrated below.

Figure 3 – Breakdown of Loans Taking Out by 3AC, and Multiple 3AC Investments

Lender	Asset Basket	Debt (USD)[1]
Voyager Digital	15,250 BTC + 250mn USDC	$650mn
Deribit	1,300 BTC + 15,000 ETH	$80mn
BlockFi	Undisclosed	Undisclosed
Genesis	Undisclosed	Undisclosed
Total	16,550 BTC + 250mn USDC + 15,000 ETH	$740mn

3AC Investments[2]
BlockFi, Trader Joe, δY/δX, ethereum, Terra, Balancer, DACM DIGITAL ASSET CAPITAL MANAGEMENT, Axie Infinity, AVALANCHE

1. *As of time of debt issuance*
2. *The investments presented are not an exhaustive list*

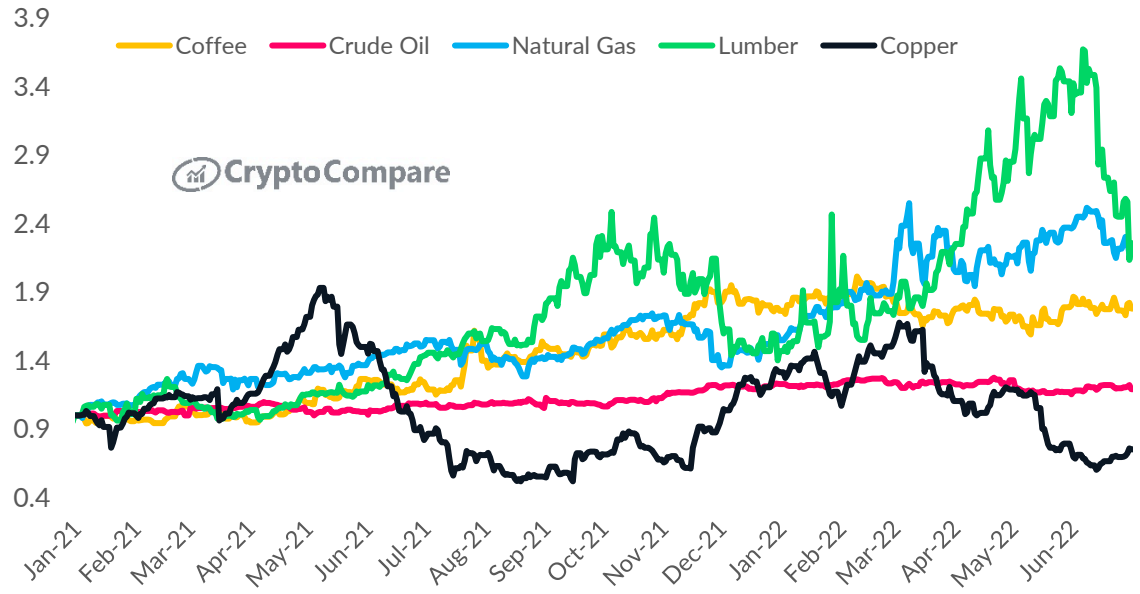
Given the above events, the performance of digital assets over the last three months is par for the course, and there are three main lessons that the industry can take from this:

- *First, the importance of tokenomics and fundamentals - many market participants saw the collapse of UST as evident due to its use of an uncollateralized pegging system as an algorithmic stablecoin. However, this was widely ignored by a significant number of market participants, who may have arguably been carried away by bull-market euphoria. Other projects with poor fundamentals and tokenomics will likely suffer now that we're in a bear market.*
- *Second, the importance of risk-management. The events of the last few months can be compared to the bankruptcy of Bear Stearns and Lehman Brothers in 2008, where no risk management practices were adopted by key players in the industry and excessive risk-taking led to contagion and negative long-term effects for the rest of the sector.*
- *Third, and arguably the most important, are the benefits that decentralization has illustrated to bring to the financial services industry. 3AC's bankruptcy has hampered centralized lending services such as Celsius and BlockFi, with the latter halting withdrawals and struggling to remain solvent. On the other hand, AAVE and MakerDAO, which have equally been exposed to 3AC's poor risk management, have been able to operate as normal. Such decentralized systems are proving to add value to the financial services space, albeit with many improvements still to come.*

Trend Reversal in Commodities

Under the macroeconomic lens, soaring inflation rates have been the driver of future economic uncertainty for most investors. However, those with a portfolio tilt towards commodities and energy have benefitted greatly, with these assets seeing significant price appreciation and being the root cause of inflation. Interestingly, commodity and energy prices have begun to contract this past quarter, whether this is as a response to the monetary policy tightening of the Federal Reserve or other factors, such as an expectation of declining demand due to a recession, or a potential ease in supply chain issues. The graph below illustrates the rapid rise and decline in various commodities.

Figure 4 – Commodity Prices, 2021 – H1 2022



In this regard, there seems to be two camps of thought. First, those with the view that the recent decline in commodity prices suggests inflation has already peaked, and therefore that central banks will overshoot interest rates and will soon have to taper to support the economy. Ark Invest's Cathie Wood is a proponent of this viewpoint, in line with her long-term view that technological deflationary forces will be a driving force of investment returns. The decline in commodity prices illustrated above aligns with this view – as market participants expect declining demand for commodities in a recession. The implications of this would be positive for crypto and other risk-assets in the medium term, as it may imply the macroeconomic picture has bottomed, and incoming support for the economy may prop up risk-asset prices. Furthermore, the abundance of dry powder

in Venture Capital is an encouraging metric for further investment in the sector – according to Preqin, Venture Capital dry powder reached $479bn in the first quarter of 2022. If a portion of this is deployed in digital assets, it may provide the funds required for the next stage of crypto innovation.

