PRASOS

QUARTERLY REPORT

Q1 2019

in collaboration with dcresearch

CONTENTS

FOREWORDS

BITCOIN'S VALUE PROPOSITIONS TO INVESTORS

INDUSTRY OUTLOOK

CRYPTOASSET MCAPS

EXCHANGES

PEER-TO-PEER MARKET

TOKEN MARKET

STABLECOINS

EMERGING MARKET

MARKET OPPORTUNITY

ASSET SUMMARY

UNIQUE ADDRESSES

CONF. TRANSACTIONS

NETWORK HASHRATE

HASHRATE DISTRIBUTION

MINING DIFFICULTY

CORRELATIONS

LIGHTNING NETWORK

UTXO & BITCOIN MARKET

INDICES AND VOLATILITY

BITCOIN, GOLD, AND FIAT

REFERENCES

FOREWORDS

First quarter of 2019 showed stable performance for bitcoin. The price stayed between $3-4K area in early to mid quarter, rising above and beyond $4K in the late Q1. Multiple fundamental indicators, including an UTXO analysis embedded in this report, are showing signs of clear market bottom. The selling pressure from short, mid, and long term investors seems to be weakening, resulting a stable environment for accumulation phase. **The Bitcoin Unspent Transaction Outputs (UTXO) hit all time high at the end of Q1 2019, indicating investor accumulation.**

Additionally, **institutional investors are showing escalating interest in the industry**, with the relative amount of institutional products growing significantly during Q1 2019, from December 2018 10%, through January 15%, February 17%, and March 18%. Institutional investors are also especially active in the growing platform token market, within projects like:

➔ Facebook. FB coin seeks $1B in venture capital funding. Most probably a stablecoin, designed for stable value, begged to a basket of foreign currencies.

➔ Telegram. A Russian startup and competitor to Facebook, raised $850M in a second round during 2018. Telegram Open Network (TON) to be launched later in 2019.

➔ Kik. A popular messaging app, owned by Canadian company Kik Interactive. Currently developing its own cryptocurrency, called Kin.

➔ JPM Coin. Launched by a globally known bank J.P. Morgan, JPM Coin is a digital asset designed to make instantaneous transactions using blockchain technology.

INCREASING EUROZONE RISKS

Bitcoin was originally created, by Satoshi Nakamoto himself, as a independent & antifragile asset, mainly to counter the systemic risks of the traditional monetary system. In 2019 we're witnessing systemic risk to raise its head again, this time in form of rising Eurozone risk profile, especially with the upcoming Brexit and lack of sustainable solutions to boost the economic growth in Europe. In recent history we still remember the Greek debt crisis of 2009 and 2010, eventually leading to IMF and EU bailouts.

What were the main drivers behind Greek debt crisis? The fundamentals stem from global financial crisis and the collapse of US mortgage market, also known as 2008 subprime crisis. Consequently with rising borrowing costs and tighter financing, the Hellenic Republic could not meet payments on its debt any longer. In October 2009, the Greek government announced that their budget deficit will exceed 12%, resulting the downgrading of Greek sovereign debt ratings to junk status in Q1 2010.

Why is still all relevant? **The global financial system, based on fiat currencies, combined with policies, like quantitative easing (QE), and zero interest rate policy, still includes vast amount of systemic risk. This is the core reason why we see bitcoin's crucial position as a non-correlated asset, and hedge to the combined risk**.

Another big paradigm in the industry is the upcoming halving event, expected to occur in May 2020. Bitcoin's upcoming block reward halving event has historically been a catalyst linked to large scale upward price movements. The next halving event is expected to occur around May 2020, halving will reduce mining block rewards and results in more restricted circulating supply.

UPCOMING HALVING

One of the topics discussed during Q1 2019 was the upcoming bitcoin halving event in 2020.

Bitcoin halving event has occurred twice since 2009. First in November 2012 and the second in July 2016.

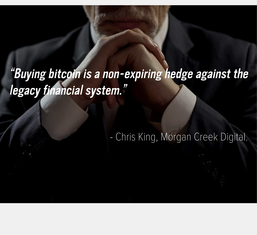
The original miner reward was set at **50 BTC.** The reward for mining a block currently is **12,5 BTC. The estimated halving date this time is 23rd May 2020, post which the reward for mining a block will be reduced to 6,25.**

Supported by strong fundamental and technical foundation, bitcoin continues to serve its position as non-correlated asset, "digital gold" among other asset classes. Bitcoin is scarce programmable digital money, with strong fundamentals into the future. **We see bitcoin as an asset class and infrastructure, which makes it unique among alternative investments.**

BITCOIN MARKET AND COMPLIANCE

The European Commission brought 5th Anti-Money Laundering Directive, also known as 5AMLD, into force in July 2018. 5AMLD also covers virtual currency exchange services and custodian wallet providers.

Each EU member state was given a transposition period until January 2020 for implementing the 5AMLD. LocalBitcoins, one of the biggest bitcoin service providers in Finland, and globally, announced that it'll be following the new EU level AML regulation, in order to continue fully compliant operations within EU, and globally [1].



ESCALATING DEMAND ACROSS INSTITUTIONAL INVESTORS

Bitwise's recent report on reported trading volumes within cryptocurrency exchanges caused a stir in the industry. While wash trading and other practices have been well known for many parties, the detailed research to US Securities and Exchange Commission (SEC) gave us important data about market liquidity [2].

