

BITFINEX Alpha



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EXECUTIVE SUMMARY

"It's inflation, stupid!" - to slightly abuse the famous quote about the US economy by James Carville, strategist to former President Bill Clinton. His point was that nothing else matters apart from the economy, and it is the same now for policy makers with regards to inflation.

September is turning into a critical month: markets are focused on the forthcoming Federal Open Market Committee meeting in a couple of weeks and critical economic reports which are due in between. The self-proclaimed "data-driven" Fed, seems only focused on one thing: bringing inflation back to its 2 per cent target range.

Delve into the detail of the plethora of economic reports released over the last seven days, and it is clear that despite higher rates, consumption of services is up, though consumption of goods is beginning to fall. The US labour market however, remains as robust as ever. And the Fed, perhaps to the chagrin of risk asset investors says it will likely be inflicting more pain on some businesses and households, before inflation is tamed. There are however some glimmers of hope, as the Purchasing Manager's Index survey for August showed, with the pricing subindex lower in August while wages are still growing - early signs that a Fed soft landing is possible.

For traded assets though, more certainty is needed. Equities have been plunging, and September is likely to remain volatile. In the bond market, two-year treasuries are also at a 15-year high amid elevated interest rate expectations.

Meanwhile, in crypto news, the push and pull in the sector continues. Meta announced it is allowing US owners of NFTs to upload them to their Facebook and Instagram accounts, while the FBI warned investors over the risks of investing in DeFi platforms. Solana-based exchange OptiFi lost \$661,000 in USDC, and Microstrategy co-founder Michael Saylor is sued for alleged tax-fraud. Tether is also asked the court to remove a controversial law firm from a legal action it is facing.

On-chain, there are signs of an NFT and DeFi resurgence, while there continues to be an accumulation of Bitcoin among small retail wallets and large whales - though the latter are taking profits too. Miners, as discussed last week are not selling in the amounts they had been previously. If they turn and stop completely, it will be a very positive signal for Bitcoin.

Throughout August, a record low of 6.1 per cent of Bitcoin was moved on-chain. While supply keeps increasing throughout the bear market, this statistic becomes even more significant. Even though the lack of demand is evident, on-chain data such as this illustrates how most investors are simply holding tight without knee-jerk reactions to price fluctuations.

Finally, in our Learning Section we focus on El Salvador which celebrates its first anniversary this week of passing its Bitcoin law to make BTC legal tender. It is a bold and visionary move, which may make countries like El Salvador, and cities like [Lugano](#), the standard that others will eventually follow.

INDEX

1. GENERAL MARKET UPDATE

5-16

- Is the economy's response in line with Fed's expectations?
- US manufacturing remains resilient.
- Hiring slowed, but the Job Market is still strong.
- Equities and Bonds Update
- Conclusion:

6-7
8-10
11-12
13-15
16

2. NEWS FROM THE CRYPTO-SPHERE

17-25

- Meta Platform Now Allows Facebook And Instagram Users To Post Their NFTs
- FBI Has Issued A Warning To Cryptocurrency Investors Regarding DeFi vulnerabilities
- Solana DeFi Exchange OptiFi Loses \$661,000 Due To Programming Error
- Microstrategy Co-Founder Michael Saylor Sued By DC Attorney General For Tax Fraud
- Tether Asks The Court To Terminate Roche Freedman From The Class Action.

18
19
20-21
22-23
24-25

3. WHAT'S ON-CHAIN THIS WEEK?

26-33

- NFT and DeFi resurgence
- Bitcoin Accumulation Trend
- Mining Difficulty Jumps to 30.977t
- Long-Term Trends Among Different HODLer Cohorts

27-28
29-31
32
33

4. LEARNING SECTION

34-38

- Update on El Salvador's Bitcoin Adoption and the Volcano Token
- A Bright Future for El Salvador's Economy
- Lugano's Plan B execution

36
37
38





GENERAL MARKET UPDATE



Global markets are at a critical intersection.

Central Banks around the world are showing an ever-increasing commitment to combat inflation: Fed Chairman Jerome Powell's speech at Jackson Hole is now being fully digested by bond markets. In the meantime, the upside surprise in European core inflation has sparked a debate about a 75-bps hike by the European Central Bank and resulted in inverted European yield curves.

In the past week, we also received the US job market report for August (315,000 more jobs created - more detail below). This is the second jobs report since the end of July when the Fed's rate hike committee last met. As the Fed is committed to a "data-driven" approach and that decisions will be made on the basis of the "totality of the data and the evolving outlook", this new piece of information becomes vital for their decision during September's meeting. The Fed believes it will take more time to bring inflation down to acceptable levels, and as Powell said, it could bring "pain" to households and the labour market.

Is the economy's response in line with Fed's expectations?

When Powell said in his Jackson Hole speech that the US economy will likely experience some "pain", does it mean that the Fed has given up on its hopes for a "soft landing"? The Fed definitely wants to slow down demand but not necessarily destroy it. Monetary policy usually takes time to work through the economy, and hence it is too early to say whether the Fed will be successful.

So far, how is the economy responding to Fed's consecutive rate hikes?

After the COVID distortions, personal consumption expenditure for goods has gone up. However, considering inflation, we can already see PCE beginning to slow on lower time frames. For consumption of services, correcting for inflation, it is still rising.

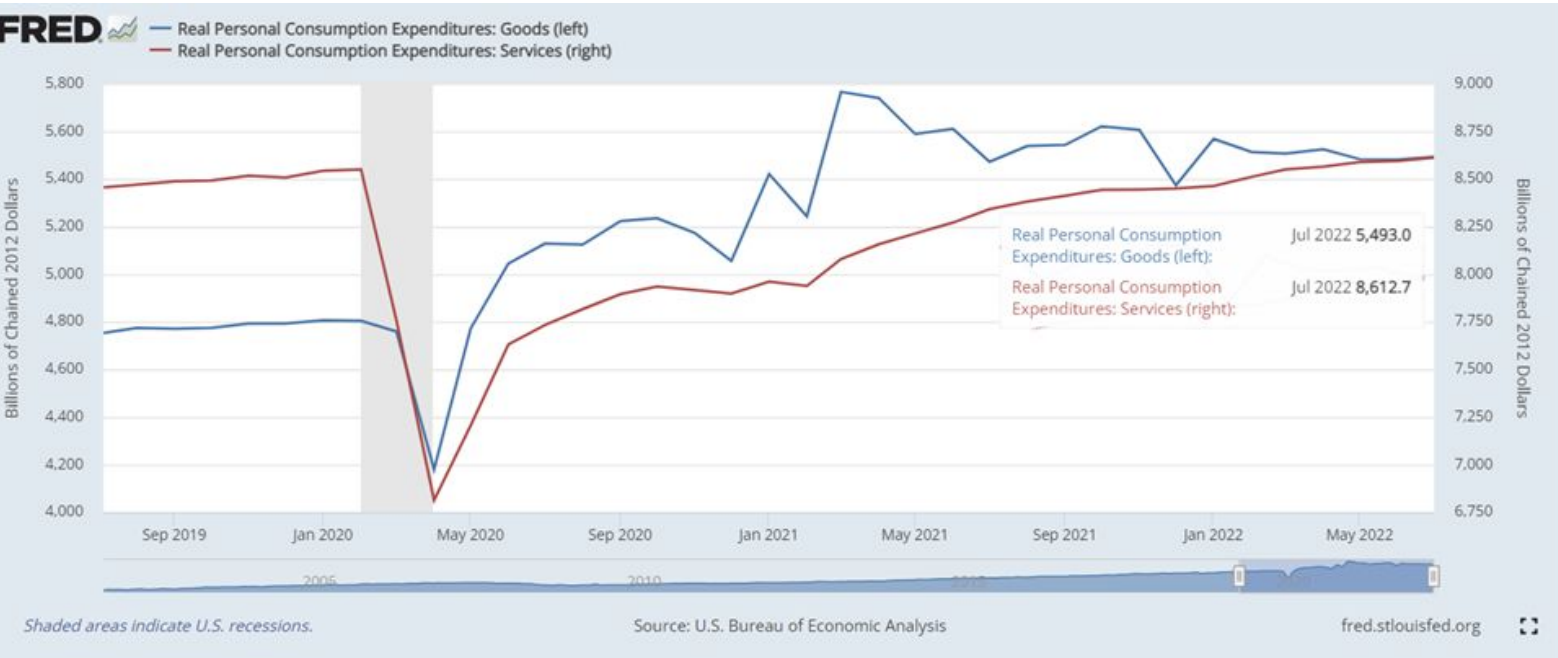


Figure 1. Real Consumption Expenditures: Goods & Services (Source: Bureau of Economic Analysis)

The majority of the inflation we've seen comes from a demand-supply imbalance in the goods economy and cooling down the goods sector might also cool inflation.

Two consecutive quarters of negative GDP (Gross Domestic Product) growth doesn't mean much compared with two consecutive quarters of positive growth in GDI (Gross Domestic Income). Both GDP and GDI measure the economy but in different ways. Though some economic analysts would say we are in a recession, these metrics say we aren't. Even the US Federal Reserve has reiterated that the current economic downturn is not a recession.

