CMCC Global

CMCC GLOBAL BITCOIN REPORT

JANUARY 2021

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This report is a comprehensive summary of important Bitcoin milestones, trends, metrics, and insights. All mentions of prices and milestones are as of 8:00am EST on January 10, 2020.

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EXECUTIVE SUMMARY

Bitcoin had a December to remember, as funds, companies, and institutional investors bought Bitcoin in record volumes to hedge against economic uncertainty.

Bitcoin finished 2020 up over 300%, dominating the returns of all other asset classes.

Bitcoin Performance vs. Other Asset Classes			
Asset Class	December 2020 Performance	Asset Class	FY 2020 Performance
Bitcoin	+47.6%	Bitcoin	+305%
Gold	+6.6%	NASDAQ	+43.6%
NASDAQ	+5.7%	Gold	+24.6%
S&P 500	+3.7%	S&P 500	+16.3%

With a market cap of less than USD 1 trillion and an absolutely fixed supply, institutions also discovered that they can exert incredible influence on the Bitcoin market by hoarding all available supply and removing it from circulation.

A deteriorating economic landscape, rising social tensions, and concerns over monetary policy have pushed investors to seek out scarce and censorship-resistant hedges, and a Bitcoin allocation continues to be their preferred strategy.

As Bitcoin becomes an essential hedge for institutional portfolios, there were also a handful of other noteworthy developments accelerating Bitcoin adoption in December:

- MicroStrategy raised USD 650M of debt to buy an additional 29,646 BTC for its company treasury
- Coinbase filed a confidential S-1 with the SEC, and one futures market is currently valuing the company at USD 78 billion
- Bitcoin Funds received huge demand, with Grayscale's Bitcoin Trust seeing record capital inflows and the Liberty Bitcoin Fund doubling its AUM in December
- 6 public and private companies added to their Bitcoin treasury holdings in December
- Bitcoin's derivatives markets continued to set records in volume, despite a lack of regulated options for institutions

HOARDING BITCOIN

Wall Street is hoarding Bitcoin, and many investors are still puzzled as to why.

In 2017, Bitcoin was called a "bubble", yet Bitcoin is now trading for twice as much as the previous all-time high, and is still only priced at a fraction of the valuation of gold.

In 2017, Bitcoin was called "speculative", yet hedge fund managers are now praising Bitcoin's strengths as a store of value, even relative to gold.

To understand why Bitcoin has reclaimed the interest of investors, it is helpful to look back at history. Specifically, 2,426 years ago in Athens.

In 405 BCE, the ancient Greek comedic playwright Aristophanes wrote a play called 'The Frogs'.

Today the play has been largely forgotten, but it contains a few lines that would form a foundational pillar of economic theory for thousands of years to come.

On the decline of Athens, Aristophanes wrote:

"In our Republic bad citizens are preferred to good, just as bad money circulates while good money disappears"

The basic idea is that when a debased (bad) form of money exists alongside a sound (good) form of money, the good money will be hoarded by citizens, and will disappear from circulation. Only the bad money will be used for making payments in day-to-day life.

Similar anecdotes on the nature of money in circulation continued to be observed for the next 2,000 years in places like Italy, China, and even Poland, where Nicolaus Copernicus wrote "bad coinage drives good coinage out of circulation" in a 1519 treatise.

However, it was not until the English crown's Great Debasement period from 1544 to 1551 that this concept earned its place as an economic law.

THE GREAT DEBASEMENT

In the early 1540s, England's money supply was being stretched thin. The population of England was growing quickly, and financing was required for the Italian War of 1542-46 as well as various military endeavours in Scotland.

King Henry VIII had already raised taxes and sold off crown land, but the proceeds did not cover England's needs. So in 1542, he secretly began minting debased gold and silver coins. The gold coins had a reduced carat count, and the silver coins contained copper with ever-smaller quantities of silver.

Once the debased coins entered circulation in 1544, merchants quickly began selling them at lower rates. That led to further debasements for years, until the silver quantity in a single coin was only 1/4th the silver contained in pre-1544 coinage.

This abuse of trust led citizens to hoard all the standard coins minted before 1544, thus removing them from circulation, leaving only the debased coins to be used for spending.

When Queen Elizabeth came into power in 1558, she began to wonder why the quality of English coinage was so poor. She got her answer in a letter from one of England's financial agents named Thomas Gresham.

Gresham explained how coin debasement causes people to hoard sound money, with only the most debased fiat coins left in circulation. This led Queen Elizabeth to go back to the pre-1544 coinage standards across England, preventing further hoarding of silver and gold.

Today, this concept of 'bad money driving good money out of circulation' is known as Gresham's Law, and it is a useful mental model for considering why Bitcoin is being hoarded today.

At a time when every major fiat currency in the world is undergoing rapid supply expansion, investors are seeking safety in sound money, driving it out of circulation. With no signs of monetary tightening in sight, Bitcoin remains a beacon of hope in an inflationary macro-economic environment.

One of the most potent indicators that investors are taking Bitcoin out of circulation is the change in Bitcoin exchange holdings in December. Roughly 5% of the 2 million Bitcoins held on major exchanges were withdrawn to external wallets for long-term storage last month.

This is a clear indication that the root cause of Bitcoin adoption among institutions is not the 'get-rich-quick' speculation that fuelled the 2017 rally, but the endless supply of fiat money acting as a tool to debase people's wealth. Instead of trading Bitcoin, institutions are hoarding it.

Just like the Great Debasement of the 16th century, until responsible policies are put in place to protect the purchasing power of fiat money, it will continue to be used only as payment for immediate purchases, while savings flow towards sound money like Bitcoin.

MACRO-ECONOMIC CONDITIONS

For better or worse, Bitcoin has found product-market fit on Wall Street.

2020 was the first year that institutional investors are realizing that a Bitcoin allocation is a credible hedge against economic uncertainty.

Therefore, Bitcoin's latest rally is no longer independent of global economic conditions. It is not just about Bitcoin adoption ticking up, it is starting to reflect the rise of economic instability, fear, and weakness in the fiat financial system.

Two clear indications of monetary uncertainty are the continued growth of the Federal Reserve balance sheet and the US M1 money supply.