The relative trading amount of institutional products grew significantly during **Q1 2019** (see chart), from December 2018 **10%**, through January **15%**, February **17%**, and March **18%**. The percentage is compared with US-based exchanges trading volume [3].

Although CBOE is exiting the bitcoin futures market with delisting announcement. However, Grayscale, and CME especially, have gained market share. We expect the role of institutions in bitcoin scene to grow on all timescales, as the industry gains more maturity and coherence.

According to Grayscale's data from 2018, **66%** of their investments came from institutional investors [4].

FIRST PENSION FUND TO INVEST IN CRYPTO

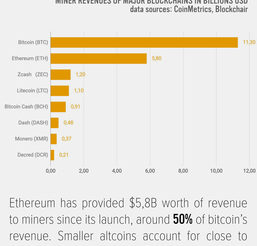
On February 12th, Morgan Creek Digital announced to be working with two pension plans in Fairfax County, Virginia. The pension funds are anchor investors in a **new $40 million venture-capital fund.**

Anthony "Pomp" Pompliano, from MCD, says the new fund is structured like a traditional venture capital fund that invests in the equity of companies in the blockchain and digital asset industry.

"The smart money is not distracted by price but looks at the long-term trends, and believes they're betting on innovation as a great way to deliver risk-mitigated returns," Pompilano commented [5].

BITCOIN MINING INDUSTRY

Cryptocurrency miners have earned more than **21 billion USD** since the launch of major blockchain networks. Interestingly, bitcoin still accounts for **>50%** of the earnings alone.



Ethereum has provided $5,8B worth of revenue to miners since its launch, around **50%** of bitcoin's revenue. Smaller altcoins account for close to $1B revenue with ZEC, LTC, and BCH. And under $500M for less liquid altcoins, like Dash, Monero, and Decred.(Source: CoinMetrics, Blockchair)

BITCOIN'S VALUE PROPOSITIONS TO INVESTORS

GROWTH

The pioneering blockchain industry is developing with escalating pace and new projects are constantly gaining traction. The mass adoption in bitcoin & blockchain tech and tokenization in general will continue to evolve rapidly in coming years.

DIVERSIFICATION

Bitcoin with a low historical correlation to traditional markets, is an emerging asset class to consider as a part of the portfolio diversification. Even just 1-5% allocation to bitcoin has been historically impacting portfolio performance favorably.

HEDGE

Bitcoin can be seen as a potential hedge to traditional asset classes. Built-in features like 21 million hard cap, inflation-free structure, and antifragile blockchain make bitcoin a store of value.

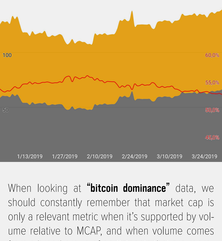
DECENTRALIZED VALUE

Global, decentralized, censorship-resistant & programmable asset with proven 10-year track record, showing outstanding staying power. With 99,98% uptime since inception, every subsequent day online makes bitcoin more robust, secured by built-in incentive structure.

INDUSTRY OUTLOOK

CRYPTOASSET MCAPS

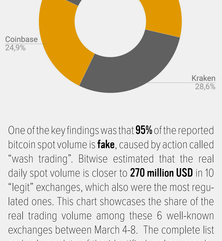
Like during previous quarters, bitcoin's market cap retained its dominant position. The selling pressure from ERC-20 ICOs, escalating the 2018 sell-off, seems to be waning.



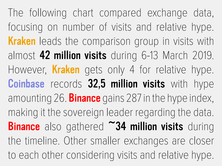
When looking at **"bitcoin dominance"** data, we should constantly remember that market cap is only a relevant metric when it's supported by volume relative to MCAP, and when volume comes from a broad group of participants that are representative of market demand. Many altcoins don't fit said criteria, so the justified bitcoin dominance is probably higher than MCAP data shows.

EXCHANGES

On March 22nd Bitwise Asset Management filed a 226-page report to SEC for their ETF filing. In the said report, Bitwise widely analyzed the cryptocurrency market, and especially exchange operations.



One of the key findings was that **95%** of the reported bitcoin spot volume is **fake**, caused by action called "wash trading". Bitwise estimated that the real daily spot volume is closer to **270 million USD** in 10 "legit" exchanges, which also were the most regulated ones. This chart showcases the share of the real trading volume among these 6 well-known exchanges between March 4-8. The complete list and volume data of the identified real sources by Bitwise can be found in references [6].



The following chart compared exchange data, focusing on number of visits and relative hype. **Kraken** leads the comparison group in visits with almost **42 million visits** during 6-13 March 2019. However, **Kraken** gets only 4 for relative hype. **Coinbase** records **32,5 million visits** with hype amounting 26. **Binance** gains 287 in the hype index, making it the sovereign leader regarding the data. **Binance** also gathered **~34 million visits** during the timeline. Other smaller exchanges are closer to each other considering visits and relative hype.

Datalight tracks social media mentions in multiple channels: **Reddit, Telegram, and Twitter** among others. Datalight uses the captured data points to calculate exchange popularity and relative hype. (Source: Datalight)

"If they become widely accepted, virtual currencies could have a substitution effect on central bank money."

- European Central Bank.

