

THE WEEKLY UPDATE

2021 Summary



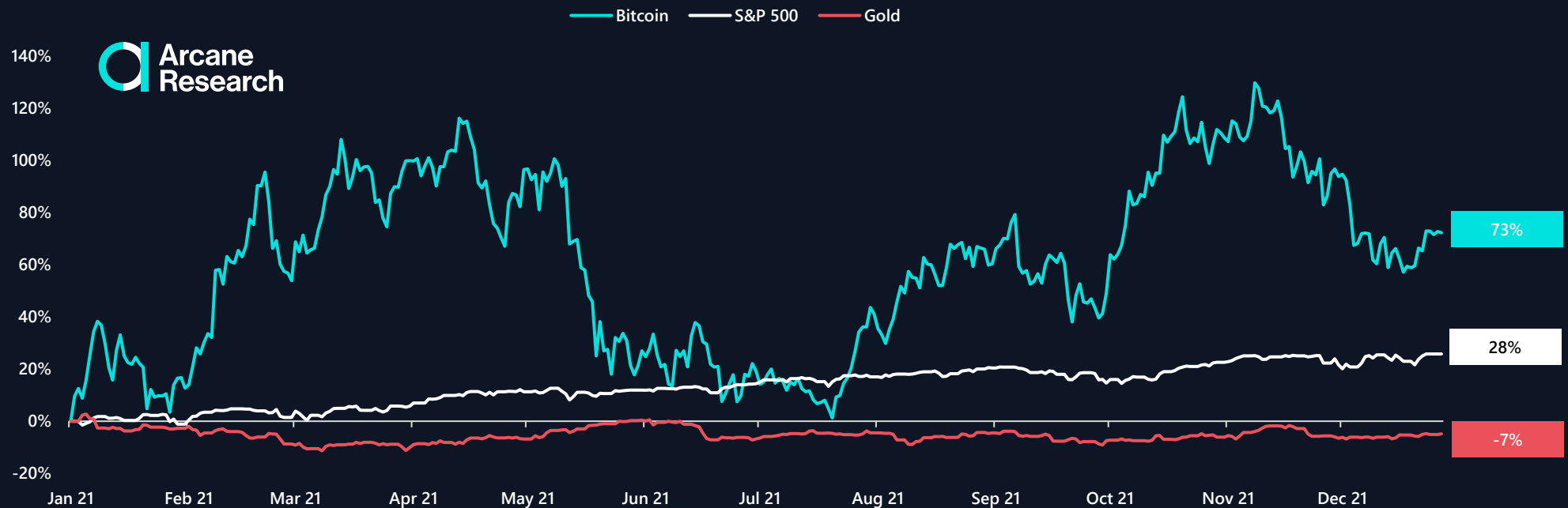
A year of up and downs, but mostly ups

What an eventful and intense year we're wrapping up in this report. In 2021, bitcoin was adopted as legal tender in El Salvador, and several public companies added bitcoin to their balance sheets. On the institutional side, open interest boomed on CME, and several bitcoin ETFs saw the light of day. Additionally, we saw numerous Tier 1 investment banks begin offering bitcoin and crypto-related services such as custody and trading. However, the year was not all filled with bullish news. Once again, China delivered bad news as they enforced a strict mining ban, leading the hashrate to temporarily plummet in bitcoin before returning to its pre-China ban levels six months later. 2021 saw bitcoin pushing towards new highs, reaching a new all-time high in November of \$69,000.

Bitcoin's performance has been dwarfed by the incredible altcoin growth this year. 2021 has felt like a continuous altseason, only taking a breather during the summer months. This altseason has seen several short-lasting bull runs in various parts of the markets as traders have rotated through the narratives. The DeFi sector, the metaverse sector, and memecoins all saw periods of strong growth. However, most stickiness in strength has been found in ETH and other layer-1s, in addition to NFTs.

As bitcoin has found its way into traditional investor portfolios, macro news has slowly but surely, begun impacting its performance. Inflation has been running high throughout the year, and overall, bitcoin has proven to be a good inflation hedge. Nevertheless, bitcoin has also proven to be sensitive to hawkish FED statements and fear in the broad financial markets. In that regard, bitcoin has behaved like a risk-on asset. However, while bitcoin shows risk-on traits in the short run, there is no doubt that central bankers and politicians worldwide will have a very hard time dampening the increasing inflation without causing harm to the economy.

Bitcoin vs S&P 500 and Gold in 2021



Source: Tradingview

The headlines that defined 2021 in crypto

Q1 Narrative

Corporate treasuries in BTC

01/01/2021	VanEck Files for bitcoin ETF
26/01/2021	WallStreetBets vs hedge funds – Memecoin rally ignites
04/02/2021	Coinbase Announces Nasdaq Listing
08/02/2021	Tesla announces \$1.5bn bitcoin purchase
08/02/2021	ETH futures live on CME
11/02/2021	BNY Mellon Announces Crypto Custody
23/02/2021	Square adds 3318 BTC to treasuries
24/02/2021	MicroStrategy adds 19450 BTC to treasuries
03/03/2021	Grayscale Premium turns into discount
09/03/2021	Meitu buys 379 BTC and 15000 ETH
09/03/2021	Aker buys 1170 bitcoin
11/03/2021	Beeple's Everyday's NFT sold for \$69 million
17/03/2021	Meitu adds 386 BTC and 16000 ETH to treasuries

Q2 Narrative

Mining (China and climate)

10/04/2021	Coal mine incident in Xinjiang, hashrate plummets
14/04/2021	Coinbase listed on Nasdaq
14/04/2021	BTC tops at \$64,000
18/04/2021	\$4.8 billion longs liquidated in BTC
27/04/2021	Tesla announces sale of 10% of their BTC holdings
30/04/2021	BTC dominance reaches 3-year low and falls below 50%
12/05/2021	Tesla to stop accepting bitcoin over climate concerns
12/05/2021	ETH tops at \$4400
19/05/2021	Massive sell-off, \$3.2 billion BTC longs liquidated
21/05/2021	China Cracks Down on Bitcoin Mining: Hashrate collapses
31/05/2021	May 2021 becomes sixth-worst month in BTC history: -35.42%
05/06/2021	El Salvador announces bill to make bitcoin legal tender
12/06/2021	Taproot updated locked in
14/06/2021	Paul Tudor Jones wants 5% of his portfolio in bitcoin as an inflation trade
28/06/2021	Binance faces regulatory issues in various jurisdiction

Q3 Narrative

Nation state adoption

26/07/2021	Bitcoin short squeeze - Momentum turns
05/08/2021	EIP-1559 Activated
15/08/2021	NFTs experience booming interest. Trend quickly spreads to alternative layer-1s
23/08/2021	VISA buys CryptoPunk
07/09/2021	El Salvador officially adopts bitcoin as legal tender
24/09/2021	China bans bitcoin again
30/09/2021	An U.S. bitcoin ETF? Narrative emerges

