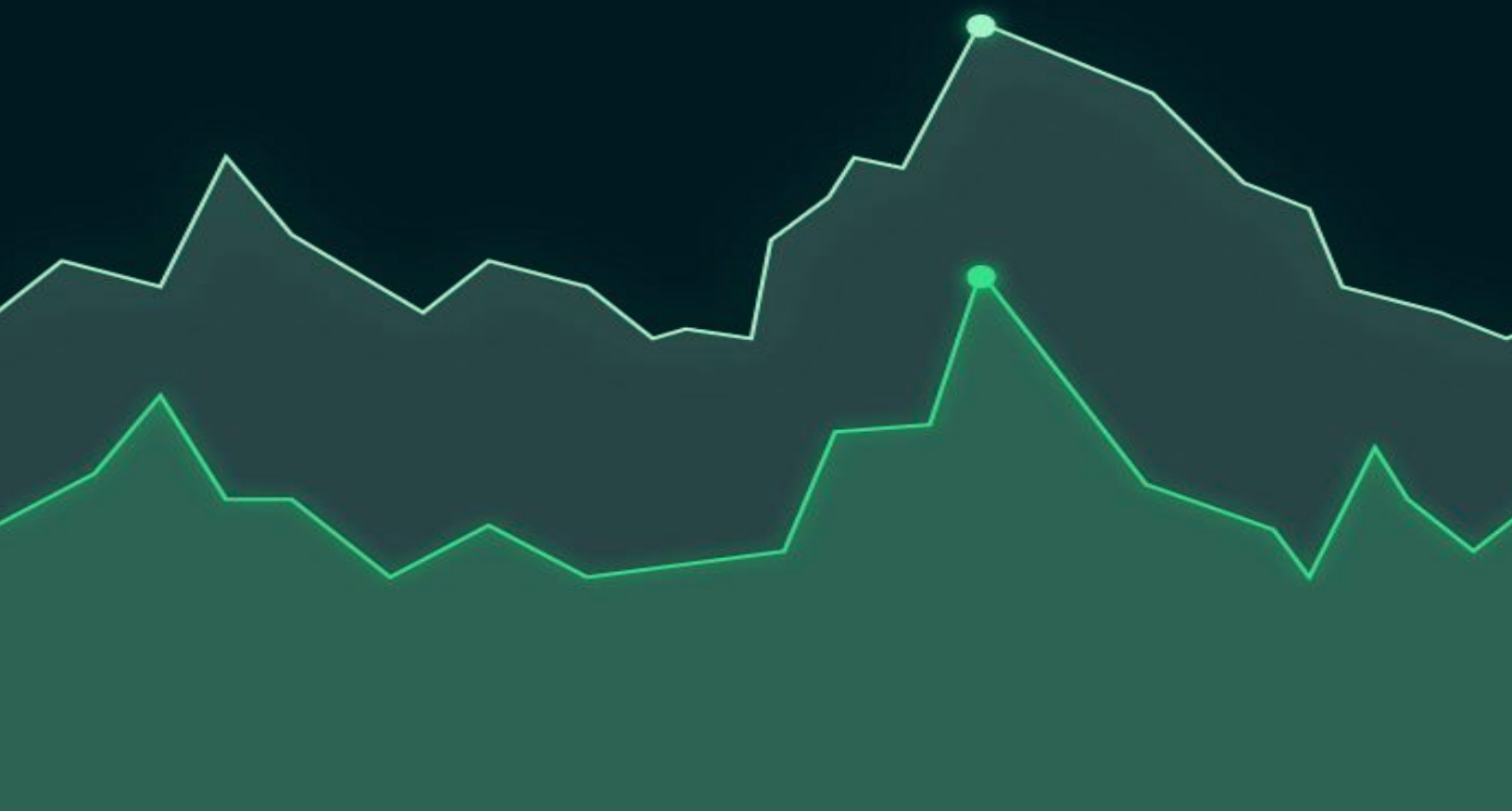
2022 Outlook:

Market Dynamics and Evolving Trends



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

2021 has proven to be an inflexion point for the cryptocurrency industry. Not only did the market reach new price all-time highs, but it has also been a year full of innovation within the crypto space as sub-sectors within crypto continued to grow in size and maturity, so much so that they have developed ecosystems of their own. Furthermore, institutional adoption has shifted to a higher gear, with traditional finance beginning to enter the space. We believe the trends set in 2021 will be fundamental in setting the direction of the industry in 2022 and further into the future. This report aims to articulate those trends and assess areas where crypto may see significant developments over the coming year.

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**.

Disclaimer

The content found in this report is for informational purposes only, you should not construe any such information or other material as legal, tax, investment, financial, or other advice.

Contents

Executive Summary

The crypto markets had a stellar year in 2021. The ecosystem grew from a total market valuation of $767bn at the start of the year to $2.22tn by the end of the year, driven by both innovations in the space and increased institutional and governmental involvement and adoption.

The macroeconomic environment has been of particular importance since the COVID-19 pandemic started. Economies around the world have received the biggest level of support from central banks since the Great Financial Crisis, yet the global economy still appears to be in a fragile state. With inflation in the United States rising to 7.0% in December 2021, and other countries following with similarly high inflation data, the direction of central bankers is likely to change in 2022 to a more hawkish stance. This is of grave importance for the crypto markets, which as a high risk-on asset class, may see significant outflows if central banks raise rates and cut on quantitative easing. On the other hand, high inflation could prove beneficial for crypto as Bitcoin secures its position as an inflation-hedge and leads the rest of the sector in a move upward.

Cryptocurrencies also have significant idiosyncratic risks which are equally important. These risks relate to specific subsectors that have seen substantial developments over the past 12 months. DeFi, for example, has grown to a $244bn sector with participants in this ecosystem having to consider very specific issues – that of high gas fees in the Ethereum network, low decentralisation in competing chains, and the importance of robust ecosystems.

NFTs are another subsector which has grown exponentially over the past year, yet the lack of utility provided to users is a worrying sign that the sector in its current state may suffer significantly in the next bear market. Alternatively, the technology behind NFTs has the potential to reform trillion dollar industries such as Gaming and Music.

2022 will likely see these sub-sectors experience some sort of consolidation. Important trends, such as increasing adoption amongst institutions and the development of regulatory frameworks, will also take center stage. Having said this, we believe digital assets hit an inflexion point in 2021 and have cemented themselves as one of the most important industries in the world from an innovation perspective. Market participants should tread carefully, but eagerly, to make the most of the opportunities available in the industry, while still considering their risks.

Changing Macroeconomic Environment and the Impact on Crypto

2021 Inflationary Backdrop

Inflation has undoubtedly been the most discussed topic in the macroeconomic discourse over the past number of months. On January 12th 2022 the US Bureau of Labor Statistics released the 7.0% annual inflation figure for December 2021, the highest reported figure in over 40 years. The United Kingdom experienced a similar price increase in its representative basket of goods – a 4.6% annual increase in November, the highest reported figure since 2008.

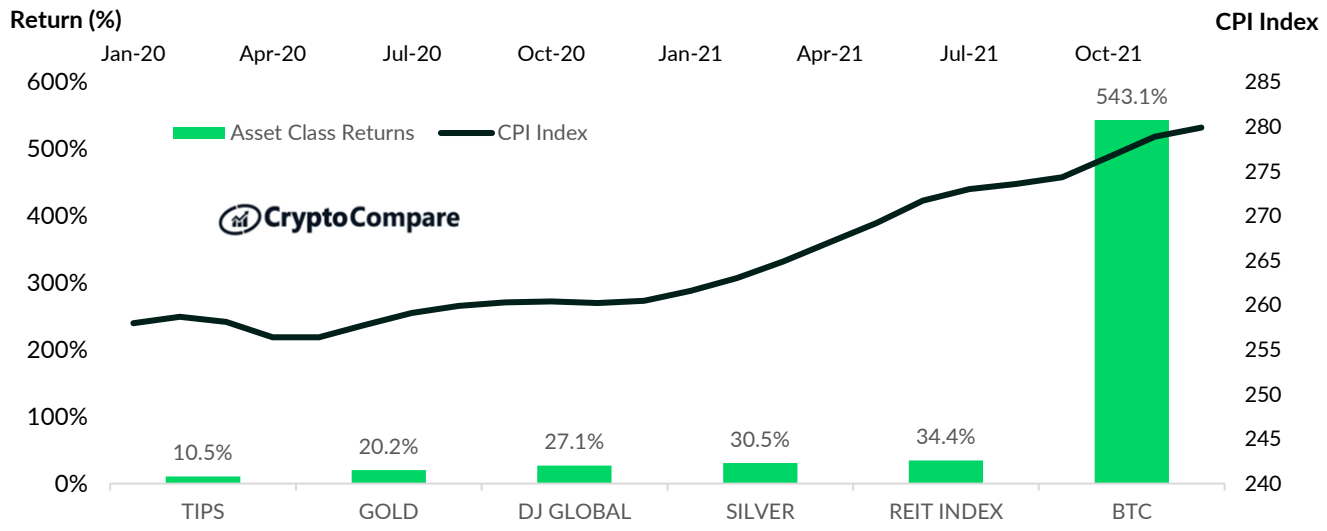
The developments in inflation data and the macroeconomic environment are absolutely critical when assessing investment opportunities, including non-traditional assets such as cryptocurrencies. 2021 was the first full calendar year where post COVID-19 macroeconomic measures aimed at supporting the economy have been in place. Thus, capital markets have had an unusual level of support over the last 20 months. The most prominent practice from central banks has been quantitative easing (QE) – central banks have continued their buying spree of government bonds and maintained interest rates at historically low levels. Further detail on major central bank programs is outlined on the table below:

Central Bank	QE Programme	Central Bank Rate	Date of Last Interest Rate Hike
Federal Reserve	$60bn monthly asset purchases	0.25%	December 2018
European Central Bank	€20bn monthly asset purchases	0.00%	July 2011
Bank of England	£895bn of bonds in balance sheet	0.25%	December 2021

While inflation has been increasing, the 21st century has historically been dominated by strong deflationary pressures caused by globalization and rapid innovation, making it easy to forget how high inflation can derail a fragile global economy. Inflation puts economic pressure on consumers, particularly low income households, who face notably higher prices and less disposable income. To combat inflation, central banks raise interest rates, thereby avoiding an overheating economy and encouraging consumers to save rather than spend (on higher priced goods). However, the world's economy is currently financed by debt – the IMF reported that in 2020 debt grew by the largest amount in 50 years, and the United States government recently went through a struggle to raise its debt ceiling for the 23rd time in the 21st century in order to avoid default by paying previous debts. If higher inflation leads to a U-turn in economic policy and a corresponding raise in interest rates, it could be extremely detrimental to the global economy by devaluing debt and causing a cascade of selling pressure for debt instruments, leading to high disruption and volatility in financial markets.

For these reasons, traditional inflation hedging assets have seen a lot of activity over the past two years. None have performed better than Bitcoin, which has returned over 600% since January 1st 2020, as shown in Figure 1.1. The worst performing hedging assets were, ironically, Treasury Inflation Protected Securities (TIPS) and gold, which returned 10% and 17% respectively *(Yahoo Finance, 2021)*.

Figure 1.1– CPI and Return of Common Inflation Hedges since January 2020

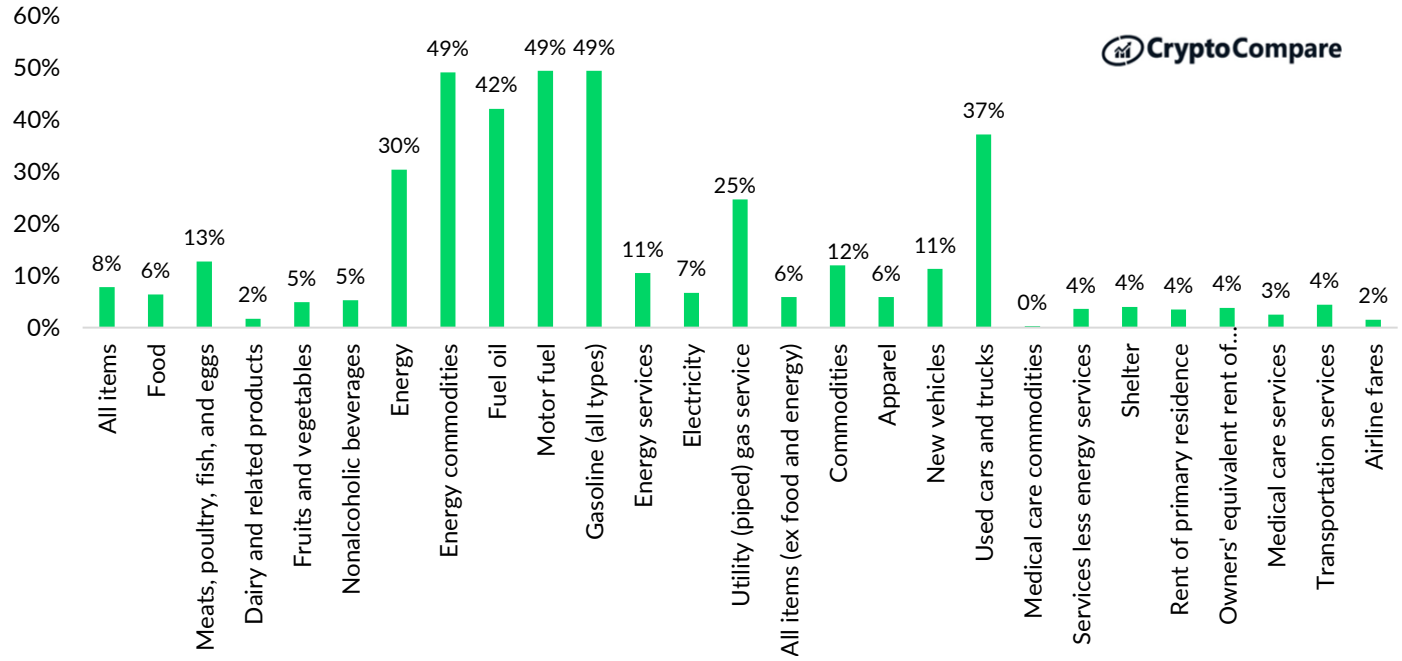


Flaws of the Consumer Price Index

However, an important caveat to note is that the CPI remains a widely criticized measure of inflation for a number of reasons. First, the basket of goods that represents CPI can be seen as somewhat arbitrary, making it difficult to believe that such figures are a trustworthy representation of inflation for the average consumer. Gold-bug Peter Schiff previously stated that "*The CPI is no longer a tool to accurately measure inflation, but an instrument of propaganda the government uses to hide accelerating inflation from the public and financial markets*" *(2013)*.

Taking this into account, we believe that the use of CPI as a proxy for inflation is rudimentary, but can be used to offer an absolute minimum level of annual inflation. Figure 1.2 shows the price of individual goods, many of which have seen price increases significantly over and above that stated by CPI. Here it is clear to see the skew of inflation among products used by the majority of individuals and businesses such as energy, motor fuel and meat products (up 30%, 49%, and 13% respectively).

Figure 1.2 – Annual Price Increase of Individual Products, December 2021



Source: US Bureau of Labor Statistics

As mentioned above, rising inflation concerns have led to significant inflows into Bitcoin, which is viewed as a hedge against fiat by many, due in part to it's fixed supply of 21 million coins and declining inflation schedule. 3rd world countries which have historically suffered from high inflation have seen mass adoption of Bitcoin and other cryptocurrencies amongst their population. For example, a recent study by Statista suggested that 32% of Nigerians now say they have or use cryptocurrencies, with the Nigerian Naira having lost 70% of its value against the dollar in the last five years, losing 7.7% in 2021 alone. Turkey has seen a similar development in the use of cryptocurrencies.

Macroeconomic Environment in 2022

There is a mixed attitude in regards to the macroeconomic landscape of 2022. Some traditional market participants such as Citibank expect inflation to "*retreat to tolerable levels*" in 2022, predicting a long-term inflation rate of 2.5% over the next decade. It is difficult to be convinced by this narrative given that the true magnitude of inflation remains unclear as CPI figures continue to rise, while supply chain issues remain prevalent globally.

On the other hand, many central banks now expect interest rate hikes and tapering of bond purchases in 2022 – Jerome Powell, the Chair of the Federal Reserve, announced that their government bond purchase program will end in March, while three interest hikes of 0.25% are a real possibility by end of year. Projections show that upon

the program's conclusion, the Fed's balance sheet will stand at over $9 trillion, twice its pre-pandemic size. As these forces pan out throughout the year, cash will likely continue to hold back portfolios as it progressively loses real value against inflation. The impact of these macroeconomic developments on crypto specifically is unclear, and we see three possible scenarios.