FEDERAL RESERVE BALANCE SHEET

As the balance sheet of the Federal Reserve continues to rise, so does the influence the Federal Reserve has on the daily operations of the US (and global) economy.

Their assets and liabilities reached an all-time high of USD 7.4 trillion on December 23rd, which is a 77% increase on the USD 4.2 trillion at the beginning of 2020, and a 7% increase in the last half of the year.

This balance sheet growth was primarily driven by US treasury security purchases and mortgage-backed security purchases in December. The CME Group recently estimated that the Federal Reserve balance sheet could reach USD 8.5T to USD 10T by the end of 2021.

M1 MONEY STOCK

M1 money supply is a measure of all US dollars that are readily accessible for spending. This includes funds from:

- Currency outside the U.S. Treasury, Federal Reserve Banks, and the vaults of depository institutions
- Traveler's checks of nonbank issuers
- Demand deposits
- Other checkable deposits (OCDs)

On December 14th, M1 money supply hit an all-time high of USD 6.74 trillion, up 70% from the start of 2020, and 18% from a month earlier.

While these dollars are not moving through the economy as quickly as they were prior to the pandemic, they are all still in the economy. They are ready to be put to use once people and businesses deem it safe to resume a pre-COVID lifestyle.

ECONOMIC IMPACT OF US ELECTION RESULTS

Just prior to publishing, the Georgia State run-off election confirmed a 'blue wave' in Washington, referring to a sweep of the House of Representatives, Senate and White House by the Democratic Party. This could give democrats the ability to pass legislation without opposition through all of 2021.

Why does this matter for Bitcoin? One of the most consequential policy topics for Bitcoin investors this year has been the pandemic stimulus efforts, and follow-on funding for states and local governments.

By our count, America has spent USD 5 trillion across four spending packages since the pandemic began:

- **March 6:** USD 8.3 billion Coronavirus Preparedness and Response Supplemental Appropriations Act
- **March 27:** USD 2.2 trillion CARES Act
- **April 24:** USD 484 billion Paycheck Protection Program and Health Care Enhancement Act
- **December 27:** USD 2.3 trillion Omnibus Spending Package

With an additional USD 2,000 on the way for roughly 300 million Americans, that is another USD 600 billion of direct payments, before considering the additional spending for businesses or state and local governments.

As the world's reserve currency, the value of the US dollar is at the center of this debate, and to the extent investors believe the dollar is being devalued, funds will continue to flow into hard assets like Bitcoin and gold.

Concerns over monetary policy are not unique to the US either. Governments all over the world are following in America's footsteps, spending more than ever to support citizens and businesses as lockdowns drag on.

McKinsey estimated that by June, the collective spending from the world's major governments had already topped USD 10 trillion, and dwarfed their spending from the 2008 Great Recession by a factor of 3. That number is certainly higher now, and the economic impact of the pandemic is far from over.

If there is anything that we have learned about fiat monetary policy in 2020, it is that fiat money is truly made up. It can be expanded faster than anyone expects at a moment's notice, and with almost no dialogue about the potential long-term effects of the expansion.

Investors now must consider whether or not the economy will be able to function without a constant stream of stimulus payments, and how long it might take to make that transition.

SOCIAL UNREST, CENSORSHIP, AND BITCOIN

Beyond the global economic weakness in 2020, other events have given off worrying signals that the fabric of American society is beginning to fray.

Tensions over racial discrimination, economic lockdowns, and election processes have surfaced extreme beliefs and behaviours from Americans for months on end.

- Beginning in May, cities all over the world launched protests and riots against the killing of George Floyd and the economic lockdowns enacted by governments
- Some cities like Portland, Oregon have seen 7 straight months of riots and protests in 2020
- On January 6th, a large group of Republican protesters stormed Capitol Hill in Washington, forcing the US Senate and House to temporarily stop the verification of the 2020 election results
- Shortly after, Facebook, Instagram, Twitter, and other online platforms banned Donald Trump for inciting violent behaviour

Americans are clearly frustrated with the state of their union, and their demonstrations are becoming increasingly concerning. Even more concerning is that Facebook, Twitter, and other tech companies are taking the state's responsibility of mitigating violence into their own hands by removing the President's existence from online discourse.

It is unclear what the consequences of these actions will be, but it gives us a thought-provoking question to ask ourselves as it relates to Bitcoin.

If the most powerful person in the world can be deleted from all major online platforms in a single day, what could your bank do to remove or restrict your access to your own money?

COMPANIES HOLDING BITCOIN

For years, Bitcoin advocates have feared that regulatory pushback and smear campaigns from traditional financial institutions would be a hurdle for Bitcoin to overcome. There is no question that Bitcoin is viewed as an alternative to the traditional financial system, and some resistance from financial institutions was to be expected.

As Bitcoin begins to attract the attention of large financial institutions as an inflation hedge, an interesting phenomenon is occurring. The overwhelming majority of banks, funds, and institutions making public comments on Bitcoin are not fighting back, censoring transactions, or playing dirty at all. Unexpectedly, they have been a source of great news for Bitcoin in December.

A handful of them have made Bitcoin allocations, and others are signalling to their clients that Bitcoin is an asset class worth owning. The ones who bought Bitcoin are not stopping there. They are using their platforms to explain Bitcoin to anyone who will listen.

COMPANIES ARE NOT *JUST* BUYING BITCOIN

MicroStrategy did not just buy 70,470 Bitcoin. They also added a section to their website homepage dedicated to Bitcoin, and their CEO has become a Bitcoin celebrity on Twitter.

Michael Saylor, the MicroStrategy CEO, has done dozens of interviews viewed by millions of people, and continues to tweet his daily thoughts about why Bitcoin is such an important asset class to his 300,000 Twitter followers. MicroStrategy's website now includes a Bitcoin purchasing playbook and regularly updated data on Bitcoin performance against other assets.

Stone Ridge partners did not just buy 40,000 Bitcoin. They also filled their most recent 16 page shareholder letter with 11 pages about why they made a Bitcoin investment, and why Bitcoin could become far more valuable than it is today.