THE QUADRIGACX CASE

QuadrigaCX, the largest bitcoin exchange in Canada, has been in the middle of controversy during Q1 2019. On January 14th, Gerald Cotten, the co-founder, and CEO of QuadrigaCX was announced dead by reports [7]. Later it turned out that **Cotten was the only person with access to $190 million of funds in cryptoassets and fiat money**, the majority of assets stored in the exchange.

Later it was relvealed that QuadrigaCX has experienced financial difficulty from 2018 to 2019, with reports of funds being locked up and user complaints. These were serious red flags over a year before the loss of funds.

On March 1st, report by Ernst & Yang showed the QuadrigaCX cold wallets only had couple of thousand USD in them. Jesse Powell, the CEO of Kraken, believes most of the funds are held under fake names, making it a lot harder for exchanges to identify them.

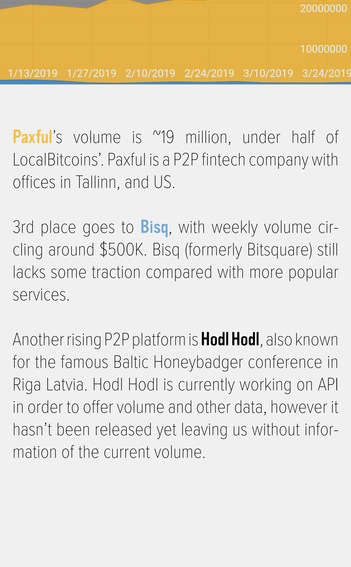
There are multiple possible explanation currently for the loss of funds. It's possible that Cotten's death was used to cover-up QuadrigaCX's financial difficulties. It's also possible that the company was a "front" for money laundering operations. Another option is just very poor management by QuadrigaCX's core team. Be that as it may, this case shows the importance of investor due diligence and cautiousness when choosing which exchange, or industry partner to use.

P2P MARKET

The main purpose of bitcoin P2P exchanges is to provide liquidity to the OTC market, they also act as an alternative to the traditional cryptocurrency exchanges. In the embedded chart we can see the relative volumes of bitcoin P2P exchanges: LocalBitcoins, Paxful, and Bisq.

LocalBitcoins is still dominant among the three, recording around $50M weekly volume ($200M monthly). By a basic calculation, LocalBitcoins' annual volume is around 2,4 billion USD. LocalBitcoins is the leading P2P platform globally with headquarters in Helsinki Finland.

Q1 2019 VOLUMES IN BITCOIN P2P EXCHANGES: LOCALBITCOINS, PAXFUL AND BISQ



Paxful's volume is ~19 million, under half of LocalBitcoins'. Paxful is a P2P fintech company with offices in Tallinn, and US.

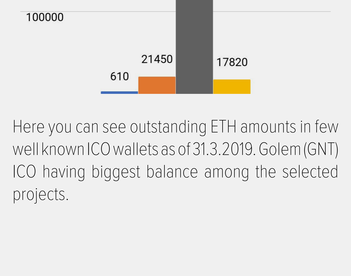
3rd place goes to **Bisq**, with weekly volume circling around $500K. Bisq (formerly Bitsquare) still lacks some traction compared with more popular services.

Another rising P2P platform is **Hodl Hodl**, also known for the famous Baltic Honeybadger conference in Riga Latvia. Hodl Hodl is currently working on API in order to offer volume and other data, however it hasn't been released yet leaving us without information of the current volume.

TOKEN MARKET

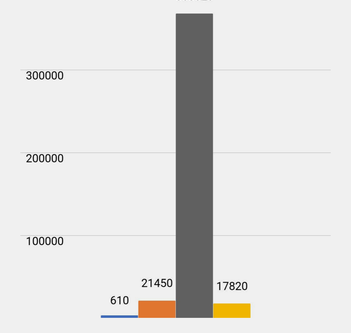
The ICO market continued to diminish during Q1 2019 in terms of raised funds, **dropping from Q4 2018 1,4 billion USD to Q1 2019 902 million USD.**

ICO FUNDS RAISED IN Q4 2018 AND Q1 2019
data source: icobench.com. 31.3.2019.



The ICO market is heavily correlated with bitcoin, meaning that outflow of assets from ICO market also heavily affects bitcoin's performance as the most dominant cryptocurrency. While the **ICO market remains bearish** for now, we're expecting another digital funding round mechanism to gather popularity. STOs (Security Token Offering) are increasing rapidly and we're witnessing multiple platforms to rise globally. Regulation is gradually catching up in many regions to support the next wave of digital fundraising.

ETH AMOUNT IN ICO WALLETS
data source: Etherscan



Here you can see outstanding ETH amounts in few well known ICO wallets as of 31.3.2019. Golem (GNT) ICO having biggest balance among the selected projects.

STABLECOINS

Bitcoin, launched in 2008, has been a huge decentralized success story. However cryptocurrency volatility inhibits large-scale merchant and consumer adoption, there can be no denying. **Stablecoins**, which are built to address the issue of excess volatility, act as a bridge between cryptocurrencies and more traditional currencies.

A stable digital, and decentralized currency could become a global medium of exchange, an especially important application in emerging markets experiencing debilitating levels of inflation, such as **Argentina, Iran, Turkey,** or **Ukraine.**

Institutional arrangements constrain access to capital markets in the current environment. Financial market transactions generate friction and transactional costs are scale-sensitive, with information costs estimated to be the most important component of these costs.