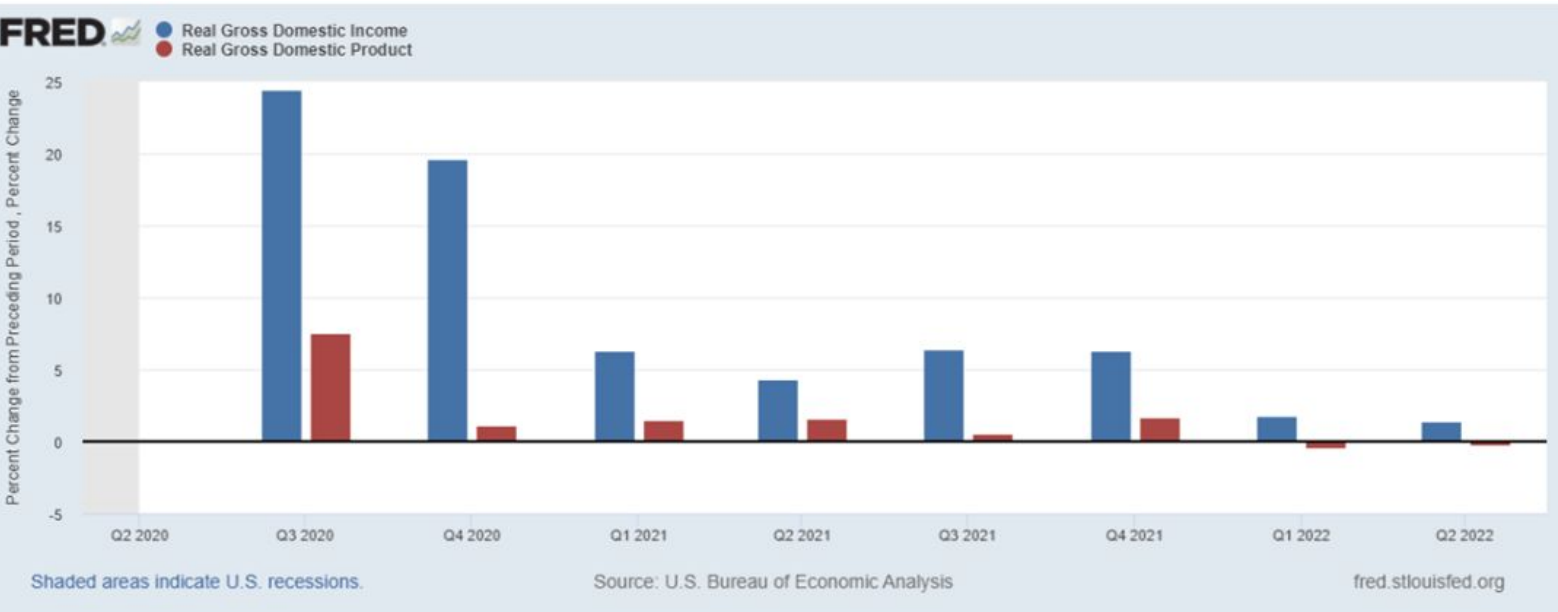


Figure 2. Real Gross Domestic Product & Real Gross Domestic Income (Source: Bureau of Economic Analysis)

The economy appears to be performing as planned. This cooling of the goods sector should likely prove helpful in reducing inflation if most of the inflation we've experienced is due to a temporary demand-supply mismatch in the goods industry.

US manufacturing remains resilient.

In August, the U.S. manufacturing sector continued to grow, and the overall economy extended its streak of 27 consecutive months of growth, despite rising interest rates from the Federal Reserve. This defies concerns that the economy is headed for a recession.



Figure 3. Purchasing Manager's Index

The monthly purchasing managers index from the *Institute for Supply Management* has, however been stagnant at 52.8 for the past three months. This indicates that the slowdown in economic growth experienced earlier in the year has levelled off. Surprisingly the survey indicated a surprising rise in

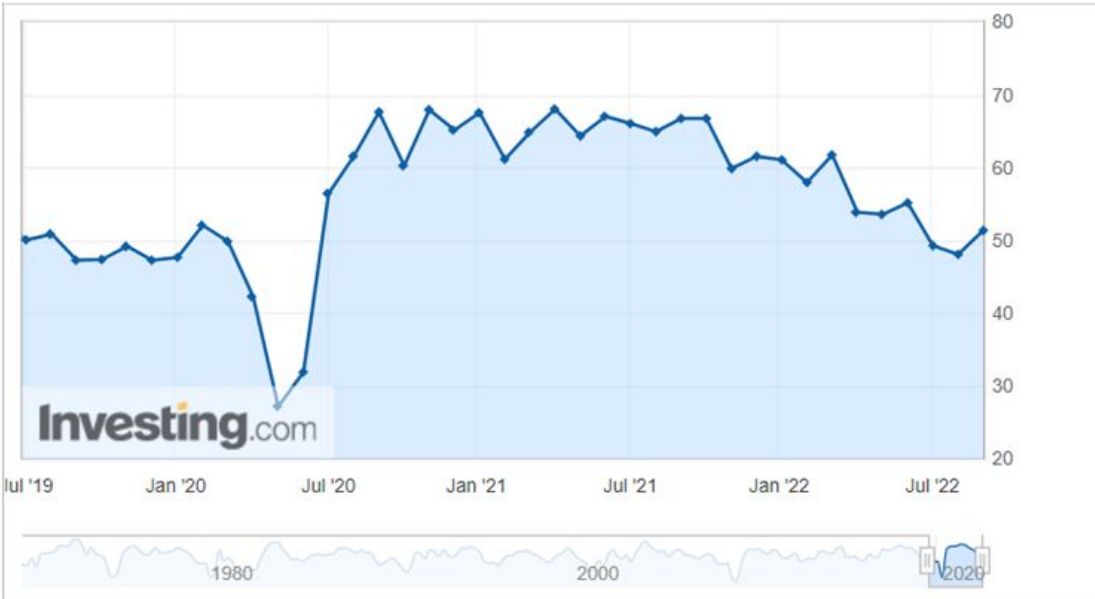


Figure 4. Orders Subindex

the latest PMI reading, the Fed appears to have succeeded in lowering inflation without halting economic growth.

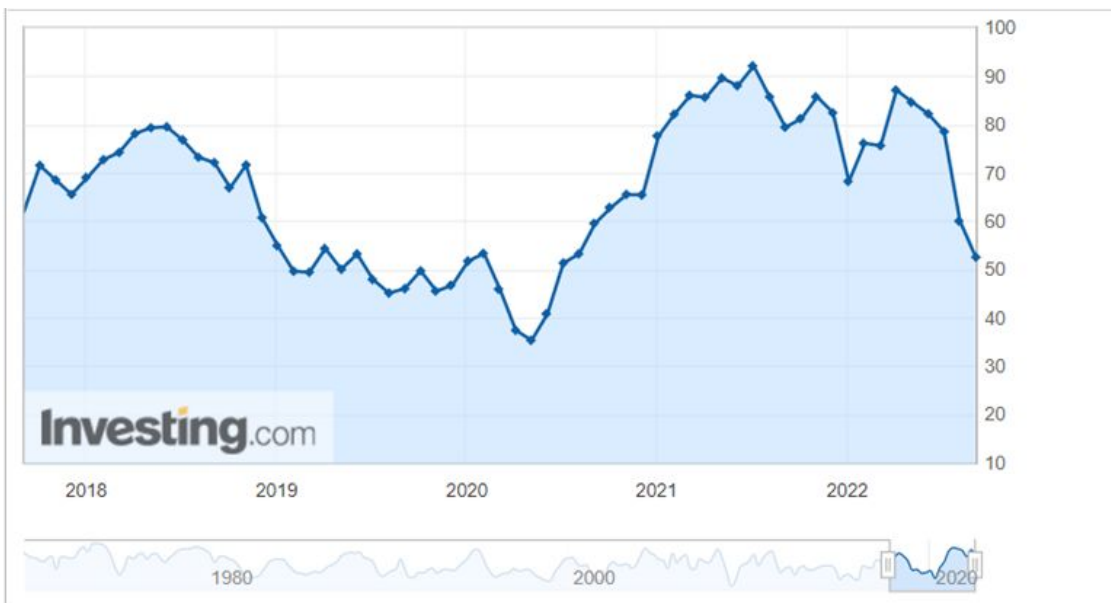



Figure 5. Price Subindex

new orders, despite firms' pricing power beginning to decline due to inflation. The PMI's orders subindex increased from 48.0 to 51.3, but the PMI's pricing subindex plummeted from 60.0 to 52.5, which has not been seen since July last year.

To summarise, US GDP remains stable; new orders are increasing at a sluggish pace, employment is up, and customer inventories are down. In contrast, raw material inventories have risen, the backlog is up, and prices are down. Based on

However, one report is clearly insufficient to come to any verdict on inflation.

In the upcoming months, manufacturers might have a hard time as the increase in borrowing rates begins to cut earnings, mainly through exports. New export orders dropped 3.2 points to an index below 50 which could be attributed to a strong dollar. Concerns about a global recession have led to a slowdown in local



demand, which is certain to impact GDP. As the hawkish Federal Reserve maintains upward pressure on interest rates, keeping prices relatively high, the dollar will remain strong, which means that manufacturers cannot rely on overseas markets to compensate for falling domestic demand.

Hiring slowed, but the Job Market is still strong.