Skybridge did not just buy 10,000 Bitcoin. They also began inviting prominent Bitcoiners to their regular events and investor calls to explain why every investor needs Bitcoin exposure. Their CEO, Anthony Scaramucci, has also become a Bitcoin advocate for his 1 million Twitter followers, and has appeared on various podcasts to discuss Bitcoin.

Square did not just buy 4,709 Bitcoin. They also open-sourced documentation to help other companies understand the Bitcoin purchase process, open-sourced all their crypto patents, and they continue to fund a team of Bitcoin developers and designers.

Square's CEO, Jack Dorsey, also launched a unique Bitcoin hashtag for anyone on Twitter to use, and continues to promote Bitcoin to his 5 million Twitter followers.

The point is that the companies buying Bitcoin are not just buying the asset. Bitcoin is becoming part of their identity.

The CEOs advocating for Bitcoin are becoming a tightly integrated part of the Bitcoin community, and are regularly interacting with other Bitcoiners online. Not only do they have deeper pockets than retail traders, they also have far more influential voices.

These are the advocates that get invited on CNBC and Bloomberg to teach other companies and funds why Bitcoin matters.

In 2017, pitches to buy Bitcoin were given around the Thanksgiving dinner table, to a host of skeptical relatives reluctant to part ways with their hard-earned money.

In 2021, pitches to buy Bitcoin will be annual reports and investor decks written by billion dollar businesses, and given to thousands of well-educated, well-capitalized investors looking for yield and security.

COMPANIES BUYING BITCOIN IN DECEMBER

On December 4th, Argo Blockchain announced their purchase of 41 BTC, they currently hold 178 BTC on their balance sheet.

On December 8th, BIGG Digital Assets announced their purchase of 40 BTC for long-term treasury holdings. They currently hold 189.5 BTC in treasury.

On December 10th, MassMutual bought USD 100M of Bitcoin for their general investment fund. The significance of a 169-year-old insurance company buying Bitcoin cannot be overstated.

MassMutual (and all insurers) are professional risk managers, so their acceptance of Bitcoin shows that Bitcoin is maturing into an asset class that can not only give them potential upside, but also limit certain portfolio risks.

On December 10th, Cleanspark acquired US-based Bitcoin mining company ATL Data Centers for USD 19.4M. It is unclear how much Bitcoin ATL Data Centers currently holds.

On December 11th, MicroStrategy raised USD 650M of debt to buy 29,646 Bitcoin. At first, this was supposed to be a USD 400M purchase, and it was raised to USD 550M before capping out at USD 650M a few days later.

The initial announcement triggered a 14% drop in MicroStrategy's stock price the following day, but it quickly became apparent that it was a smart move. The interest rate on this debt is only 0.75%, and within days of MicroStrategy completing their Bitcoin purchase they had already made more in profit than all remaining interest payments for the next five years. At USD 40,000 per Bitcoin, they have almost doubled the value of their $650M purchase in a few weeks.

On December 15th, Ruffer Investments allocated 2.5% of their USD 27B portfolio to Bitcoin. They hold an estimated 45,000 BTC as "a small but potent insurance policy against the continuing devaluation of the world's major currencies".

On December 22, Bit Digital announced the addition of 62 BTC to their holdings. They now hold 122 BTC.

On January 8th, just prior to the publishing of this report, Morgan Stanley Investment Management filed an SEC disclosure that they had purchased 10.9% of MicroStrategy's outstanding shares.

That is a 455% increase from Q3 2020, when they held just 142,908 shares.
It is also the first time one of America's major banks has announced meaningful Bitcoin exposure.

Since MicroStrategy has 70,470 BTC on their balance sheet, Morgan Stanley's stake is now roughly 7,681 BTC, valued at USD 307M.

Another noteworthy Bitcoin event in December was one that has not materialized into a Bitcoin purchase. In an odd Twitter exchange, Michael Saylor asked Elon Musk to do Tesla shareholders a favor by buying Bitcoin with the USD 14 billion of cash on Tesla's balance sheet.

Musk entertained the idea, and asked if it was even possible to make such large transactions. Tesla has not made any Bitcoin purchase announcements, and Elon Musk has not commented on the idea of buying Bitcoin since then.

BITCOIN FUND INFLOWS

During December, two public closed-end funds made their trading debuts, another Bitcoin fund was announced, and existing Bitcoin funds meaningfully increased their Bitcoin under management.

CMCC Global's Liberty Bitcoin Fund doubled its AUM during the month of December, while increasing its number of investors by 75%. This was driven by Bitcoin investments from corporations, family offices and hedge fund managers.

Bitwise's 'Crypto 10' fund grew from under 5,000 BTC on the 10th of December to 10,720 BTC under management as of December 31.

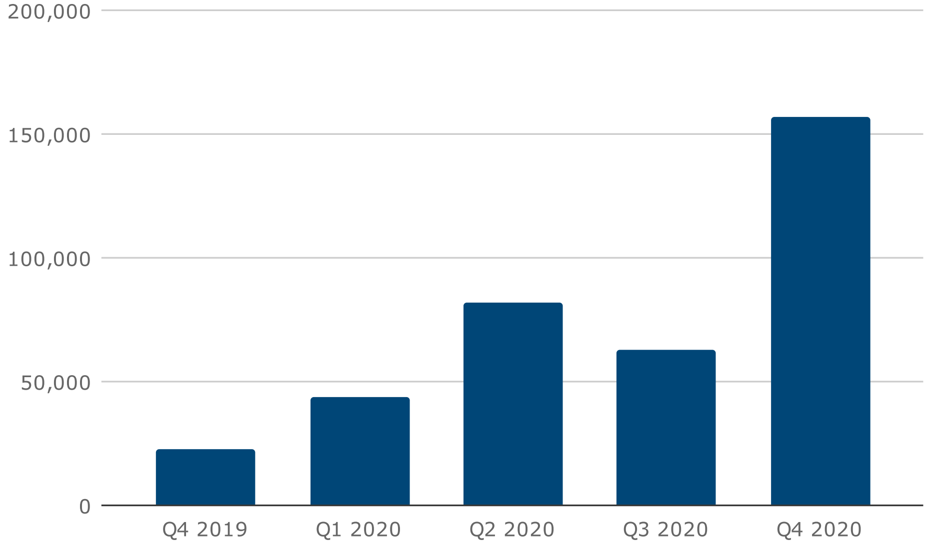
CI's 'Galaxy Bitcoin Fund' launched in Canada with 3,306 BTC under management on December 16th through a partnership with Mike Novogratz's Galaxy Digital.