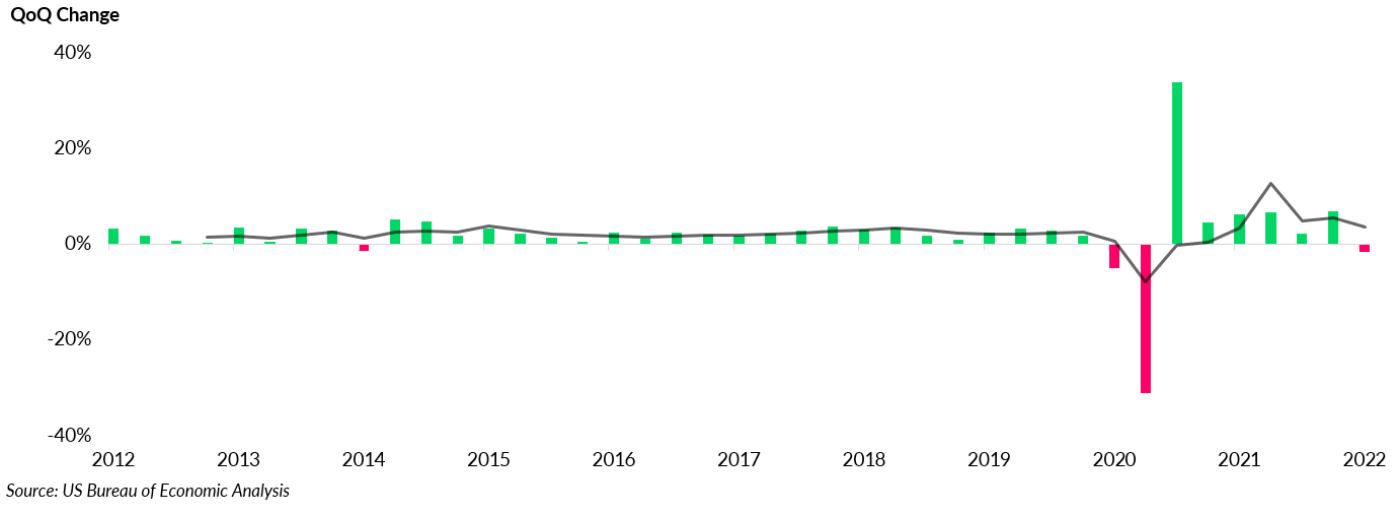
Second, those of the view that inflation is still to worsen, as the underlying cause of price rises are supply-side issues relating to lingering supply chain troubles from the pandemic and the war in Eastern Europe. The implications of this would be a sustained bear market for crypto assets, exacerbated by the credit crisis within the ecosystem and the bankruptcy of 3AC and other major players.

Macroeconomics – Peak or Continued Inflation?

With the possibility of recession at the forefront of investors' minds regarding current macroeconomic conditions, institutional investors are torn.

Most market participants are in agreement that we are headed into a recession, with the World Economic Forum predicting global growth will decelerate in both 2022 and 2023, particularly in the Eurozone and the United States. In the first quarter of the year, the US recorded its first quarter-over-quarter decline in real GDP of 1.5% since the start of the COVID-19 pandemic, and only the fourth in the last decade. If GDP growth does not return positive this quarter, we will have entered a recession, and though Bitcoin was born from the ashes of one recession, it has since correlated far more highly to tech indices, and will likely suffer similarly.

Figure 5 – US Real Gross Domestic Product, 2012 – H1 2022



The trailing twelve month average of real GDP growth remains positive at 3.6%, and lower unemployment throughout the year in the United States (ending the quarter to pre-pandemic levels of 3.6%) allude to the possibility of a productive quarter.