The Federal Reserve acknowledged that job losses are an inevitable consequence of fighting inflation. The United States central bank will require an unlikely confluence of circumstances to keep the number of job losses low as interest rates continue to increase.

However, the recent job reports gave the Fed a bit of reprieve. Nonfarm payrolls climbed in August despite a weakening economy. Still, the unemployment rate rose as more employees re-joined the workforce looking for work, according to the Bureau of Labor Statistics. The economy added 315,000 jobs in August, exceeding economists' expectations but yet far below July's blowout report when employment surged by a revised 526,000 positions. The nation's unemployment rate rose to 3.7 per cent from 3.5 per cent. The labour force participation rate ticked up by 0.3 percentage points to 62.4 per cent but still remains below the pre-pandemic level of 63.4 per cent. Average hourly wages rose by 0.3 per cent for the month and 5.2 per cent from a year earlier, both below expectations.



Figure 6. Monthly job addition statistics in the US. (source: US Bureau of Labour Statistics)

Some of August's most significant monthly employment gains came from professional & business services and the health care sector, which saw employment increase by 68,000 and 48,000, respectively.

The Fed is also closely monitoring wage growth, and Powell has previously expressed concerns that continued gains could keep inflation elevated. Wage gains continue to be outpaced by the rate of inflation, which is still at 40-year highs but slowed down slightly in July to 8.5 per cent from 9.1 per cent. The August report showed that the pace of average hourly earnings increased at a slower pace of 0.3% from July. That's the lowest rate of increase since April, for an annual growth of 5.2%.

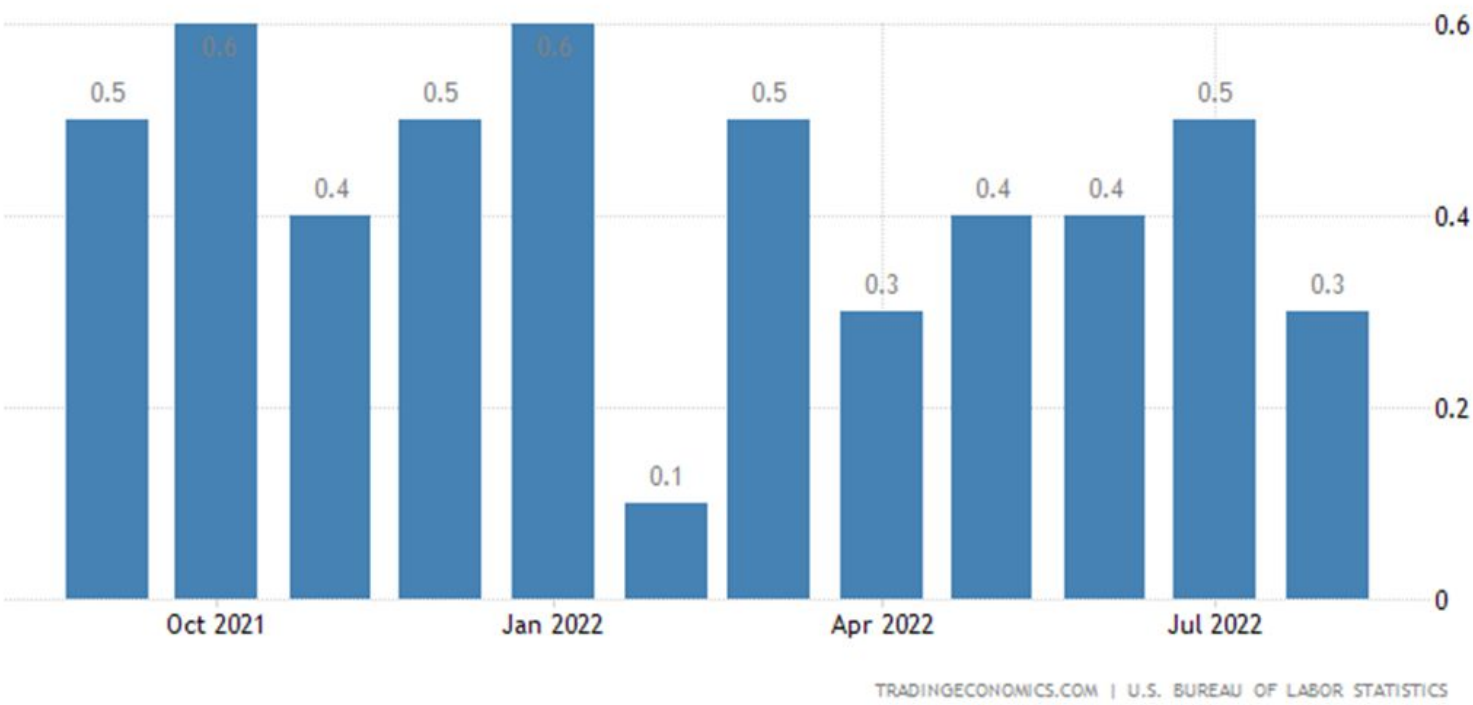


Figure 7. US Average Hourly Earnings MoM (source: tradingeconomics.com)

While that shows that wage increases are beginning to subside, it is far too early to read that as a sign that any Fed pivot from tighter monetary policy is imminent, and an at least 50 basis point increase in rates is still almost a certainty based on the current data.

Inflation is running at its highest pace in more than 40 years. This is a result of a combination of a demand-supply imbalance, massive stimulus from the Fed and Congress, and the crisis in Ukraine. Still, as other parts of the economy have weakened, employment has remained steady. It is still too early to infer the effectiveness of the Fed's monetary policy. The latest economic reports show that the Fed's ability to achieve a soft landing is not entirely impossible.

Equities and Bonds Update

At its Jackson Hole conference, the Federal Reserve sunk all prospects of a dovish pivot and caused stock prices to tumble to new weekly lows. Several critical economic data releases and an FOMC meeting are scheduled for September, which might add even more volatility to a month where markets generally underperform.

September tends to be the weakest month, with an average decline of -0.34 per cent over the past 30 years. There have been drops of as much as 11% and rises of as much as 8.8 per cent.

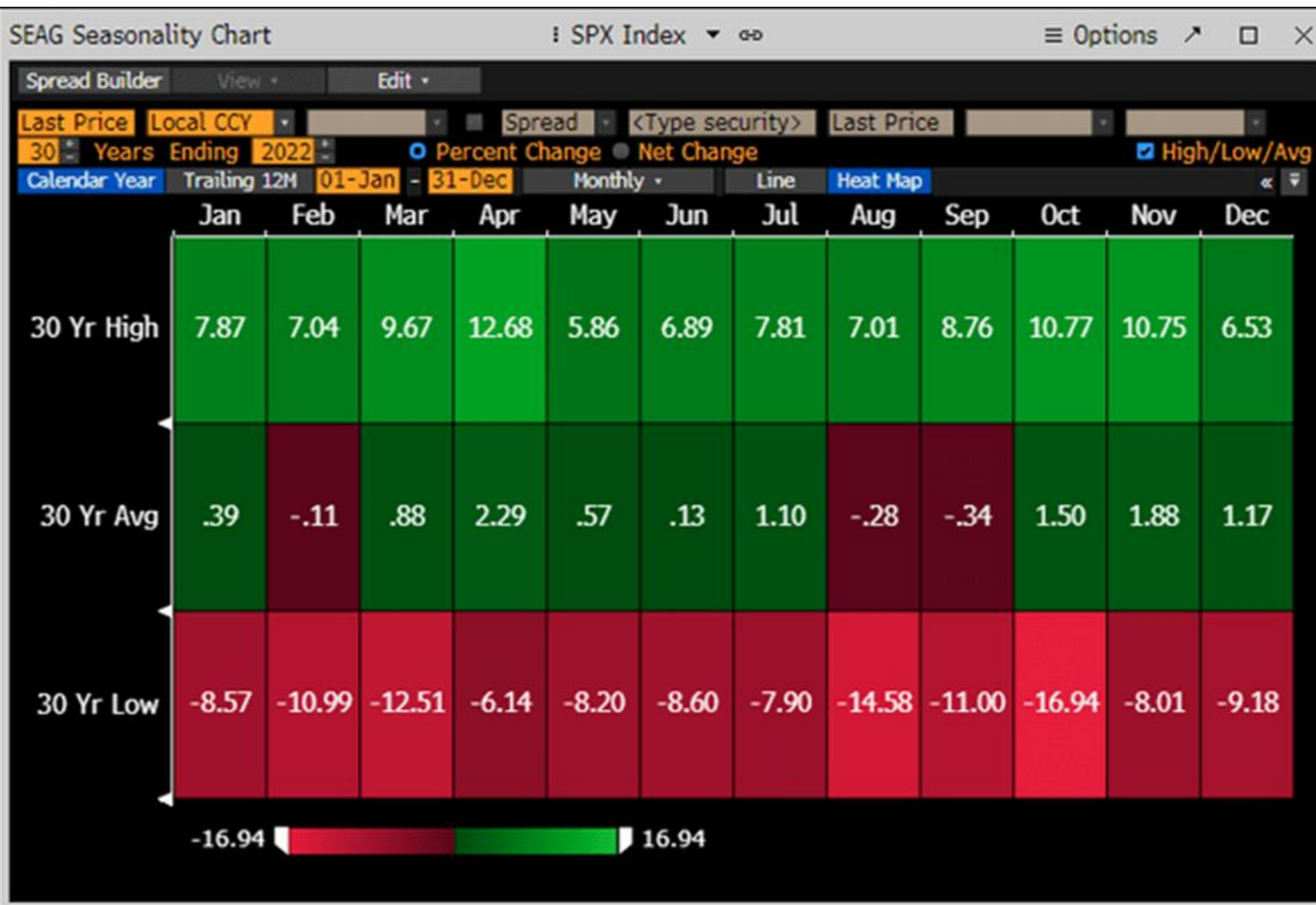


Figure 8. Seasonality Chart (Source: Bloomberg)

With an eventful summer ahead, the long weekend in the US due to Labor Day is unsettling investors' nerves. Given the historical performance of equities in September, only one thing can be said with certainty – expect volatility. The Cboe Volatility Index (VIX) has rebounded from August lows; it has approached the 28 mark in the last week and could witness further upside. When the VIX is near 24, the SPX is expected to fluctuate by 1.50 per cent daily, equivalent to a 61-point swing. This gives us a potential estimate of the incoming volatility for US equities.




