HATASE
HOLDINGS

CRYPTO:

A NEW ASSET CLASS?

Introduction

This report provides an overview of the global crypto hedge fund landscape and offer insights into both quantitative elements (such as liquidity terms, trading of cryptocurrencies, and performance) and qualitative aspects, such as best practice with respect to custody and governance.

The report focuses on actively managed crypto hedge funds which invest/trade in liquid, public cryptocurrencies and other instruments.

This report excludes:

- Crypto index funds (including passive/tracker funds)
- Crypto venture capital funds (which make equity type investments).

The report excludes exchange-traded funds 'ETFs' and access products.

Given the focus of the report, there were certain participants in the survey whose data we needed to exclude from the final results, as our research showed they were not actively managed crypto hedge funds as described above.

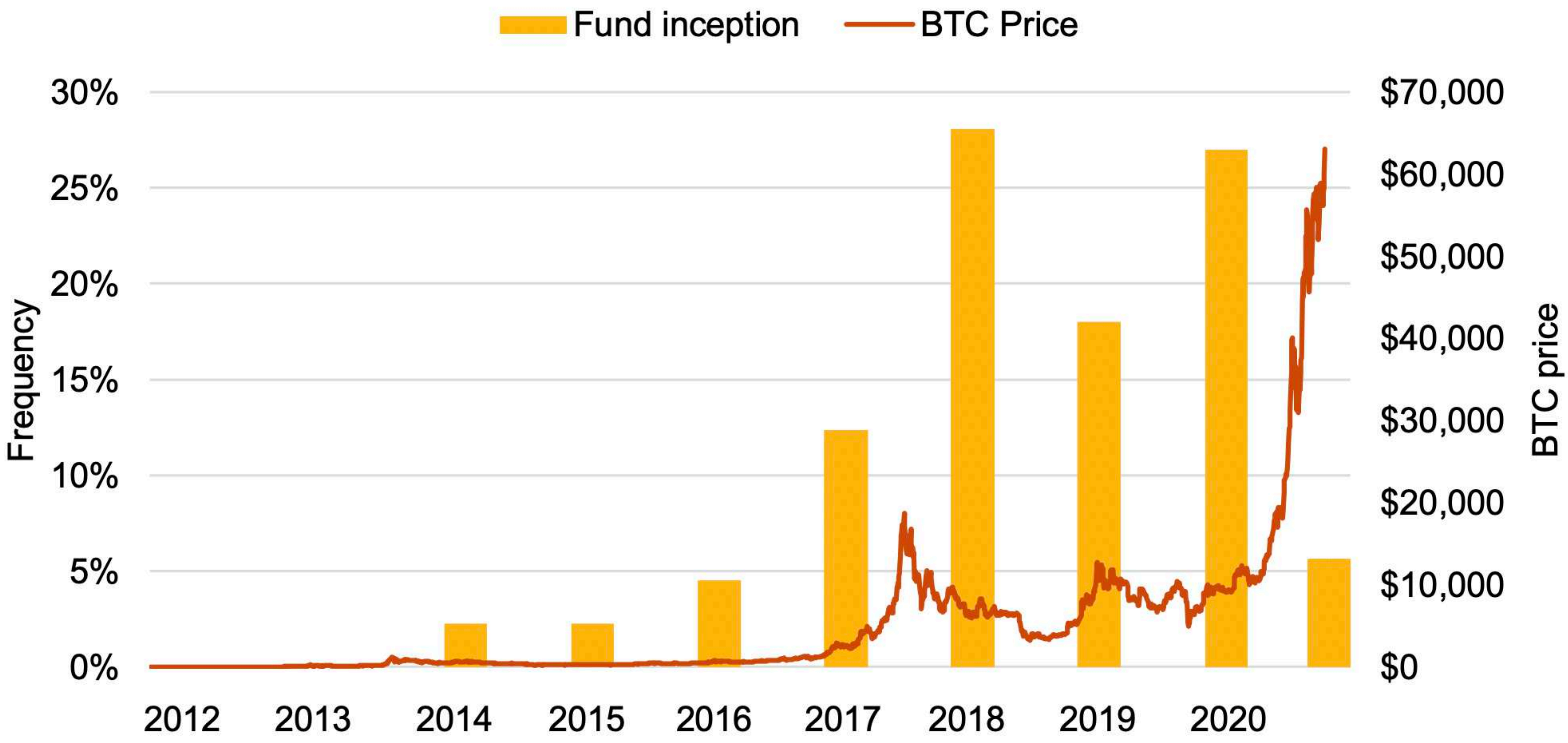
While most crypto hedge funds provided responses to all he survey questions some were not in a position to provide information on certain topics/questions.

There is an inherent element of survivorship bias in the fund universe surveyed, as the report only includes crypto hedge funds that were in operation in Q1 2021. Funds that were forced to shut down prior to this date due to the difficult market conditions of 2019 and early 2020 have been excluded.

THE DATA PROVIDED IN THIS REPORT, INCLUDING PERFORMANCE DATA, HAS ALSO NOT BEEN VERIFIED BY AN INDEPENDENT FUND ADMINISTRATOR OR OTHER THIRD PARTY, BUT WAS PROVIDED BY THE CRYPTO HEDGE FUND MANAGERS DIRECTLY.

Strategy insights

Our research this year shows that there are between 150 and 200 active crypto hedge funds currently. Our survey results suggest that four in every five of these were launched between 2017 and 2020 (81%).



As shown by the graph above, the launch of actively managed crypto funds is highly correlated with the price of Bitcoin (BTC).

The price spike in 2018 appears to have been a catalyst for further crypto funds to launch, while the decrease in 2018 led to fewer funds being launched in 2019. 18% of the survey respondents were launched in 2020, when prices were rising again.

Most common strategies of crypt hedge funds

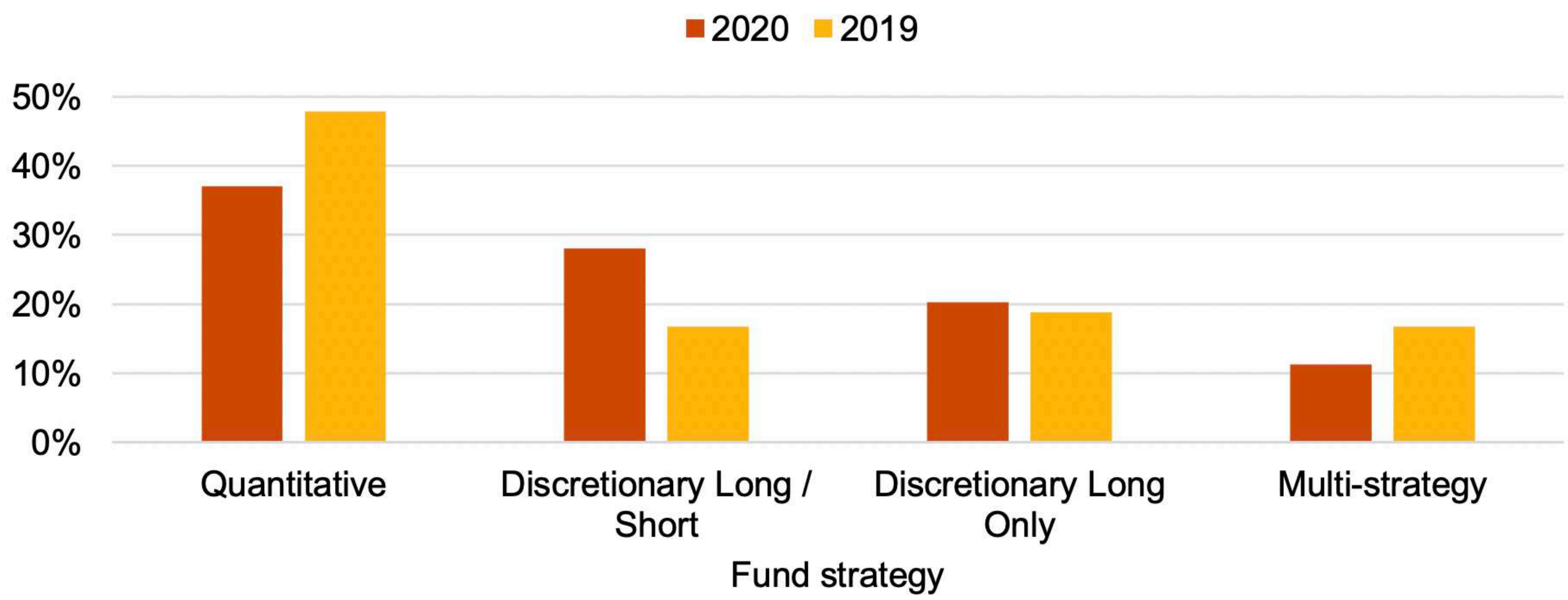
Crypt hedge funds are classified to four broad fund strategies:

• **Discretionary Long Only**: Funds which are long only and whose investors have a longer investment horizon. These funds tend to invest in early stage token/coin projects, and they also buy and hold more liquid cryptocurrencies. These funds tend to have the longest lock-up periods for investors.

• **Discretionary Long / Short**: Funds which cover a broad range of strategies including: long/short, relative value, event driven, technical analysis and some strategies which are crypto specific, such as mining. Discretionary funds often have hybrid strategies which can include investing in early stage projects. They tend to have a similar lock-up period to the Discretionary long only group.

