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Why is Blockchain fundamental analysis difficult?

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Assets sitting on a public blockchain offer data insights into the movement and health of the network. Unlike traditional securities and commodities, the flow of value can be seen in real-time and analysed. There are problems, however, when attempting to decipher the vast amount of information happening every second on a blockchain and what they ultimately mean. Providing context proves to be a challenging exercise in comparison to looking into a company's health when assessing its equity value.

Copper takes a look at the complexities of sound fundamental analysis in cryptocurrency, what the data tells us today, and whether or not outlook can be improved in the future.

The Bitcoin blockchain provides a plethora of data that can be used to assess economic activity. There are, however, multiple considerations and different ways to read and glean information from every available dataset on the blockchain. Ultimately, the movement of Bitcoins is the movement of value. Transactional volume is a key metric looking into how much the network is being utilised that could help in indicating demand. On the most basic level, we can look to see how much Bitcoin is being sent and received, and what their value is at the time in US dollars (see charts 1 & 2).

Not all is what meets the eye, however. Bitcoin transfer of funds works the same way as a cash transaction. If someone's wallet holds $100 but is only spending $10, there is a $90 change that must be returned. The transaction value seen on the blockchain is for the full amount, spend and change, not just the $10. Due to the mechanics of Bitcoin's blockchain, what the real value sent, and what the change value is requires heuristic data algorithms. Blockchain companies like Chainalysis and TokenAnalyst have built tools to separate and break down the real value sent and the change to the best estimate possible.

The separated data paints a vastly different picture to the data on the blockchain. In 2019, for example, the value of Bitcoins moved on the blockchain was just north of $3.9Tn beating 2017 by $215bn. The real value, however, the final sum sent from one address to another, was actually $1.9Tn. The real 2019 figure is $849bn less than 2017, despite last year showing a higher total transaction volume on the blockchain (see chart 3).

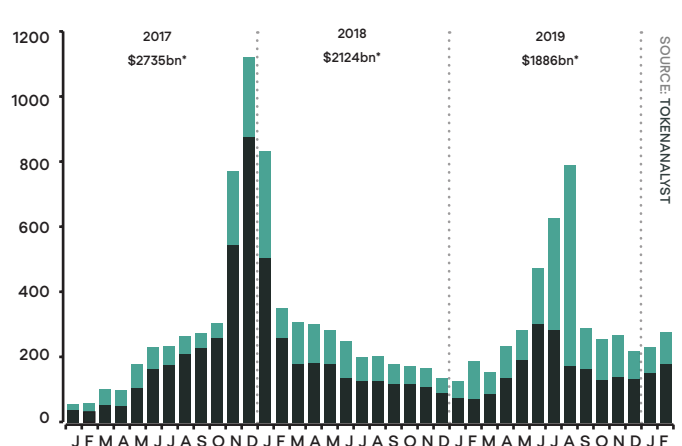1: Total Bitcoin On-Chain Transaction Volume (BTC mn)
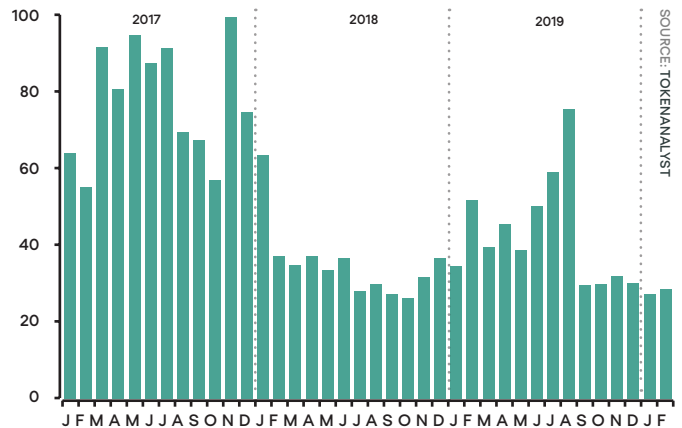
2: Total Bitcoin On-Chain Transaction Volume (USD bn)
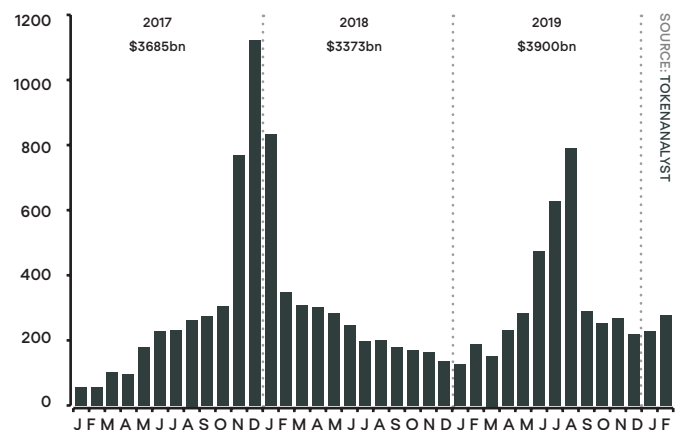
3:B Total Bitcoin On-Chain Transaction Volume (USD bn)   CHANGE REAL*