Skybridge announced their 'Skybridge Bitcoin Fund' on December 22, and their plans to seed it with USD 25 million of their own capital. Skybridge has also shared that they own roughly 10,000 BTC across all their funds.

On December 18, Jefferies, an investment firm with USD 51 billion in assets under management, announced the conversion of 5% of their gold holdings in their long-only global portfolio for US dollar-denominated pension funds into Bitcoin.

Grayscale's Bitcoin Trust, the largest Bitcoin fund in the world, added 71,109 BTC during the month of December. This was their largest monthly fund increase ever, despite closing their fund to new investors in the final 7 days of 2020. Grayscale has more than doubled the Bitcoin holdings in their fund during 2020, from 261,192 BTC at the end of 2019 to 607,037 BTC at the end of 2020.

GRAYSCALE BITCOIN TRUST, BITCOIN INFLOWS BY QUARTER



Below is a list of other notable public Bitcoin fund additions in December 2020.

BITCOIN FUND INFLOWS AND HOLDINGS IN DECEMBER

Bitcoin Fund Inflows and Holdings				
Fund	Location	December Additions	Total BTC Holdings	Bitcoin Value
Grayscale Bitcoin Trust	North America	+71,109 BTC	607,037 BTC	USD 24.3B
Liberty Bitcoin Fund	Asia	Undisclosed	Undisclosed	Undisclosed
3iQ The Bitcoin Fund	North America	+1,569 BTC	18,054 BTC	USD 722M
ETC Group	Europe	+3,119 BTC	11,935 BTC	USD 477M
Bitwise Crypto 10	North America	+10,720 BTC	10,720 BTC	USD 429M
Grayscale DLC Fund	North America	+319 BTC	7,270 BTC	USD 291M
CI Galaxy Bitcoin Fund	North America	+3,306 BTC	3,306 BTC	USD 132M

"IT'S SHOCKING TO ME HOW MANY INSTITUTIONS ARE LINING UP TO GET BITCOIN INTO THEIR PORTFOLIOS"

Mike Novogratz

"A CROWDING OUT OF GOLD AS AN ‘ALTERNATIVE’ CURRENCY IMPLIES BIG UPSIDE FOR BITCOIN OVER THE LONG TERM"

J.P. Morgan Strategist Nikolaos Panigirtzoglou

"BITCOIN GETS LESS RISKY THE HIGHER IT GOES... THAT’S THE OPPOSITE OF WHAT HAPPENS WITH MOST STOCKS."

Bill Miller

ON-CHAIN METRICS

BITCOIN ACTIVE ADDRESSES

Bitcoin active addresses: Any BTC addresses involved in either sending or receiving BTC on a given day

In December, the daily average of active addresses on the Bitcoin network hit 1.067M, approaching the all-time highs (1.085M) set in December 2017. It was up 4% from November, and up 52.4% from December 2019.

Historically, this metric has had a weak positive correlation to Bitcoin adoption and prices. It is a helpful indication of the additional network usage that exists during times of high Bitcoin prices/investor interest. However, this metric only shows that more or fewer people are using the Bitcoin network. It does not show anything about how they are using it.

One interesting note is that daily active addresses are lagging the spot price of Bitcoin. Bitcoin finished December almost 50% above 2017 all-time highs, but active addresses were still below the previous all-time highs from 2017 on December 31. As of January 10, 2021, daily active addresses have now passed 2017 all-time highs by a small margin.

BITCOIN TRANSACTION VOLUME

Bitcoin Transaction Volume: The volume of all on-chain Bitcoin transactions sent each day. To be precise, this metric does not capture volume of Bitcoin exchanges, just the on-chain flow of funds.

In December, Bitcoin's average daily transaction volume was USD 6.08 billion, higher than all but one month in Bitcoin history (Dec 2017). It is up 34.3% from USD 4.52 billion in November, and 323% from USD 1.44 billion in December 2019.

Once again, transaction volume on the Bitcoin network is lagging the price of Bitcoin compared to the 2017 market cycle. This may be an indicator that Bitcoin's December rally has overshot actual adoption, as both active addresses and transaction volume have lagged spot Bitcoin price growth. It may alternatively be an indication that more transactions are taking place through centralized exchanges and are not being captured on-chain.