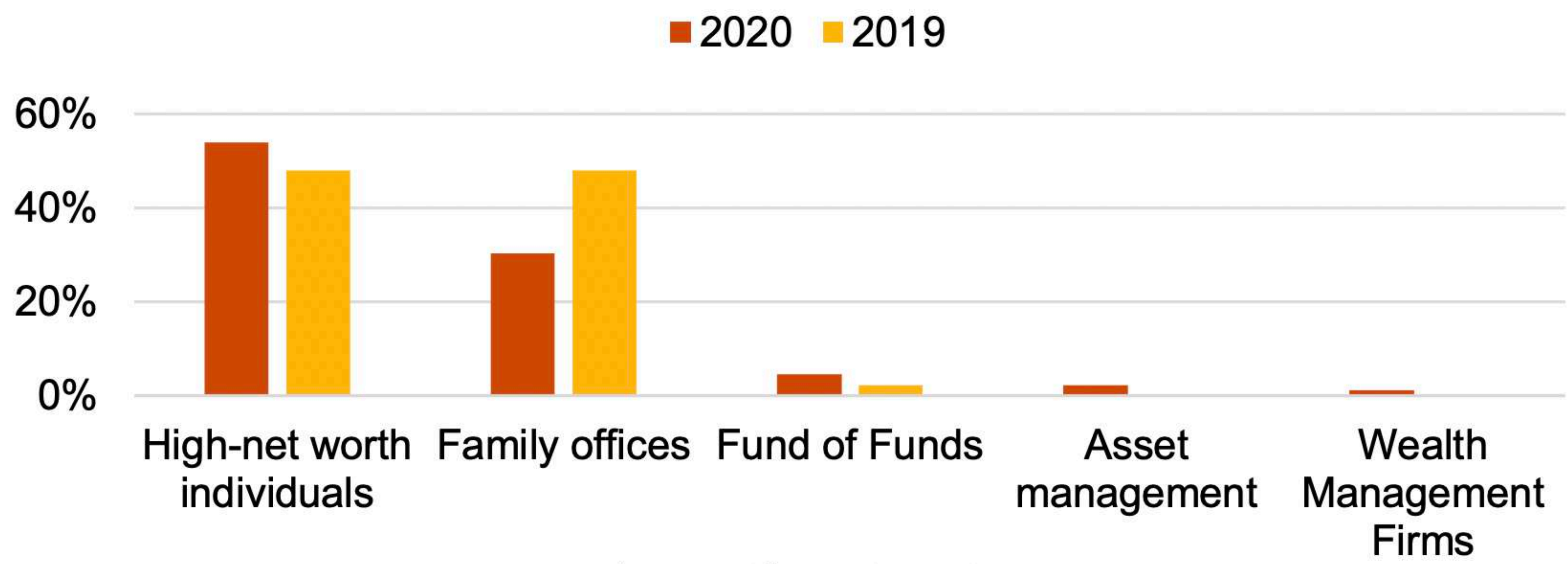
• **Quantitative**: Funds taking a quantitative approach to the market in either a directional or a market neutral manner. Indicative strategies include: marketmaking, arbitrage and low latency trading. Liquidity is key for these strategies and restricts these funds to only trading more liquid cryptocurrencies. As a result, these funds typically have the shortest lock-up periods for investors.

• **Multi-strategy**: Funds adopting a combination of the above strategies. For instance, within the limitations set in the prospectus of a particular fund, traders may manage discretionary long / short and quantitative sub-accounts.



Market Analysis

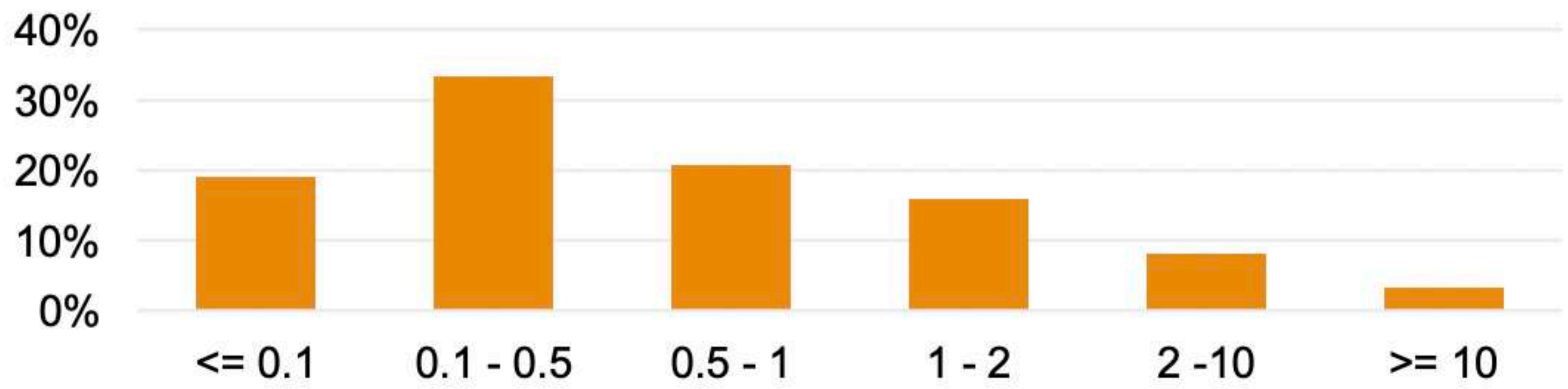
Looking at the market for crypto hedge funds, we identified High-net worth individuals ‘HNWIs as the most common investor type in crypto hedge funds, with more than half of funds mentioning them as the most common investor type. Family offices come second (30%) and funds of funds, a distant third (4%). Although institutions have been aggressively ploughing into cryptocurrency markets, they are not yet prevalent investors in crypto hedge funds, with only one fund in our sample mentioning them as their main investor type and the top spots still dominated by HNWIs and family offices. Going forward, it is expected that this mix in the investor base while gradually change with the increased levels of interest from institutional investors.



Largest investor category

The median number of investors in funds is 23 and the average is 70.1, while the median ticket size is US$0.4 million and the average is US$1.1 million. The graph below shows the distribution of the average ticket size and suggests that half of funds have tickets below US$0.5 million.

	Average	Median
Number of investors	70.1	23.0
Average ticket size (US$m)	1.1	0.4

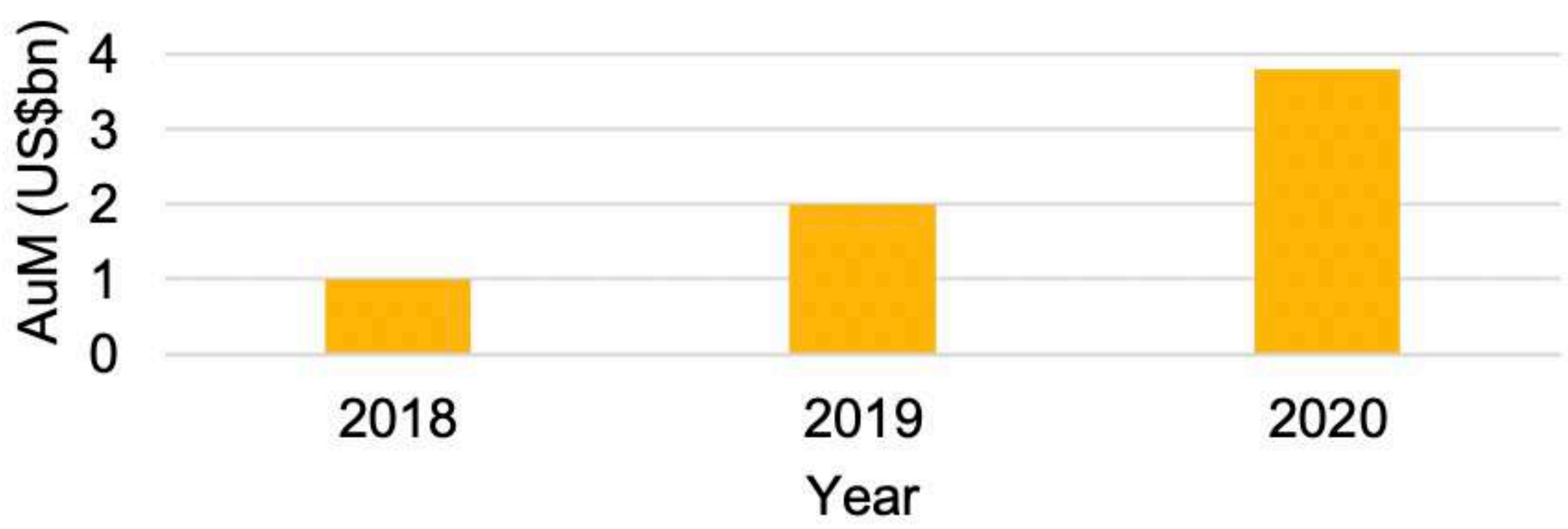


Average ticket size distribution (US$m)