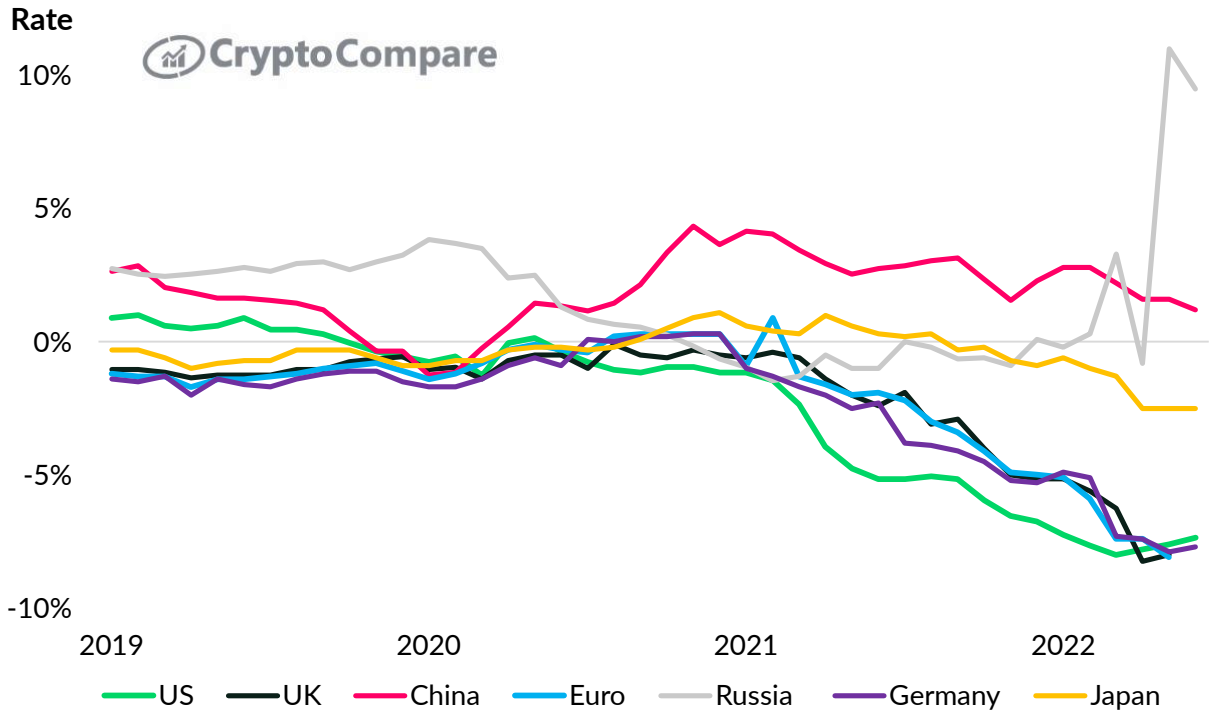
Outside of the US, macroeconomic sentiment remains mixed, with many eyes on Russia following the invasion of Ukraine in February this year. Russia has artificially propped up the Ruble to its strongest level in seven years by enforcing restrictions such as:

- Banning margin trading
- Hiking headline interest rate to 20%
- $10,000 USD limit on foreign currency withdrawals
- $10,000 USD limit per month on transfers by residents to foreign bank accounts

These restrictions have been put in place in response to the swathe of sanctions imposed by the West as the Kremlin has sought to increase oil and gas exports (which currently make up over 40% of the country's exports).

However, given the extremity of these measures, cracks are beginning to appear. Oil exports to China and India are down 15%, inflation has hit 17.5%, and on June 27th Russia defaulted on their first foreign debt payments since 1918, totaling $100mn. A creditors downgrade by Standard and Poors from BBB to CCC-, (an eight-grade fall) followed the default, leaving Russia's credit rating, "junk", and bringing to question Russia's ability to secure foreign debt. This default following creditor downgrades could hamper not only Russia's and Russian companies' ability to secure foreign debt, but also its ability to fight an unsustainable inflation rate.

Figure 6 – Global Real Rates, 2019 – H1 2022



The graph above puts into context what we view as a reckless lack of action from central banks globally. As inflation was termed 'transitory', real rates have fallen to severely negative territory. This has a number of implications for the world economy and investable assets.

- *First, significantly negative rates allow governments to lower their debt burden, as the real value of borrowed monies falls significantly every year. This could be seen as highly beneficial for governments, who in the last decade have rigorously propped up their debt, with the US and UK boasting debt-to-GDP ratios of 124% and 86% respectively.*
- *Second, negative rates will have a fatal impact on lower-income households and those who live paycheck to paycheck. As inflation creeps higher and individuals and businesses have no low-risk interest-bearing instruments to defend against it (due to artificially low nominal rates). This will have a subsequent effect on the economy as overall consumption declines - which is c68% of total GDP in the United States.*
- *Lastly, such negative rates have an interesting implication for risk-assets. While a recent increase in central bank rates has been an important factor in the downturn in risk assets such as equities and crypto, real negative rates suggest a different story - that fiat holdings are being immensely devalued on a year-on-year basis, and so risk assets may still be an interesting alternative for those looking for wealth protection and appreciation, particularly over the long-term.*

Figure 7 – Global Nominal Interest Rates vs. Inflation Rates, 4Q 2020 – 2Q 2022

Rates	20Q4	21Q1	21Q2	21Q3	21Q4	22Q1	22Q2
US	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%	1.00%
	1.4%	2.6%	5.4%	5.4%	7.0%	8.5%	9.1%
UK	0.10%	0.10%	0.10%	0.10%	0.25%	0.75%	1.00%
	0.6%	0.7%	2.5%	3.0%	5.4%	7.0%	9.0%*
China	3.85%	3.85%	3.85%	3.85%	3.80%	3.70%	3.70%
	0.2%	0.4%	1.1%	0.7%	1.5%	1.5%	2.5%
Euro Zone	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	-0.3%	1.3%	1.9%	3.4%	5.0%	7.4%	8.1%*
Russia	4.25%	4.50%	5.50%	6.75%	8.50%	20.00%	9.50%
	4.9%	5.8%	6.5%	7.4%	8.4%	16.7%	15.9%
Germany	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	-0.3%	1.7%	2.3%	4.1%	5.3%	7.3%	7.6%
Japan	-0.10%	-0.10%	-0.10%	-0.10%	-0.10%	-0.10%	-0.10%
	-1.2%	-0.4%	-0.4%	0.2%	0.8%	1.2%	2.5%

Interest
Inflation

**May data quoted as June is unreleased*

Stablecoins – An Uncertain Safe Haven

In name and in theory, stablecoins allow participants in the digital asset economy to safeguard their wealth against the inherent volatility of the industry. The past quarter has proven the reality may be different, with the debacle of UST and the Terra ecosystem being the final nail in the coffin of the bull market – the depegging is illustrated in the chart below, from CryptoCompare's *Exploring UST's Fall From Grace* report.