Peeling the onion

While transaction volumes paint a picture of economic activity, Bitcoin's position as a Store-of-Value requires a better understanding of Bitcoin holdings. Reasonable assumptions can be made when parsing blockchain data. Grouping addresses by size can help indicate, for example, retail appetite to Bitcoin.

4: Bitcoin Addresses Holding 1-10 BTC (Annual Peak)
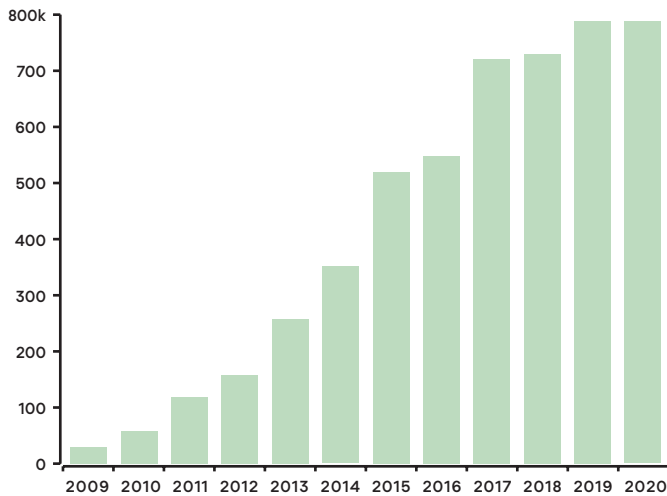
Addresses holding 1-10 Bitcoins continue to hit new peaks year-on-year, with only 2020 to date being just shy of 2019's high (see chart 4). But such information that is commonly used by multiple blockchain data source providers requires further assessment.

In March 2020, addresses in the range of 1-10 BTC held 1.69mn coins, up from 1.52mn a year before. On face value, the additional 171k Bitcoins added would be considered a positive note. Further analysis shows that these additions only represent 24% of freshly minted Bitcoins during this period.

Still, expanding the bracket to account for balances from 0 to 10 BTC changes the picture further. The increase of Bitcoin held in these addresses would mean retail investors have absorbed 43% of the new supply in the last 12 months.

The difficulties in blockchain analysis require the restructuring of assumptions as the market is constantly in motion. This makes fundamental analysis a moving target with multiple layers of considerations rather than having absolute economic parameters. While complex, blockchain economic models for fundamental analysis can still be built with realistic criteria.

Network value

One key measure to assess Bitcoin's network value is looking at mining activity. Akin to company assets, Bitcoin miners must pony up hefty amounts of capital in order to add hash rate power. This would give them a better chance at receiving freshly minted Bitcoin as a reward for processing transactions on the network by using their computing and energy resources.

5: Annual Peak Hash Rate (EH/s) vs. Annual Growth Rate (%)
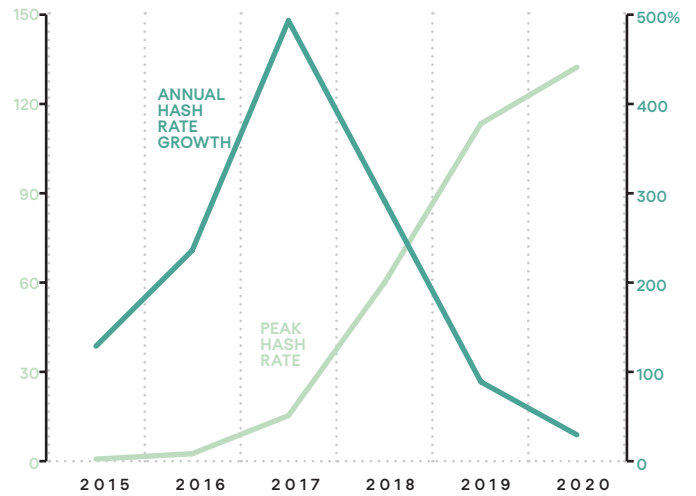
Growth in the network's hash rate has hit new peaks every year (see chart). This indicates a massive deployment of capital resources into Bitcoin's network.