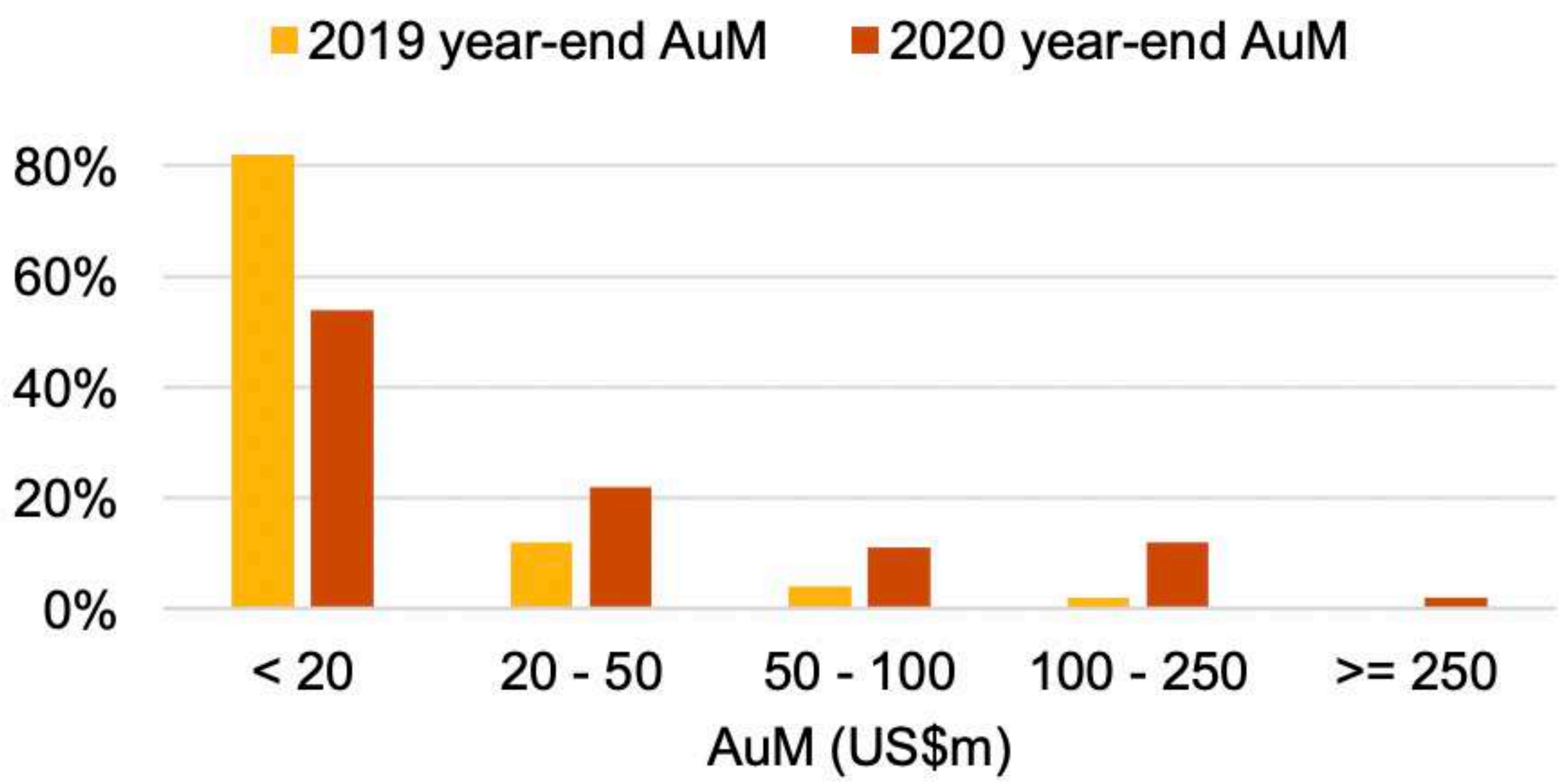
Asset under management

We estimate that the total AuM of crypto hedge funds globally increased to over US$3.8 billion in 2020, just over US$2 billion in the previous year. This data is based on the AuM responses given to us by the surveyed fund managers with certain adjustments due to some funds having not disclosed their total AuM.

	Average	Median
2020 year-end AuM (US$m)	42.8	15.0
2019 year-end AuM (US$m)	12.8	3.8
AuM level at launch (US$m)	11.3	1.0



The graph below shows the distribution of AuM held by individual crypto hedge funds. Although there are many smaller funds, assets are still highly concentrated among the largest hedge funds. Our survey showed that the top-10 largest crypto hedge funds control 63% of total AuM.



Fund performance

	Average	Median
Quantitative Long / Short	+87%	+72%
Discretionary Long / Short	+202%	+129%
Discretionary Long Only	+231%	+294%
Multi-strategy	+108%	+114%

The table above shows a breakdown of the performance by investment strategy. On a median basis, quantitative long / short funds have considerably underperformed other strategies (72%), while discretionary long only out on top (294%). This is not surprising considering the market rally that took place in the fourth quarter of 2020.

	2020	2019
Quantitative Long / Short	+72%	+17%
Discretionary Long / Short	+129%	+23%
Discretionary Long Only	+294%	+10%
Multi-strategy	+114%	+12%

Overall, the crypto hedge funds in our sample had a median performance of 184% last year, vastly higher than 2019 (17%) and, while different strategies have yielded different levels of performance, neither was able to outperform BTC itself, which went up 305% during 2020. A similar picture can be drawn from 2019 data, when our sample had a median performance of 17%, against the BTC rally of 95% in that year.

Fees

Median fees were the same as 2019: a 2% management fee with a 20% performance fee. Average management fees remained the same (2.3%) but the average performance fee increased (from 21.1% to 22.5%). The slight increase in performance fees can be simply attributable to the fact that fund managers were able to command higher performance fees in a bull market.

	Average	Median
Management fees (%)	2.3	2.0
Performance fees (%)	22.5	20.0

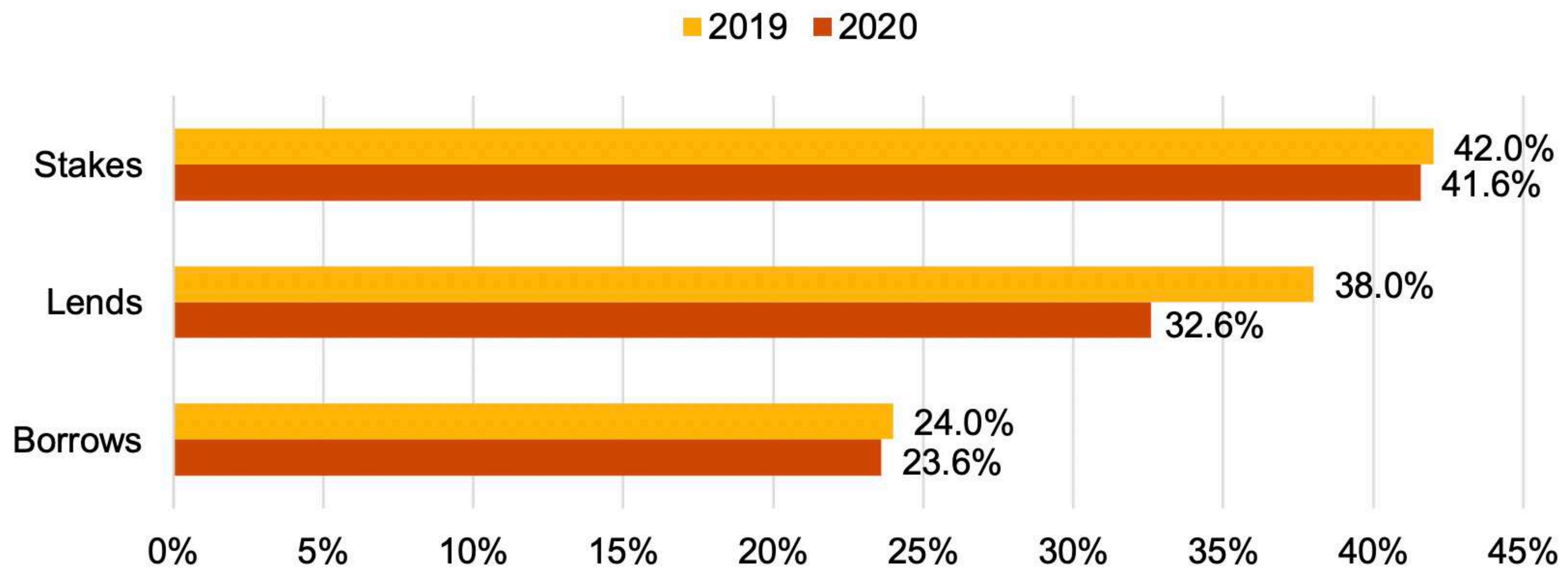
Going forward, we expect funds to incur higher costs, as regulations are likely to become more stringent and investors demand higher institutional set-ups. However, the growing number of funds, as we saw in 2020, is likely to increase competitive pressures between managers, which would eventually seek to lower their fees in order to attract new clients, especially institutional investors. As a result, investors are likely to benefit from increased investment options, while funds are likely to have their profits squeezed by lower margins and increased competition.

Despite the slight increase in management fees, crypto funds will still find it challenging to break even, unless they are able to attract enough investors, keeping in mind that the median crypto hedge fund in 2020 had US$15 million in AuM.

To illustrate this point, if the median crypto fund manages US$15 million and charges a 2% management fee, then they have US$300,000 in annual revenue. This is unlikely to be sufficient to sustain a business operation, especially considering that the median fund has a payroll with six employees. As a result, some funds are exploring ways to increase their income in order to cover costs. For example, we have seen quantitative long / short funds diversify their approach and start market making, and early-stage focused funds take on advisory roles for new projects, while other funds seek to raise additional capital by selling stakes in their General Partner (GP). Some funds remain focused on their core strategy and hope to cover costs via the performance fee. In 2020, this would have been extremely successful, as the median fund returned 128% and would have been able to generate an additional US$3.8m in income, assuming the above mentioned median AuM. While this approach looks positive at first, the downside is that managers may be inclined to take additional risks, especially towards year-end if they are still under their high-water mark.