Figure 8 – Depegging of UST, May 2022

The crash of UST was followed by uncertainty surrounding other stablecoins, with USDT and USDC both coming into question, and the former seeing a temporary depeg on May 12th. While both of these are fully collateralized, we have explored the reserves breakdown of these two assets below:

Figure 9 – USDC and USDT Statistics

Asset	USDC[1]	USDT[2]
Market Capitalization	$55.8bn	$66.4bn
Operating Firm	Circle	Tether
Stablecoin Type	Fully Collateralized	Fully Collateralized
Cash Holdings	24.4%	5.00%
Cash Equivalents[3]	75.4%	80.7%
Non-Cash Equivalents	0.0%	14.4%

1. *USDC breakdown is as at 1st July 2022*
2. *USDT breakdown is as at 31st March 2022*
3. *Market Capitalization is as at 30th June 202.*
4. *Cash Equivalents are defined as the sum of US & International Treasury Bills, Commercial Paper & Certificates of Deposits (CDs), Money Market Funds, and REPO Agreements.*

The data suggests that USDC is in reality a more liquid stablecoin, evidenced by having almost a quarter of collateralized holdings in cash. This is 5x the percentage collateral of Tether's stablecoin, which holds 47.6% of collateral in US T-Bills, equivalent to $39.2bn as of 31st March 2022, while also holding $4.10bn in cash, and $20.1bn in Commercial Paper and Certificates of Deposits. These dollar figures have since reduced due to the shrinking of the sector, but data from the Federal Reserve provides an interesting context here – under an extreme stress test to USDT's collateral, it would take just 2.0% of the liquidity of the US treasury market, the most liquid security in traditional markets. A scenario analysis is presented in the table below to illustrate.

Figure 10 – USDT Redemptions Scenario Analysis

% Redemptions of USDT	$ Value of Redemptions of USDT	$ US-Treasuries Being Sold ($ Redemptions - Cash Holdings)	Redemptions Length (Days)	% liquidity of average US Treasury Bills Volume
10%	8,242,482,110	4,141,996,305	7	0.4%
10%	8,242,482,110	4,141,996,305	14	0.2%
10%	8,242,482,110	4,141,996,305	30	0.1%
20%	16,484,964,220	12,384,478,415	7	1.2%
20%	16,484,964,220	12,384,478,415	14	0.6%
20%	16,484,964,220	12,384,478,415	30	0.3%
30%	24,727,446,330	20,626,960,525	7	2.0%
30%	24,727,446,330	20,626,960,525	14	1.0%
30%	24,727,446,330	20,626,960,525	30	0.5%

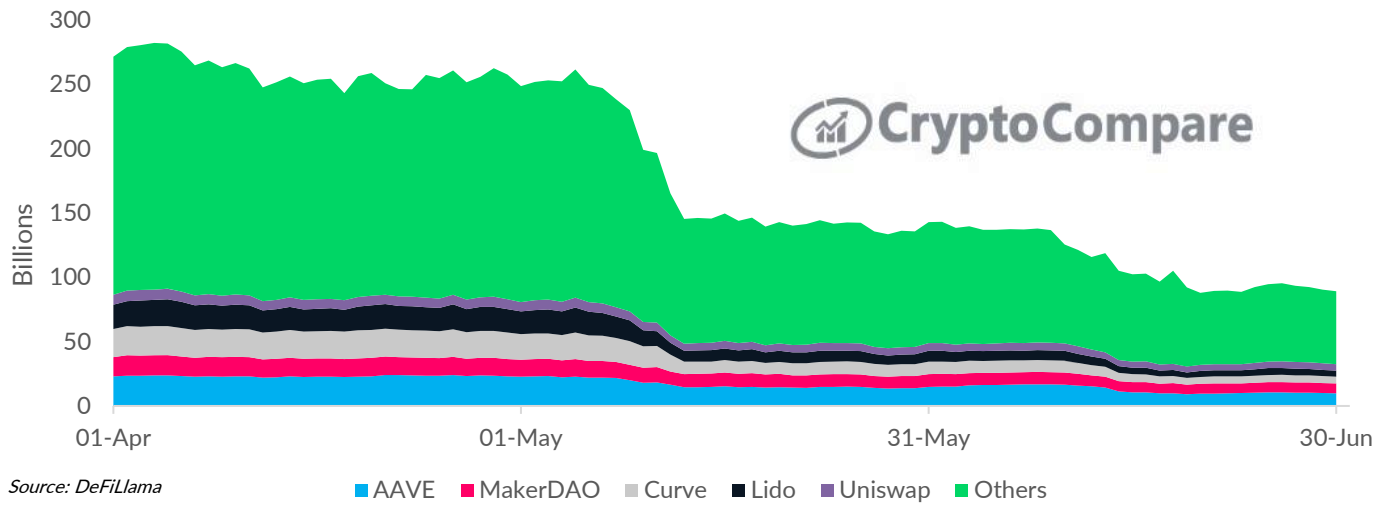
The above assumes Tether would initially use all cash positions to pay redemptions, and that only US-T Bills would be used for redemptions subsequently. Of course, this would be in extreme market conditions, where 10 – 30% of total USDT market capitalization is redeemed in the space of 7 – 30 days.