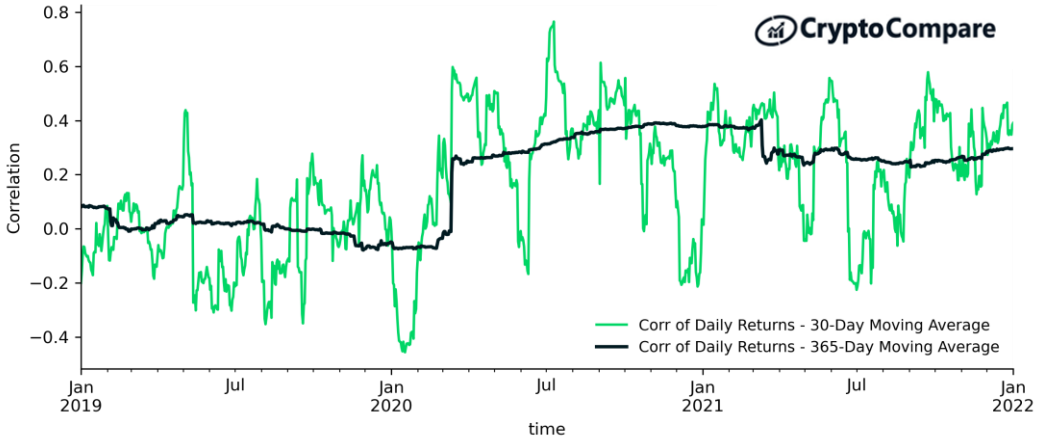
Inflation persists and crypto outperforms

Given the overload of expansionary monetary policy over the last two years, it is more than likely that inflation will persist into 2022, as there has been little action to counteract the influx of new monies into markets and the global economy. The Bank of England took the first step out of any major central bank or government by increasing England's base interest rate to 0.25% in December 2021, but similar actions are required by the Federal Reserve and European Central Bank if inflation is to be curved. In this instance, it is likely that crypto will outperform as Bitcoin assumes its position as an anti-inflationary store of value, and leads the rest of the industry in a move upwards.

Persistent inflation leads to strong central bank action

Strong central bank action could have a debilitating impact on crypto markets in 2022. As a risk-on asset, tight monetary policy may lead to outflows from digital asset products into more defensive investment classes. Furthermore, as shown in Figure 1.3, Bitcoin particularly has seen stronger correlation to other risk-on investments since 2020, for example the S&P500, as the asset receives larger institutional attention and adoption. Higher interest rates are typically correlated with lower equity prices. Cryptocurrencies may experience a similar relationship as the asset class becomes more institutionalized.

Figure 1.3 – Bitcoin Correlation to the S&P 500, 2019 – 2021



Source: CryptoCompare, Yahoo Finance

Inflation doesn't persist

Central bankers and government personnel have stated throughout 2021 that inflation is 'transitory'. This perspective may come to fruition in 2022 as supply chain issues caused by COVID-19 are resolved. The impact on crypto in this case is uncertain, while higher inflation is arguably beneficial for crypto - as it positions Bitcoin and other currencies as inflation-hedges - normalized inflation rates will lead to the avoidance of higher interest rates and a tight monetary policy that could harm risk-on assets like crypto. However, we see this as the least likely scenario.

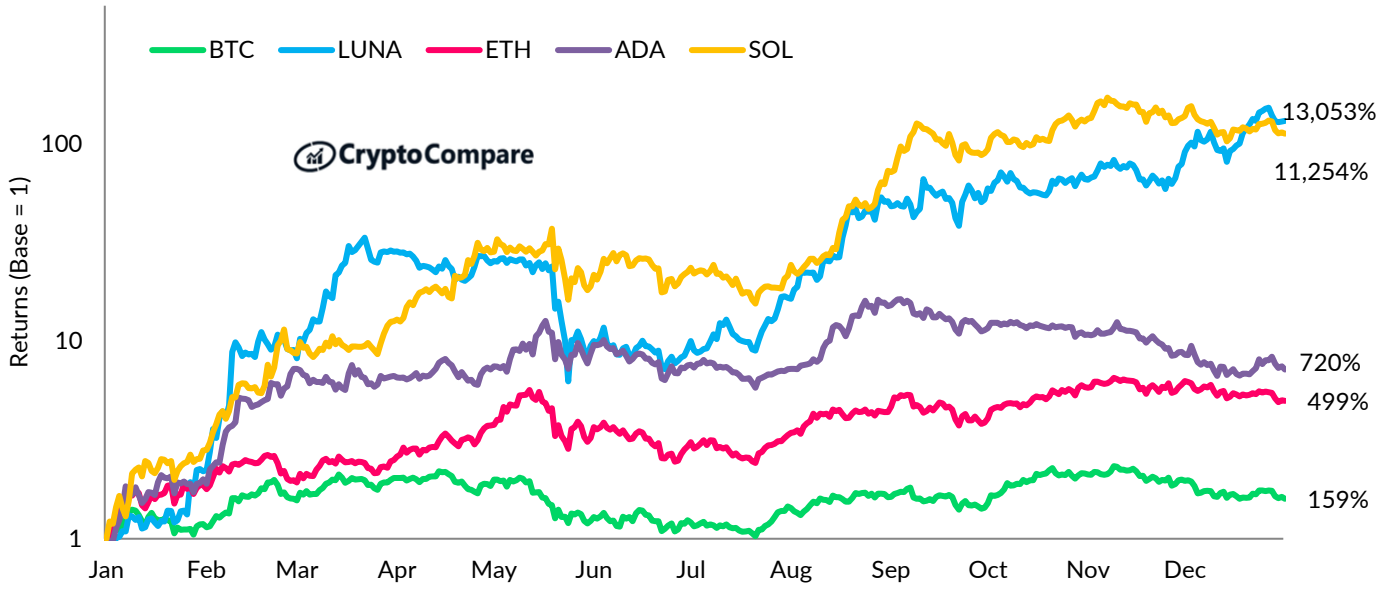
Other risk factors such as the impact of new COVID-19 variants on the global economy must also be accounted for when assessing macroeconomic changes. Crypto might be an industry with significant idiosyncratic risks, but it is also one with extensive innovation and a growing ecosystem of new products, ideas and opportunities. These may push the asset class backward or forward regardless of macroeconomic policy.

Cryptocurrencies Go Mainstream

The Bull Run of 2021

Due to the rampant volatility present in crypto markets, it is easy to forget how far cryptocurrencies have come since the start of 2021. Bitcoin and Ethereum began the year at $28,972 and $737 respectively, and closed it at $46,197 and $3,676 – annual returns of 59% and 399% respectively. While there are still many sceptics out there, the growth in crypto asset valuation may be a wink to the inflexion point that 2021 has been for the industry, which has cemented itself as the next revolutionary technology of the 21st century. It is thus no surprise that VC firms and other allocators of capital are flooding into the industry in the search of promising crypto projects – 2021 saw a record $30bn of investments from VCs alone, compared to just $6.5bn in 2020.

Figure 1.4 - Annual Returns of Major Cryptocurrencies, 2021



While BTC and ETH have performed strongly this year, the best performers have been newly launched projects that tackle the challenges faced by the cryptocurrency industry. Solana, for example, has grown to be one of the most prominent competitors of Ethereum due to its extraordinarily low fees and quick transaction time – a major challenge for Ethereum. It returned 11,154% in 2021. Similarly, Terra aims to solve the lack of decentralization amongst issued stablecoins. Its native token LUNA has returned 12,953% this year.

New Projects Enter the Top 10

The aforementioned projects are creating a new ecosystem that previously revolved purely around Bitcoin, and to a smaller extent Ethereum. The table below illustrates the top 10 projects by market capitalization as at the end of the year.

Asset	Fully Diluted Market Capitalization	Project Launch Date
Bitcoin	**$873bn**	January 2009
Ethereum	**$437bn**	July 2015
Solana	**$87.1bn**	March 2020
Binance Coin	**$85.4bn**	July 2017
Ripple	**$83.3bn**	June 2012
Tether	**$78.3bn**	October 2014
Terra	**$71.1bn**	July 2019
Avalanche	**$43.3bn**	September 2020
Cardano	**$43.1bn**	September 2017
USD Coin	**$35.0bn**	September 2018

3/10 *of top assets by market capitalization are less than 2.5 years old*

4/10 *of top assets by market capitalization were not in the top 10 at the end of 2020*

Largest crypto assets by market capitalization –31 Dec 2021.

Even institutional investors, who most prominently utilize digital asset management products for crypto exposure, are shifting their attention towards other cryptocurrencies. As reported in our December Digital Asset Management Review, the dominance of Bitcoin-based products has fallen notably this year – from 74.9% in January 2021, to 67.8% of total AUM by year-end.