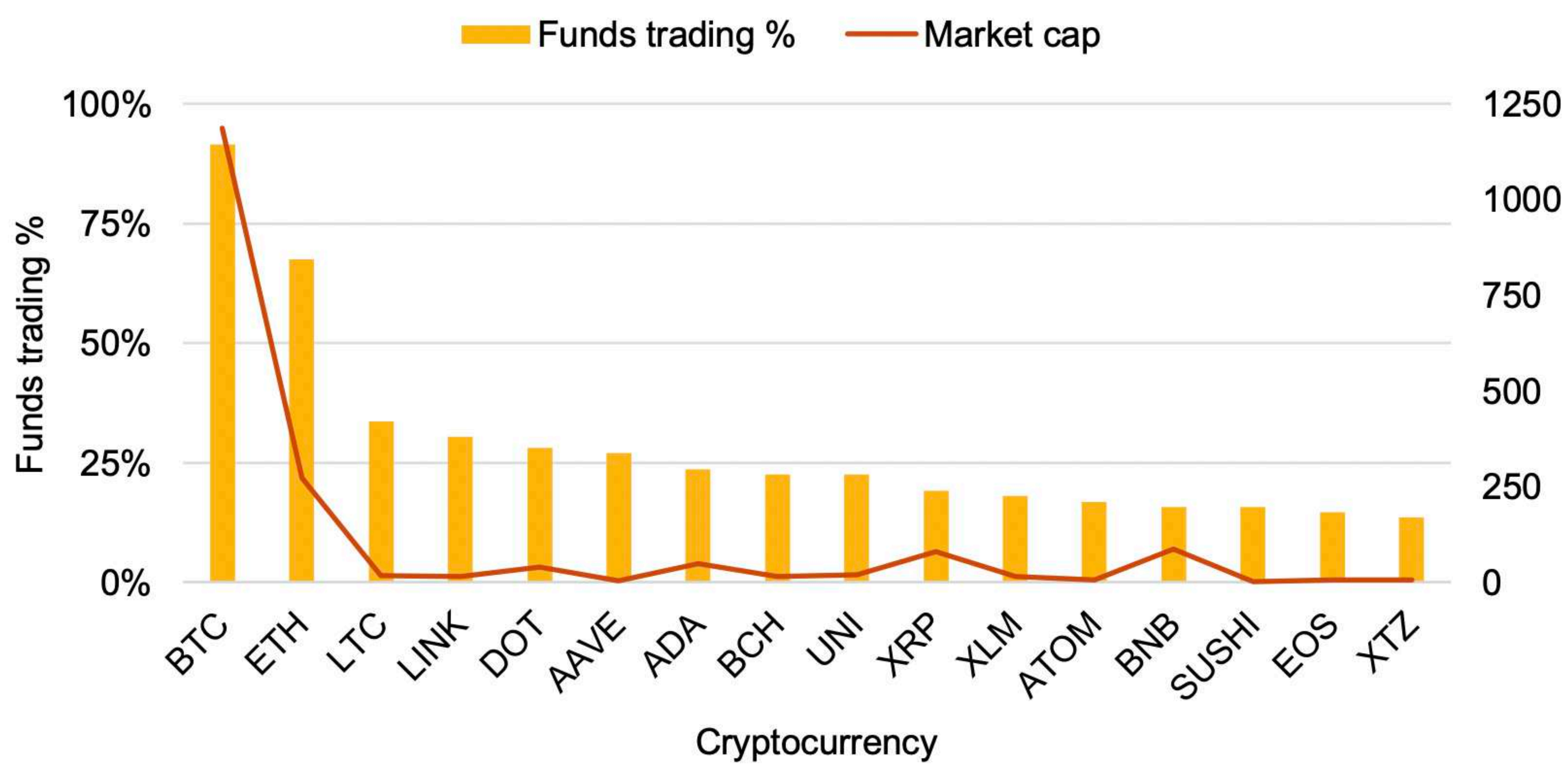
Cryptocurrencies

Looking at how crypto hedge funds are using Bitcoin and other cryptocurrencies other than for investment purposes, we asked whether they stake, lend or borrow digital assets. The activities listed below were highlighted by the funds. The number of funds staking, borrowing and lending has remained stable across the board, despite a slight drop in the percentage of funds involved in lending in 2019.



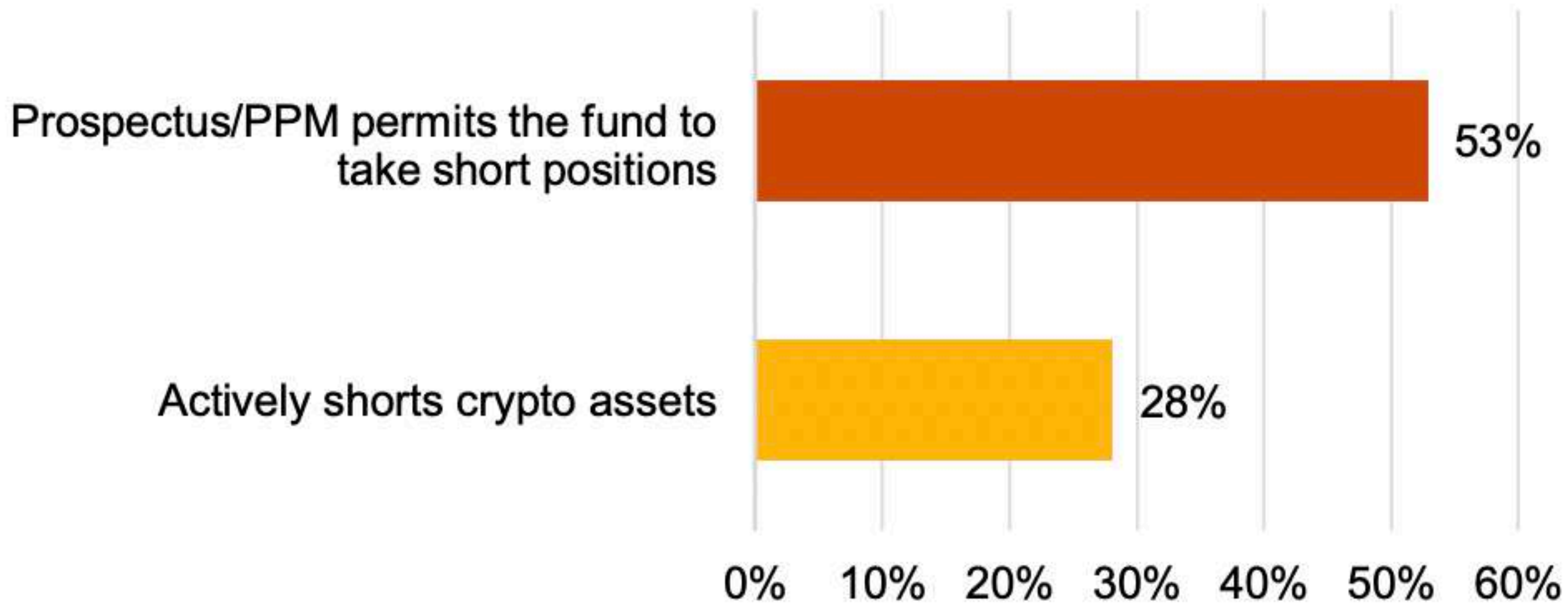
We also asked funds to name their top traded altcoins by daily volume (stablecoins were excluded). We found that the top five were: Ethereum (ETH, 67%), Litecoin (LTC, 34%), Chainlink (LINK, 30%), Polkadot (DOT, 28%) and Aave (AAVE, 27%).

Among the top 15 traded altcoins, some of them are considerably more popular than their market capitalisation would suggest. Litecoin and Chainlink are the second and third most traded altcoins, but their market capitalisations are far lower than Polkadot and Cardano, which fare lower in the trading ranks. Aave, the fifth most traded altcoin by hedge funds, has a market capitalisation of US$5 billion, compared to Cardano's US$48 billion, which ranks one position below it.