The network, however, does not provide information on the power distribution of each mining unit. This means that, again, only assumptions can be made with the best available information. Based on today's most efficient mining equipment, Bitmain's Antminer S17, the absolute upper-bound investment to have hit this year's hash rate peak would have meant $3.2bn in assets. Older equipment has become unprofitable even at favorable electricity prices.

But mining equipment power growth has not been able to keep up with the mass deployment of competing for hash power. 2019 saw the lowest growth rate in Bitcoin's network despite being an impressive 90% increase versus 2018.

With the data available, models for fundamental analysis can only be estimates. Following trends is of key importance in order to assess network value and, in tandem, the asset worth. But despite scant details, fair assessments can still be made.

Future optics

Not all blockchains are as complicated as Bitcoin for fundamental analysis. Ethereum, gearing to be a financial platform, provides a more straightforward framework that can help assess economic activity. Its most popular application to date is stablecoins built atop the network. Over $6bn in US dollar-pegged tokens sat on Ethereum in March. And Decentralized Finance (DeFi) products continue to be spun out with February hitting a peak north of $1.25bn on Ethereum's financial applications. But tumbled markets severed DeFi funds in half during March.

Forward guidance

Although parsing through the vast amount of data can make for a tedious exercise (and the results are not absolute), there are indicators that can highlight the overall state of a network's economic health. However, there are many unknowns in every blockchain network that only allows for investors to make the best estimate possible based on their own economic models, trend analysis, and outlook. Economics theory may not have changed, but blockchain data has benefits and the potential to shift asset valuation into a public paradigm.

Bitcoin: What's the Real Circulating Supply?

SEE BOX STORY NOTES BELOW

Maximum Supply	Current Supply	Less Bitcoins on Exchanges	Less Lost Bitcoins	% Circulating
21mn	18mn	14mn	10mn	55%

2020 Bitcoin Rout: What Blockchain analytics can tell us?
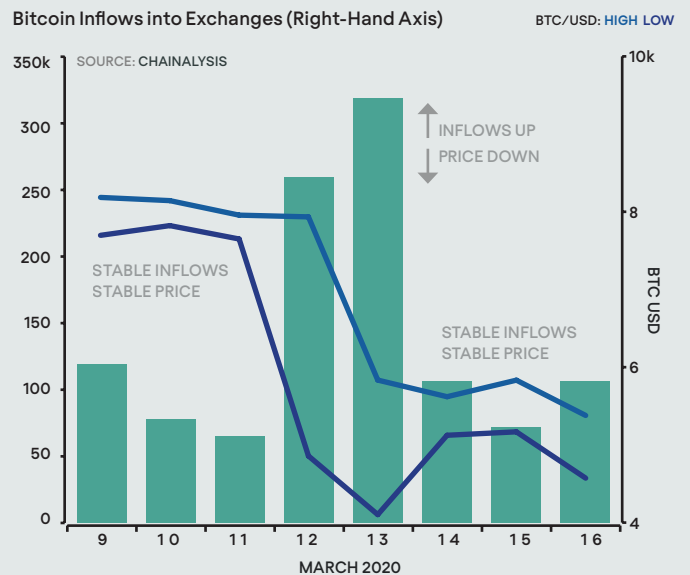
Global markets have tumbled since February 19, 2020, taking down every asset class. Bitcoin's status as a Store-of-Value was put to the ropes for the first time since its creation. By every visible metric, the cryptocurrency failed to live up to the status it has vied for against gold - which also went down.