Q4 Narrative

ETFs, metaverse, macro

19/10/2021	ProShares' BITO ETF approved and starts trading
28/10/2021	Facebook Announces Metaverse. Metaverse related crypto-rally follows
10/11/2021	BTC tops at \$69000
12/11/2021	VanEck Spot-based ETF denied
14/11/2021	Taproot activated
30/11/2021	U.S. CPI soars. Jerome Powell retires the word "transitory".
15/12/2021	FED to accelerate tapering while forecasting three interest rate hikes in 2022 to combat inflation

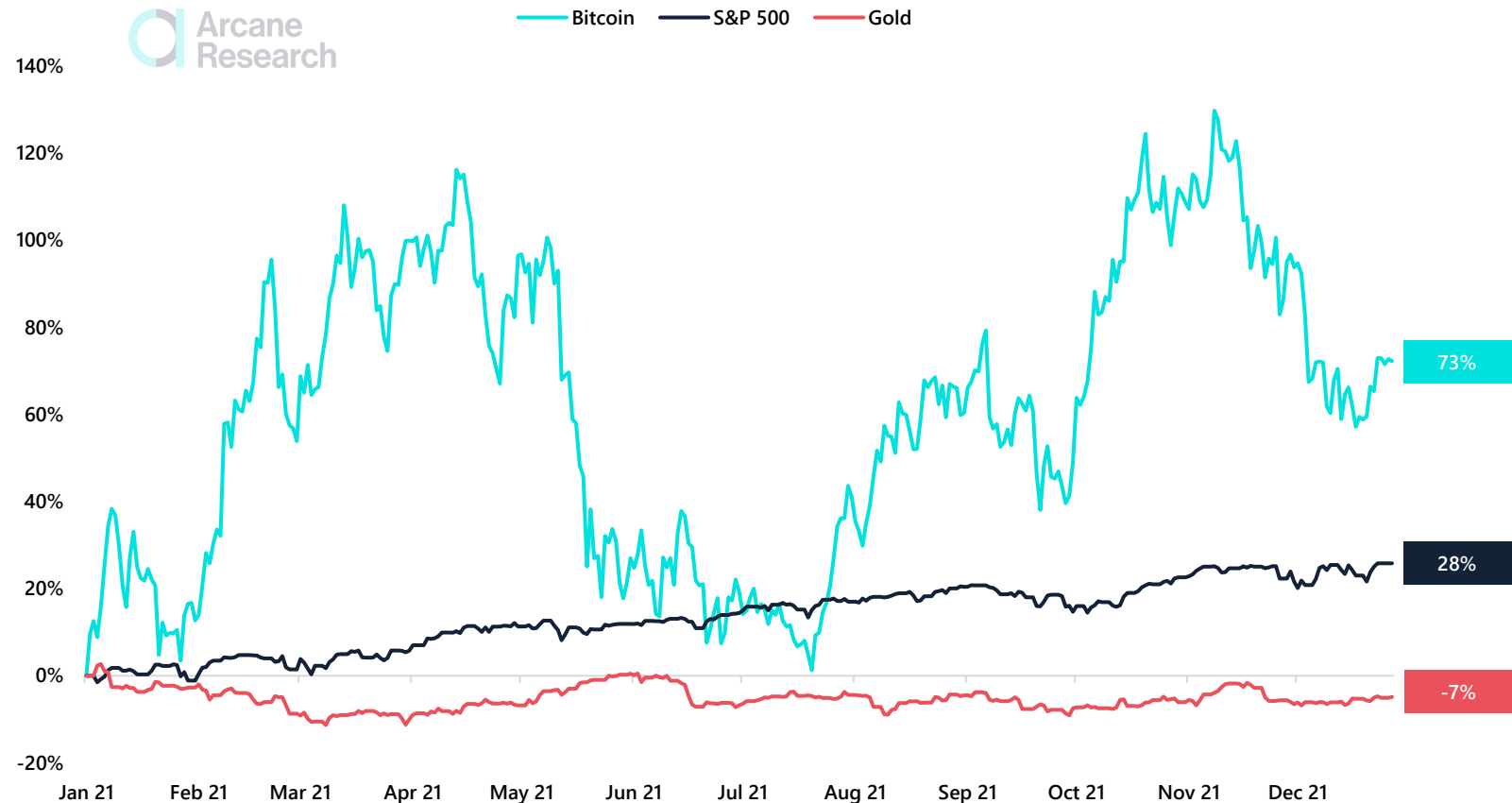
Bitcoin once again outperforms the stock market

Bitcoin beats both the stock market and gold for the third year in a row – but the ride upwards has been highly volatile.

- In 2021, asset prices have surged while we have seen higher inflation than in several decades ([slide 6](#)).
- Both bitcoin and the S&P 500 have performed very well in the inflationary environment of 2021. Bitcoin is up 73%, while the S&P 500 has increased 28%. Gold – the traditional inflation hedge – is down 7%.
- Although bitcoin has beaten the S&P 500 in 2021, it had a much more volatile year. Bitcoin has increasingly behaved like a risk-on asset, amplifying the most significant movements of the stock market ([next slide](#)).
- Therefore, if the stock market continues to increase in 2022, bitcoin will likely outperform. But if we see a red year for the stock market, bitcoin will likely underperform.

2022 prediction: Bitcoin will outperform the S&P 500 in 2022.