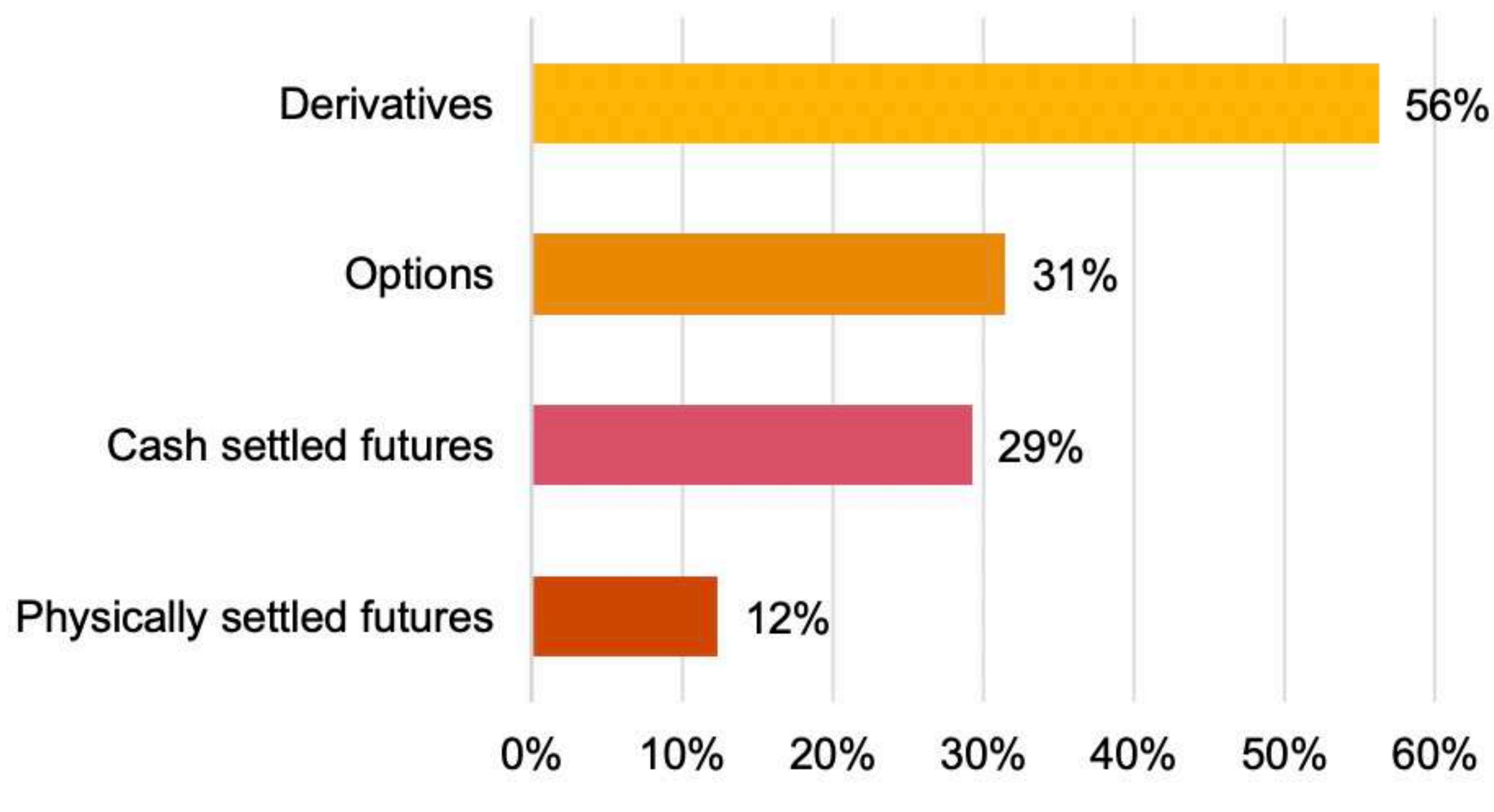
Derivatives and leverage

Derivatives can either be used as hedging or alpha-enhancing instruments. 2020 was a very busy year in this space. Bitcoin futures open interest saw a substantial rise, indicating increasing institutional interest in cryptocurrencies. As a result, existing derivatives exchanges sought to enrich their offerings, while a number of new players entered this space, leading to a decrease in the concentration of trading volume distribution between exchanges. Towards the end of the year, Bitcoin futures notional trading volumes exploded and trading currently includes billions of US dollars per day, up from hundreds of millions a year ago.



The increased number of players and liquidity is rapidly transforming the cryptocurrency derivatives market, enabling widespread institutional adoption, which will, in turn, allow exchanges to offer more sophisticated products, further allowing crypto hedge funds to take advantage of mispricing and arbitrage opportunities.

Our 2020 data shows that more than half of the surveyed funds use derivatives, with options being the most commonly used tool (31%). However, in contrast with our previous survey, funds are taking less short positions, with only 28% stating they actively short cryptocurrencies. This is consistent with the extremely bullish views in this market, especially from Q4 2020 and into Q1 2021, when the survey was conducted.

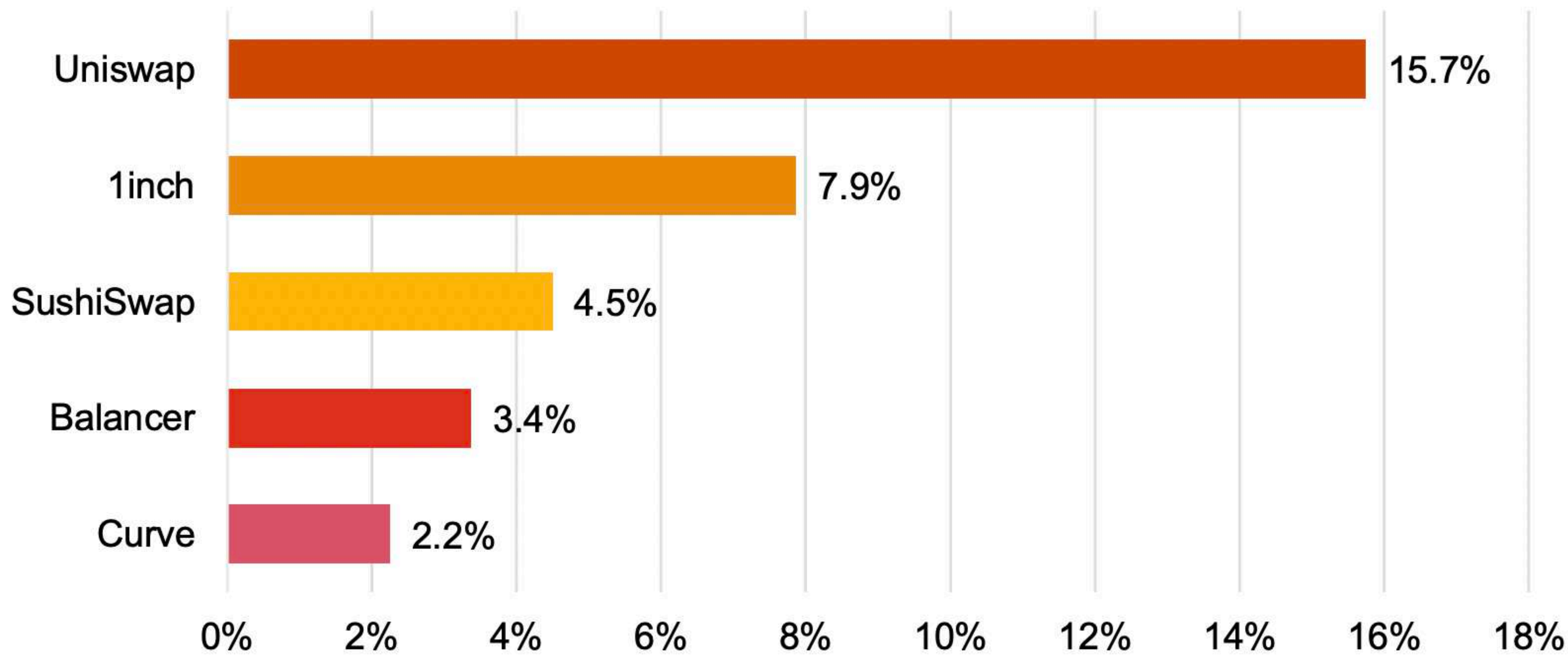


Decentralised exchanges

Decentralised finance (DeFi) had extraordinary growth in 2020 and was the year's buzzword within the cryptocurrency community. DeFi protocols aim to render peer-to-peer financial services, which allow cryptocurrency trading, loans, interest accounts without the use of traditional banks and traditional financial intermediaries.

Last summer, DeFi started booming and, between April 2020 and April 2021, the trading volume on these platforms grew more than 90-fold, with Uniswap making up for half of the DeFi market volume in April 2021.

Our data shows that 31% of crypto hedge funds use decentralised exchanges, with Uniswap being the most widely used (16%), followed by 1inch (8%) and SushiSwap (4%).



List of crypt hedge fund respondents

168 Trading Limited
Algo Capital PCC Limited
Alpha Sigma Capital
Alphabeth Capital Group
Altana Wealth
Apollo Capital
ARK36
Astronaut Capital
BKCoin
Block Asset Management
Blockchain Assets Pty Ltd
Blockforce Capital
BlockTower Capital
BLP Asset Management
Blue Block Group
Cambrian Asset Management, Inc.
CMCC Globa
Coincident Capita
CryptAM Capital Limited
Crypto Consulting AG
Crypto Fund AG
DARMA Capital
DCAP Capital Limited
Dunamis
Etherbridge
ExoAlpha
Exosphere Capital Ltd
Fasanara Capital
Ferst Capital Partners
Galois Capital Management LLC
German Deep Tech Quantum GmbH
Hartmann Capital
Hazoor Partners
Hilbert Capital
Hunting Hill Global Capital, LLC
Huobi Digital Asset Fund Limited P
Hyperion Decimus, LLC
Immutable Insight
JKL Capital
L1 Digital
KR1 plc
Lavaliere Capital Management
LedgerPrime LLC
Liquibit Capital
M31 Capital
M33 Capital
Maicapital Ltd
Strix Leviathan
Maximalist Capital
S2F Capital
Mutual Coin Fund
NAOS Blockchain
Napoleon AM
Nickel Digital Asset Management
ODIN88 Asset Management
Off the Chain Capital, LLC
Panxora Management Corp
Pirata Capital Management
Plutus21 Capital
PostModern Portfolio Advisors
ProChain Capital
PROTEIN CAPITAL FUND SLP
Proxima Investments
Pythagoras Management Company
Quantia Capital
Red Building Capital
Rivemont Investments
SeQuant Capital
Sigil Limited
Silver 8 Capital, LLC
Smart Arbitrage Technologies
Solidum Capital
St. Gotthard Fund Management AG
Swiss-Asia Financial Services Pte Ltd
Synchronicity
Typhon Capital Management
Uphold Asset Management Ltd
Vellum Capital
Walden Bridge Capital