The above scenario suggests that Tether's collateral structure is sustainable and will be able to handle severe stress tests, as it would be able to effectively convert its T-Bills balance into cash and fulfill significant redemptions. Similarly, USDC possesses 24.4% of collateral on cash holdings and the rest in T-Bills, meaning it is also well equipped to effectively manage a bank run. Given the possibility of such a large-scale bank run is improbable, this gives confidence in the stability of these collateralized stablecoins, albeit these have other problems for the industry, particularly their centralization.

DeFi, GameFi, and NFTs

As previously mentioned in this report, Q2 was marred by high-profile contagion events within the digital assets ecosystem. Consequently, the fall in the price of crypto assets has translated into a decline in Total Value Locked (TVL) in DeFi protocols – falling 65.7% to $93.2bn in Q2 2022.

Figure 11 – Total Value Locked in DeFi Protocols, Q2 2022



AAVE, which launched its v3 application near the end of Q1, is the largest protocol with a TVL of $10.4bn and has been at the forefront of recent market developments, being used by 3AC and centralised lenders to pursue yields in DeFi. MakerDAO, the protocol behind the DAI stablecoin, also gained some interest after its overcollateralized algorithmic model was deemed safer compared to the now demised algorithmic stablecoin TerraUSD. It followed as the second largest protocol with $7.89bn in TVL.

The same can be said about Curve Finance, the DEX liquidity pool on Ethereum for efficient stablecoin exchange, and Lido Finance, a liquid staking pool that allows users to earn staking rewards. Both these platforms were instrumental cogs in the events of the last few months – with Curve being a key marketplace in the depegging of UST, while Lido's stETH product has been a major matter of questioning following its fall in parity with ETH.

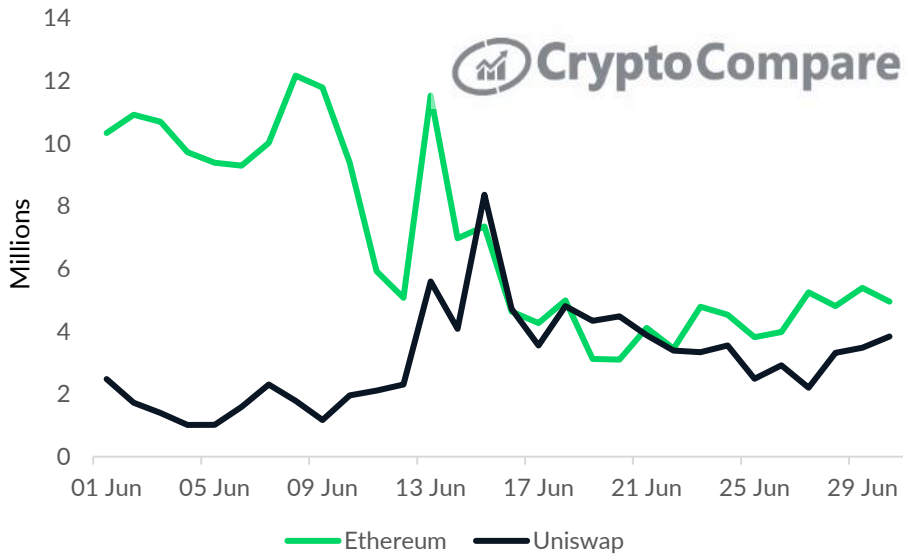
These platforms have played important roles in the crunch of the digital asset space, but are in no way responsible for such issues. Rather, they have functioned as normal with little to no operational downtime. The issues in crypto have come from *how* these platforms have been used. Ultimately, these marketplaces have proven their value to the global financial system, particularly their property as decentralized platforms. While TVL is down mainly due to decline in prices, they have proven to be robust against extreme market conditions and volatility.

DeFi TVL Continues to Bleed

The poor macroeconomic environment, combined with the possibility of a multi-year long bear market, may make it difficult for DeFi protocols to sustain themselves, particularly if they have not shown prudent treasury management practices, such as moving treasuries to fiat to avoid reserve volatility and to maintain runway. Even AAVE, the flag bearer of DeFi, has seen its treasury value go from $532mn to $102mn in the first half of the year. All signs point towards a more sustained period of pain for the DeFi sector. As a result, we expect the TVL in DeFi to continue to stay range bound as the price of crypto assets attempts to recover from the current drawdown.

The development in this subsector of crypto has led to the term 'DeFi 2.0', which addresses various limitations early DeFi projects had; including capital efficiency, liquidation risks, and cost efficiency. Over the last 18 months, we have seen a rise in copycat projects aiming to grab market share by luring in users with unsustainable yields. During this current downtrend, we expect a rebalance of the inflow of capital to DeFi protocols with sound fundamentals. For example, Uniswap, the pioneer in AMM DEX, was one of the better performers in this downtrend. In June, the DEX surpassed Ethereum blockchain in daily fee revenues for the first time this year. Moreover, Uniswap remained the only protocol in the top five that saw an increase in TVL in ETH terms.

Figure 12 – Uniswap vs. Ethereum Fee Revenue, June 2022



Abandoning the De in DeFi

Another challenge for DeFi protocols going forward will be their adherence to the ethos of decentralization, with a number of DeFi protocols exhibiting behaviours reminiscent of centralized entities – these have been outlined on the table below.