Bitcoin vs S&P 500 and Gold in 2021

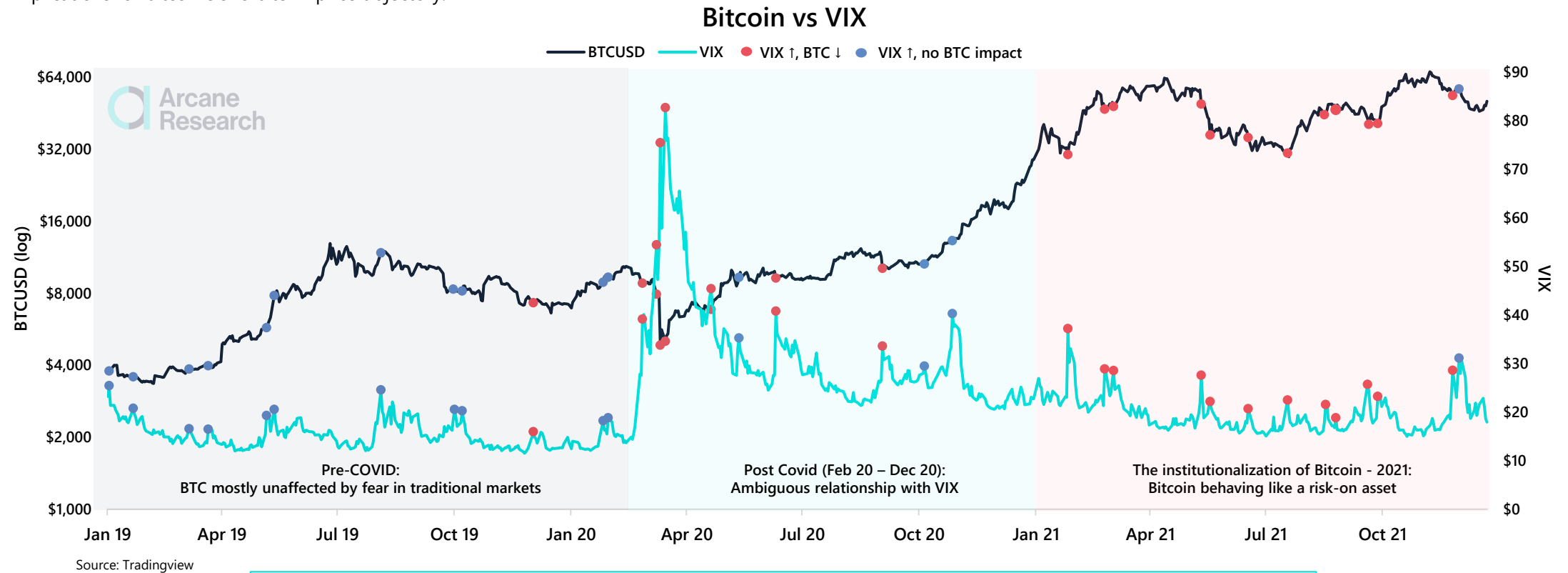


Source: Tradingview

Bitcoin in 2021: A risk-on asset

Following the monetary and fiscal policies implemented after the outbreak of the COVID-19 pandemic, bitcoin has seen growing institutional adoption.

However, throughout 2021, one trend was evident: Fear in the broad financial markets directly affected bitcoin's performance. Spikes in the volatility index VIX have accompanied bitcoin sell-offs - suggesting that, as of now, institutional traders broadly view bitcoin as a risk-on asset. Therefore, be aware of stock market headwinds in the next year and their possible implications for bitcoin's short-term price trajectory.

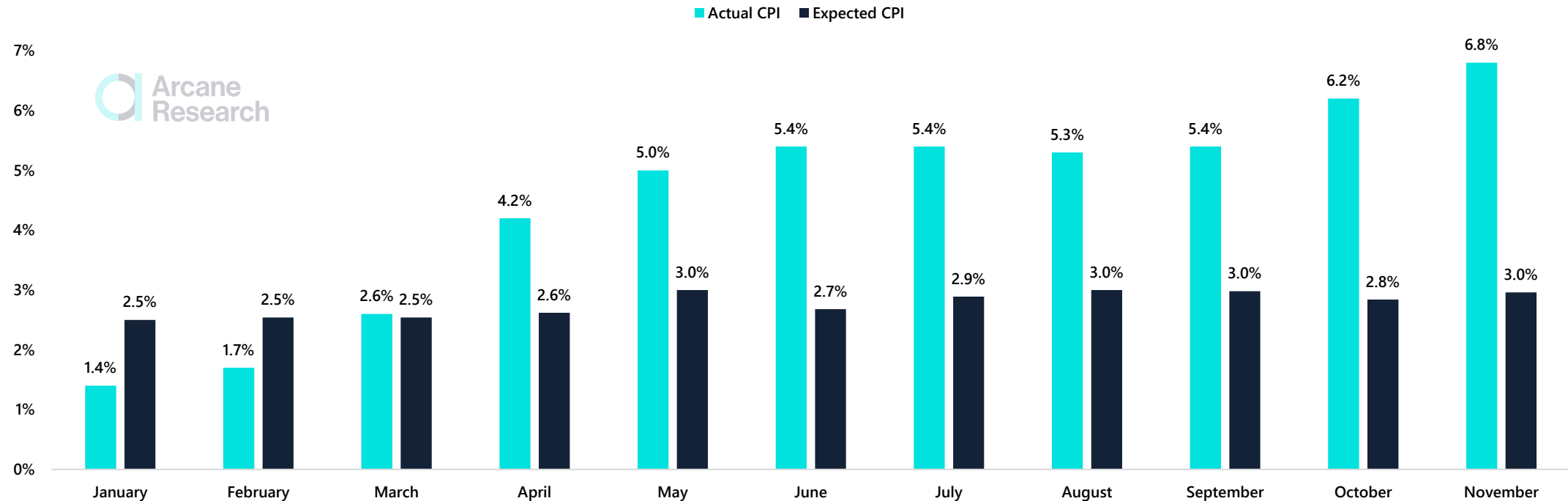


2022 prediction: BTC will remain closely linked to the VIX. Risk-on will prevail, shocks in tradfi -> Shocks in bitfi.

A year of rising inflation: The inflationistas were on to something?

Inflation has risen continuously throughout 2021 and topped out in November when we saw the largest 12-month CPI increase in 39 years. Most economists didn't see the high inflation coming, as witnessed by the 1-year ahead consumer inflation expectations. With its 73% gain in the highly inflationary 2021, Bitcoin has proven itself to be an excellent inflation hedge.

Inflation 2021: Actual CPI vs Expected CPI*



Source: BLS, New York FED

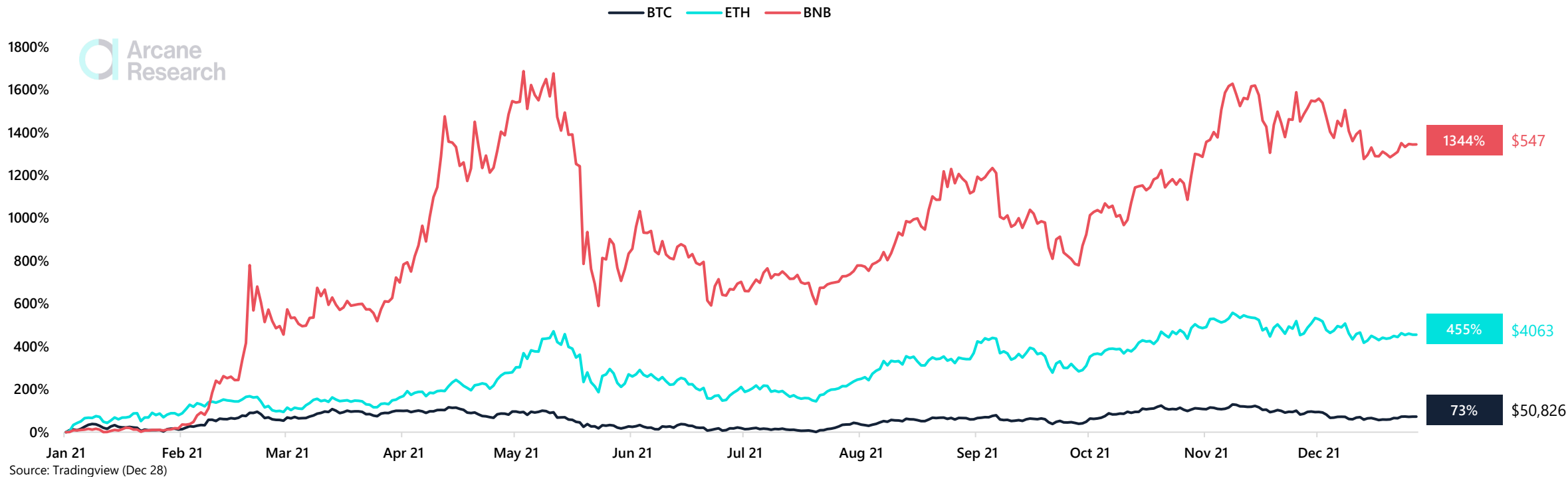
* Expected CPI one year before from FED's survey of consumer expectations

2022 prediction: Inflation will continue to reach new highs in 2022.