The stablecoins can be divided into 4 categories:

01 Fiat-collateralized stablecoins (GUSD, PAX, TUSD, USDC, USDT)

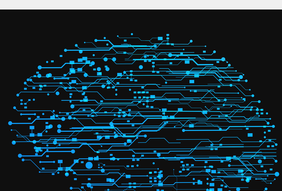
Stablecoins backed by fiat-currencies are issued according to a set ratio pegged to fiat currency. The total amount of tokens issued must 1:1 with the total cash in the bank or vault. However, the 1:1 stabilization method presents riks around the trust of centralized 3rd parties. The fiat custodians are audited frequently to confirm that the tokens are fully backed by fiat reserves.

02 Asset-backed stablecoins (Digix)

Asset-backed stablecoins have a similar structure to fiat-backed stablecoins. However the digital coin pegged to the value of a hard asset instead of fiat currency. The risks included in asset-backed stablecoins are similar to the risks of fiat-backed stablecoins, due to needed trust in third party audits for ensuring the correct peg ratio.

03 Crypto-collateralized stablecoins (DAI)

Crypto-backed stablecoins are digital tokens that are backed by the value of another digital asset like Bitcoin or ETH. This structure is a bit more complicated as the price of cryptocurrencies can swing wildly; thus simply pegging the two assets, Ether and the stablecoin, 1:1 will not serve to stabilize the price. Thus, more creative solutions, like that of MakerDAO and their stablecoin DAI, have been introduced. Maker uses collateral debt positions (CDP) which operate similar to a bank. Currency risk exists in this initial deployment of CDPs due to lack of diversification of a single digital asset, ETH, held as collateral. Future developments of the CDP functionality will allow the smart contracts to hold multiple asset types thereby increasing diversification and reducing volatility.



04 Non-collateralized stablecoins (Basis)

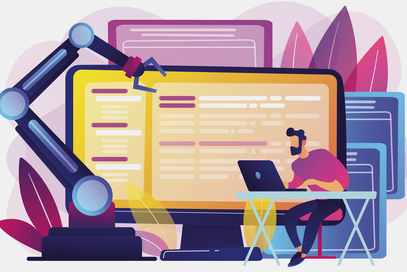
Algorithmic stablecoins are not backed by a hard asset, but instead automated logic modifies the token supply based on supply and demand. Think of this as an automated central bank that enacts monetary policy through programmatic capital controls. User adoption is one risk faced by algorithmic stablecoins, like Basis, since the functionality of the system required participation for stability.

STABLECOINS - DAI

Dai

The Dai infrastructure is based on a governance token called **MakerDAO (MKR)**. Ownership of MKR tokens grants the token holders governance rights over the Dai systems risk parameters and types of collateral that can be held in Collaterized Debt Positions (CDPs). When MKR users close CDPs they must pay a stability, or governance fee in for of MKR, which is consequently burned byt Dai system. This process reduces the supply of MKR token, and is one of the direct financial incentives for holding MKR and supporting the Dai ecosystem.

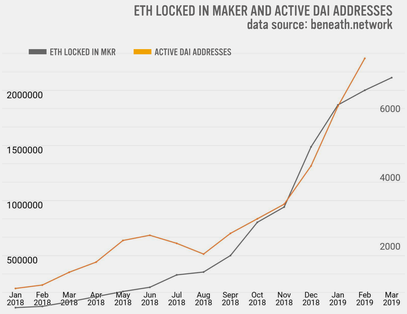
The Dai target price mechanism works based on two functions: It allows for the calculation of the collateral debt ratios of CDPs, and it determines the value of assets deposited into CDPs in the case of global settlement. Dai also includes a Target Rate Feedback Mechanism (TRFM), which helps to maintain the Dai market price around the set target price. TRFM works by changing the target rate, and target price to balance supply and demand for Dai by adjusting users incentives to generate and hold Dai.



Dai's code has been open source, and auditable for years, longer than many other stablecoin projects. This gives Dai an edge amid concerns regarding Tether (USDT).

From the beginning, Dai's structure backed by ETH, has been built to be inherently decentralized. The ecosystems users do not rely on trusted third party. Dai is also not subject to counterparty, or traditional banking risks. We see a bright future ahead for Dai, as a breakthrough stablecoin ecosystem, and as a benchmark for all decentralized finance token iniatives.

MakerDAO accounts for almost 90% of total USD value locked in decentralized finance projects and has seen impressive growth over 2018 and Q1 2019. MakerDAO recently released a report, which showed there were nearly 8200 unique addresses with a non-negligible Dai balance. In addition, they observed 20% monthly growth for holders and active addresses.

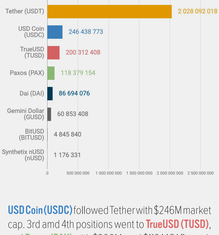


We charted the amount of ETH locked in MKR and active DAI addresses since the start of 2018. It's important to highlight that, as a lending platform, Maker remained resilient even as the price of the asset it lends against (Ethereum) lost much of its value over the course of 2018 [8].

STABLECOINS MCAPS

Tether (USDT) unsurprisingly retained its position as the dominant stablecoin in the market, with 2,03B USD market cap. Tether's history has been somewhat controversial, especially considering banking relations. On November 1st 2018, Tether Limited announced it had established a banking relationship with Deltec Bank & Trust Limited. Deltec is a 72-year-old financial institution with headquarters in the Commonwealth of Bahamas [9].