Figure 13 – Centralized actions of DeFi Protocols

Protocol	Centralized Action
Juno Network	Voted to confiscate the funds of an account that was able to take advantage of the Juno stakedrop
Solend DAO	Proposed to grant emergency power to the team to take over an account of a whale, liquidating them to avoid pushing the protocol to its liquidity limits. The proposal, which was reversed the following, day passed initially with one voter accounting for 98% of all yes votes
Bancor	Paused the impermanent loss protection feature after the recent price action of BNT

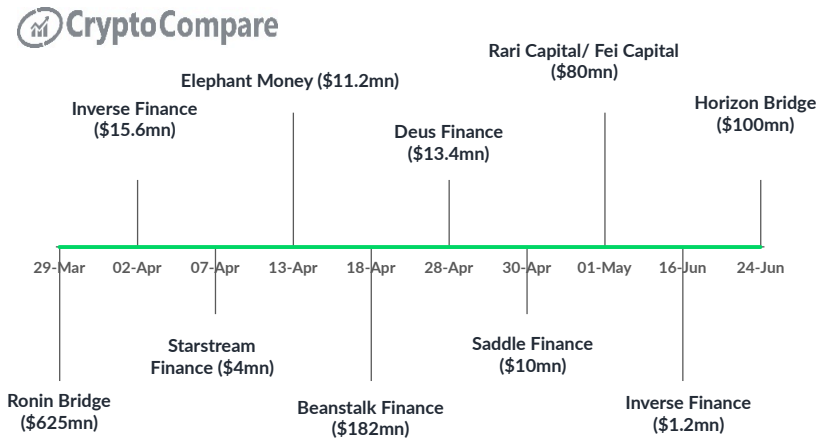
It is understandable that teams have to take these decisions for the long-term benefit of the protocol and a wider range of users. However, the recent bear market has highlighted the lack of inherent decentralization of a plethora of DeFi protocols. If these decisions become common as a result of poor protocol design or lack of responsibility from development teams, DeFi can enter a slippery slope where the protocol changes on the developer's whim. It is a long stretch from the ethos of blockchain in terms of immutability or the 'code is law' narrative.

Regulations in the Wild Wild West

Watchdogs have seemingly decided to pay closer attention to DeFi and stablecoins following the stresses in the sector over the past months. Janet Yellen, US Treasury Secretary recently highlighted the risks associated with the asset class following the collapse of UST. In June, lawsuits were filed against Terraform Labs and other related entities, citing violations of the RICO act - a federal law introduced to bring successful charges against members of large organized crime gangs. ECB president Christine Lagarde has also called for the Markets for Crypto Assets (MiCA) proposal, a major EU initiative to regulate digital assets, to cover more areas of the space, including DeFi.

Regulators must be careful not to hamper innovation with such proposals, however their oversight may be welcomed when it comes to security issues, as high-profile hacks and exploits stained the sector in Q2. Figure 13 shows the timeline of high-profile DeFi exploits in the second quarter of 2022.

Figure 14 – DeFi exploits, Q2 2022



These security risks imply that we may need more established regulations for crypto and DeFi to protect retail investors, rather than to constrain the sector. We are already seeing governments looking to introduce stricter taxation rules to DeFi, with the UK government recently seeking views from investors, professionals and companies on taxation of DeFi activities. However, implementation of these laws will be in the years to come, which implies DeFi will have to self-regulate in the short and medium term. The next quarter will also likely showcase legal actions against wrongdoers in crypto including insider trading, false promises and misguiding investors, particularly in the aftermath of Q2.

Rollups or Appchains?

Rollups and Appchains have become increasingly popular in the last quarter as protocols have started to take advantage of scaling solutions to provide users with better products. Rollups like Arbitrum and Optimism allow protocols to leverage the security and technology of the Ethereum blockchain, while Appchains allow protocols to develop their own blockchain to host their application. Osmosis DEX on Cosmos or AVAX subnets such as Swimmer Network or DFKChain are examples of appchains.

The benefits of layer 2 scaling solutions like rollups are known – they allow protocols to capitalise on Ethereum's user base by providing cheaper gas fees for transactions. But recently, protocols like dYdX have announced their move to launch its own appchain using Cosmos SDK. Going forward, there will be a number of protocols battling between choosing to host their own appchain or using scaling solutions like Rollups.

Figure 15 – Transaction Costs in Layer-2 Protocols vs. Ethereum, 2022

Chain/Protocol	Send ETH Cost	Swap Tokens Cost
Loopring	$0.03	$0.28
ZKSync	$0.04	$0.09
Boba Network	$0.11	$0.22
Optimism	$0.15	$0.22
Polygon Hermez	$0.25	-
Arbitrum One	$0.29	$4.56
Aztec Network	$0.78	-
Ethereum	$0.78	$3.91