Figure 1.5 – Monthly AUMs by Asset, 2021

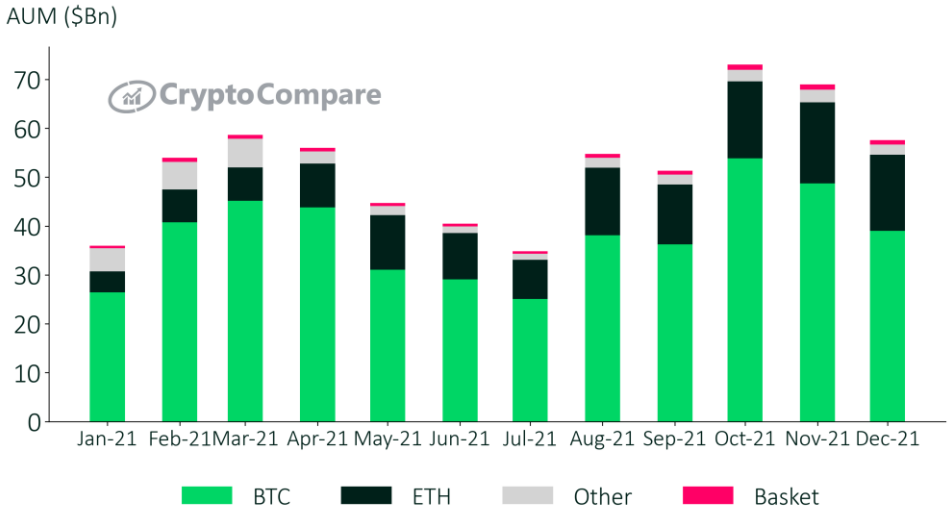
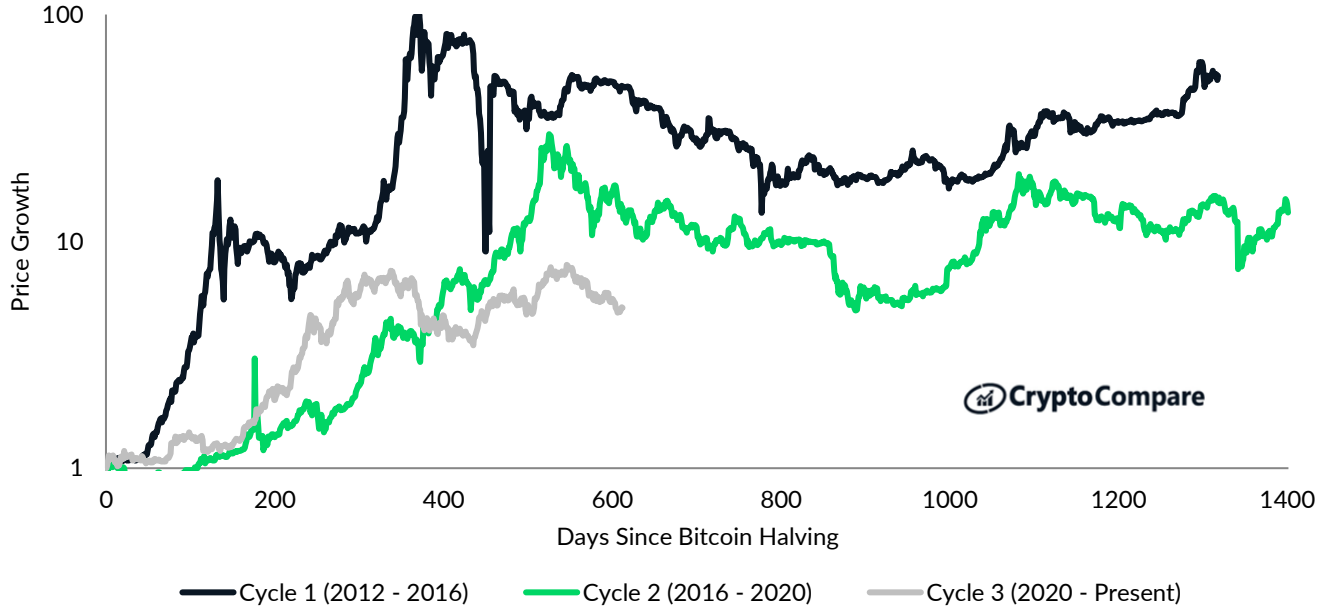


Figure 1.5 highlights the growth of institutionally focused crypto products, with total AUM almost doubling from $36bn in January to $58bn in December. Similar growth can be seen in the use cases of cryptocurrencies and blockchain. Traditionally seen as a tool to disrupt the financial services industry, other applications have grown to prominence this year. NFTs are likely the most viral subsector, which mostly apply blockchain technology to art. The gaming industry is raging with crypto innovation with the launch of metaverse gaming. The vision of a 'web 3.0' has impacted technological companies so much so that Facebook rebranded to 'Meta'.

Will there be a Blow-Off Top in 2022?

Many cryptocurrency investors are familiar with the theory that crypto follows a '4-year cycle', mainly driven by the Bitcoin halving events. This 4 year cycle assumes a 'blow-off top' where Bitcoin leads the market in a significant move upwards before a destructive crash of ~80% that ends the cycle. Figure 1.6 below exemplifies this for the current and previous two cycles.

Figure 1.6 - Bitcoin Halving Cycles

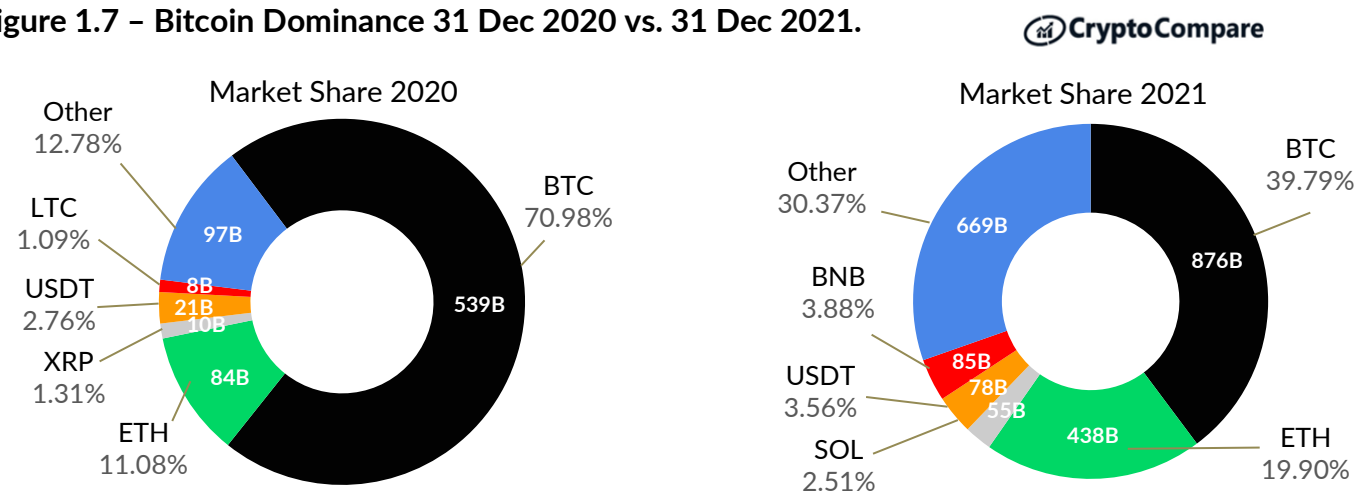


The most pressing theme of the last quarter was the realisation that this blow-off top would likely not occur in Q4 2021. Instead, market highs occurred in early November followed by a steep decline in the last 2 months of the year, with bitcoin falling 24.7%.

Thus, expectations have shifted to, broadly, two general camps. The first believe that the blow-off top will still occur, but rather in 2022. The 4y cycle theory is not entirely exact and in the same way that the 2016 – 2020 saw a delay in the peak compared to the first cycle, we may also see a steep rise occurring late into this cycle. The second group argue that the cycle theory is a case of coincidental technical analysis, and that no blow-off top will occur. If the latter is true, it may be the case that crypto is currently in a bear market after the aforementioned fall in November and December.

A possible explanation for the lack of a blow-off top during this cycle is the changing market dynamics of crypto markets. Previously, Bitcoin was by far the leading asset in the space, and movements in other crypto projects followed the largest cryptocurrency. Thus, in periods of euphoria, Bitcoin would lead the market upwards as it was considered the best, safest and easiest bet in the space. This dynamic has changed dramatically over the past 2 years as other cryptocurrency projects have taken the shine away from Bitcoin. The space now has a plethora of promising projects that may be attracting new investment away from Bitcoin, and thus Bitcoin-dependent market dynamics may not occur. Regardless, Bitcoin's dominance has undoubtedly faded in 2021, which can be seen in Figure 1.7.

Figure 1.7 – Bitcoin Dominance 31 Dec 2020 vs. 31 Dec 2021.



There are two competing dynamics here – new projects which expand the use cases of crypto will lead to declining Bitcoin dominance, whereas projects with no added value will eventually capitulate and lead to an increase in Bitcoin dominance. We expect Bitcoin dominance to follow a mean reversion dynamic, with the long-term average trend being slightly downward sloping.

It must be stated that the blow-off top cycle has been critical in the past for cryptocurrency markets to wash out non-productive projects and to decrease overall speculation in the sector. Indeed, each cycle experienced its own type of mania and speculation. In the cycle of 2016, Initial Coin Offerings (ICOs) became of stark popularity – ICO funding grew to $6.2bn and $7.8bn in 2017 and 2018, before plummeting to just $371mn in 2019, according to CB Insights. As mentioned previously in this report, the mania in this latest cycle seems to include DeFi related projects, NFTs and meme coins. While the most popular of these projects will likely survive, it is more than likely that many of these, which provide no added utility to buyers, will capitulate, along with other cryptocurrency projects which do not add value to the ecosystem.