Figure 9. CBOE Volatility S&P 500 Index

US stocks ended the week in a sharp downtrend, erasing early gains made after the August employment data and notching their third consecutive week of losses as the Labor Day weekend approached. However, the report's findings that employment growth was somewhat more substantial than anticipated and moderate wage rises did nothing to dampen already high expectations for the Fed's aggressiveness later this month.



Figure 10. US Treasury Bond Yield (2 Year & 10 Year)



The current decline in stock prices can be attributed in part to the fact that two-year Treasury rates have risen to 15-year highs this week, surpassing the highs seen in June. Stocks have been jolted by the increased assessment of Fed hawkishness, which is reflected in the increase in rates on two-year bonds. At the same time, the yield on the 10-year US Treasury notes is 3.21 per cent, resulting in a spread of 20 basis points against the two-year note, maintaining yield curve inversion between the two notes.

Conclusion:

- The recent downturn seems to be levelling off as goods consumption corrects to a downtrend and services consumption increases to pre-pandemic levels.
- For August 2022, the ISM Manufacturing PMI remained unchanged at 52.8. New orders rose again (51.3 vs 48), but prices fell again (52.5 vs 60), indicating a return to supply-and-demand balance.
- Employment rose again (54.2 vs 49.9 on the employment subindex) with little signs of layoffs, hiring freezes, or decreases in personnel because of attrition.
- Nonfarm payrolls rose by 315,000 jobs in August. The unemployment rate climbed to 3.7%, two-tenths of a percentage point higher than expectations.
- Wages also rose, with average hourly earnings up 5.2 per cent from a year ago, slightly lower than the estimate
- The S&P 500 has fallen sharply in the past few weeks as a potential dovish pivot by the Fed has vanished.
- The yield on two-year US Treasury rates has risen to 15-year highs. The 10-year rate is still at 3.21 per cent, signifying that the yield curve is still inverted.



NEWS FROM CRYPTO-SPHERE



Meta Platform Now Allows Facebook And Instagram Users To Post Their NFTs



“Meta Allows Users To Post NFTs on Facebook And Instagram”

Figure 11. Unlike Twitter and Reddit, which focus on NFT-based avatars, Meta introduced a feature that allows people to showcase their digital collections through posts.

Meta Platforms on Monday, August 29, 2022, [announced](#) that it has allowed users to upload non-fungible tokens (NFTs) on Facebook and Instagram. Users can connect their digital wallets or crypto wallet to either of the apps to share their NFTs across both platforms.

Digital wallets that support those features include Coinbase Wallet, Rainbow, MetaMask, Trust Wallet, and Dapper Wallet. Meta Platforms also explains that users will bear no “associated fees” when uploading or sharing their NFTs.

Meta Platforms are known to utilise the Flow blockchain developed by Dapper Labs to allow individuals to upload their assets minted on the Flow blockchain to Instagram. Apart from Flow, currently, Meta also supports other blockchains such as Ethereum and Polygon.

This announcement comes months after Meta Platforms began testing digital asset integration on Instagram last May. However, the ability to post NFTs on both Instagram and Facebook is currently only available to US users.

Apart from being able to upload digital collections on Instagram and Facebook, Meta Platforms claims it would also allow people to display and share their digital collections as augmented reality (AR) stickers on Instagram Stories.

Meta Platforms says it will explore additional features in the coming months to support creators and collectors further.

FBI Has Issued A Warning To Cryptocurrency Investors Regarding DeFi vulnerabilities



Figure 12. The warning comes after numerous DeFi hacks in 2022, which have cost investors billions of dollars.

The United States Federal Bureau of Investigation (FBI) on Tuesday, August 29, 2022, issued a new warning to investors using decentralised finance (DeFi) platforms, which are often subject to exploitation.

According to a [Public Service Announcement](#), the FBI said that cybercriminals are seeking to take advantage of investors' growing interest in cryptocurrencies and the complex cross-chain functionality and open-source nature of DeFi platforms.

"Between January and March 2022, cybercriminals stole \$1.3 billion in cryptocurrencies, almost 97 per cent of which was stolen from DeFi platforms," the FBI says, citing a report by blockchain analysis firm Chainalysis.

The agency says that criminals generally exploit DeFi platforms by initiating a flash loan vulnerability, exploiting a signature verification and manipulating cryptocurrency price pairs. Further, the agency advises investors to conduct diligent research on DeFi platforms before investing in them.

"Be alert to DeFi investment pools with extremely limited timeframes to join and rapid deployment of smart contracts, especially without the recommended code audit," the agency said in a statement.

The regulator also urged DeFi platforms to start instituting real-time analytics, monitor and rigorously test code to identify vulnerabilities and suspicious activity on decentralised platforms more quickly.

Solana DeFi Exchange OptiFi Loses \$661,000 Due To Programming Error



Figure 13. The development team shut down the mainnet and locked up funds during an attempted upgrade, effectively halting OptiFi.

Solana-based decentralised exchange (DEX) OptiFi [announced](#) on Monday, August 29, 2022, that it had inadvertently closed its program on the Solana mainnet, resulting in a total of \$661,000 worth of USDC stable coins being permanently inaccessible.

According to the [blog post](#), Solana's blockchain-powered protocol made an error while trying to update its program code. Instead of the standard update, OptiFi accidentally used the "Solana program close" command, which resulted in a permanent shutdown of the platform on the mainnet.

OptiFi said that approximately 95 per cent of the total value locked (TVL) was held by a team member. The company has also pledged to reimburse all of the users' funds and settle manual positions on Friday, September 2, 2022. The refund process is expected to take two weeks.

"OptiFi's team will learn from this harsh lesson and keep on building for everyone who trusts us. Sincerely apologise to all the users who put faith in us and got affected by our mistakes," the company tweeted.

OptiFi also suggested that Solana officials add more documentation regarding the "Solana close program" to help app developers understand its functionality and avoid such mistakes.



The company also seems to be planning to launch a new version of its program, claiming that it will use a peer-to-peer surveillance system to ensure that at least three people engage in blockchain actions in the future, in the hope that such a system will reduce impatience and further errors.

“Every deployment needs a rigorous process, and single-point failure can be avoided. Please don’t rush like we did, especially for DeFi projects.” OptiFi said in a blog post.

Microstrategy Co-Founder Michael Saylor Sued By DC Attorney General For Tax Fraud



“MicroStrategy’s Michael Saylor Sued for Alleged Tax Fraud in Washington DC.”

Figure 14. The stablecoin issuer believes freezing Tornado Cash addresses is a reckless move and expects further clarity from the U.S. authorities.

Washington DC Attorney General Karl Racine, on Wednesday, August 31, 2022, announced new charges against former MicroStrategy (MSTR) CEO Michael Saylor for not paying taxes.

Racine said in a series of tweets that Saylor has never paid any income taxes in the District of Columbia in the more than 10 years he lived there. In addition, the DC attorney general is suing MicroStrategy for allegedly conspiring to aid him in his tax evasion schemes. The company allegedly reported false information on federal tax forms. This makes this news relevant for the entire crypto community, as MSTR remains the crypto-exposed equity with the largest Bitcoin reserves.

Racine also stated that the lawsuit was the result of whistleblowers taking advantage of the recently passed False Claims Act.

“It’s the 1st lawsuit brought under DC’s recently amended False Claims Act, encouraging whistleblowers to report residents who evade our tax laws by misrepresenting their residences,” Racine added.

According to the [complaint](#), the Attorney General's Office alleges that Saylor falsely claimed to be a resident of either Florida or Virginia to benefit from significantly lower tax rates. However, his Facebook posts which are included in the complaint, indicate that he maintained his residence in Washington DC.



Saylor allegedly boasted to his confidants about impersonating a Floridian to avoid paying taxes in the District of Columbia. Despite not abandoning the district as his domicile, he registered to vote in Florida and obtained a driver's license there.

“Saylor avoided paying more than \$25 million in DC income taxes by claiming to be a Florida or Virginia resident,” the Attorney General's office said in a [statement](#).

MicroStrategy, the largest Bitcoin holder among publicly traded companies, has been hard hit by the Bitcoin sell-off. In the second quarter of 2022, the company [reported](#) a \$1 billion loss.

Tether Asks Court To Terminate Roche Freedman As Counsel In Crypto Litigation.