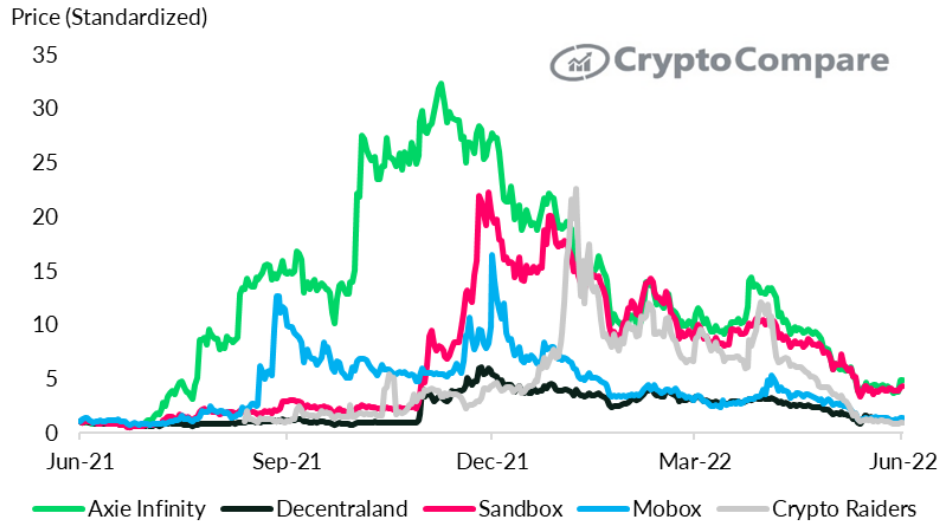
A major challenge for scaling solutions is the unknown of how they will fare if they were to process a similar number of transactions as Ethereum. Arbitrum, for example, recently launched their *Odyssey event* to incentivise users to participate in a range of DeFi activities on the Arbitrum platform. However, with the surge in user activity, the gas fees in Arbitrum surpassed the gas fees in Ethereum, leading the team to pause the event until a network upgrade allows it to process transaction at a faster pace and with cheaper gas fees.

Another concern that protocols might have in choosing Rollups is that they use a single centralised 'sequencer' to control the batching and submission of transactions. This would mean teams may be able to censor transactions on protocols using Optimism as a scaling solution.

GameFi: Still Searching for Fun

GameFi projects continued to plummet last quarter after an explosive 2021. Most tokens are down more than 90% in price while user activity has tumbled as well. The glaring lack of good gameplay has failed to retain players, and the unsustainable tokenomics employed by many projects has led to persistent selling pressure on in-game tokens.

Figure 16 – Price Action of Major GameFi Tokens, June 2021 -2022



We believe that these factors coupled with the current macroeconomic environment will drive a significant portion of gaming projects out of existence in medium-term. These projects will find it difficult to sustain themselves as falling price action adversely affect their treasury, user interests, and activity.

In the search for the entertainment factor in these projects, the sector has been anticipating the launch of its first AAA games. While these games will likely not be launched in the next quarter, projects like Illuvium, Treeverse, and Aurory look to be at the forefront of the race. Infrastructure builders like ImmutableX will also be key players in the growth of the GameFi sector.

NFT

The NFT market has seen some intriguing developments over the last quarter which would suggest a slight maturing of the sector. While NFTs have arguably not delivered on the hype promised during the last bull market, it is important to note that the technology is still early-stage, and has also only risen in prominence over the last 18 months – the mint of BAYC was just 15 months ago. This is a shorter development timeframe than other factions within the digital asset ecosystem, such as DeFi, which began to rise in the latter half of 2018 with the launch of Compound Finance and Uniswap, for example. While in the long-term a three-year difference is inconsequential, in the short-term it signals to continued innovation in the NFT space as more product-market fit opportunities come to light. DeFi has seen similar maturity, particularly with the clear value proposition of certain protocols, some of which have been mentioned prior in this report.

The launch and growth of alternative marketplaces and the appearing weakening of OpenSea's monopoly is one sign of the movement away from the 'ideation' stage of development in NFTs towards a more consolidated and robust ecosystem. Most recently, Polygon and Reddit came into partnership and announced the unveiling of their own NFT marketplace, while Magic Eden achieved Unicorn status after a $130mn Series B raise. Sidechains have also been increasing volume market share, at the same time when OpenSea faces operational challenges – it recently laid off 20% of its workforce, quoting the current crypto winter and abrasive macroeconomic conditions. Lastly, some new marketplaces are also providing innovative new products – such as Yawww.io, which allows peer-to-peer lending and trading of NFTs, bringing another dynamic to NFT trading and investing. All these factors lead to more competition within the space, which will encourage further innovation and growth.

The way blue-chip NFTs have reacted to the bear market also suggests a shift towards a slightly more consolidated market – illustrated by the table below.

Figure 17: NFT Floor Prices, 1st Jan 22 vs. 30th June 22

NFT Collection	USD Floor Price		ETH Floor Price	
	1st January 2022	30th June 2022	1st January 2022	30th June 2022
Crypto Punks	$235,395	$73,110 (-69%)	63.9 ETH	66.0 ETH (+3.3%)
Bored Ape Yatch Club	$222,897	$95,722 (-57%)	60.0 ETH	86.4 ETH (+44%)
Fidenza – Art Blocks	$295,338	$91,222 (-69%)	79.5 ETH	83.0 ETH (+4.4%)
Ethereum	$3,676	$1,070 (-71%)	1.0 ETH	1.0 ETH