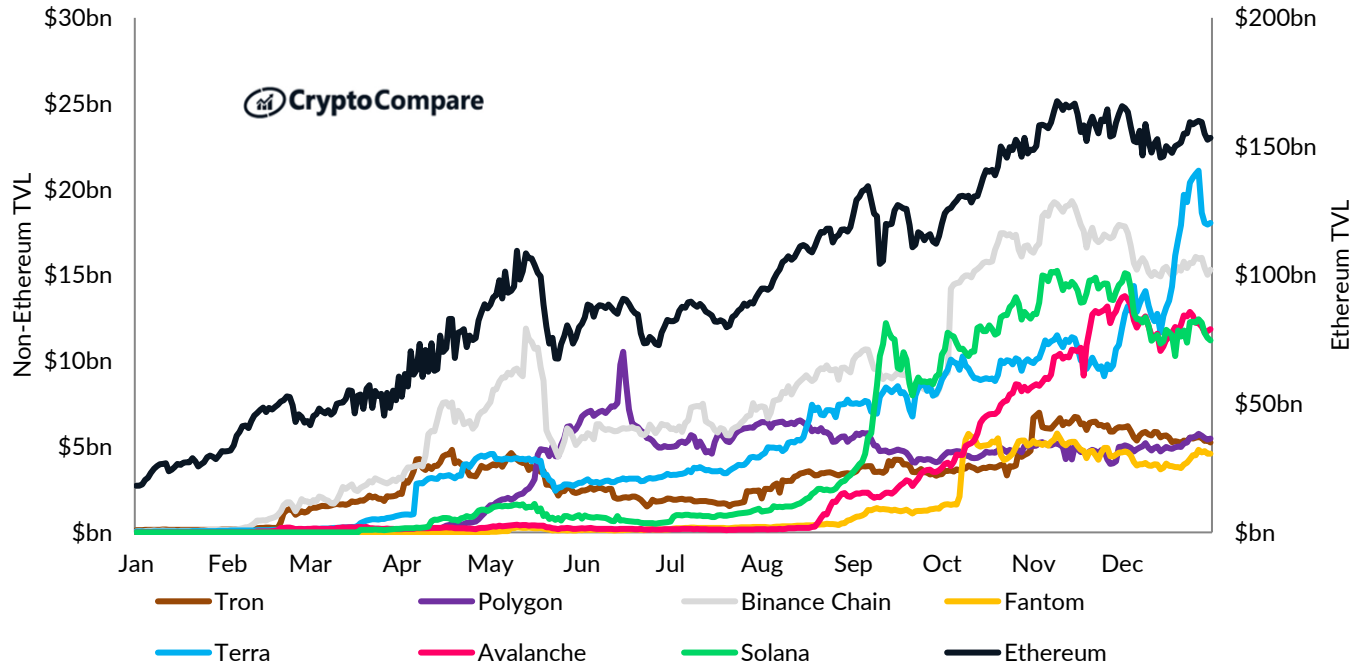
Thus, an intriguing question to pose to a market without a blow-off top is **through which mechanism will unproductive assets cease to receive funding**? It is important to note that this dynamic is not necessarily applicable to just crypto – the dot-com bubble burst of 2000 saw an abundance of poor internet companies collapse. Internet firms which at the time proved to be adding value to the ecosystem, such as Amazon, were greatly harmed during the burst, but still managed to survive and persevere (Amazon saw a 95% decline in its stock price from its peak in 1999 to its low in 2002 – what a buying opportunity!).

Investors will be paying close attention to bitcoin's price movements in the first quarter of 2022 to gauge whether the bull market is still in full force, or whether the cycle has ended, putting us in a bear market. Regardless of your view, it is critical for investors to have a planned exit strategy in place for when volatility hits – either on the upside (how and when to take profits) or on the downside (limiting losses via risk budgeting, position limits, or stop-loss limits).

The Rise of DeFi and Smart Contracts

In 2020, Ethereum was the only platform with a significant decentralized finance (DeFi) market, where smart contract functionality was being put to use for financing activities at a large scale for the first time. By the end of 2020, there was $21.1bn in total value locked (TVL) in the DeFi space, with Ethereum taking 97.6% of the pie. Fast forward a year and the DeFi landscape has changed dramatically – TVL has grown over 10x to $244bn, and while Ethereum remains the leader in the sector, its dominance has faded to 62.8% of the market.

Figure 1.8 - Total Value Locked in Leading Smart Contract Platforms, 2021



Source: DeFiLlama

In fact, DeFi has undoubtedly been the hottest sector in cryptocurrencies this year – out of the 10 largest crypto assets, 6 of them provide (or aim to provide) a DeFi ecosystem and 12 blockchain networks ended the year with over $1bn TVL. Even Bitcoin, which has historically been considered a monetary asset, recently underwent the 'Taproot' soft fork, which, among other things, aims to provide smart contract functionality to its primary scaling solution, the Lightning Network.

However, the challenges faced by different ecosystems have become more clear in the past year. As the market leader, Ethereum has almost had a target on its back and has been extensively criticized for its high transaction fees and slow throughput. This became obvious in November, when the CEO and Co-Founder of Three Arrows Capital, one of the largest crypto hedge funds, shared a tweet attacking Ethereum – the tweet went viral in the crypto twitter ('CT') community.

"Yes I have abandoned Ethereum despite supporting it in the past. Yes Ethereum has abandoned its users despite supporting them in the past..."

'Ethereum-killers' thus aim to solve the leader's main issues – high transaction fees and slow processing time. This has led to the success of the 'Solunavax' narrative, where Ethereum-killers led by SOL, LUNA, and AVAX have strongly outperformed the market. On the other hand however, these smart contract platforms still face challenges that Ethereum has resolved, mainly that of a more fully decentralized network (for example, Solana only has c1,300 validators, compared to over 200,000 on Ethereum) and the network effect benefits of Ethereum's robust ecosystem.

The Future of DeFi

The growth of DeFi suggests that it is an area of crypto which will become pivotal for the rest of the industry to succeed. Indeed, the idea behind cryptocurrencies has long been to disrupt a financial services industry that currently benefits a select few over the many. A peer-to-peer financial industry where decisions are made as a collective is undoubtedly a fearsome competitor for traditional finance.

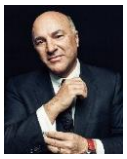
In spite of that, various traditional institutions have spotted the opportunity that DeFi presents, and the industry is reacting to this. Over the summer of 2021, Aave, one of the largest lending DeFi protocols on the Ethereum network, launched 'Aave Pro', which includes KYC processes and allows institutions access to decentralized markets. Another protocol, 'Alkemi' launched in October with the purpose of bridging traditional finance and DeFi. Competing protocols will likely follow suit this year - if the institutionalization process for crypto began in 2021, we see the institutionalization of DeFi beginning in 2022, which will bring further clarity in pivotal areas of DeFi, such as stablecoins.

Nevertheless, DeFi remains a sector in its early stages, which will certainly experience significant shifts in its market dynamic over the next few years. It is probable that many of the fast-growing ecosystems will not survive through the next bear cycle if funding dries up and an increase in risk causes fatal liquidity shocks to these projects – it is important to remain cautious and alert to the fact that DeFi continues to be a high-risk activity. Having said this, it may be the case that the leaders of this sector in the middle of the 21st century will have come to fruition in this past year, in the same way that the two largest public companies in the world, Apple and Microsoft, were founded in the 1970s, in the eve of the first information technology revolution.