Binance Coin the winner of 2021

Bitcoin may have beaten the stock market in 2021 (slide 4), but it has been left in the dust by other cryptocurrencies. Binance Coin (BNB) is the best performer of the three biggest cryptocurrencies by market cap, with a 1344% gain. The Binance Smart Chain ecosystem has seen massive growth in 2021, taking some market share from Ethereum. Although Ethereum has lost its indisputable position as the "one and only" smart contract platform, ETH has also crushed BTC in 2021 with its 455% gain.

Top 3 Coins: Performance in 2021



2022 prediction: XRP and Cardano will fall out of the top 10 cryptocurrencies by market cap.

2021 – a year of altseason

2021 has been one long altcoin season, as most other cryptocurrencies have crushed bitcoin (slide 12).

- The NFT and metaverse narratives have dominated the market this year, especially during the Autumn. The NFT craze has led to enormous gas fees on Ethereum (slide 37), making the market increasingly focused on other layer-1 tokens (slide 14).
- Most of the layer-1 tokens belong to the Mid Cap Index - the winner of 2021 with its 830% gain.

2022 prediction: The Small Cap Index will be the winner of 2022.

YTD Performance of Market Capitalization Weighted Indexes



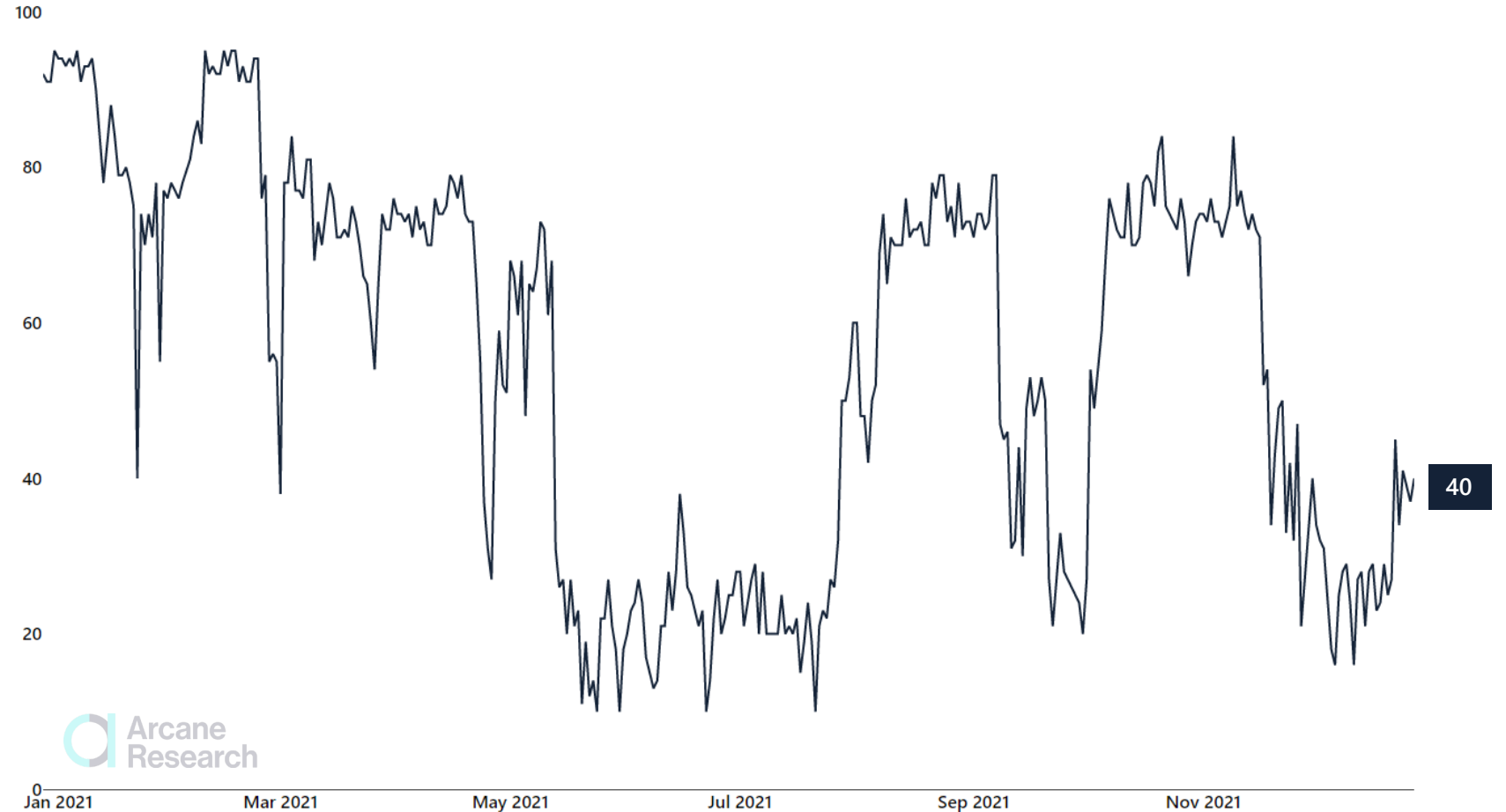
Source: NYDIG, Bletchleyindexes.com (Dec 27)

2021 has been an emotional rollercoaster for crypto investors

- The market started the year with extreme greed. After staying greedy for the first four months as bitcoin pushed through new all-time highs, market sentiment plummeted in May.
- The market stayed fearful throughout most of the summer as crypto assets struggled to regain the momentum from the spring rally.
- In August, the market suddenly became euphoric again, and it stayed in a greedy state during most of the Autumn.
- As usual, the greediness didn't last long, as the market finished the year in a fearful state. Just like it did in 2020, The Fear and Greed Index gave some great buying opportunities to thick-skinned crypto investors in 2021.

2022 prediction: The Fear and Greed Index will give investors some great “buy the dip” opportunities in 2022.