STABLECOIN MCAPS AT THE END OF 01 2019
data source: stablecoinindex.com 31.3.2018



USD Coin (USDC) followed Tether with $246M market cap. 3rd amd 4th positions went to **TrueUSD (TUSD)**, and **Paxos (PAX)** with $200M, and $118 MCAPs each respectively. Compared with Q4 2018, **Dai (DAI)** from MakerDao overtook Winklevoss twins' gemini as the 5th largest stablecoin. Leaving **GUSD** for the 6th place in global MCAP competition.

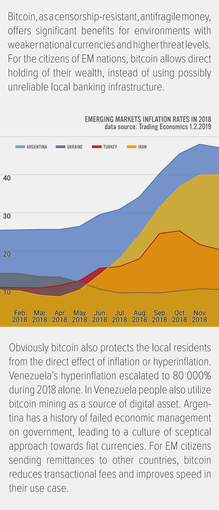
Designed especially to counter the heavy volatility embedded in cryptocurrencies, stablecoins aim to act as a bridge between cryptocurrencies and traditional (fiat) currencies. Stablecoins' value proposition also includes providing more liquidity to the market and offering new generation of decentralized financial (DeFi) services.

EMERGING MARKETS

It's been a well-known fact that bitcoin's adoption curve is steeper in countries with less developed infrastructure [10]. When exploring emerging markets (EM) inflation rates in 2018 we'll see a clear trend of high, or growing inflation in **Argentina, Iran, Turkey,** and **Ukraine.**

Bitcoin, as a censorship-resistant, antifragile money, offers significant benefits for environments with weaker national currencies and higher threat levels. For the citizens of EM nations, bitcoin allows direct holding of their wealth, instead of using possibly unreliable local banking infrastructure.

EMERGING MARKETS INFLATION RATES IN 2018
data source: Trading Economics 1.2.2019



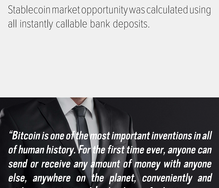
Obviously bitcoin also protects the local residents from the direct effect of inflation or hyperinflation. Venezuela's hyperinflation escalated to 80.000% during 2018 alone. In Venezuela people also utilize bitcoin mining as a source of digital asset. Argentina has a history of failed economic management on government, leading to a culture of sceptical approach towards fiat currencies. For EM citizens sending remittances to other countries, bitcoin reduces transactional fees and improves speed in their use case.

Passport Capital noticed the clear divergence between LocalBitcoins volume in developed, and emerging markets. According to Passport Capital analysis, volume in developed markets is tracking price (speculation), and the volume in emerging markets has been growing despite price drop, indicating utility functionality [11].

MARKET OPPORTUNITY

Bitcoin technology holds immense market opportunities. Satoshi Capital Research estimated the market opportunity of bitcoin technology, following the data in this chart. The total combined market opportunity of bitcoin technology was estimated to be **over 65 trillion USD** [12].

ESTIMATED OPPORTUNITY IN USD TRILLION
data source: Satoshi Capital Research 25.1.2019



In the estimations, Satoshi Capital Research used the following calculation methodologies:

➡ Bitcoin market opportunity. M0 money supplies 0 + value of all mined gold.

➡ Stablecoin market opportunity. M1 money supplies - M0 money supplies.

➡ Smart banking market opportunity. M3 money supplies - M1, M0 money supplies.

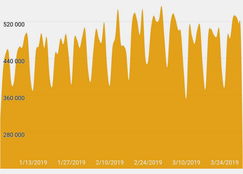
Stablecoin market opportunity was calculated using all instantly callable bank deposits.

ASSET SUMMARY

UNIQUE ADDRESSES

The number of unique bitcoin addresses used in Q1 2019 remained steady, at around 500 000 addresses.

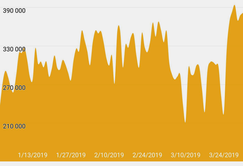
NUMBER OF UNIQUE ADDRESSES USED DURING Q1 2019
data source: blockchain.com



CONF. TRANSACTIONS

2018 saw a 3-year low in confirmed transactions during April 2018, since then transactions have grown **over 40%**. The amount of confirmed transactions continued to grow during Q3 and Q4 2018. Consequently we expect the amount of transactions to continue growth in 2019.

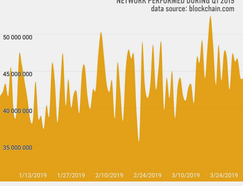
CONFIRMED TRANSACTIONS PER DAY DURING Q1 2019
data source: blockchain.com



NETWORK HASHRATE

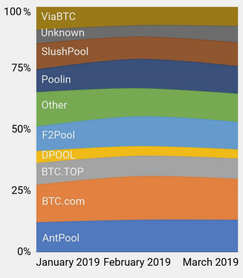
Bitcoin network hashrate remained relatively steady through Q1 2019. The stable hashrate indicates miner confidence and healthy infrastructure. The hashrate usually correlates with bitcoin's price, however hashrate usually contains less volatility as mining operations are investment heavy.