Bitcoin as a macro asset

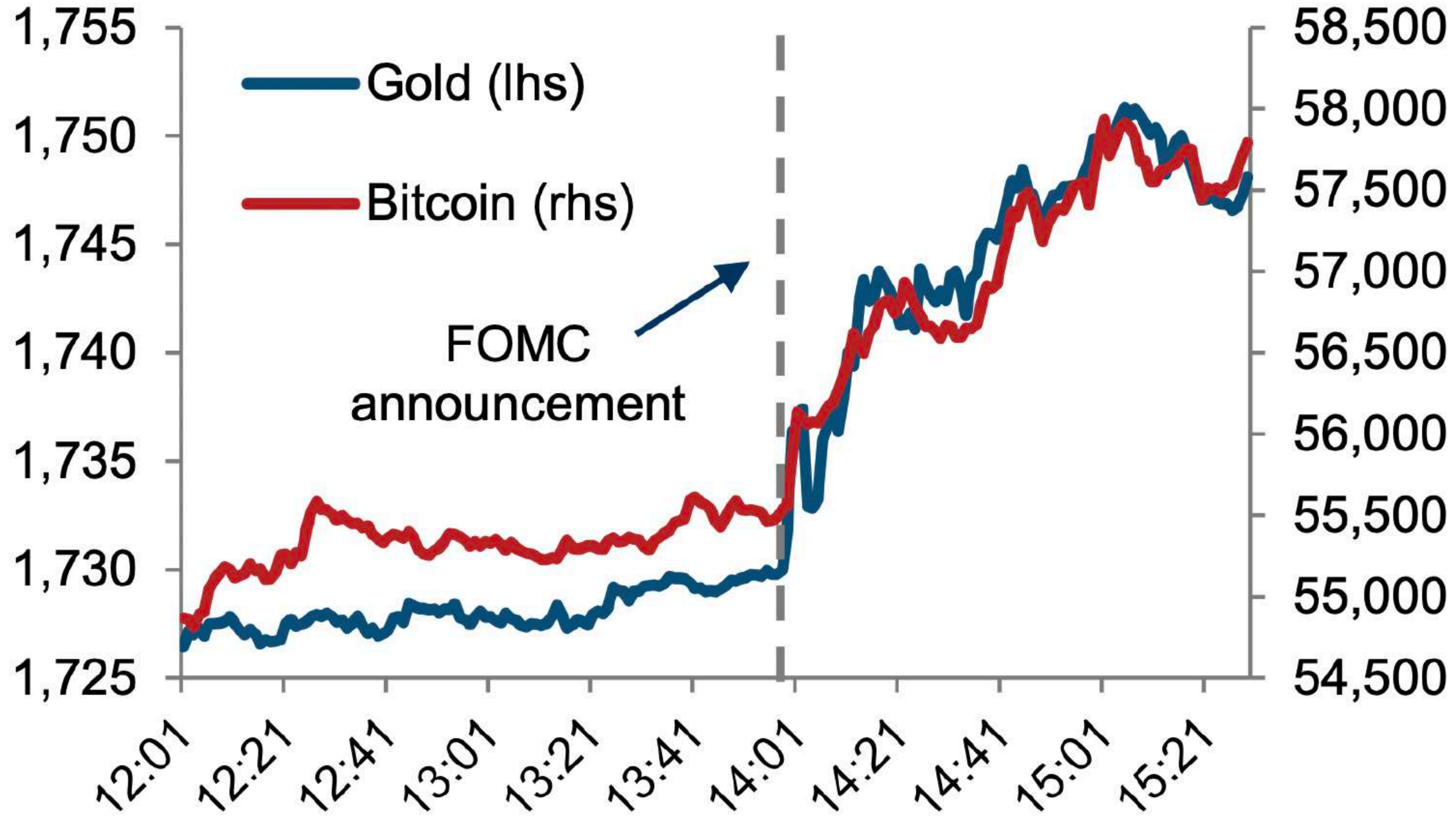
Although bitcoin is now seeing wider institutional adoption, many sophisticated investors still struggle to understand why a digital asset should have any value—much less a market capitalization of more than $500bn. And because of the parabolic price increases and high retail participation, many treat the cryptocurrency phenomenon as a classic speculative mania or “bubble”. Regardless of whether bitcoin will prove to be a good investment over time, this perspective is too narrow. Bitcoin is a medium which is beginning to serve the functions of money—primarily as a “store of value”. Virtually anything can serve this purpose as long as it gains widespread social adoption, and bitcoin has made meaningful progress down that path.

The critical ingredient to bitcoin’s success—widespread social adoption—has now crossed many notable thresholds: Tesla, the sixth largest company in the S&P 500, is carrying bitcoin on its balance sheet; storied macro hedge fund Brevan Howard has begun investing in cryptocurrencies; and Coinbase is now listed on the Nasdaq. Other blockchain networks, especially Ethereum, are developing decentralized banking platforms, Facebook is expected to introduce its stablecoin Diem later this year, and many central banks are exploring distributed ledger technology for their own digital currencies. Whether bitcoin will succeed as a store of value in the long run remains an open question—and its consumption of real resources may be a headwind over time—but for now social adoption of cryptocurrencies appears to be moving forward.

Bitcoin behaved like gold

Bitcoin has also matured enough that its price behavior resembles that of other macro assets. For example, at its March 17th meeting, the Federal Reserve said that most policymakers did not expect to raise interest rates until after 2023—later than financial markets had expected. Macro assets reacted in the conventional way to a "dovish policy shock": shorter-maturity Treasury yields declined, the yield curve steepened, the Dollar fell, and stock prices increased. Bitcoin rose, just like gold, but with about four times the volatility.

Prices on March 17, 2021, $



Source: Bloomberg, Goldman Sachs GIR.

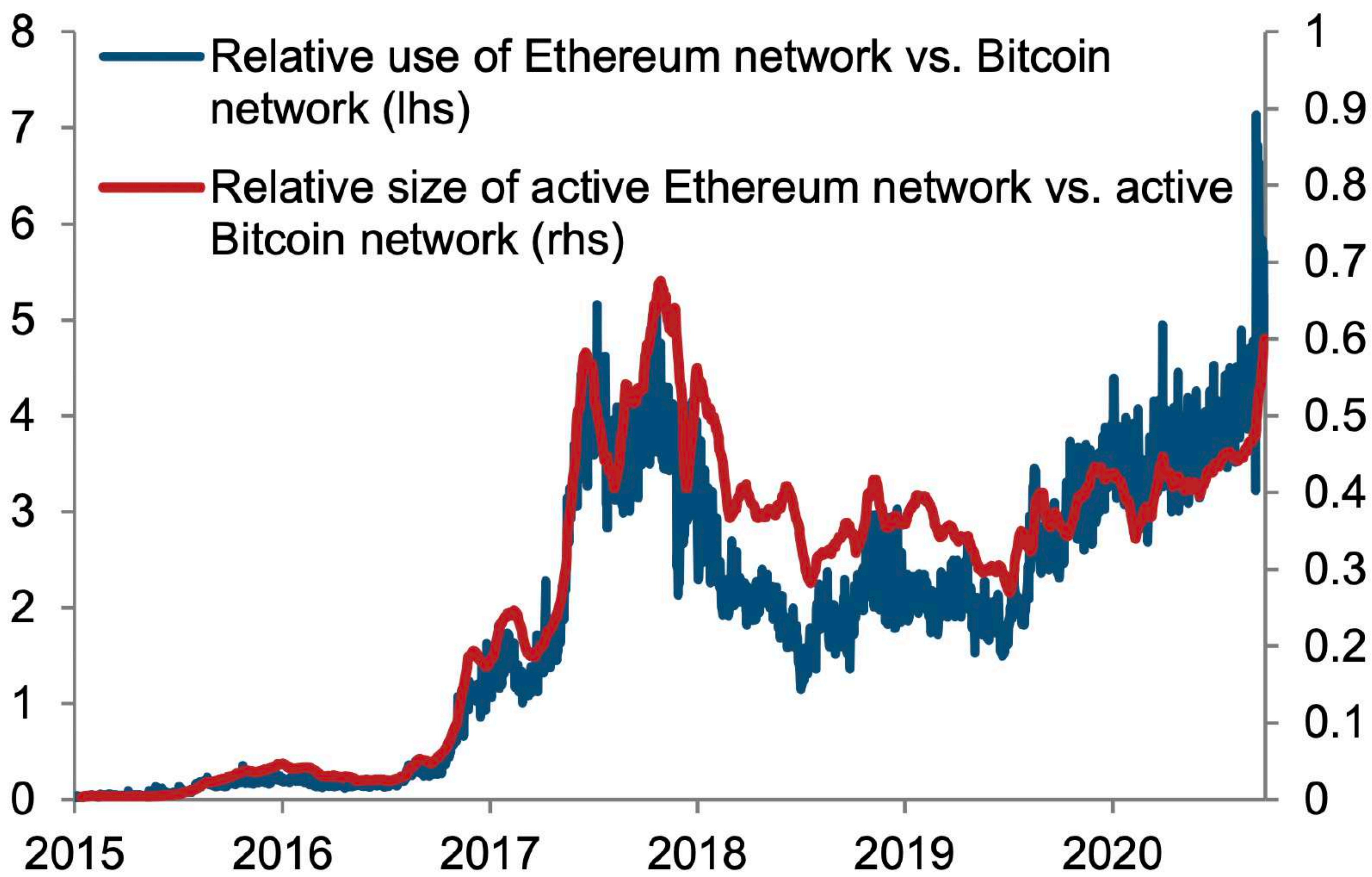
Investors should treat bitcoin in this way. Gold is a commodity that serves a money function and behaves like a currency. Bitcoin is exactly the same, even though it is a digital commodity created through cryptography, rather than a physical commodity found in the Earth's crust. From a markets standpoint, the main difference between the two assets is that bitcoin is going through a one-time social adoption phase— which may succeed or fail.

When social adoption is rising, bitcoin should offer superior returns compared to gold. When social adoption is declining (e.g. due to adverse regulatory changes), bitcoin will likely offer inferior returns compared to gold. Because of the speculative nature of the asset class and high uncertainty around valuation, investors should be prepared for prices to overshoot fundamentals in both directions. While bitcoin has generally appreciated in value over time, there have already been several waves of speculative excess followed by large drawdowns.

The network creates the crypto value

Unlike other commodities, coins derive their entire value from the network. A bitcoin has no value outside of its network as it is native to the Bitcoin blockchain. The value of oil is also largely derived from the transportation network that it fuels, but at least oil can be burned to create heat outside of this network. At the other extreme, gold doesn't require a network at all. Derived demand leaves the holder of the commodity exposed to the risk of the network becoming obsolete—a lesson that holders of oil reserves are now learning with decarbonization accelerating the decline of the transportation network, and, in turn damaging oil demand. Likewise, bitcoin owners face accelerated network decay risk from a competing network, backed by a new cryptocurrency.