Fear & Greed Index



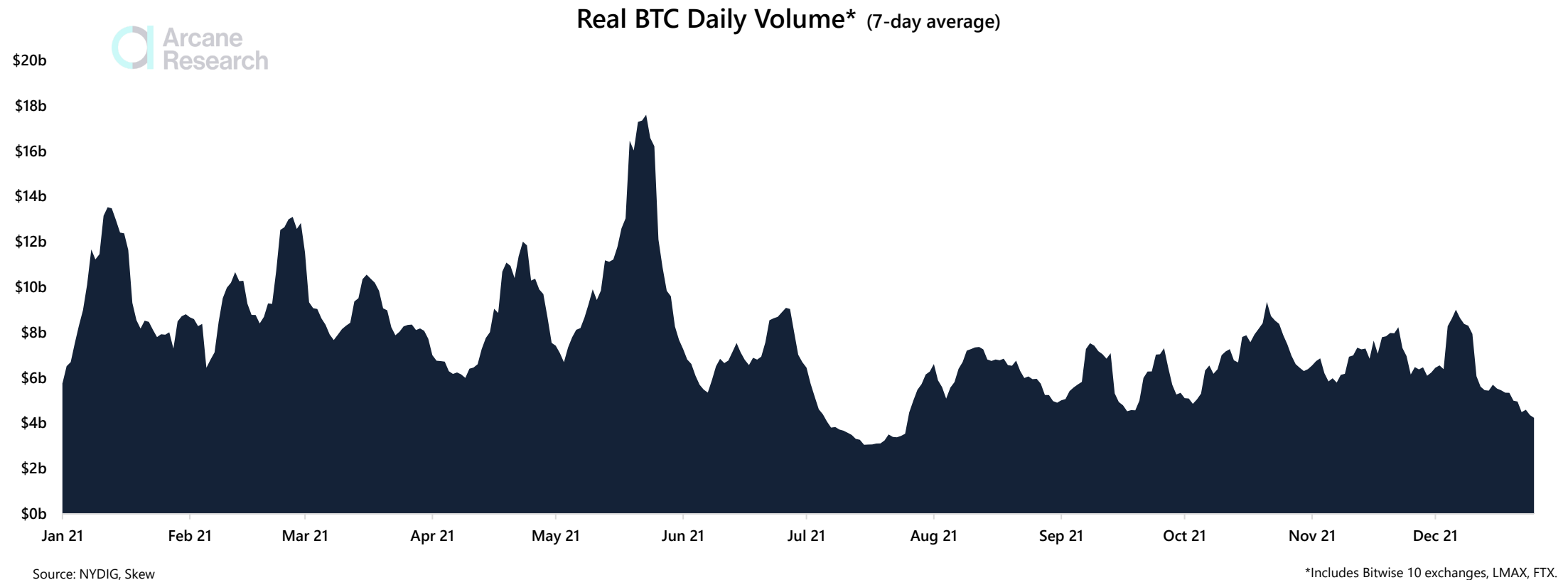
 Arcane Research

0 Jan 2021 Mar 2021 May 2021 Jul 2021 Sep 2021 Nov 2021

Source: Alternative.me, NYDIG (Dec 27)

A year of stabilizing bitcoin spot volume

2021 started with massive spot volume as the crypto market was in the middle of a retail-driven rally. The spot volume stayed high during the spring but decreased over the summer. It has now stabilized on a considerably higher plateau than we saw during similar market conditions in 2020. The aggregated spot volume in 2021 was more than 4 times higher than in 2020.



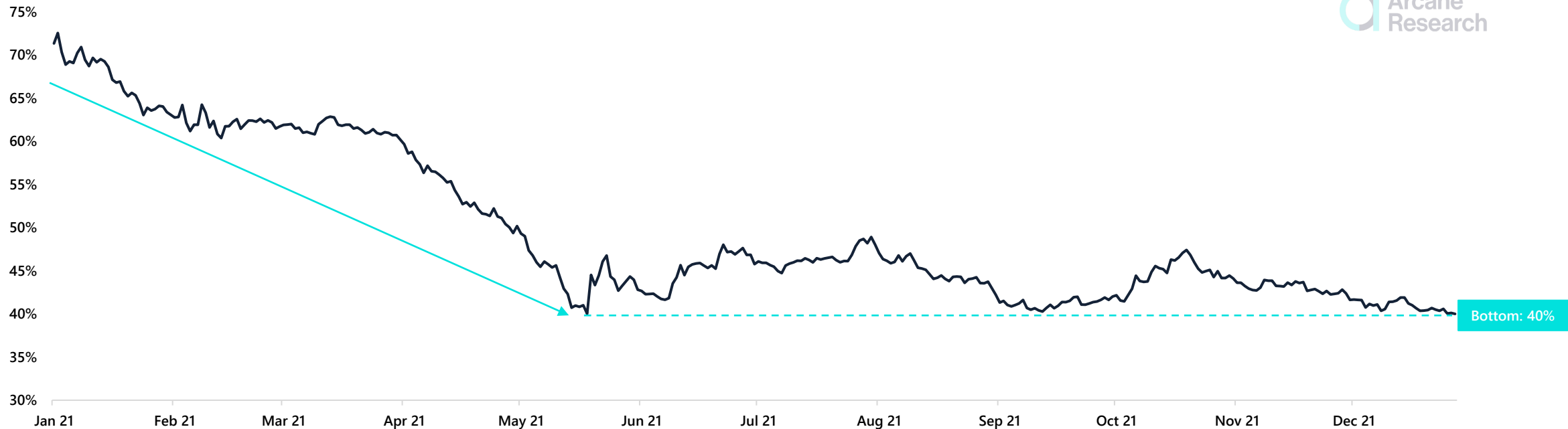


A year of altseason

The year for altcoins

2021 has been a flying year for most altcoins. While bitcoin showed strength in 2021, we've seen a constant stream of capital trickling down into altcoins. Throughout the first five months of the year, bitcoin saw a continuous loss of dominance, as traders rotated into altcoins while bitcoin pushed above former highs. These months saw a mixture of "stupid" pumps in memecoins and Ethereum DeFi strength. Bitcoin's dominance has since May 19th stabilized in the 40-50% range, with traders constantly rotating between narratives. Currently, we see the strongest narrative and momentum among the "ETH-killers", and GameFi/Metaverse related tokens.