"Tether Files To Terminate Kyle Roche's Firm from Class Action Lawsuit"

"MicroStrategy's Michael Saylor Sued for Alleged Tax Fraud in Washington DC."


Figure 15. This request comes amid allegations that Roche had a secret agreement to "harm" competitor Ava Labs in exchange for AVAX tokens and Ava Labs equity.

Tether, the business behind the USDt stablecoin, together with Bitfinex and others, has asked that Roche Freedman LLP be terminated as counsel in the case captioned In re Tether and Bitfinex Crypto Asset Litigation currently ongoing in the U.S. District Court for the Southern District of New York. The request, made in a series of filings, follows Kyle Roche's motion to be removed as counsel in the case.

Elliot Greenfield of Debevoise & Plimpton LLP, representing Tether, Bitfinex, and others, [filed](#) an initial response to Mr. Roche's motion on August 31, 2022, and another response on September 2, 2022. In addition to seeking the termination of Roche Freedman as counsel, the defendants asked that Roche Freedman certify to the court that they have returned or destroyed all documents and information produced by the defendants in the lawsuit and that they have not shared any such documents or information with any third party.

Mr. Roche [filed](#) a motion to withdraw from the lawsuit amid the recent CryptoLeaks expose. Several videos were [published](#) on the CryptoLeaks website in which Mr. Roche suggests that he and Roche Freedman are misusing the litigation process to harm competitors of Ava Labs and to benefit Ava Labs. In the videos, Mr. Roche makes disparaging remarks about juries, class members, and the class-action process in the United States.

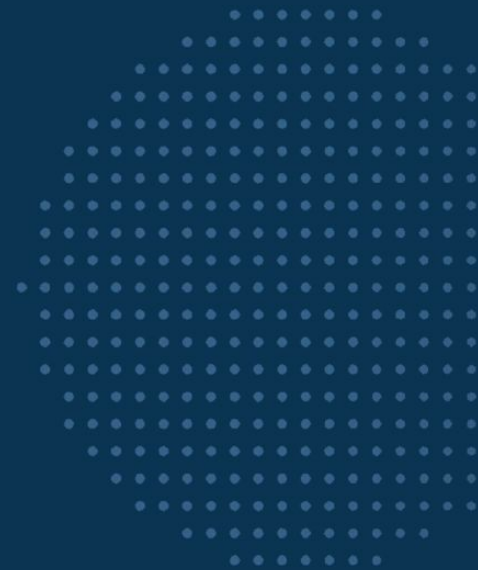
Mr. Greenfield said that Mr. Roche's statements on the CryptoLeaks website raised concerns "that he may be abusing the discovery process and misusing information that he learns through litigation."



He added that the "concerns resonate strongly in this case, where Plaintiffs have served a number of document requests seeking information that has no apparent link to the claims and defenses in this lawsuit." In the September 2nd filing, Mr. Greenfield concluded: "Roche Freedman's assertion that Defendants have raised Mr. Roche's statements with the Court as a 'litigation tactic' suggests that it fails to fully understand the egregious nature of those statements or the seriousness of the concerns they raise."

Mr. Greenfield stated that removing Roche Freedman as counsel would not prejudice the plaintiffs because they would continue to be represented by other large and experienced firms: Selendy Gay Elsberg PLLC and Schneider Wallace Cottrell Konecky LLP. Those firms submitted their own filing with the court on September 2, 2022, in which they also requested that Roche Freedman be terminated as interim co-lead counsel in the case.

According to a CoinDesk [report](#), Tether and Bitfinex were sued in 2019 for allegedly manipulating the cryptocurrency market by issuing USDt that was not backed by reserves. The suit seeks class action status. The class has not been certified as of the time of writing. Other lawsuits from which Mr. Roche has sought to [withdraw](#) from include Binance, Solana, Tron, Nexo, and Dfinity.



WHAT'S ON-CHAIN THIS WEEK?



NFT and DeFi resurgence

The purpose of this section is to inform investors of the recent innovation we continue to see in the crypto space. Bearish market conditions have often allowed developers, projects and investors alike to level up and build through tough conditions - and this crypto winter appears to be no different. On-chain analytics clearly illustrate that a lot of focus is on the NFT and DeFi sectors.

Although less frequently talked about narratives in the current market, they remain promising sectors with significant growth potential. Particular themes that have emerged include NFT trading and lending on-chain, and the ability to capture TVL in these markets (particularly the race to take market share from Opensea).

Projects like SudoAMM/XMON have sprung up, taking meaningful market share by trading volume (albeit in a low-volume market).

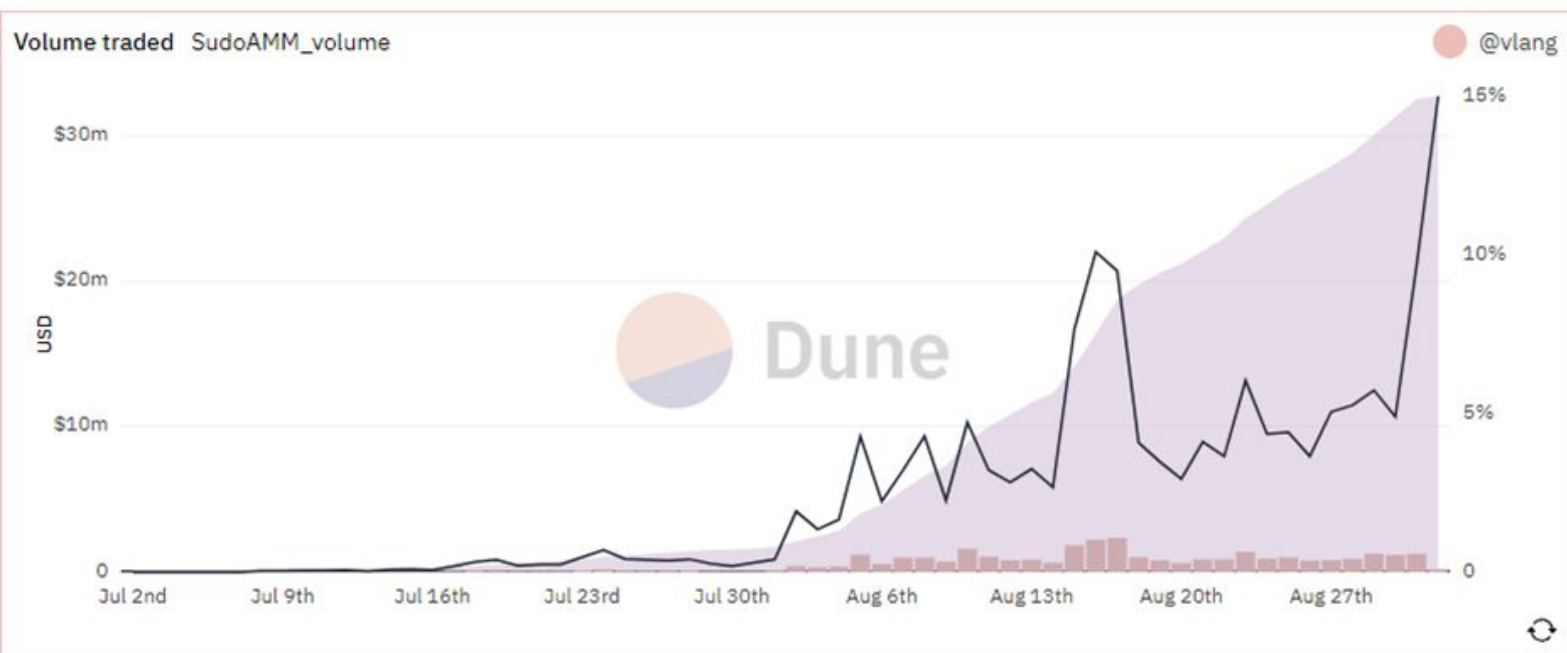


Figure 16. SudoAMM is enroute to capture a more substantial percentage of trading volume in all of DeFi. (source: Dune Analytics)

While NFT volumes have fallen significantly, this theme is about choosing future winners in the space, especially once “trading volume and speculation” re-enter the marketplace.