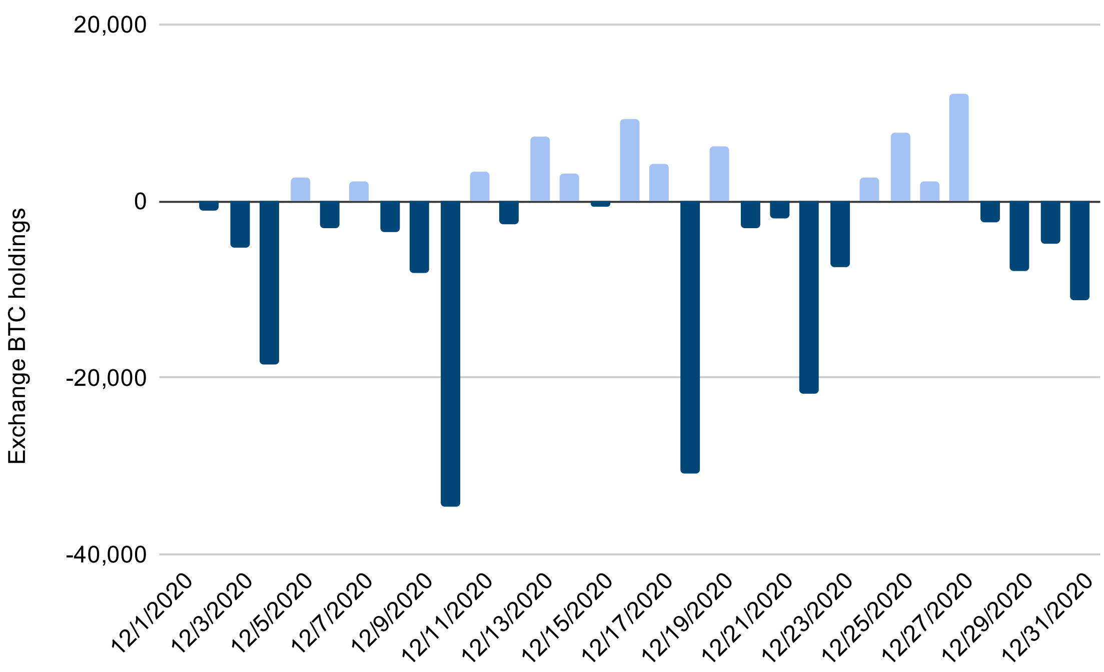
EXCHANGE BITCOIN HOLDINGS

Exchange Bitcoin Holdings: The total number of Bitcoins held in custody of the top 10 Bitcoin exchanges

Exchange Bitcoin Holdings is a useful, but not perfect, metric for understanding Bitcoin user intent. When users want to trade, they tend to leave their funds on an exchange where they can execute orders instantly. When they want to hold their coins, they tend to withdraw them to external cold wallets.

In December, the world's 10 largest Bitcoin exchanges saw Bitcoin outflows of over 100,000 BTC. They started December with 2,095,593 BTC and ended the month with 1,990,693 BTC, representing a 5% drop in their Bitcoin holdings.

EXCHANGE BITCOIN INFLOWS & OUTFLOWS



This decline in exchange holdings has been a theme for most of 2020, but the trend accelerated in December due to rumors of crypto wallet regulations from Steve Mnuchin and the US Treasury.

The rumors began in early December, and the US Treasury has since released a proposal to modify the way 'Virtual Asset Service Providers' (exchanges) keep track of customer fund flows.

They proposed that:

"For deposits & withdrawals above USD 3k involving a non-custodial wallet, VASPs would have to record the name & physical address of the wallet owner. VASPs would also have to report any deposit or withdrawal above USD 10k to FinCEN in the form of a currency transaction report (CTR)."

This proposal has been met with fierce opposition from Bitcoin companies such as Square, Coinbase, Gemini, and many others, and has not been passed as of January 10th.

BITCOIN BORROWING AND LENDING

Bitcoin borrowing and lending platforms received a rush of new capital in December.

On the retail side, BlockFi and Celsius are quickly joining the ranks of the largest Bitcoin businesses in the world. BlockFi surpassed USD 5 billion of assets under management in December, and Celsius has USD 4.8 billion of assets under management as of January 9th.

BlockFi paid clients over USD 16 million in interest in December alone, their largest monthly payment yet, and Celsius has more Bitcoin under management than all but 7 Bitcoin exchanges in the world.

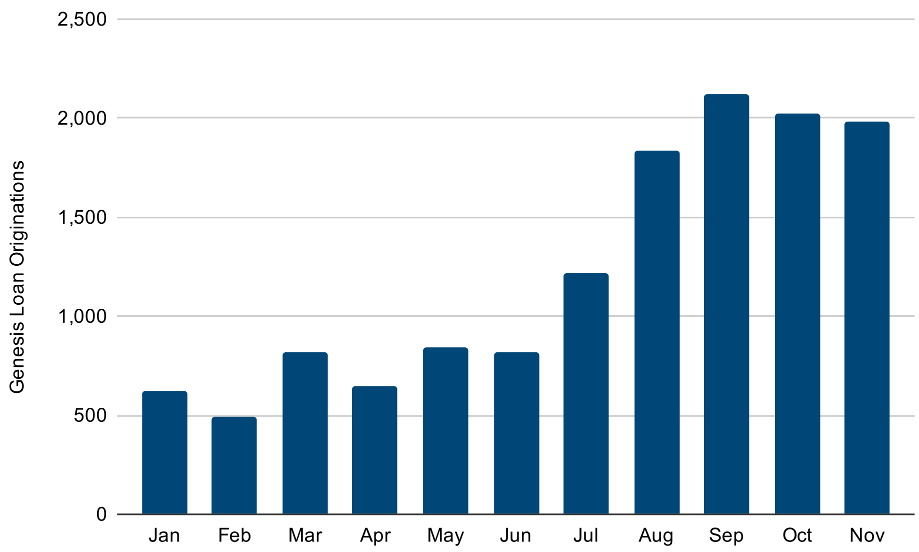
They are two of the most popular platforms for borrowing and lending Bitcoin, among a growing pool of competitors. Below is a list of popular Bitcoin borrowing platforms and their respective rates for different levels of collateral (TVL means total value locked).

Bitcoin Borrowing Rates		
Platform	Loan to TVL	Borrow Rate
BlockFi	20%	6.73%
Celsius Network	25%	1%
Celsius Network	33%	6.95%
BlockFi	35%	10.44%
Unchained Capital	50%	12.92%
Ledn	50%	12.68%
BlockFi	50%	12.50%
Celsius Network	50%	8.95%

BlockFi also competes for institutional lending, against loan desks such as BitGo Prime Lending, Blockchain.com Institutional Markets, Genesis, and others.

Genesis (a subsidiary of Barry Silbert's Digital Currency Group) is likely the largest institutional Bitcoin lending platform in the world. In Q3 it had USD 5.2 billion of loan originations, and during October and November it recorded another USD 4 billion of originations. December results have not yet been released, but will likely push Genesis over USD 6 billion in Q4 loan originations.