Bitcoin Dominance

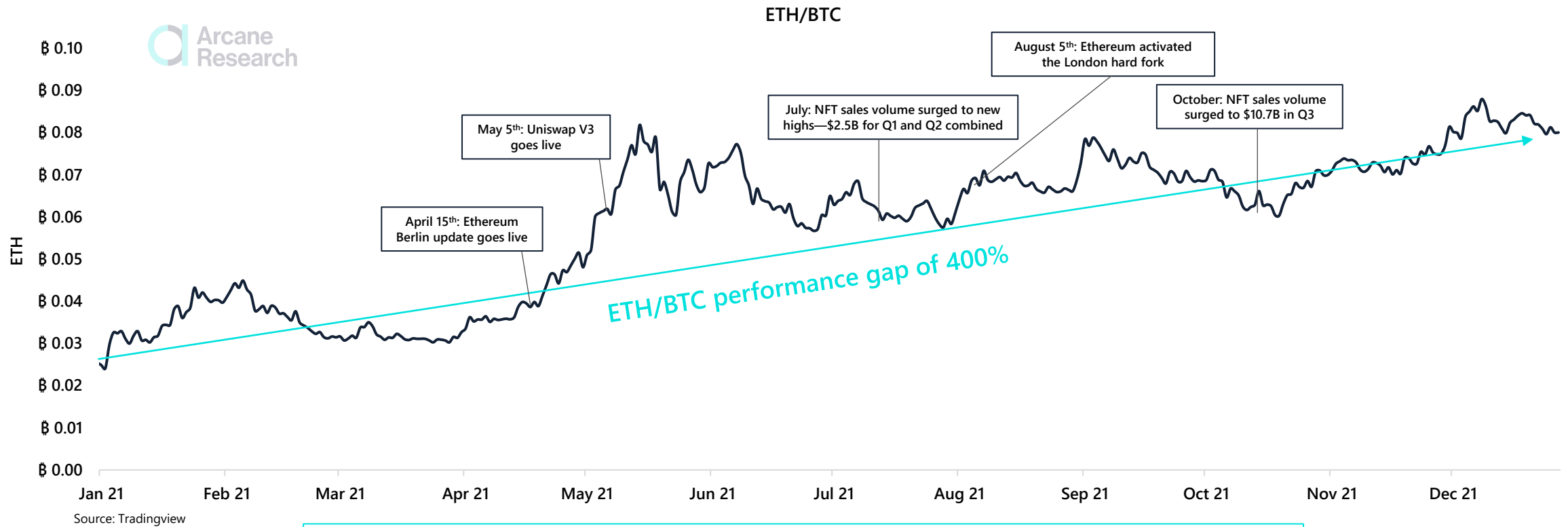


Source: Tradingview

2022 prediction: Traders will continue rotating between narratives unless the bear forces her claws on the market.

The resurrection of Ethereum

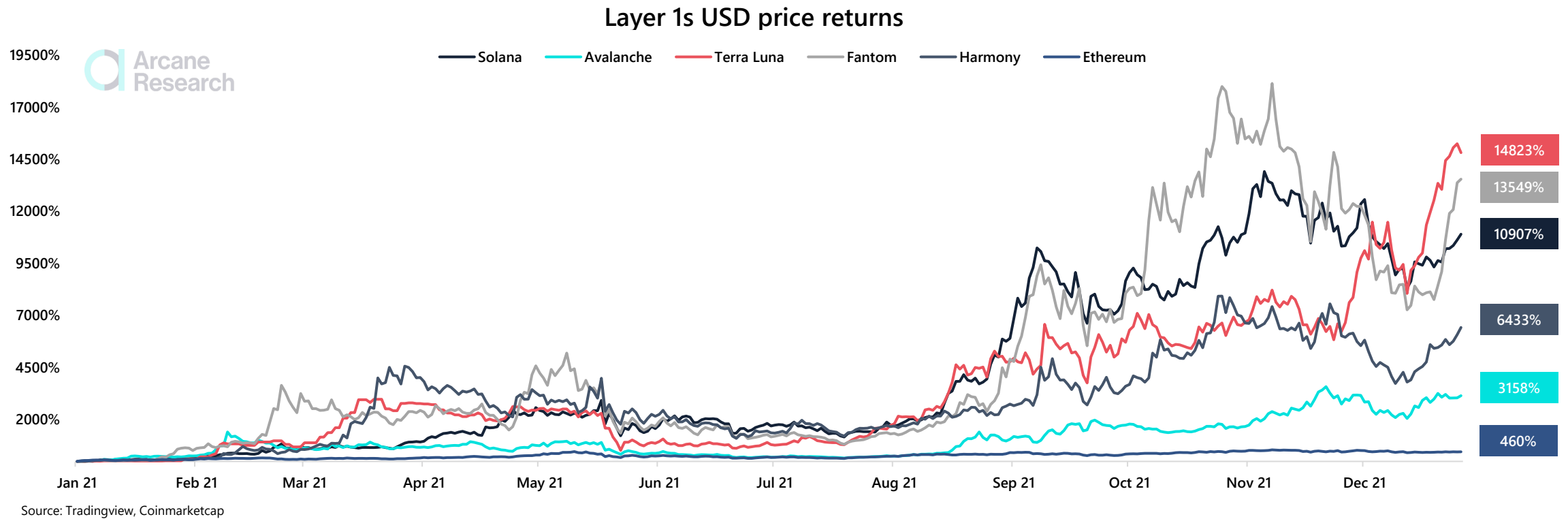
The multi-year range breakout on the ETHBTC pair is among the prevailing trends of the year. Ether has stood out on a year-to-date basis, rising by about 500% compared to bitcoin's increase of roughly 95%. This performance gap is the widest seen since 2015, when Ethereum was launched. However, ETH still lags behind BTC in terms of market cap, with a valuation of around \$490 billion compared to bitcoin's \$1 trillion.



2022 prediction: ETH will continue to outperform BTC, but we will not see the market cap of ETH surpassing that of BTC.

The year of the layer-1s

As ETH has outperformed BTC ([previous slide](#)), other layer-1 networks like Solana, Avalanche, Terra Luna, Fantom, and Harmony have outperformed ETH significantly. We expect this trend to continue in the upcoming year as these other smart contract platforms continue to steal market share from Ethereum in terms of users and the amount of funds stored on the network. These networks have thriving and fast-growing ecosystems that continuously drive the price performances of their native tokens.

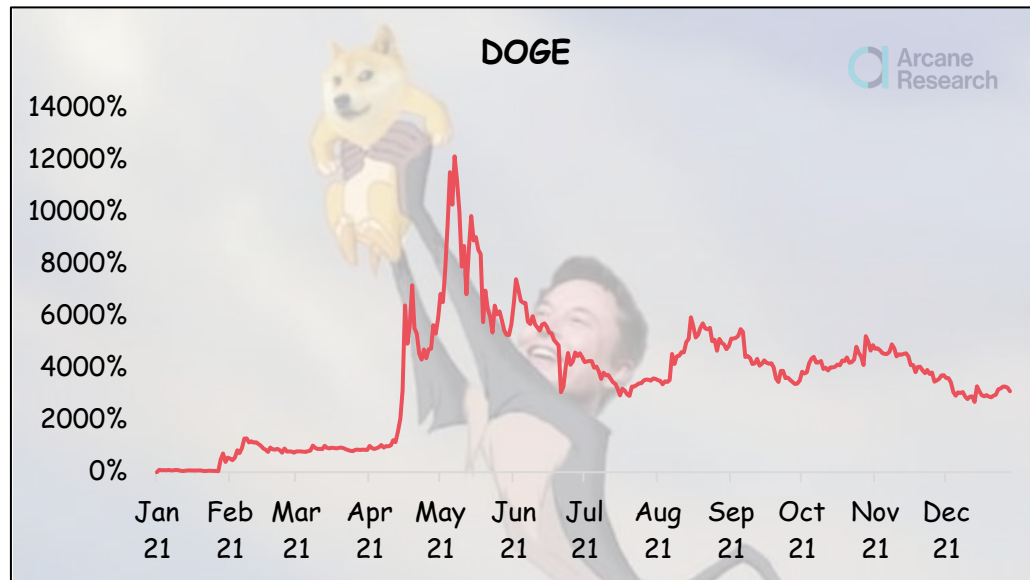


2022 prediction: Adoption of other layer-1s than Ethereum will continue to surge, and they will continue to outperform ETH.