NFTs - USD Volume
Daily, per Platform

@hildobby

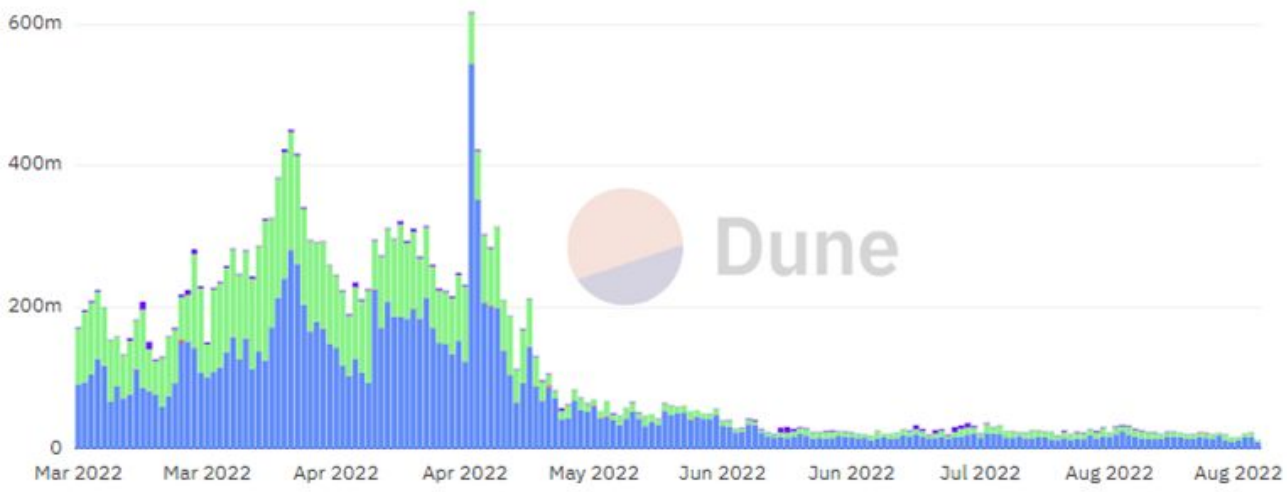


Figure 17. NFT daily volume per platform for 2022. (source: Dune Analytics)

Bitcoin Accumulation Trend

The three sections of categorically different Bitcoin accumulators are retail investors, whales/ other large wallet addresses (wallet size > 1000 BTC) and miners. These three entities have contrasting reactions to market conditions that rarely intersect but are of great significance when that happens.

Retail:

The supply of BTC held by entities with 0.01 - 0.1 BTC and 0.1 - 1 BTC has increased tremendously. The 90-day change in these metrics breached its previous all-time high indicating that the plunge below the previous cycle high in June has not weakened their resolve to accumulate more of the asset. This could potentially indicate that retail investors are not as concerned about the USD-denominated price of the asset as before.

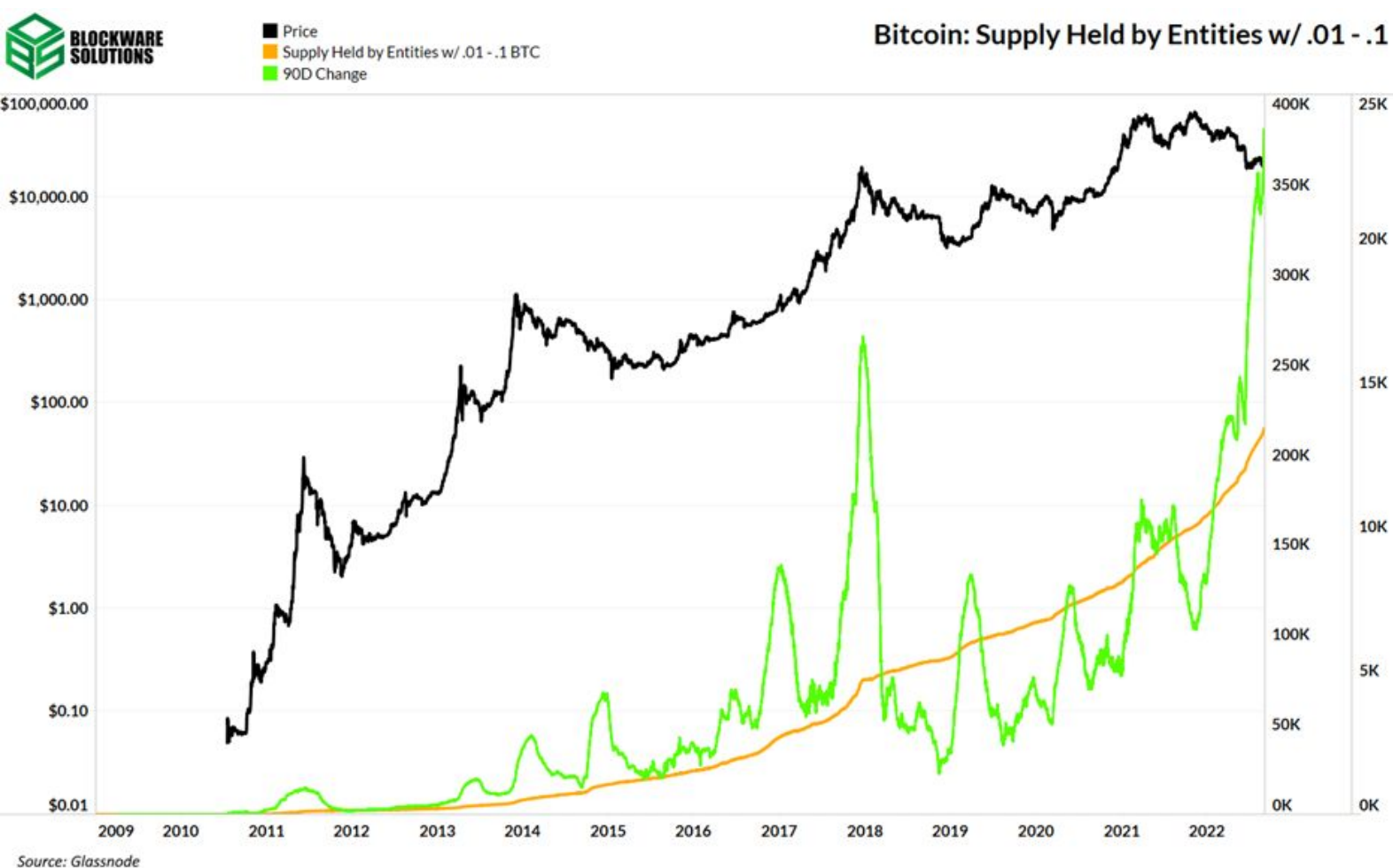


Figure 18. Bitcoin Supply held by entities of wallet size 0.01-0.1 BTC. (source: glassnode and Blockware Intelligence)

Whales:

Whale or large wallet address size accumulation has not ceased ever since the initial plunge below \$20k for BTC in June. On each instance of the price moving below the barrier, bids from large wallets have shown up on spot markets.

Below is the large wallet inflows indicator. Bubbles indicate the locations at which large players accumulated Bitcoin that they are still holding (the indicator auto-adjusts the size when a particular address sells or moves the accumulated BTC off their wallet).



Figure 19. Large Wallet Inflows for Whales. (source: whalemap.io)

This behaviour by large players reflects what the retail players are doing. However, while retail is quite possibly buying to their max potential, whales have also gone on to realise profits after buying sub \$20k and reducing long spot exposure in July and August.

Miners:

In our previous issue, we discussed miner capitulation and their behaviour under different market conditions. (link - <https://bit.ly/3BdpwuW>)

Miner revenue has decreased significantly over the past year.

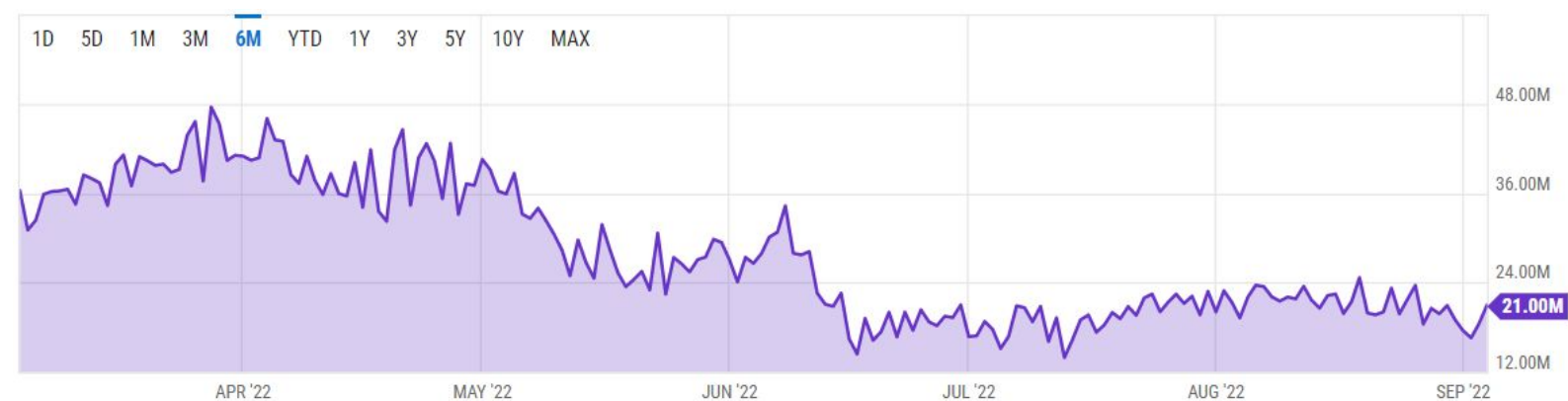


Figure 20. Daily Total Miners Revenue for BTC. (source: ycharts.com)

Daily Miner revenue went below cost of production on 3 instances in July. This caused the month to report per day revenues as low as \$13M. Market recovery and miner capitulation resulting in only the largest and oldest players surviving have both contributed to a growth in revenue. This further adds to the post miner-capitulation narrative.

Miner reserves have fallen significantly over the past couple of months. However, we talked about the reducing selling pressure from miners in the previous issue. The key takeaway here is that we might be witnessing a post miner-capitulation world where retail and whale accumulation has seen a positive trend of reduced futures market speculation alongside hefty spot accumulation.