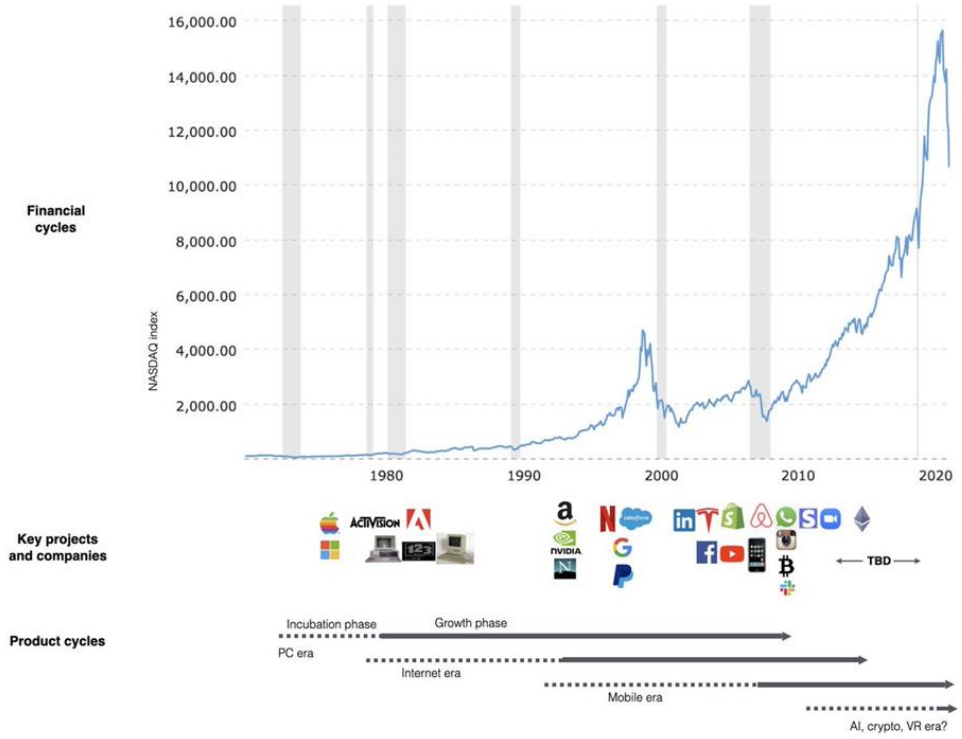
The relationship between NFT floor prices in USD, ETH, and the price movement of ETH/USD, has been debated within the crypto community. It can be argued that the consensus was that NFT collections were a leveraged bet on certain cryptocurrencies – NFTs would move in the same direction but to a larger extent. Indeed, this is likely the case with more risky NFT projects, but blue chips such as CryptoPunks, Bored Ape Yacht Club, and Fidenzas, have behaved slightly differently. CryptoPunks and Fidenzas have marginally outperformed Ether so far this year, while BAYC has strongly overperformed the layer 1 blockchain, mainly due to the success of Yuga Labs and the rest of the BAYC ecosystem, including MAYC, Ape Coin, and Otherside, the BAYC metaverse.

Thus, blue-chip NFTs appear to have performed as an important store of value for crypto-native individuals, a property that will likely be maintained in successful NFTs going forward, whether they are profile picture NFTs, music, gaming, or any other applications. While sceptics might have anticipated the complete collapse of NFTs during this bear market, they appear to be as strong as ever, and will likely grow in utility and value in the years to come.

Innovations and New Product Launches

While macroeconomic conditions and idiosyncratic events in the digital asset space suggest a continued bear market, it is important to note that product innovation does not evolve simultaneously with price movements, and thus the upcoming bear market may lead to the creation of some of crypto's future star protocols. Developers who are passionate about their cause continue to build irrespective of price movements. As Chris Dixon, general partner at venture capital firm a16z points out, "2008 and the 3 years following the Great Financial Crisis turned out to be the golden age for startups". The iPhone and Appstore were released by Apple in 2007 and 2008. The years following saw the launch of some of today's most popular mobile apps including Uber, Instagram and Venmo.

Figure 18: Product Cycle vs Innovation Cycle, Chris Dixon



The same thought process can be applied to digital assets. Compound Finance, a large lending protocol in Ethereum, was built during the bear market of 2018. Uniswap, the first AMM DEX in DeFi was launched in November 2018 as well. We voice the same opinion of Dixon that crypto and web3 will be at the forefront of the next technological cycle. There have been some exciting developments lately in the crypto space, outlined below.

Crypto Goes Mobile

Solana recently announced its plan to release a web3-focused smartphone named ***Saga***. The smartphone will leverage blockchain technology and aims to implement digital asset products and services to mobile. Similarly, Polygon has collaborated with phone manufacturer ***Nothing*** to create a web3 phone. This presents a vital opportunity to begin the transition towards making web3.0 truly accessible, with over 6.50 billion people having a smartphone globally, according to Statista. This would allow developing countries to leapfrog previous stages of innovation, such as centralized banking and governance, in preference for new technological advancements such as web3.0. With the advent of crypto on smartphones, millions of people may be given further, easier access to web3.0 and decentralized finance, leading to increasing financial inclusion.

Stablecoin Issuance

Both Tether and Circle have recently announced the launch of new stablecoin products pegged to alternative fiat currencies. Indeed, the current stablecoin market revolves around US Dollar-pegged assets, providing a challenge for non-native holders of the US Dollar to denominate their stablecoins in their local currencies. Tether recently announced plans to launch GBPT, what would be its fifth stablecoin. Similarly, Circle recently launched EUROC, a euro-pegged stablecoin.

As the digital asset industry grows in size and scope, more fiat-pegged stablecoins will be required to accommodate users from all over the globe. While the recent fall in the value of the Euro relative to the US Dollar suggests this may not be an important development in the near future, fiat currencies will always move in value relative to each other, and the availability of a plethora of stablecoins will increase optionality for users.

Modular Blockchains

Celestia is another up and coming project that has received significant attention over the last few months – it is the world's first modular blockchain network. Unlike traditional blockchains, Celestia separates the consensus and execution layers which helps to create a more scalable, composable and decentralized system. After launching its testnet 'Mamaki' in May, Celestia is expected to launch its hugely anticipated incentivized testnet later this year.