THE ESTIMATED NUMBER OF TERAHASHES (TH/S) THE BITCOIN NETWORK PERFORMED DURING Q1 2019
data source: blockchain.com



HASHRATE DISTRIBUTION

BITCOIN MINING POOL HASHRATE DISTRIBUTION IN Q1 2019
data source: blockchain.com

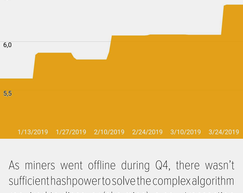


Bitcoin mining pool hashrate distribution during Q1 2019 shows hashrate being distributed more evenly between mining pools during the quarter. Smaller mining pools started to emerge especially during Q3 and Q4 last year.

MINING DIFFICULTY

After dropping heavily from 7 400 000M level to 5 100 000M level in late Q4 2018, bitcoin difficulty rose again during first quarter of 2019, into late March 6 300 000M. The reason for difficulty drop in late Q4 2018 was mainly miners shutting down their operations.

BITCOIN MINING DIFFICULTY DURING Q1 2019
data source: blockchain.com

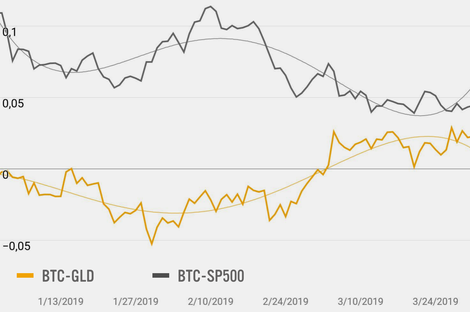


As miners went offline during Q4, there wasn't sufficient hashpower to solve the complex algorithm required to discover (aka mine) a new transaction block. The difficulty level is designed to adjust to every 2016 block to accommodate with hashrate in each situation.

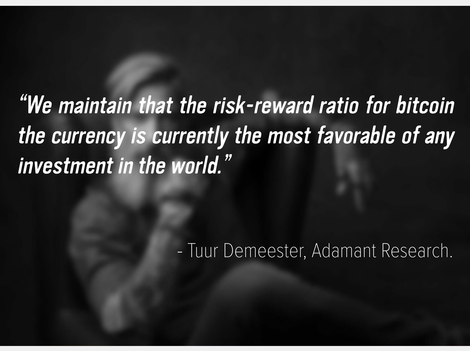
CORRELATIONS

Bitcoin's correlation with **gold (GLD)**, and stock market **(SP500)** is shown in the following chart. During Q1 2019 the rolling 180d correlation with gold was close to zero most of the time, rising from early Q1 -0,02 level to 0,02 level at the end of quarter. Bitcoin shows no linear relationship with the gold market.

Q1 2019 CORRELATION BETWEEN BITCOIN - S&P 500, AND BITCOIN - GLD
data sources: Coinmarketcap, FRED, IBA.

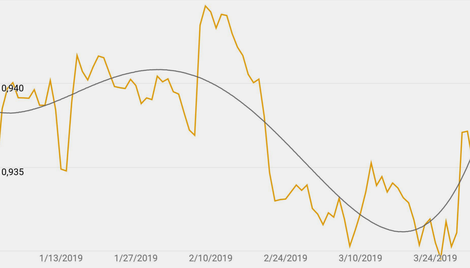


The highest point of bitcoin - SP500 correlation was 0,11 during mid-quarter. Correlation dropped to 0,04 at the end of Q1. **The low correlation with stock market favors bitcoin's "digital gold" hypothesis**, in which bitcoin is portrayed as a non-correlated asset to the traditional asset classes and at the same time offer unique return potential among alternative investments.



The Bletchley 10 Index is a market capitalization weighted index composed of 10 of the most valuable digital assets by market capitalization. The market capitalization of each member is calculated off of the expected total supply in 2050 (pulled from OnChainFX.com) for each asset, then adjusted to reflect the publicly current available amount (float) of each asset available today (also from OnChainFX.com). There are no limits set on the weight of any individual constituent [13].

Q1 2019 BITCOIN - BLETCHLEY 10 INDEX CORRELATION
data sources: Coinmarketcap, FRED, IBA.

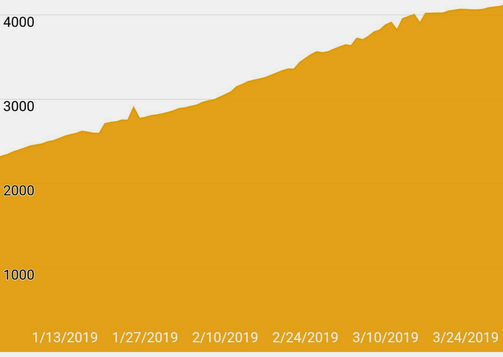


The rolling correlation between the Bletchley 10 Index and bitcoin has been high and stable during the Q1. Bitcoin's weight (ranging between **60-65%**) in the index has been **dominant** during the first quarter. Also the other index constituents' correlation with bitcoin has been historically relatively high resulting to a significant overall correlation within the cryptocurrency markets.

LIGHTNING NETWORK (LN)

With lightning network adoption, bitcoin fulfills its value proposition as light, antifragile, and generally accessible protocol. Over the past year, bitcoin lightning network saw **over 45% monthly growth rates**.