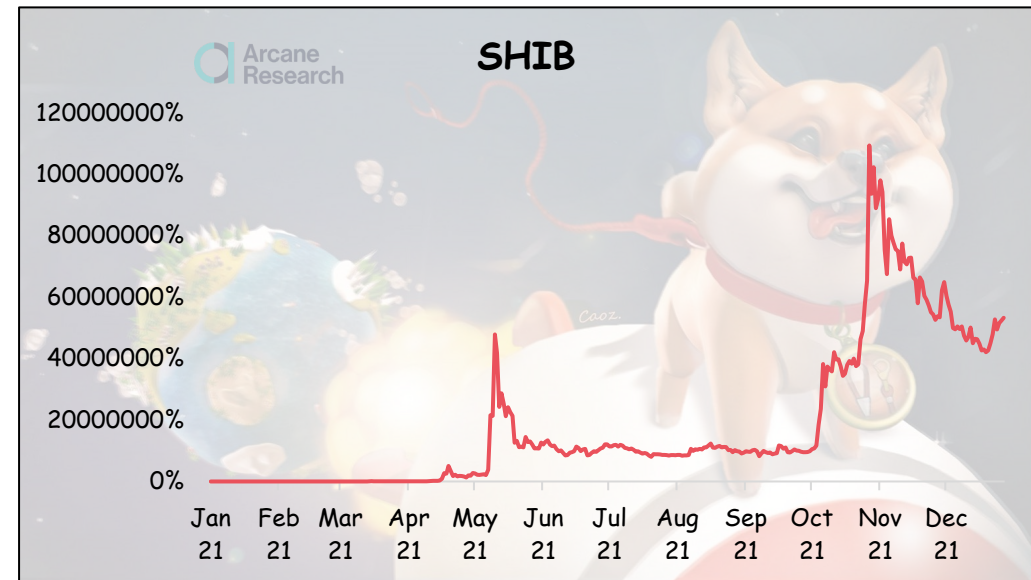
Meme coin mania: The absurd dog fight

We cannot summarize the 2021 market without mentioning the absurd meme coin rally of 2021.

Not long after Tesla purchased bitcoin, Elon Musk picked up a habit of frequently tweeting about Dogecoin (DOGE), leading to several mind-blowing rallies for the OG meme coin. Correspondingly, the WallStreetBets community went deep into option bets on GME, AMC and CLOV, fueled by the mantra "We Like The Stock". We saw a similar mentality in the crypto sphere, with the mantra "We Like The Coin". The DOGE rally led other dog-related meme coins to rally even harder, with Shiba INU (SHIB) seeing a blow-off top as Musk appeared on Saturday Night Live. In October, SHIB again prospered as several large exchanges utilized SHIB as a marketing tool to attract new customers to the platform, leading SHIB to flip DOGE's market cap briefly.



Source: Tradingview

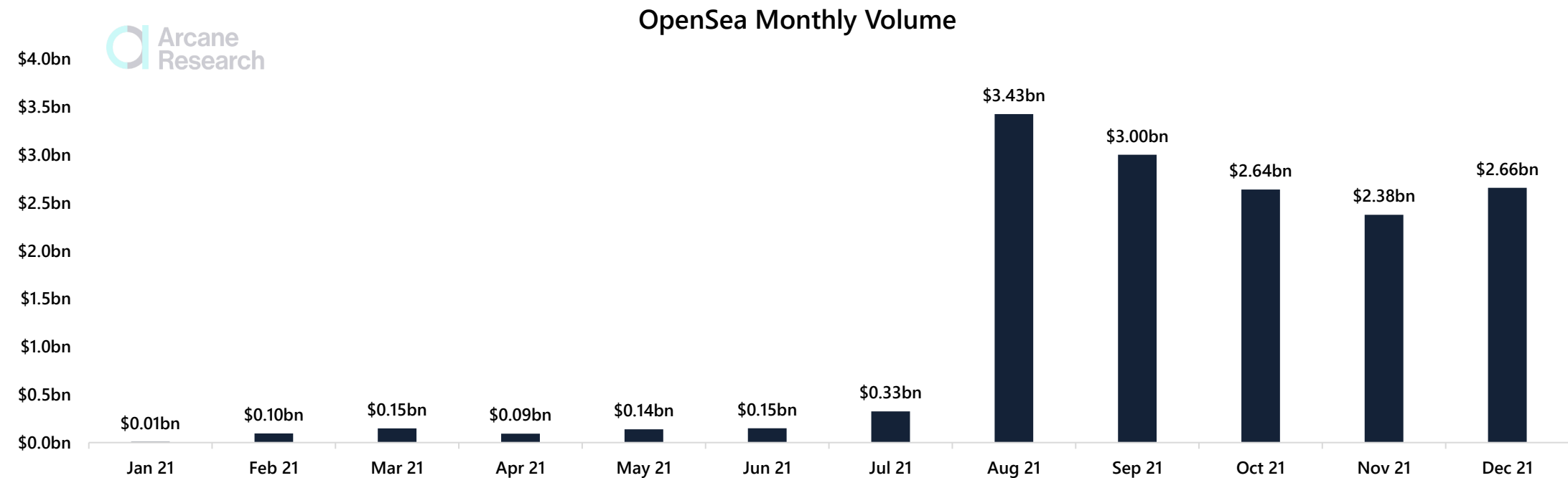


2022 prediction: Most meme coins will fade into obscurity, being a historical relic of the absurd times that was 2021.

The breakthrough year for NFTs

Let there be no doubt, 2021 was the breakthrough year for NFTs.

In March, Beeple's "Everydays: the First 5000 Days" was sold at a Christie's auction for a whopping \$69.3 million, making it the eighth-most expensive artwork sold in 2021. Following the sale, NFT awareness turned mainstream. Everyone and their grandma entered the market: Artists, venture capital, Visa, Christie's, Sotheby's, Nike, Adidas and Pepsi. Additionally, gaming companies like Ubisoft seek to turn in-game items into NFTs. Prices soared in NFT projects such as CryptoPunks and BAYC's, leading OpenSea volume to surge from \$10 million in January to \$3.4 billion in August. OpenSea reached unicorn status through a capital raise and has an estimated valuation of \$10 billion. The extreme NFT growth has contributed to Ethereum's growing fee problems, creating opportunities for other layer-1s with higher throughput to prosper ([slide 14](#)).



Source: Dune Analytics

2022 prediction: Traditional gaming companies will continue to explore ways to implement NFTs to the games.