Mining Difficulty Jumps to 30.977t

The Mining Difficulty is a measure of how difficult it is to mine a Bitcoin block, or in more technical terms, to find a hash below a given target. A high difficulty means that it will take more computing power to mine the same number of blocks, making the network more secure against attacks. The difficulty adjustment is directly related to the total estimated mining power estimated in the Total Hash Rate (TH/s) chart.



Figure 21. Network Difficulty of mining BTC increases 9.3%. (source: coinwarz.com)

This was Bitcoin's largest upward difficulty adjustment since January 2022. This large difficulty adjustment can be attributed to two key factors:

- A fair number of ASICs shifted hands during the capitulation this summer. The reason is that miners in debt were forced to auction or default their collateralised mining rigs. This was acquired by larger players with access to cheaper electricity.
- New ASICs (XPs) are likely beginning to get shipped and plugged in.

This increase in difficulty is very significant as it eliminates smaller players in the mining space. The network difficulty increase implies higher electricity costs to mine the same amount of BTC, which in turn reduces profitability in mining the asset. Smaller players are unable to strike lucrative prices on electricity deals.

Long-Term Trends Among Different HODLer Cohorts

This statistic allows us to view HODLer activity on the blockchain at a macro level. Each coloured band corresponds to a window of time in which coins were last moved. As bands move from cooler colours (purple, blue, etc.) to warmer colours (yellow, orange, etc), it corresponds to coins moving more recently.

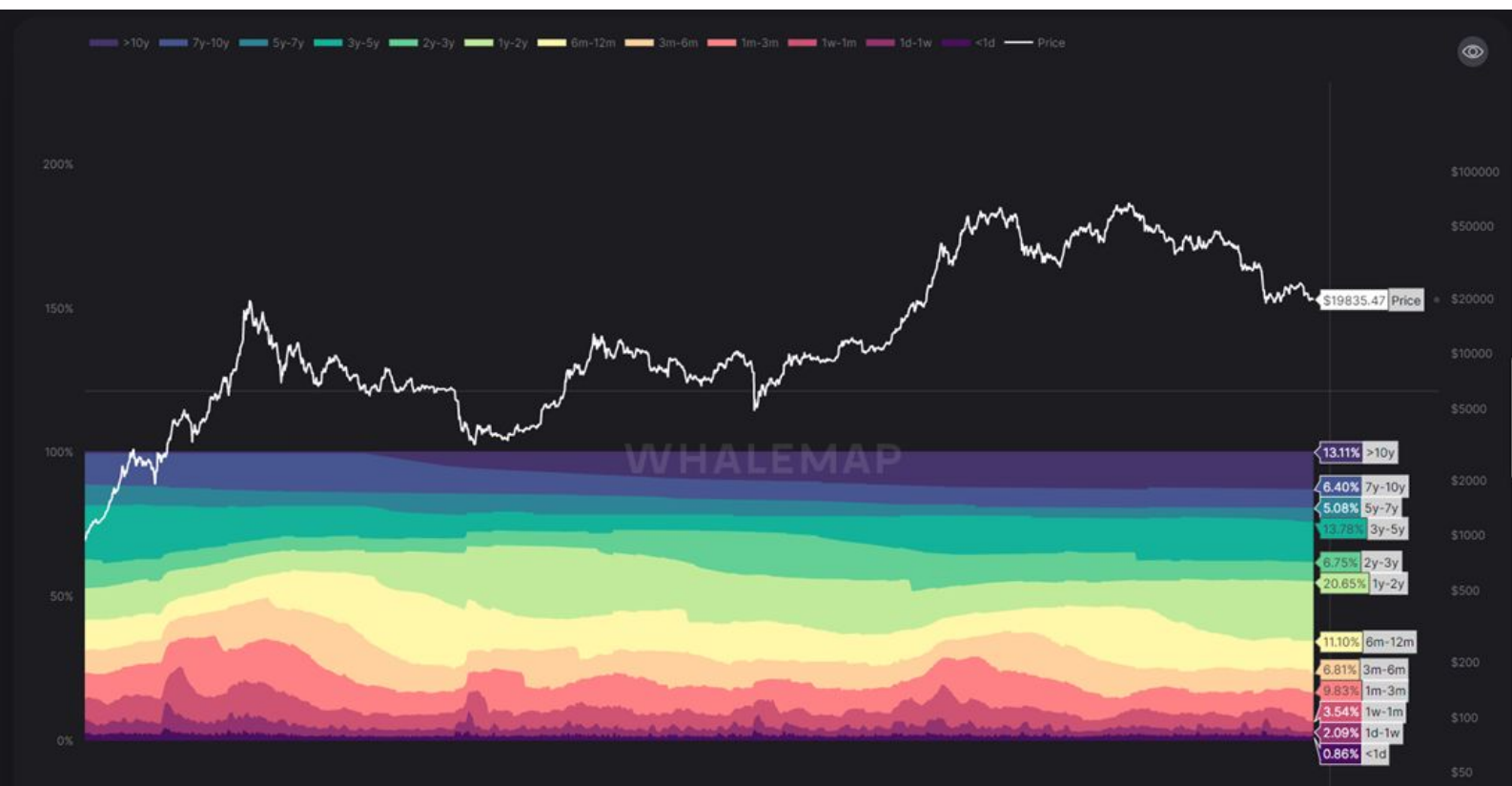
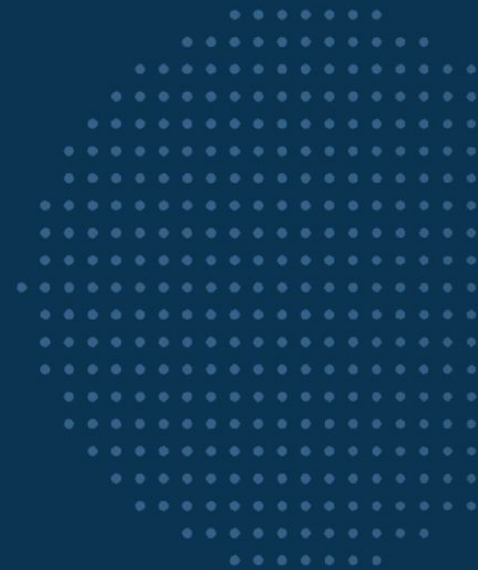


Figure 22. HODL Waves for BTC. (source: Whalemap)

Throughout August, a record low of 6.1 per cent of Bitcoin was moved on the chain. While supply keeps increasing throughout the bear market, this statistic becomes even more significant. Even though the lack of demand is evident, on-chain data such as this illustrates how most investors are simply holding tight without knee-jerk reactions to price fluctuations. When we see growth in the upper bands, this represents an increase in the number of coins sitting idle on the blockchain. Thus, supply also seems to be drying up in the short term.

This is further evidence that the process of flushing out the weaker hands in every market cycle might be in its final stages or potentially might be behind us. This is relevant for each of the broad categories of investors that make up the supply - retail, whales and miners.



LEARNING SECTION





Figure 23. El Salvador President Nayib Bukele declared Bitcoin as legal tender on September 7th, 2021.

In September 2021, El Salvador was the first country to legalise Bitcoin as legal tender. The country's businesses have been mandated to accept the cryptocurrency for payments. The government even offered its citizens financial incentives to adopt a cryptocurrency app called the *Chivo wallet* in an effort to adopt it for mainstream use. Citizens who downloaded the app received USD 30 worth of free Bitcoin and a discount on fuel bought with Bitcoin. To make transactions, residents are only required to have a mobile phone and access to the internet. A concept that was entirely new for the Central American nation.