LIGHTNING NETWORK (LN) NODE GROWTH IN Q1 2019
data source: Bitcoin Visuals



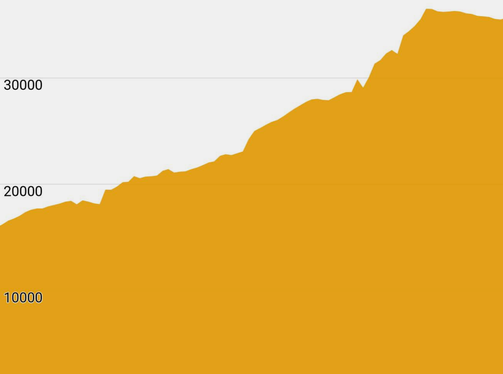
These charts show the number of nodes with channels. Lightning nodes open payment channels with each other that are funded with bitcoin. When transactions are made across those channels, the channel balance is reflected without having to broadcast a transaction on chain.

"Bitcoin itself cannot scale to have every single transaction in the world to be broadcasted to everyone and included in the blockchain. There needs to be a secondary level of payment systems which is lighter and more efficient."

- Hal Finney.

This creates a second layer on top of the bitcoin network that expands it capabilities. Lighting Network's node count has been growing steadily during 2018, continuing deeply through Q4. The node count indicates good fundamentals for bitcoin, as a hugely promising layer 2 solution. Lightning Network (LN) continued to grow during Q1 2019, **increasing** node count **from 2297 to 4123**.

LIGHTNING NETWORK (LN) CHANNEL GROWTH IN Q1 2019
data source: Bitcoin Visuals



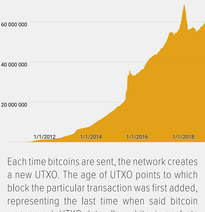
Unique channels are bitcoin LN channels connecting nodes directly for the first time. Lightning Network (LN) channel growth, escalating during December and Q4 2018, showcases rising popularity of the network, even during current bear market cycle.

UTXO & BITCOIN MARKET

ANALYZING BITCOIN MARKET AND UTXO DATA

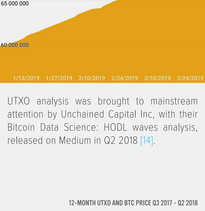
UTXO, or unspent output from bitcoin transactions, is one data source for analysing the cryptocurrency market. Within the bitcoin blockchain, every transaction creates a new UTXO, and the certain age of UTXO indicates the block that the transaction was firstly included in. UTXO data can be utilized to track buying, and selling patterns in the previous, current, and upcoming market cycles.

GROWING BITCOIN UTXO SET
data source: Bitcoin Visuals



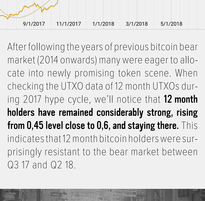
Each time bitcoins are sent, the network creates a new UTXO. The age of UTXO points to which block the particular transaction was first added, representing the last time when said bitcoin was moved. UTXO data allows bitcoin analysts to track the last time coins have moved. A drop in cumulative UTXO age usually correlates with increase in bitcoin activity. A rise in cumulative UTXO age represents more holding in the market, as smart investors typically accumulate when price decreases.

BITCOIN UTXO SET IN Q1 2019
data source: Bitcoin Visuals



UTXO analysis was brought to mainstream attention by Unchained Capital Inc, with their Bitcoin Data Science: HODL waves analysis, released on Medium in Q2 2018 [14].

12-MONTH UTXO AND BTC PRICE Q3 2017 - Q2 2018



After following the years of previous bitcoin bear market (2014 onwards) many were eager to allocate into newly promising token scene. When checking the UTXO data of 12 month UTXOs during 2017 hype cycle, we'll notice that **12 month holders have remained considerably strong, rising from 0,45 level close to 0,6, and staying there.** This indicates that 12 month bitcoin holders were surprisingly resistant to the bear market between Q3 17 and Q2 18.

"Bitcoin is owned by the crowd, its users. And it now has a track record of several years, enough for it to be an animal of its own right."

- Nassim Nicholas Taleb.

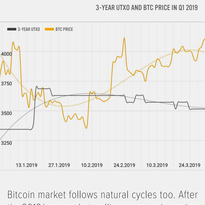
Let's explore UTXO data from 2017-2018. UTXOs continued to rise drastically until a few weeks after bitcoin's $20K peak, when the indicator saw a clear decline in correlation with BTC's strong move under $10K, **signaling that a substantial number of traders and investors had panic-sold their assets.** The 2017 ETH ERC-20 ICO hype cycle also affected the behaviour of long term bitcoin holders.

5-YEAR UTXO AND BTC PRICE Q3 2017 - Q2 2018

5 year UTXOs have showed **significant selling pressure**, especially after March 2018, **indicating long-term holders liquidating their positions.** By the end of 2018 5 year UTXOs have stabilized, probably indicating a market bottom, and end of peak capitulation.

When exploring UTXO data for the 2019 first quarter, we can see a clear increase in 6 month, and 3 year UTXOs, occuring in mid-January. Although both 6 month, and 3 year UTXO since dropped lightly, the steep increase indicates accumulation in wallets of mid-, and longer-term investors.

6-MONTH UTXO AND BTC PRICE IN Q1 2019



3-YEAR UTXO AND BTC PRICE IN Q1 2019

Bitcoin market follows natural cycles too. After the 2018 bear market, selling pressure is waning across the investor segment. When the selling pressure weakens enough, bullish investors and smart money start to accumulate assets.