Institutional and Corporate Adoption & Increasing Regulation

Crypto Adoption Experienced an Inflexion Point in 2021

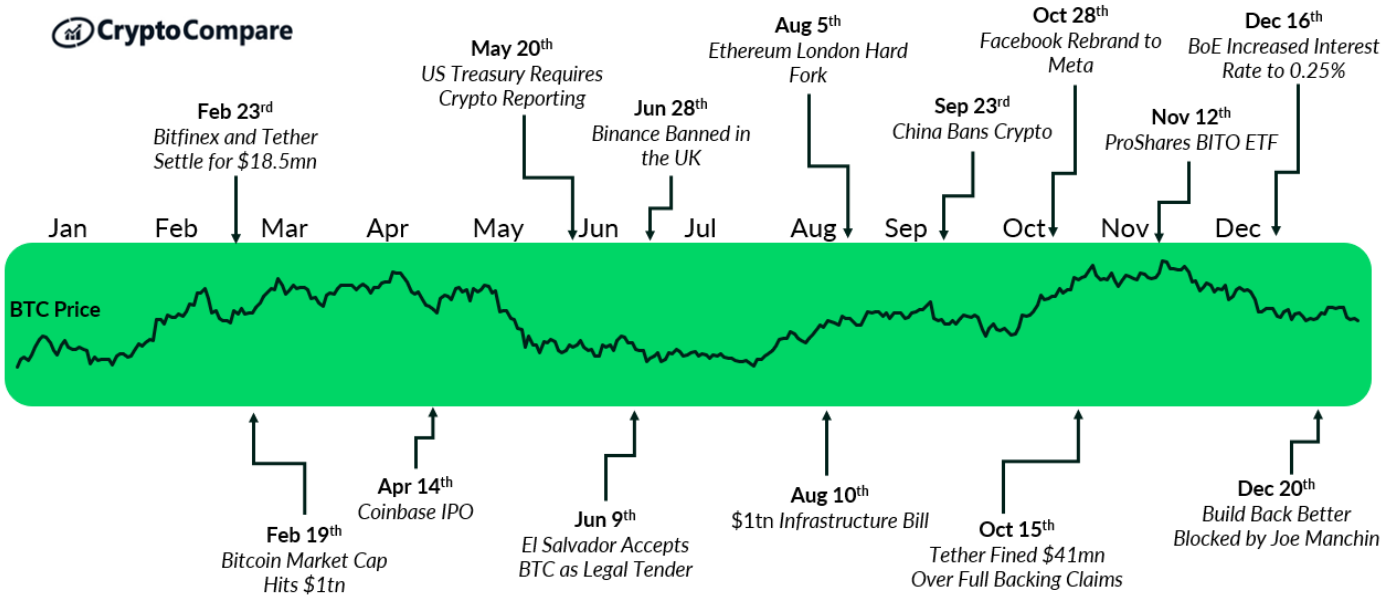
Institutional adoption has been a common theme in crypto markets in 2021. A continuation from the year prior, Paul Tudor Jones stated in October 2020 that he had a small, single digit percentage allocation to Bitcoin. This trend has come forward in full force, with a range of firms and individuals moving into the asset class. Some of these examples have been outlined below, and we expect this trend to accelerate in the coming years. There are many optimists out there in this regard, most famously the CEO of Ark Invest, Cathie Wood, who in October stated that "*the move by institutions into Bitcoin…could add $500,000 to Bitcoin's price if they moved into the tune of roughly 5% [of their portfolio] over time*".

Company/Individual	Adoption Strategy
MicroStrategy	Microstrategy is the largest corporate buyer of BTC and has accumulated 124k Bitcoin for an average price of $30.2k per bitcoin, which are worth $5.7bn as of the end of the year, approximately 0.66% of circulating Bitcoin.
Morgan Stanley	Morgan Stanley has participated in a range of crypto investments, most prominently a $200mn funding round of NYDIG, a Bitcoin services firm. It also offers three bitcoin funds to its clients, who increased their exposure by 63% over the Q3.
	In June 2021, El Salvador announced it would issue BTC as legal tender, and the programme started in September 2021 via a nationwide Bitcoin airdrop. Arguably an unrealistic goal, the country plans to build a 'bitcoin-city' powered by energy from volcanoes and $1bn in financing.
	Kevin O'Leary has stated that he participates in the DeFi economy by utilising Circle's USDC stablecoin to earn a superior yield provided by the traditional finance ecosystem. He is a proponent of stablecoin regulation and greater regulatory oversight for the industry.
BNY MELLON	In March 2021, BNY Mellon invested in the cryptocurrency infrastructure company Fireblocks. It also joined a consortium of six banks in the launch of Pure Digital, a London-based interbank marketplace for digital assets.
TESLA	In February 2021, Tesla announced in an SEC filing that it had bought $1.5bn worth of Bitcoin, which is now worth $2.0bn. Throughout the year, Elon Musk tweets have had short-term impacts on crypto markets, both on the upside and downside.
	The billionaire hedge fund investor Stanley Druckenmiller has owned Bitcoin since 2020 in the search for an effective inflation hedge, particularly after central banks began expanding their balance sheets in the wake of the COVID-19 pandemic.
	In the New York Times' annual DealBook Summit, Tim Cook, the CEO of Apple, acknowledged that he has personally invested in cryptocurrency. However, he rejected the idea of Apple adding cryptocurrency functionality to Apple Pay, the firm's payments platform.

Increasing Role of Regulation

As higher institutional adoption begins to take place, regulators must keep up with this fast-growing industry. 2021 began with a lawsuit that is still ongoing between XRP's creator Ripple and the SEC over the classification of the crypto asset and whether it violates securities law. It appears to be one of the most important regulatory cases for crypto going forward, as it may set the precedent towards the treatment of cryptocurrencies as financial securities, money, or some other classification. Other regulatory events throughout the year are illustrated below.

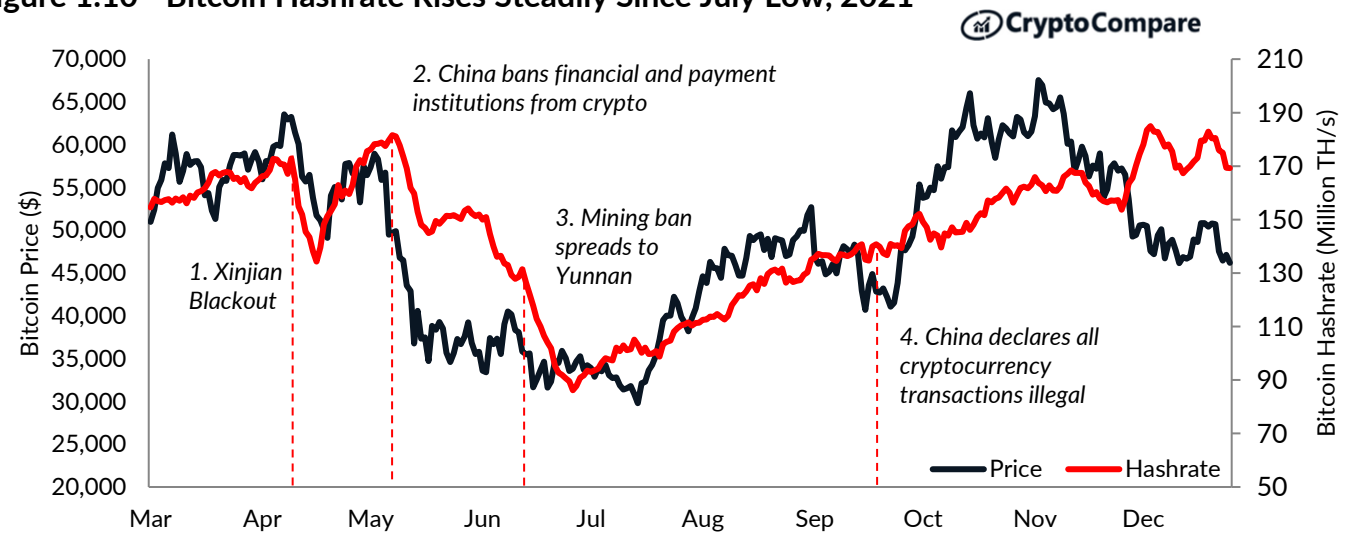
Figure 1.9 – Timeline of Regulatory Events in Crypto Markets



Regulatory pressures from China were also at the spotlight in crypto markets last year. China officially banned financial institutions from utilizing cryptocurrency for payments in May, while also abolishing the Bitcoin mining industry in June. These two regulatory actions led to a steep decline in Bitcoin's price – from $57,758 in the start of May to a low of $28,908 in June, due to a significant fall in hash rate after mining operations were shut down.

Other nations have attempted to follow suit but have been unable to enforce a crypto ban. Nigeria, for example, barred local banks from using cryptocurrencies, but the country remains one of the global hotspots for crypto use due to the aforementioned economic struggles of the nation. It seems as if only governments with an authoritarian hold over their financial institutions will be able to impose an effective embargo on the use of cryptocurrencies by their population going forward.

Figure 1.10 - Bitcoin Hashrate Rises Steadily Since July Low, 2021



While panic initially ensued following the China ban, it can be argued that the move has turned out to be a net positive for Bitcoin. Miners have transitioned to other countries for their operations, and thus the industry will avoid any further authoritarian policies from the Chinese Communist Party. Moreover, hash rate has fully recovered from the decline and the move of mining facilities to free market economies will allow for further transparency and cooperation in the industry, which may be key in tackling lingering issues such as the environmental footprint of Bitcoin mining.

Crypto Adoption and Regulation in 2022

The pace of crypto adoption and regulation will likely not decline in 2022. Cryptocurrency exchanges have been extremely active in their marketing strategies in 2021, which will contribute to accelerating the onboarding of new participants into the crypto economy. Crypto.com has undoubtedly been the most active exchange in this regard, spending almost $1bn in marketing campaigns – $700mn for the naming rights of the Los Angeles arena, $175mn apparel deal with the UFC, and a $100mn sponsorship deal with Formula 1.