GENESIS NEW LOAN ORIGINATIONS (MILLIONS OF USD)

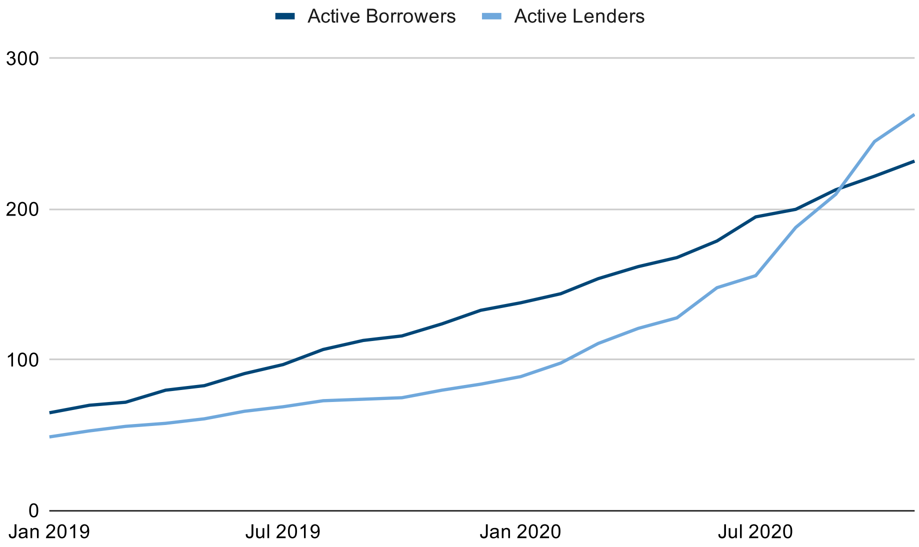


One other interesting theme at Genesis is its shifting composition of customers. Since Genesis was launched in 2018, it has always had more active borrowers on its platform than lenders.

In October 2020, its client composition flipped, and active lenders have continued to dominate over active borrowers in November. This is one indication that institutions may not be over-extending themselves with leverage.

Instead of taking on the risk of margin calls due to collateral volatility, institutional customers at Genesis are clearly choosing to use Bitcoin as a tool for generating yield.

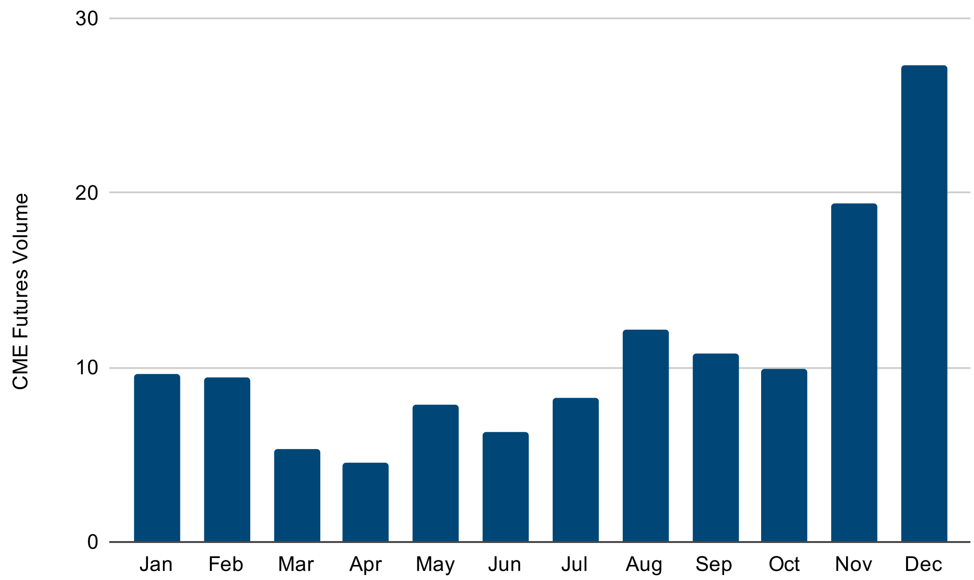
GENESIS ACTIVE BORROWERS VS. LENDERS



BITCOIN DERIVATIVES

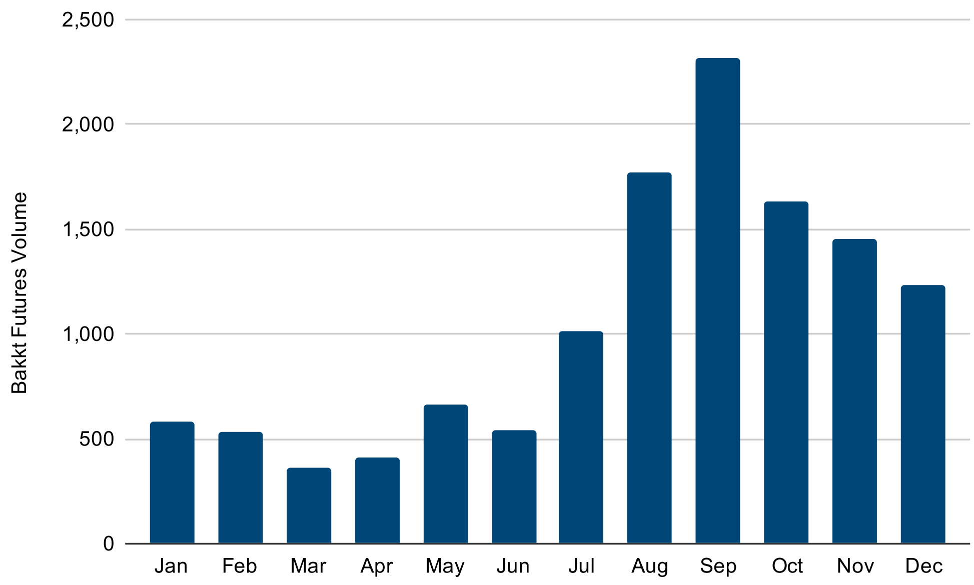
In December, USD 27.32 billion of futures volume traded on the CME, for an average of USD 1.4 billion of volume each trading day. That is up 41% from CME futures volume in November, and up 600% from the CME futures volume in December 2019.

CME BITCOIN FUTURES VOLUME (BILLIONS OF USD)



Bakkt, the other regulated US based futures market for Bitcoin, saw volumes continue to decline during December. USD 1.23 billion of futures volume was traded, down almost 50% from its all-time high of USD 2.32 billion in September.