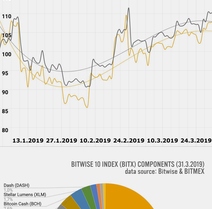
"There's a belief in the institutional world that if the industry will be around for a long time, it will be very valuable. The smart money is not distracted by price but looks at the long-term trends, and believes they're betting on innovation as a great way to deliver risk-mitigated returns."

- Anthony Pompliano, Morgan Creek Digital.

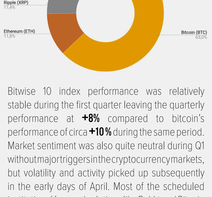
INDICES AND VOLATILITY

The Bitwise 10 Index is designed to track the broad-based performance of the cryptocurrency market as reflected in a basket of the ten largest coins, weighted by 5-year inflation-adjusted market capitalization. It is a rules-based index with a monthly reconstitution and rebalancing discipline. The latest monthly reconstitution occurred at 4pm ET on March 31, 2019.

BITX INDEX VS BTC PERFORMANCE IN Q1 2019
data source: Bitwise & BITMEX

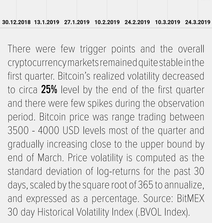


BITWISE 10 INDEX (BITX) COMPONENTS (31.3.2019)
data source: Bitwise & BITMEX

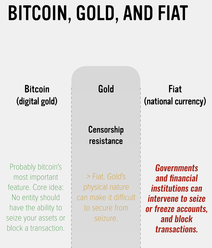


Bitwise 10 index performance was relatively stable during the first quarter leaving the quarterly performance at **+8%** compared to bitcoin's performance of circa **+10%** during the same period. Market sentiment was also quite neutral during Q1 without major triggers in the cryptocurrency markets, but volatility and activity picked up subsequently in the early days of April. Most of the scheduled institutional focused solutions like Bakkt and Bitcoin ETFs in the US were further delayed during the first quarter.

BITCOIN PRICE VOLATILITY IN Q1 2019
data source: Bitwise & BITMEX



There were few trigger points and the overall cryptocurrency markets remained quite stable in the first quarter. Bitcoin's realized volatility decreased to circa **25%** level by the end of the first quarter and there were few spikes during the observation period. Bitcoin price was range trading between 3500 - 4000 USD levels most of the quarter and gradually increasing close to the upper bound by end of March. Price volatility is computed as the standard deviation of log-returns for the past 30 days, scaled by the square root of 365 to annualize, and expressed as a percentage. Source: BitMEX 30 day Historical Volatility Index (.BVOL Index).



"The reported spot volume of Bitcoin that is claimed on sites like Coin Market Cap is about $6bn a day, that means all Bitcoin would turn over about every two weeks, for something which is designed primarily as a long-term store of value. That is absurd."

- Matthew Hougan, Bitwise.

BITCOIN, GOLD, AND FIAT

Bitcoin (digital gold)	Gold	Fiat (national currency)
	Censorship resistance	
Probably bitcoin's most important feature. Core idea: No entity should have the ability to seize your assets or block a transaction.	> Fiat. Gold's physical nature can make it difficult to secure from seizure.	***Governments and financial institutions can intervene to seize or freeze accounts, and block transactions.***
	Divisibility	
Bitcoin is divisible out to 8 decimal places by design. This feature offers a possibility for micropayments.	Gold can be divided into smaller amounts, however using small amount of gold in commerce can be impractical.	Fiat currencies are easily divisible.
	Durability	
Bitcoin will remain durable as long as the network remains secure (*lindy effect*). However, bitcoin's history is relatively short, and there are risks associated with the asset.	Gold is nearly indestructible, highly resistant to corrosion, and does not rust.	**Fiat is only as durable as the institutions issuing it. There are multiple cases in history where fiat currencies failed to retain their position as long-term value assets (inflation).**
	Track record (history)	
Bitcoin has a 10-year history, shorter than gold, and fiat.	Gold has a track record dating back 1000 years, and has proven to be an excellent store of value.	Fiat currencies, in their current form, are a product of 20th century.
	Fungibility	
1 BTC = 1 BTC. Bitcoin's blockchain is transparent, bitcoins used for illicit purposes can be traces. Bitcoin transactions can be made anonymous by OTC trading and other methods.	High fungibility.	**History shows instances where fiat nominations have been treated differently due to government policies.**
	Portability	
Bitcoin is an excellent option for cross-border transactions. Bitcoin can transfer value globally in minutes, and there is no limit for the amount of wealth an individual can carry.	Gold can be moved and transacted in small amount, but using gold can become impractical with bigger amounts due to its increasing weight.	**The digital transfer of fiat is relatively easy, but usually takes a few days to settle, and can be subject to capital controls. Moving larger amounts of fiat is physically difficult.**
	Scarcity	
Bitcoin's maximum supply = 21 million btc. Bitcoin's inflation schedule is predefined and governed by a mathematical formula.	Gold remains highly scarce, while there's a possibility for the discovery of new reserves.	**Fiat lacks any true scarcity, and institutions issuing it have the potential to print fiat without limits.**
	Verifiability	
Bitcoin's blockchain ensures authenticity, and cryptographic signatures prove ownership.	Gold can be identified easily, however there's a risk of faking gold with cheaper materials.	While fiat currencies are quite easy to identify, fiat can be counterfeited relatively easily.

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