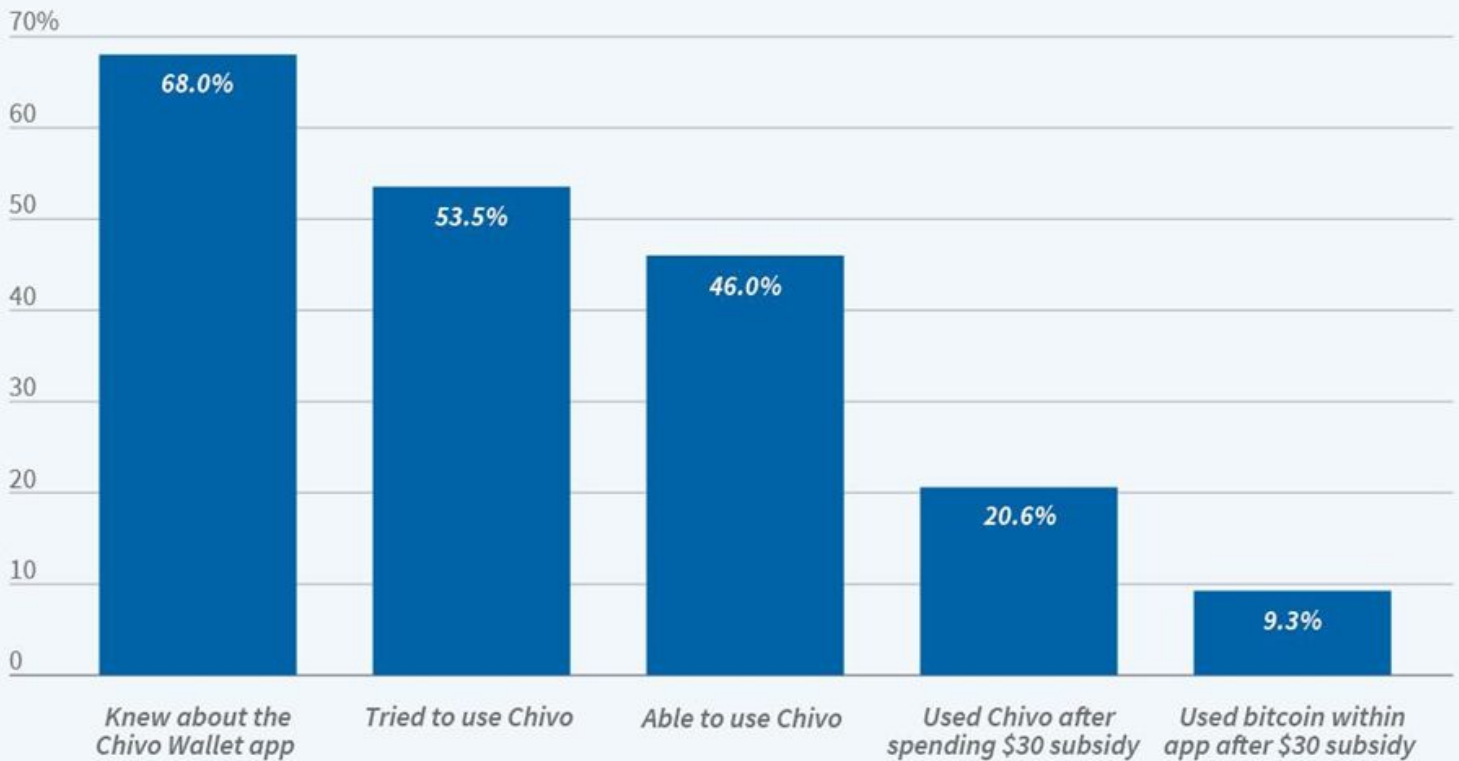
In October, El Salvador President Nayib Bukele also announced pilot crypto-mining rigs would be established powered by the thermal energy generated from the volcanoes in the country. This energy would be used to power the mining computers that perform complex mathematical calculations to verify transactions to earn Bitcoin.

Shortly after El Salvador made Bitcoin its legal tender, it also announced that it would issue a Bitcoin bond, known as the Volcano Token.

The proposed terms for the Volcano Token was a \$1 billion U.S. dollar token due in January 2032 that pays 6.5 per cent annual interest. The \$1 billion obtained will be split between purchasing Bitcoin and building Bitcoin City. The Bitcoin city will be located on the slopes of the Conchagua volcano and will be powered by geothermal energy. The planned location of Bitcoin city gives the tokens their nickname. The Bitcoin bought will be held for five years and then sold over the remaining five years. If it makes money on such sales, it will repay "50 per cent of its Bitcoin investment earnings to investors after the initial \$500 million Bitcoin investment is repaid," according to reports at the time. The Bitcoin token is revolutionary since it's the first tokenisation of a sovereign bond.

Update on El Salvador's Bitcoin Adoption and the Volcano Token

Measures of Bitcoin Use



Source: Researchers' calculations using data from a national survey in El Salvador

Figure 24. Figures relating to El Salvador's population and their interaction with Chivo.

Half of the nation's households downloaded the app after the Bitcoin law took effect. Since 2022, a large number of families have joined as early adopters.

El Salvador's Bitcoin vision has long been tied with the success of the Volcano token launch. Apart from funding Bitcoin city, this can also help the government with its debt issues ahead of a possible default.

For the token to be launched, El Salvador first needs to pass its own Securities Law. Once issued, companies can apply for licensing under the new law in order to participate in the issuance and the trading of the token. Bitfinex Securities has been announced as the financial technology platform on which the token will be traded and it is reportedly doing due diligence on the issuer, however it is yet to apply for a licence given the current lack of any licensing guidelines in the absence of the Securities Law.

A Bright Future for El Salvador's Economy



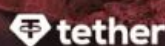
Figure 25. The country has recorded its best tourism numbers ever. The partnerships that they have developed have helped an economy where 70 per cent of households are bankless.

Though the Bitcoin price has not recovered since its peak in November 2021, El Salvador's bold Bitcoin movement seems to have kept its tourists interested. This year, the country's tourism industry climbed back up to its pre-pandemic numbers. According to the Ministry of Tourism, there were 1.2 million tourists in the entire year of 2021 while 1.1 million in just the first half of 2022.

Bukele stated that this growth has resulted from Bitcoin tourism, surfing and crime reduction. The rise in dollar dominance and spending power advantage in third world countries could also be an essential factor in the increase in tourist visits.

El Salvador is steadfast in its vision for Bitcoin adoption. Theoretically, developing nations like El Salvador are good candidates for crypto adoption. More than fifty per cent of its citizens rely on cash than credit and debit cards. 70 per cent of its households are bankless, and nearly 90 per cent do not use mobile banking. A cryptocurrency payment platform can pave the way for a more inclusive and accessible economy.

Lugano's Plan ₿ execution



Est March 2022

Figure 26. While having different execution strategies, both El Salvador and Lugano's Plan ₿ are experiments in widespread adoption of digital currency.

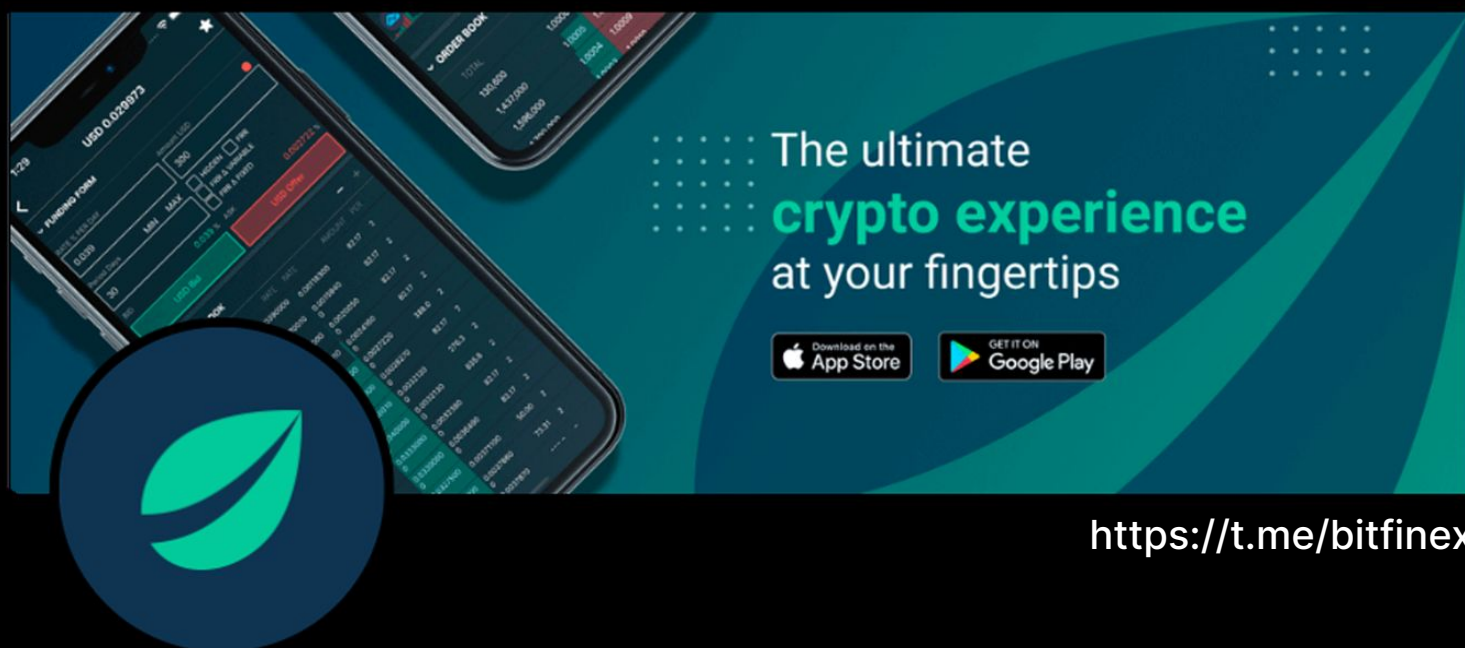
Cases like El Salvador show that even with government backing, cryptocurrencies have a long way to go before they can fully replace traditional currency. Citizens must have a firm grasp of and faith in digital currency.

Six thousand miles west of El Salvador is the Swiss city of Lugano which aims to be recognised as Europe's cryptocurrency capital. Lugano plays it a little differently than El Salvador, which went all-in on bitcoin alone. Lugano is creating new infrastructure to adopt Bitcoin, Tether, and its own LVGA token as legal cash.

Lugano residents will be able to pay their taxes and purchase items from 200 local businesses using cryptocurrency to encourage its adoption. To further Lugano's vision into a reality, the city will aggressively back R&D and relevant initiatives in its business centre. These efforts will attract talent and promote networking and knowledge sharing. The ultimate objective is to use blockchain technology extensively across the city, enhancing all facets of life for its citizens.

El Salvador and the City of Lugano's crypto ambitions are both in nascent stages, and the journey to the end goal will not be smooth sailing. We still believe that the possibilities of cryptocurrency becoming mainstream are quite bright.

At some point, El Salvador and the City of Lugano may lead the future while everyone else will play catch up.



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