Countries with dire economic challenges will also continue to enter the crypto space at an arguably faster pace than developed nations, as the benefits for individual users in these nations are more clear. The Bitcoin payments service Strike has recently launched in service in Argentina, a country with a reported inflation rate of 51.2% in November 2021. The move is part of an expansion plan in Latin America, a market that is ripe for currency and financial services innovation. Similarly, Santo Blockchain, a cryptocurrency company, is aiming to open 300

Bitcoin ATMs across Latin America this year. We expect cryptocurrency services to penetrate developing markets like Latin America, Asia and Africa at a faster rate in 2022.

In contrast, adoption in western countries is more dependent on the shift of institutions into the space, due to the larger percentage of capital that institutions hold relative to wealth. Because of this, regulatory oversight is arguably more important in developed nations, as institutions are significantly more wary about regulation than retail investors. We expect continued progress in this regard in 2022, as governments begin to grasp the opportunities for their local economies that cryptocurrency can provide. This trend has already begun with a Spanish MP recently proposing the creation of a national strategy for cryptocurrencies and a regulatory framework for the industry. Similarly, various Senators in the United States have made their pro-crypto stances public, and are advocating for regulatory clarity – Wyoming's Senator Cynthia Lummis, one of the leading advocates for Bitcoin in government, is expected to pitch a new crypto regulatory body to Congress this year.

On the other hand, it seems many regulators are still well behind in their understanding of the value proposition of cryptocurrencies. The Deputy Governor for Financial Stability of the Bank of England Jon Cunliffe recently stated that the bulk of crypto assets "have no intrinsic value" and could pose a significant risk to financial stability. It is necessary for regulators to dedicate resources to understanding the benefits of this innovative technology and keep an open mind when developing regulatory frameworks in order to allow the industry to flourish.

Lastly, the increasing availability of digital asset products will act as a catalyst for more institutions to enter the space. On October 20th 2021, Proshares launched the first Bitcoin-linked ETF after a 9-year regulatory battle. The Proshares Bitcoin Strategy ETF is a futures backed fund, deriving price from the movements in bitcoin futures price, and has experienced larger losses than Bitcoin itself, returning -28% since launch compared to -25% for Bitcoin. In 2021 the SEC continually delayed its decision with regards to a spot ETF, recently delaying their verdict concerning Grayscale and Bitwise ETFs to February 1st and 6th respectively. We hope to see the approval of a Bitcoin spot ETF in the United States in 2022, which will act as a stronger representation of the underlying product than its futures counterpart.

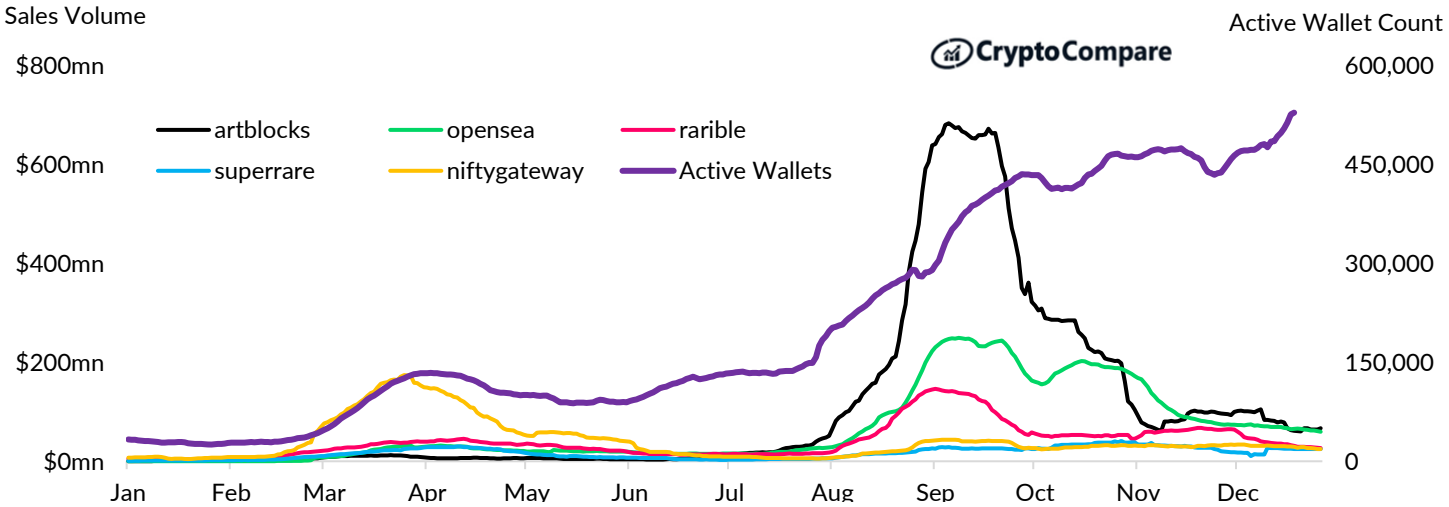
NFTs

15x Growth in NFT Volumes in 2021

Non-Fungible Tokens (NFTs) have arguably been the most viral application of blockchain technology since the inception of crypto in 2009. The sector has been alive various years – with the famed CryptoPunks collection dating back to 2017 – but only began to gain serious momentum after digital artist Beeple sold an NFT at Christie's, one of the world's most well known auction houses, for $69mn in March 2021.

Since then the sector has grown stride by stride – while OpenSea is likely the most well known marketplace, others have grown significantly too, as shown by Figure 1.11 below. The top five marketplaces had an average 30d sales volume of $2.6mn at the start of the year – this grew to a peak of $229mn in early September, before falling to an average of $40.5mn by year end, a 15x growth in 12 months. Similarly, 30d rolling active wallets have continued to grow steadily throughout the year from 33,000 to 529,000 by the 18th of December, suggesting a growing NFT community and participation rate amongst crypto natives.

Figure 1.11 – NFT Marketplaces 30d Rolling Sales Volume vs. Active Wallet Count, 2021



Source: Masterpiece
**Collections listed on artblocks are attribute to artblocks volume, regardless of the marketplace where it has sold*

While it may seem like NFTs are a niche sector within crypto, it has been a target area of growth for the industry's largest participants. Many leading cryptocurrency exchanges have or are planning to launch NFT marketplaces, including Binance, Gemini (niftygateway) and Coinbase, whose marketplace is expected to launch in 2022 and accumulated a waiting list of over 1.5mn in just two days. Most importantly, parties outside the crypto space have had no choice but to pay attention and enter the space due to the revolutionary characteristics of NFTs. Adidas,

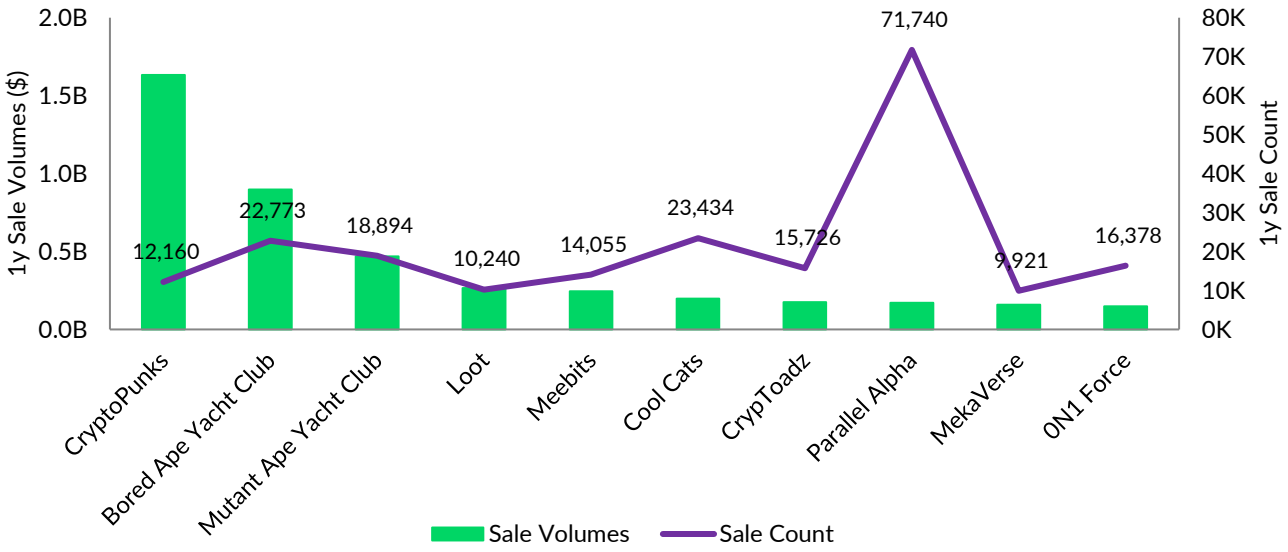
for example, partnered with the NFT collection Bored Aped Yacht Club (BAYC) in an attempt to enter the metaverse.