BAKKT BITCOIN FUTURES VOLUME (MILLIONS OF USD)

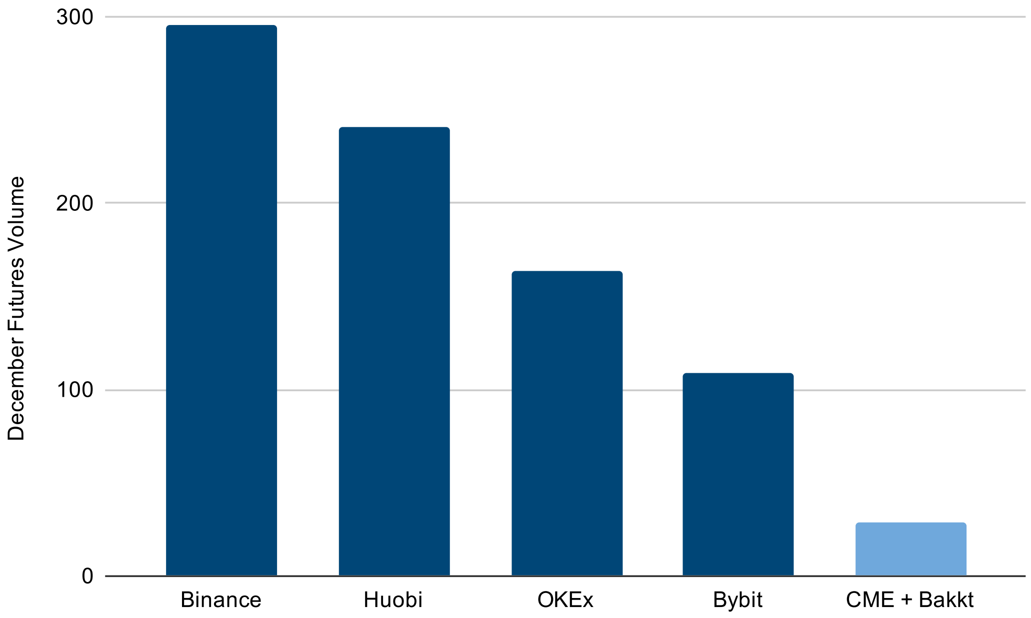


UNREGULATED BITCOIN FUTURES MARKETS

CME and Bakkt are two of the most popular futures platforms for US institutions and hedge funds, but the international, largely unregulated futures markets dwarf their regulated counterparts.

In December, the CME and Bakkt combined for just under USD 30 billion of Bitcoin futures volume. That represents just 3% of the USD 1.06 trillion of Bitcoin futures volume in December. The majority of that volume comes from unregulated exchanges, with Binance, Huobi, OKEx, and Bybit each doing over USD 100 billion of futures volume in December.

BITCOIN FUTURES VOLUME IN DECEMBER (BILLIONS OF USD)



This comparison continues to highlight the lack of adoption in regulated Bitcoin derivatives markets. Unregulated exchanges remain the primary option for retail investors and non-US investors to satisfy their desire for Bitcoin derivatives exposure.

BITCOIN OPTIONS

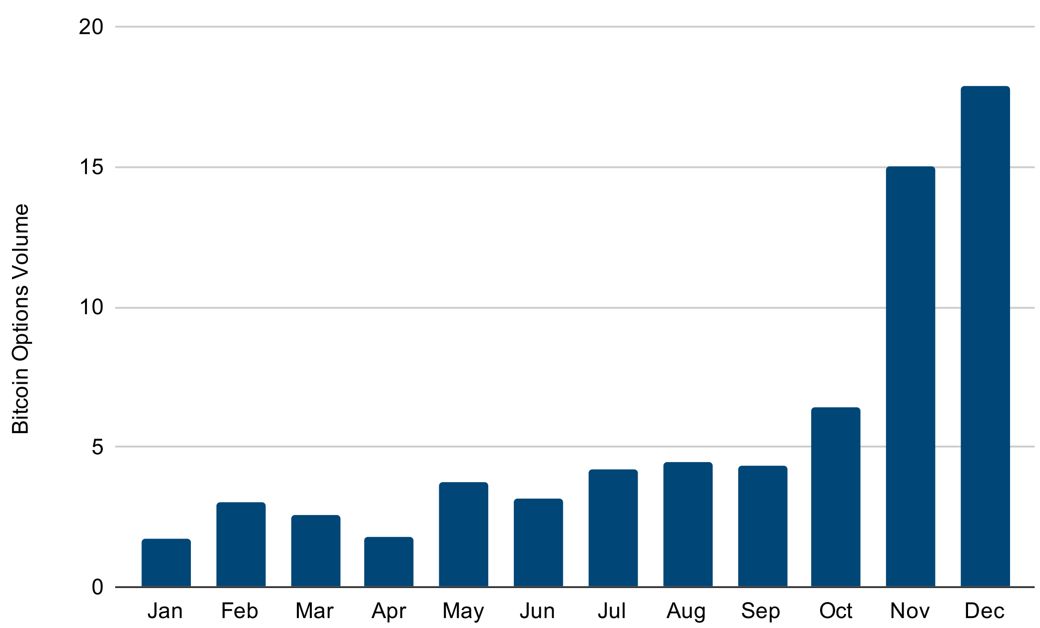
Bitcoin's futures volume in December 2020 was larger than futures volume in all of Q4 2019, but that growth pales in comparison to the growth of the Bitcoin options market.

In December, investors did USD 17.9 billion of Bitcoin options volume. That is up 19% from November, and is 70% higher than the USD 9.85 billion of options volume during all of 2019.

Just like in the futures markets, unregulated exchanges dominate the regulated ones in trading volume.

Deribit does over 80% of all Bitcoin options volume, and has maintained a monopoly position on the market for years. The CME launched their Bitcoin options product in January 2020, but it has yet to capture a meaningful options market share.

BITCOIN OPTIONS VOLUME (BILLIONS OF USD)



BITCOIN COMPANY VALUATIONS

As the price of Bitcoin has surged, so too have the valuations of Bitcoin-related companies.

Coinbase shared one of the most significant Bitcoin announcements in December when it announced its plans to go public. It has filed a confidential S-1 with the SEC, and will likely begin trading on public markets in 2021. While the exact valuation remains uncertain, that has not stopped futures traders from speculating on Coinbase's value at IPO.

FTX, a Hong Kong based derivatives exchange, offers a market on the value of Coinbase shares at IPO. As of January 10, 2021, Coinbase futures were reflecting a USD 78 billion company valuation.