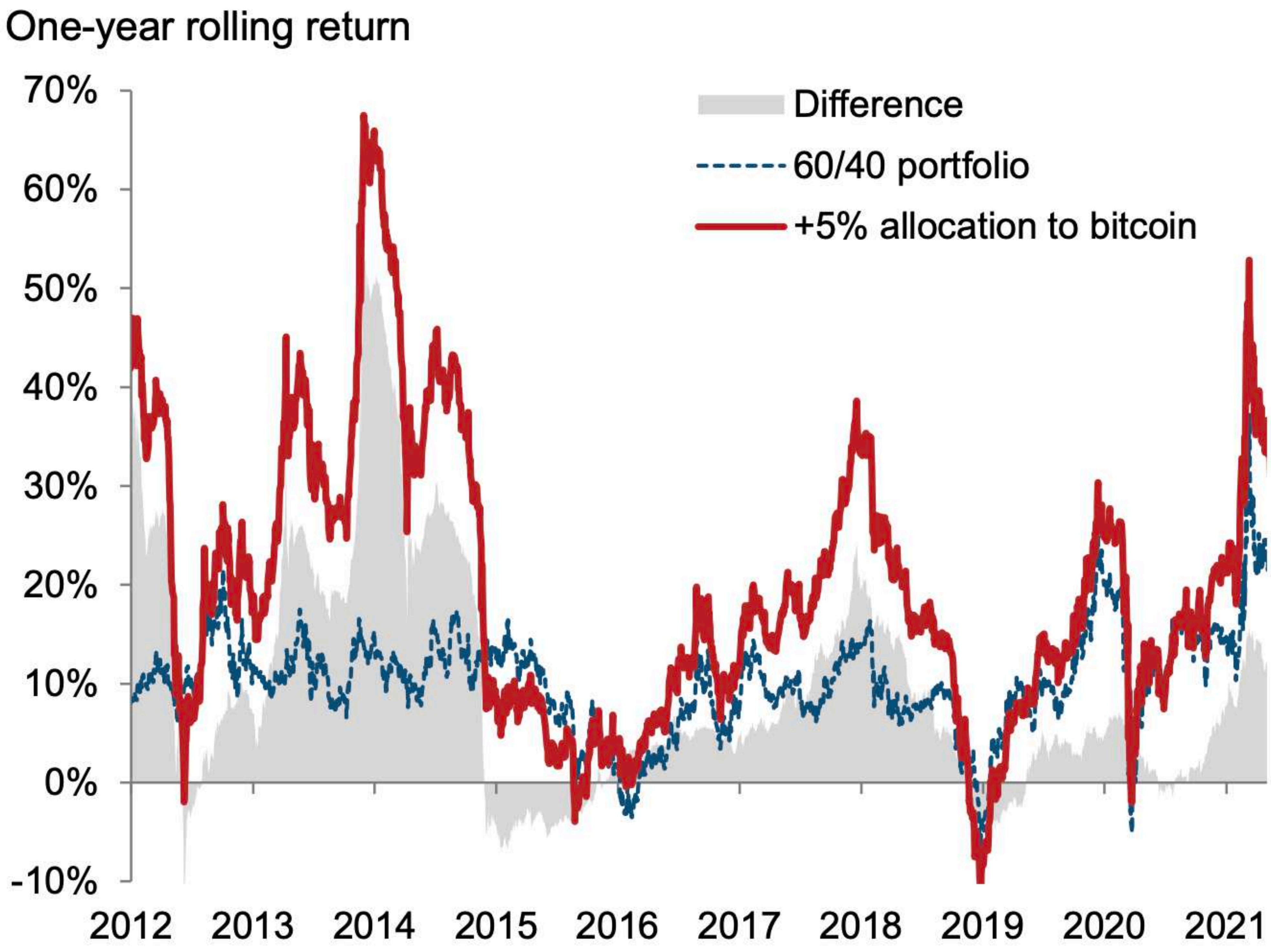
As the demand for gold is not dependent on a network, it will ultimately outlive oil and bitcoin—gold entropy lies at the unit, not the network, level. Indeed, most stores of value that are used as defensive assets—like gold, diamonds and collectibles—don't have derived demand and therefore only face unit-level entropy risk. This is what makes them defensive. The world can fall apart around them and they preserve their value. And while they don't have derived demand, they do have other uses that establish their value, i.e. gold is used for jewelry and as a store of value.



Source: Bloomberg, Goldman Sachs GIR.

Small allocation, big impact

Just a small allocation to bitcoin in a standard US 60/40 portfolio would have enhanced risk-adjusted returns materially since 2014 (while bitcoin prices are available from mid-2010, we use prices since 2014 as bitcoin was not easily accessible to investors before then), even as balanced portfolios performed strongly on their own. Driving the enhanced performance was both higher risk-adjusted returns for bitcoin compared to the S&P 500 and US 10y bonds, despite much higher volatility, as well as diversification benefits from relatively low correlations between bitcoin and other assets.



Source: Bloomberg, Goldman Sachs GIR.

However, bitcoin's strongest performance contribution to the portfolio resulted from isolated rallies in 2017, 2019 and last year, when it received a major boost from the COVID-19 crisis. Since 2014, bitcoin has actually often declined during equity drawdowns like in 2015, 2018 and 1Q 2020. These large drawdowns, combined with bitcoin's high volatility, have eventually outweighed the benefits of having it in a portfolio at higher allocations. Even with just a 5% allocation in a 60/40 portfolio, bitcoin drove roughly 20% of the portfolio's volatility, while US 10y bonds contributed only 2%. That is likely too much concentrated risk exposure for an institutional multi-asset portfolio, and such high volatility also limits the potential allocations from investors employing risk parity strategies or targeting a specific level of risk in the portfolio.

A small allocation to bitcoin has enhanced a 60/40 portfolio in recent years

	S&P 500	US 10y bond	Bitcoin	60/40 portfolio	Allocation to bitcoin +2.5%	+5%	+10%	+20%
Since 2014								
Return p.a.	14%	4%	79%	10%	12%	14%	19%	27%
Volatility (daily)	18%	6%	73%	10%	10%	10%	12%	18%
Volatility (monthly)	15%	6%	87%	8%	9%	10%	13%	20%
Return/volatility	0.77	0.60	1.08	1.03	1.24	1.39	1.53	1.53
5% CVaR	-10%	-3%	-35%	-5%	-6%	-6%	-7%	-10%
Max drawdown	-34%	-11%	-83%	-18%	-19%	-19%	-20%	-29%
2014-2019								
Return p.a.	12%	4%	46%	9%	11%	12%	15%	21%
Volatility (daily)	13%	6%	74%	7%	7%	8%	10%	16%
Volatility (monthly)	11%	6%	87%	6%	7%	8%	11%	19%
Return/volatility	0.92	0.66	0.62	1.26	1.46	1.56	1.53	1.31
5% CVaR	-7%	-3%	-35%	-4%	-4%	-4%	-5%	-8%
Max drawdown	-19%	-11%	-83%	-11%	-11%	-12%	-18%	-29%

Source: Bloomberg, Goldman Sachs GIR.

Interview with Michael Novogratz

Allison Nathan
Goldman Sachs and Co. LLC
Interviewer

Michael Novogratz
CEO of Galaxy investment
Interviewee

Allison Nathan: How does Galaxy invest in the crypto universe?
Michael Novogratz: Galaxy Digital grew out of my family office, which operates like a merchant bank, and has become a nearly full-service business for the digital asset and blockchain technology communities. Being involved across the ecosystem is important to us, namely so that we can be positioned to help grow the industry that we believe will transform the way we live and work globally. We own and trade coins, have a large venture business, and invest in the virtual world that will be used not by finance, but by consumers—the meta verse, gaming studios, and non-fungible token (NFT) projects. We believe you learn by being at the frontier and that's why we started the company—to learn about the crypto space and share that knowledge with our institutional customers as we create the next generation of financial services companies.

Allison Nathan: You've been involved in and excited about the crypto space for a while now, but it's had fits and starts, including the dramatic price rise and collapse in 2017/18. What makes this time different?
Michael Novogratz: 2017/2018 was the first-ever truly global and retail-driven speculative mania. It was blind excitement. It's not that there are no excesses, knuckleheaded Twitter comments, cheerleading, or tribalism today, but that's all there was back then. And crypto's market cap cratered 98.5%. But out of that mania grew a much smarter investor base that took the lessons learned and is more willing to differentiate between the different use cases for crypto—from stores of value to decentralized finance (DeFi) to stablecoins and payment systems. And in turn, the community has built up a more logical investment process. Importantly, that price downturn didn't result in a downturn in investments being made in the underlying crypto infrastructure, so the custody and security infrastructure necessary to attract institutions has been built. As a result, we've now hit a critical mass of institutional engagement. Everyone from the major banks to PayPal and Square is getting more involved, which is a loud and clear signal that crypto is now an official asset class. There's still a lot of volatility, so people will wash in and out. But crypto is not going away. And a core group of crypto people see this as—and I quote the Blues Brothers here —"a mission from god". They want to rebuild the infrastructure of the financial markets in a way that's more transparent and egalitarian and doesn't rely on governments who make bad decisions with our finances. They will never sell. And because of that, bitcoin and ether can't go to zero.