An exciting property of NFTs is their versatility and applications to other business areas. In this regard, gaming and music come to mind. Many video games sell in-game items to encourage user activity and to increase engagement amongst players outside of actual gameplay. For example, the free-to-play game Fortnite brought in $2.4bn in in-game sales in 2018. However, players do not have proof of ownership of these in-game items, leaving them unable to profit from their time spent gaming. NFTs would provide gamers with the ability to directly own the items they buy or earn in games, and trade them with each other for compensation, thereby creating an in-game economy to the benefit of users. Music artists would be able to gain from NFTs by issuing music through NFTs, allowing them to collect royalties via the terms on a smart contract – this would solve the fact that musicians only receive 12% of all revenue in the music industry.

Having said this, it is likely that many NFT projects will fail in the next market crash – it is undeniable that the technology in its current form faces significant challenges, most prominently the lack of utility provided to NFT owners. Many projects are aiming to change this by adding services such as NFT staking, or using NFTs as a membership entry to an exclusive club, but such 'utility' are often cookie cutter approaches taken from competing projects, and do not warrant the significant amount of money spent by buyers. Furthermore, illicit activities such as money laundering, or even market manipulation such as wash trading, are rampant on NFT markets. It is thus no surprise that NFTs are a winners-take all market – a report from Chainanalysis suggests that on OpenSea, the top 30% of addresses account for 107% of all realized gains, leaving most participants to 'hold the bag'.

Of course, hugely successful projects have cemented themselves as digital status symbols and will likely remain in the crypto space in the long term – some of these are illustrated in Figure 1.12 below. Nevertheless, the NFT market is one of the most prone to manipulation and arguably is the most risky area of crypto. Market participants should tread carefully in this space.

Figure 1.12 - Top 10 NFT Projects by Sale Volumes



Source: Masterpiece

OpenSea IPO

In early December, OpenSea appointed Brian Roberts, the former CFO of Lyft, as the NFT Platform's first CFO. Soon after, the executive hinted in an interview with Bloomberg that the NFT platform would consider going public via an IPO. This has received significant backlash from the OpenSea community, who argue this would in effect be a 'recentralization' event, which goes against the founding principle of decentralization that many crypto natives hold true.

Following the Roberts interview, the marketplace has received extensive criticism for a lack of support to users and taking an excessive cut from NFT transactions. Furthermore, the competitor 'LooksRare' launched on January 10th 2022, and it provides many of the benefits users have sought from OpenSea – primarily trading rewards in the form of a 'LOOKS' token, and a staking platform for LOOKS. While this business model may not be sustainable in the long-term, it offers a viable challenge to OpenSea's dominance in the Ethereum NFT space.

While Brian Roberts clarified that the IPO would not occur in the short-term, this series of events begs the question of how truly decentralised many crypto applications will be going forward. There are of course decentralised-friendly fundraising alternatives for companies like OpenSea. Most prominently is the use of ICOs, allowing firms to issue tokens instead of stock to raise capital. Similarly, airdrops have become extremely popular

in 2021. This occurs when a token is launched by issuing free tokens (typically with governance rights) to a project's early adopters. The firm is then able to raise capital via the token's price appreciation. The Ethereum Name Service (ENS) airdrop in November 2021 is likely the most successful case, where 25% of tokens went to users and 50% of tokens remained in the community treasury. The ENS token had a fully diluted market capitalization of $3.9bn at year end.

Using an ICO or airdrops could possibly be a more successful strategy for OpenSea. Not only will it be seen as a more equitable approach by giving financial benefits to important stakeholders such as users (who are clearly pivotal in the success of the platform) it will also certainly be beneficial from a marketing perspective – ENS received significant attention for its airdrop, and this will likely be dwarfed by an airdrop from the largest NFT platform.

Regardless, the discourse around OpenSea's funding options – whether they will go through the traditional IPO route or through a crypto native method like airdrops, or even an ICO, will be a key area to look out for in the first quarter of 2022.

Coinbase NFT Marketplace

In October, Coinbase announced it would launch a marketplace for NFTs on its platform, with the objective of having a platform that replicates social media by "*adding social features that open new avenues for conversation and discovery*". The move could see Coinbase rival other marketplaces such as Gemini, Binance and OpenSea. Given the exchange's popularity, with 73mn verified users as of Q3 2021, the marketplace is expected to become the largest NFT marketplace, surpassing OpenSea. In fact, the marketplace waiting list reached 1.5mn in just two days – almost double the 842,000 OpenSea all-time users.

The move suggests that NFTs are not going away anytime soon – coupled with the entrance of non-crypto brands into the space, such as Adidas and luxury brand Dolce & Gabbana, it is likely that the launch of the Coinbase NFT marketplace will be a key highlight of 2022, if indeed that's when the launch takes place.

Meme Coins

Another curious trend in 2021 was the meme-ification of investments across different asset classes. This was ignited by the case of GameStop Corp (GME), an American video game and electronics retailer that saw its stock skyrocket 1,500% in January after a group of social media investors active in the WallStreetBets Reddit forum collectively discovered they could profit by short squeezing hedge funds who were, in aggregate, short over 100% of GME stock. This attitude has created an investing culture of reckless abandonment where overly optimistic terms such as 'Diamond Hands' (refers to those who refrain from selling an investment regardless of the accumulated loss) or 'WAGMI' (We're All Gonna Make It) have become the mantra of a new generation of investors.

Unsurprisingly, this trend has trickled into crypto, which is an arguably fitting companion for social media investors due to the asset class' natural anti-establishment position. In crypto markets, Dogecoin - a cryptocurrency that was initially started as a joke in 2013 - quickly grew to become the biggest 'meme coin' and returned over 700% in January 2021 alone. It closed the year with a whopping 3,587% return.

Although the cryptocurrency provides little utility outside of price appreciation, has no smart contract functionality, no significant developer activity, and is not scarce (i.e. it has unlimited supply), it benefits from a cult-like following of investors who are eager to see the crypto's price continue to rise endlessly. Furthermore, Dogecoin is also heavily impacted by viral tweets, most importantly those from Elon Musk. The Tesla CEO is popular in the twitter community where he often shares memes with his followers. In February, Elon shared a number of Doge-specific tweets, including stating "Dogecoin is the people's crypto" on February 4th, which led to a 42.1% appreciation on the day.

However, one must tread very carefully in regards to meme coin investments. The lack of any type of fundamentals makes these investments extremely dangerous – it is impossible to know whether a new project will be the next meme coin to provide a 100x return, or whether it is an outright scam. Two contrasting examples come to mind. First, that of Shiba Inu, now the second largest meme coin, with an end of year market capitalization of $18.5bn. While arguably an identical cryptocurrency to Dogecoin, whose name and logo is also a dog, the cryptocurrency returned 831% in just October and was the best performing crypto asset of 2021 (by a significant margin). On the other hand, a cryptocurrency named 'Squid Game' (SQUID) was launched in October, inspired by the most watched Netflix television series of all-time. After launch, the token quickly rose to a price of over $500, but plummeted shortly after to near $0 when it became clear that the coin was a scam.

Closing Thoughts

We believe 2021 has been a particularly important year for the future of the industry, with many milestones having been reached – Bitcoin breaking a $1tn market capitalization, the first country issuing Bitcoin as legal tender, and the development and maturing of various sub-sectors including DeFi and NFTs. We have aimed to cover some of the most important developments in this report.

Because of this, the legitimacy of scepticism around crypto has significantly faded over the last year, and will continue to do so over the long-term. It is now a multi-trillion dollar industry with over 300mn users worldwide, many of which are young individuals who have lived with the use of the internet and smartphones for most of their lives. We question how much more integration is required for sceptics to see the value that crypto can bring to the global financial system, and blockchain technology to other industries.

There are a number of other innovations and market developments that we have not covered in detail. These include events like the Ethereum Merge, which represents the long-awaited merging of the Ethereum Mainnet and Beacon Chain to transition the Ethereum Network to Proof of Stake. 2021 was also the year were the concept of 'Web 3.0' arose, a loose term for an internet led by blockchain technology and decentralization. This is still a relatively unclear concept, with there being few functioning applications that could actively replace the internet in its current form. We expect this concept to become more clearly defined in the coming year, although the growing popularity of the Metaverse and the growth of Decentralized Autonomous Organizations (DAOs) as an organizational structure suggests the shift towards Web 3.0 has already begun. We expect these two concepts to be pivotal for the future of Web 3.0.

To conclude, it is important to remember that cryptocurrency is still a relatively young industry in an early stage growth cycle. This means there are significant opportunities that investors and market participants can take advantage of, but also a high level of risk. Market participants should ensure to carry out appropriate due diligence before participating in crypto-related activities. Nevertheless, if 2021 has proven anything is that crypto is here to stay. WAGMI.