However, data provided by Chainalysis, a blockchain analytics firm, tells an important story on the flows of Bitcoin into exchanges during March when Bitcoin's price tumbled toward the low $4k.
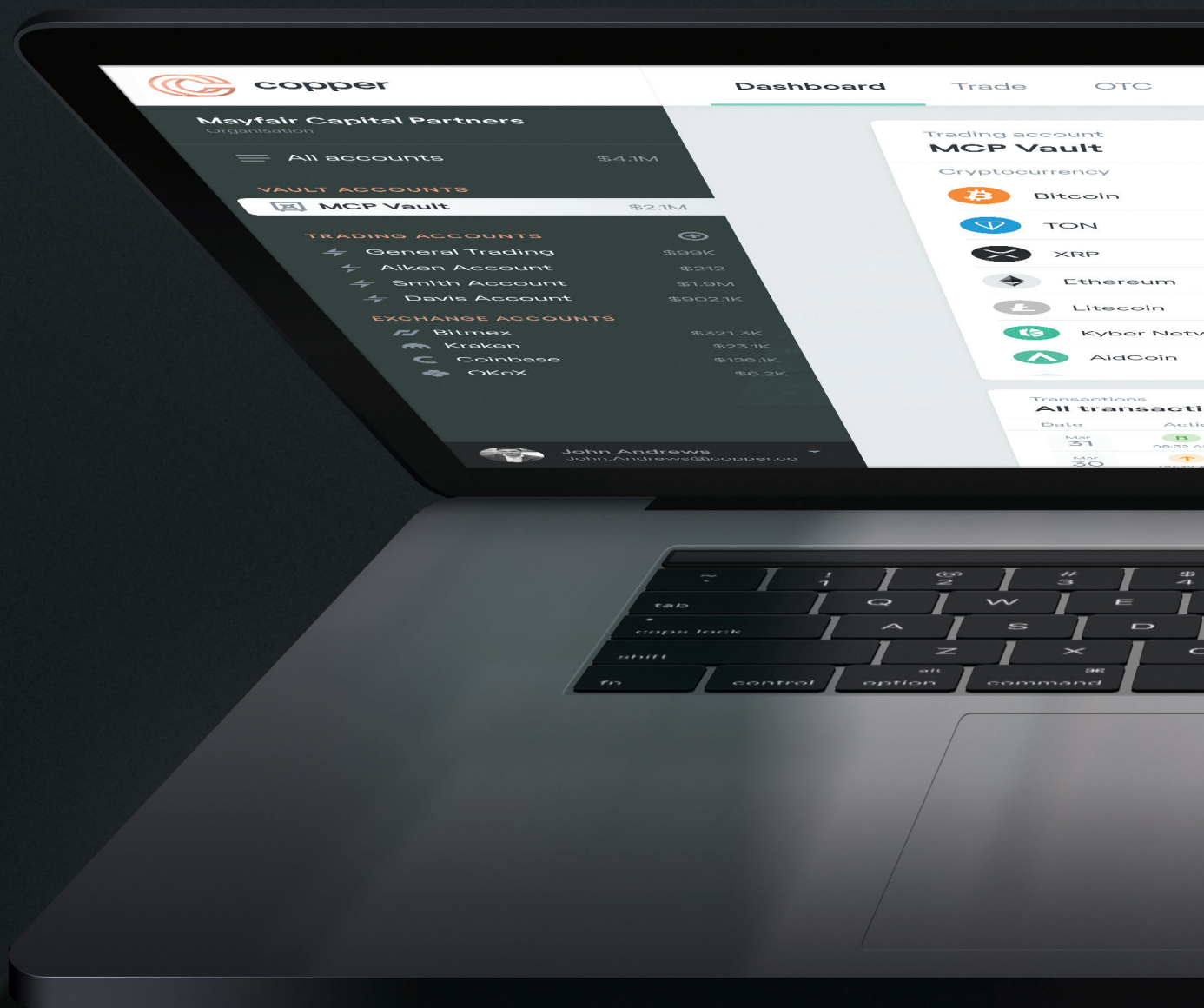
Real-time metrics of Bitcoin movement could indicate market sell-off momentum, a clear advantage in transparency over traditional stock markets. 2020 daily average Bitcoin inflows into exchanges stood at 52K Bitcoins. During market turmoil, exchanges saw inflows north of 300k in a single day (see chart).

Fundamentally speaking, there is another way to look at the data. Markets may have sold off in grand style, but nearly 10mn Bitcoins, the majority of available supply, did not move (see note).

Did the market oversell? It depends on how you look at the data.

Bitcoin Inflows into Exchanges (Right-Hand Axis)   BTC/USD: **HIGH LOW**

SOURCE: CHAINALYSIS

INFLOWS UP
PRICE DOWN

STABLE INFLOWS
STABLE PRICE

STABLE INFLOWS
STABLE PRICE

MARCH 2020

Note: Exchanges hold around 4mn of the 14.52mn bitcoin (Chainalysis lower bound estimate is 2mn and the upper is 5.5 million). 4mn Bitcoins are assumed to be lost/inaccessible.