If Coinbase does go public at a USD 78 billion valuation, it would be worth almost 10x more than its value during its last private round, where Coinbase raised USD 300M at a USD 8 billion valuation in 2018.

BITCOIN VS. BITCOIN MINERS

Until Coinbase completes its IPO, public Bitcoin mining companies will continue to be the most accessible proxy for Bitcoin exposure in equity markets. There are already a handful of public Bitcoin mining companies, whose valuations have significantly out-paced the spot Bitcoin market in the last half of 2020.

Companies like Riot Blockchain and HIVE Blockchain also out-performed the spot Bitcoin market in the late stages of the 2017 Bitcoin market cycle, but it is important to remember that the economics of Bitcoin mining makes these businesses incredibly competitive over the long-term.

Miner profit margins are always susceptible to competition from those with access to cheaper energy, and the natural deflationary forces of solar and wind technology continue to push energy prices down and eat away at competitive moats.

Beyond the difficulty of the mining business, Bitcoin mining companies continue trading at a massive premium over their actual Bitcoin holdings.

Bitcoin Holdings Valuation vs. Company Valuation

Company	BTC Holdings	BTC Value	Company Value	BTC as % of Market Cap
Argo Blockchain	209 BTC	USD 8.3M	USD 492M	1.6%
Riot Blockchain	1,175 BTC	USD 47M	USD 1.8B	2.6%
HIVE Blockchain	489 BTC	USD 19.6M	USD 918M	2.1%
Hut 8 Mining	2,851 BTC	USD 114M	USD 645M	17.7%

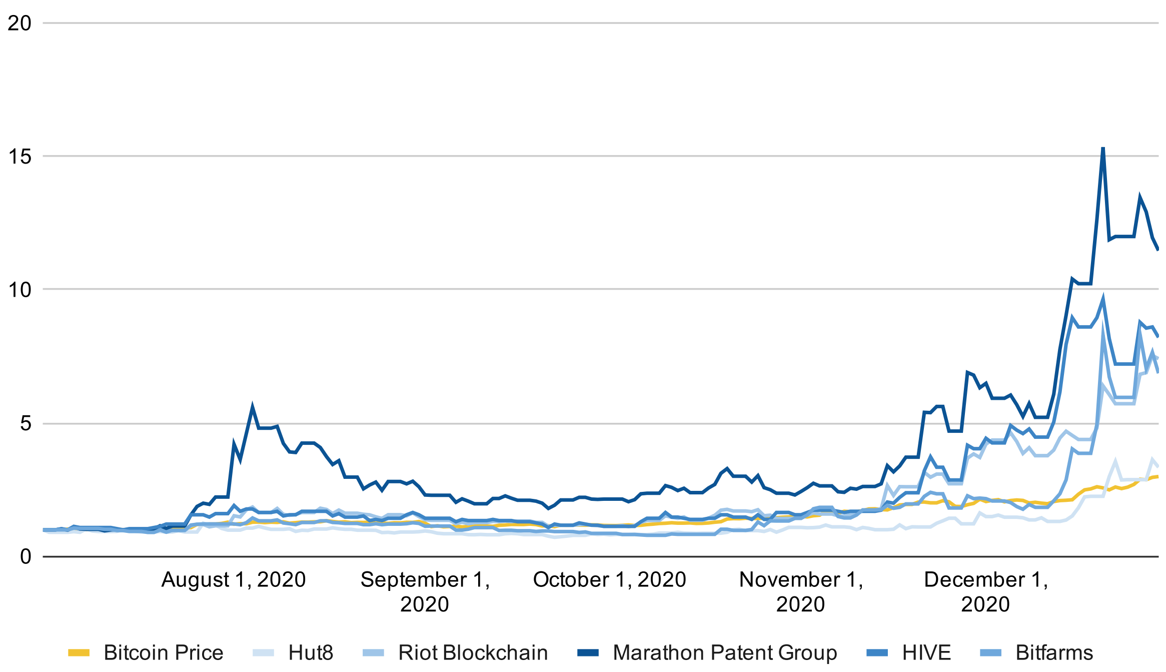
Faced with a highly competitive business landscape, and trading at an ever-larger premium over Bitcoin holdings, investors need to be aware that by investing in Bitcoin mining companies, they are taking on significant operational risk independent of the price of Bitcoin.

Bitcoin's success does not guarantee the success of individual mining companies.

In fact, the success of an individual Bitcoin mining company automatically means the failure of another since all Bitcoin miners are locked in a zero-sum battle for fixed block rewards.

Despite the fact that the stock prices of all miners are currently out-pacing the Bitcoin spot price, the mining industry has razor-thin margins, and no moat or protection against future competitors.

BITCOIN VS. BITCOIN MINERS PRICE GROWTH IN 2H 2020



FINAL THOUGHTS

Institutional investors are recognizing Bitcoin's scarcity, censorship resistance, and digital design as fundamental elements that make it a useful hedge against uncertainty.

MicroStrategy was among the first to realize this, and bought up a total of 70,470 BTC in 2020. Others are following in MicroStrategy's footsteps, sending Bitcoin prices through the roof as the market struggles to keep up with demand.

Bitcoin options, futures, and lending platforms continue to see rising demand, while new Bitcoin funds launch to satisfy additional interest.

As Bitcoin matures as an asset class, rising prices are becoming correlated not only with increasing usage, but also with expectations of a weakening macro-economic backdrop, social unrest, and relentless money printing.

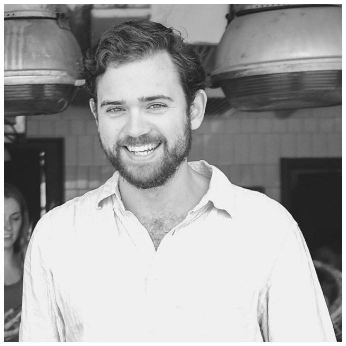
To some degree, Bitcoin prices are now inversely linked to the stability and productivity of the global economy.

As institutional investors are coming to this realization, they are starting to hoard Bitcoin.

CONTACT

This report is a monthly analysis of Bitcoin markets for institutional investors.

For monthly access to this paid report and all underlying datasets, please email research@cmcc.vc



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