Interview with Nouriel Roubini

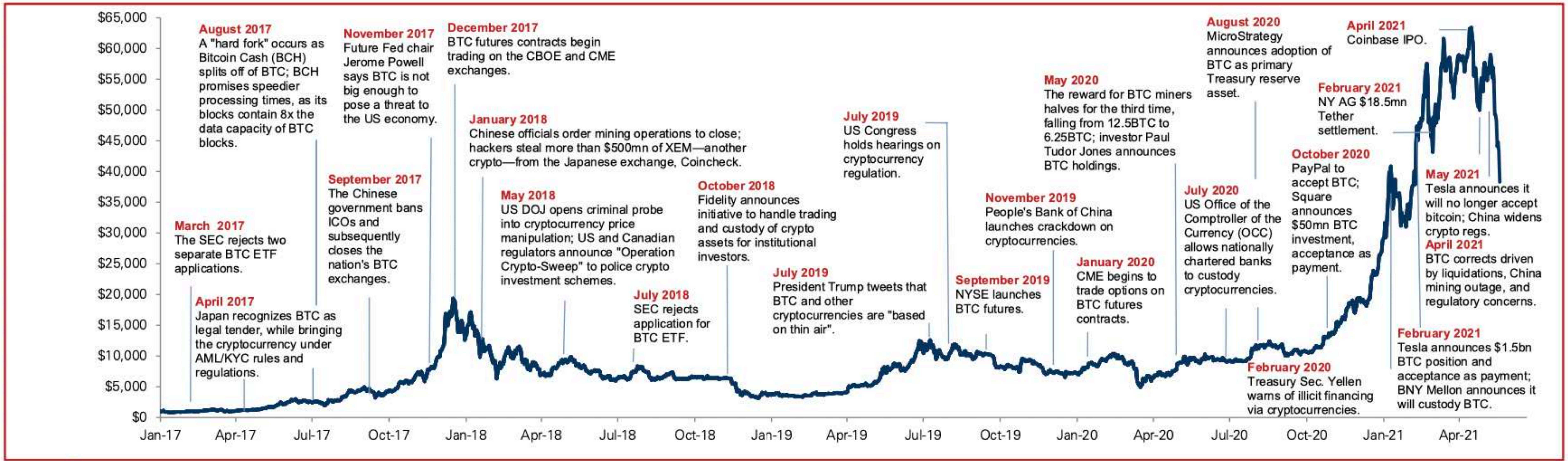
Allison Nathan
Goldman Sachs and Co. LLC
Interviewer

Nouriel Roubini
Professor of New York University
Interviewee

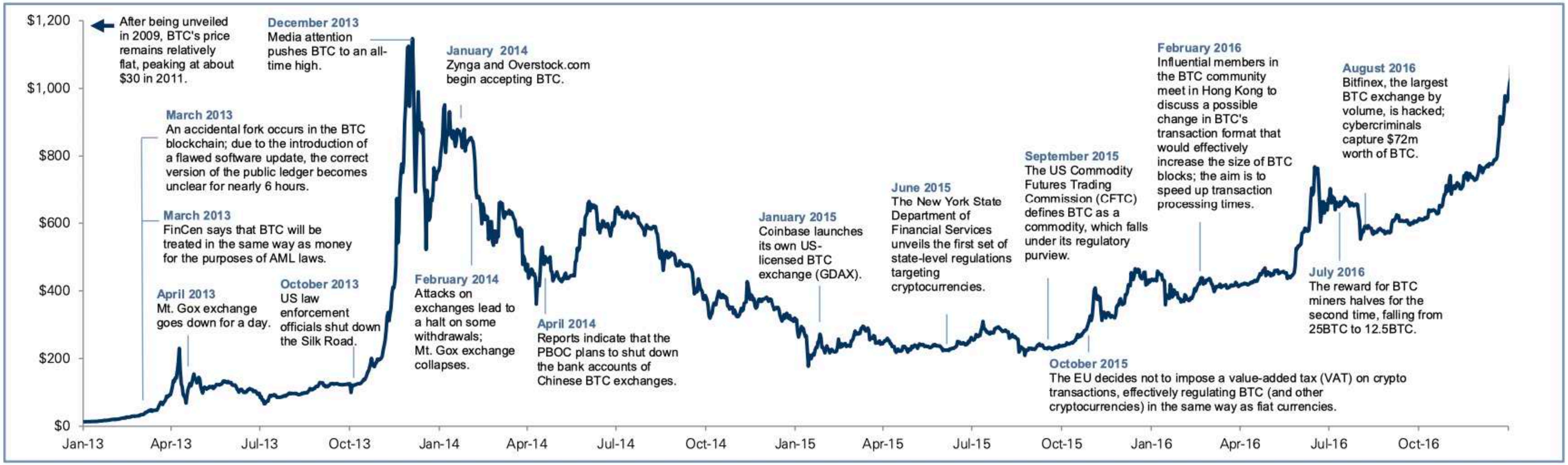
Allison Nathan: Why do you think bitcoin and other cryptocurrencies are in a bubble?
Nouriel Roubini: Bitcoin and other cryptocurrencies also aren't assets. Assets have some cash flow or utility that can be used to determine their fundamental value. A stock provides dividends that can be discounted to arrive at a valuation. Bonds provide a coupon, loans provide interest, and real estate provides rent or housing services. Commodities like oil and copper can be used directly in different ways. And gold is used in industry, jewelry, and has historically been a stable store of value against a variety of tail risks, including inflation, currency debasement, financial crisis, and political and geopolitical risk. Bitcoin and other cryptocurrencies have no income or utility, so there's just no way to arrive at a fundamental value. A bubble occurs when the price of something is way above its fundamental value. But we can't even determine the fundamental value of these cryptocurrencies, and yet their prices have run up dramatically. In that sense, this looks like a bubble to me.

Allison Nathan: Why are more institutions interested in getting involved in cryptocurrencies if they are in a bubble, and will this help stabilize and credentialize the market?
Nouriel Roubini: Given the large trading volumes, it pays to facilitate trading activity, custodial services, etc. But do institutional investors really want to get more involved? Maybe some do, but I don't see it becoming mainstream. There's an argument that because only a fraction of institutional money is currently invested in bitcoin relative to gold, the price of bitcoin could go to the moon as a result of asset re-allocation from gold. But I'm doubtful institutions want exposure to an asset that can drop by 15% overnight. There's also always the risk that something else backed by real assets might end up completely replacing bitcoin as an alternative store of value. Bitcoin could disappear one day, but gold won't. And the idea of corporate treasurers allocating to crypto assets is totally crazy. No serious company would do that because treasury accounts must be invested in stable assets with minimal risk, even if they provide a very low return. Any treasurer who invests in something that falls 15% in value overnight will be fired. Sure, Elon Musk can do it because he's the boss, although he's since backtracked somewhat on bitcoin due to environmental concerns. But few other people are in that position.

2017-2021



2013-2016



Note: Market pricing as of May 19, 2021.

Source: CoinDesk, 99bitcoins, Bloomberg, various news sources, Goldman Sachs GIR.

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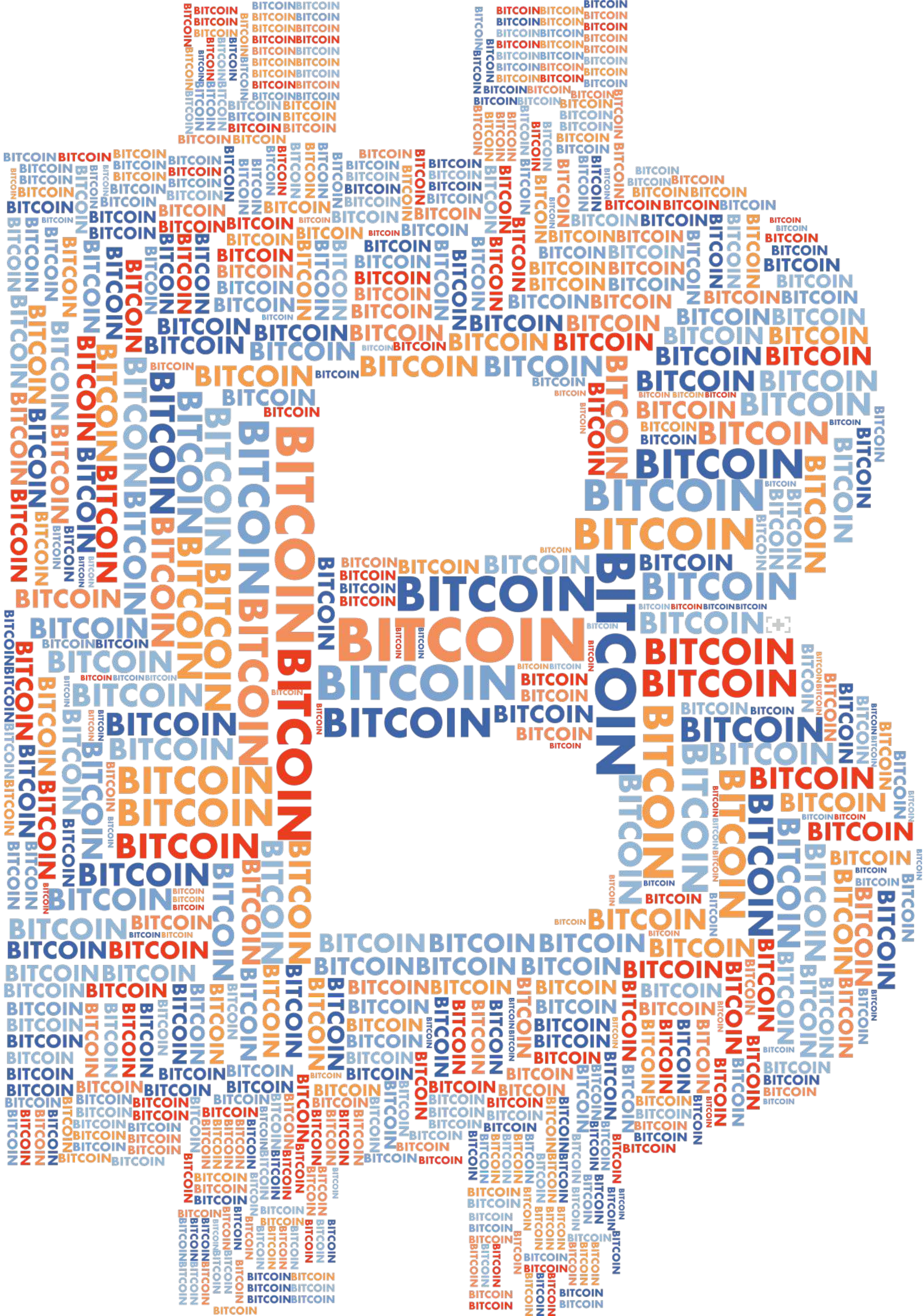

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