The Derivatives Market

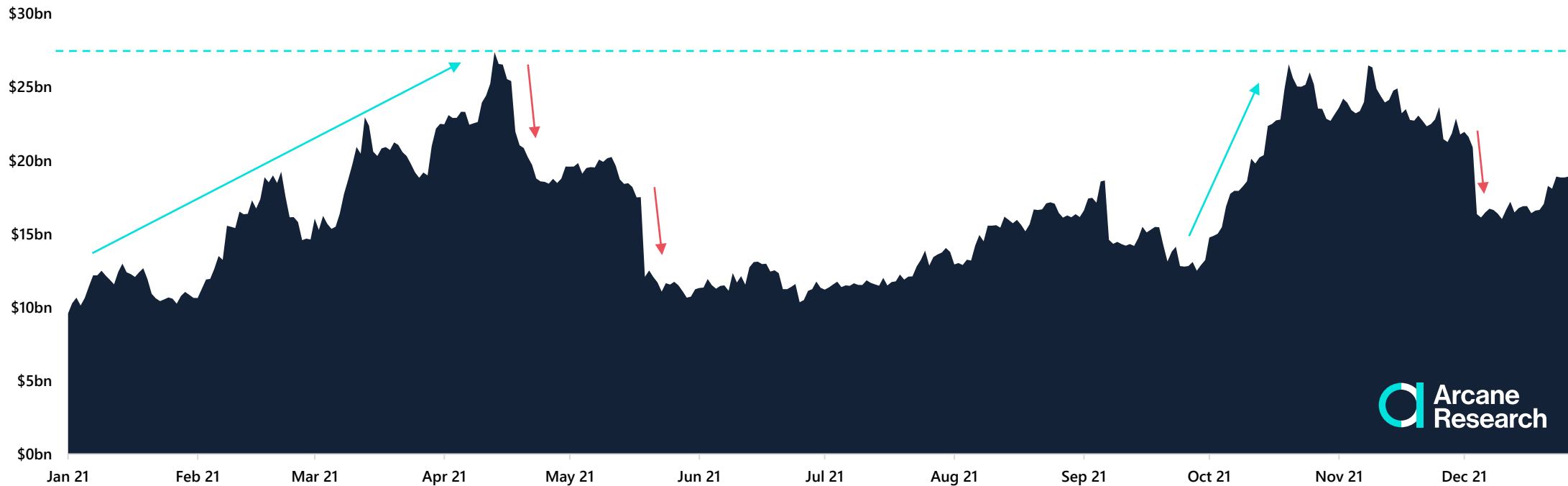


A year of leverage and froth in the futures market

2021 has taught us that crypto traders have a much heftier risk appetite than the average Joe - leading to massive volatility, long and short squeezes and plenty of market action.

The open interest in the bitcoin futures and perpetuals market peaked at \$27.3 billion in the middle of April, and the market was much more leveraged towards further upside. We also saw high leverage in the futures market as bitcoin reached its \$69,000 all-time high in November. The following slides illustrate 2021's wild tendencies in the futures market.

BTC Futures: Open Interest



Source: Skew

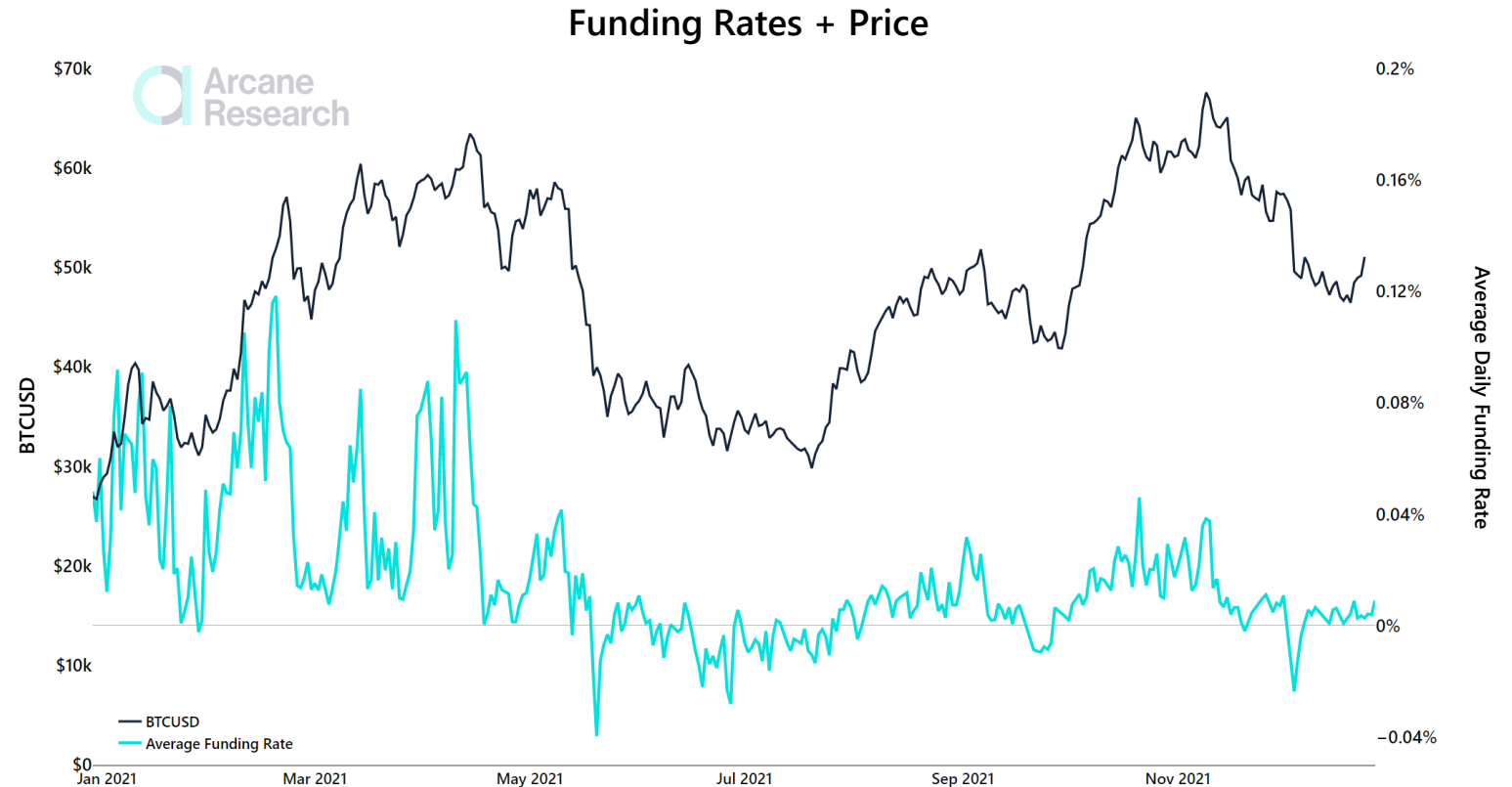
2022 prediction: Retail-traders haven't learned anything from the liquidation cascades this year and will continue to go hard on leverage.

Funding rates settled after an overly exuberant Q1

The perpetual swaps market ran wild throughout 2021, as the derivatives market fluctuated between fear and greed.

- Examining the funding rates is a very effective way to grasp the sentiment in the market.
- In Q1, we saw extreme greed and surging funding rates. Funding rates on Binance and Bybit periodically soared well above 0.1%, corresponding to an annualized interest rate of more than 100%.
- This summer, funding rates flipped negative, as sentiment went from greedy to fearful following the relentless Q2 sell-off.
- In the second half of the year, funding rates have been less extreme in both directions - suggesting that traders might have realized that taking the opposing side of the force that is the perp traders is an efficient way to gain yield in the crypto markets.

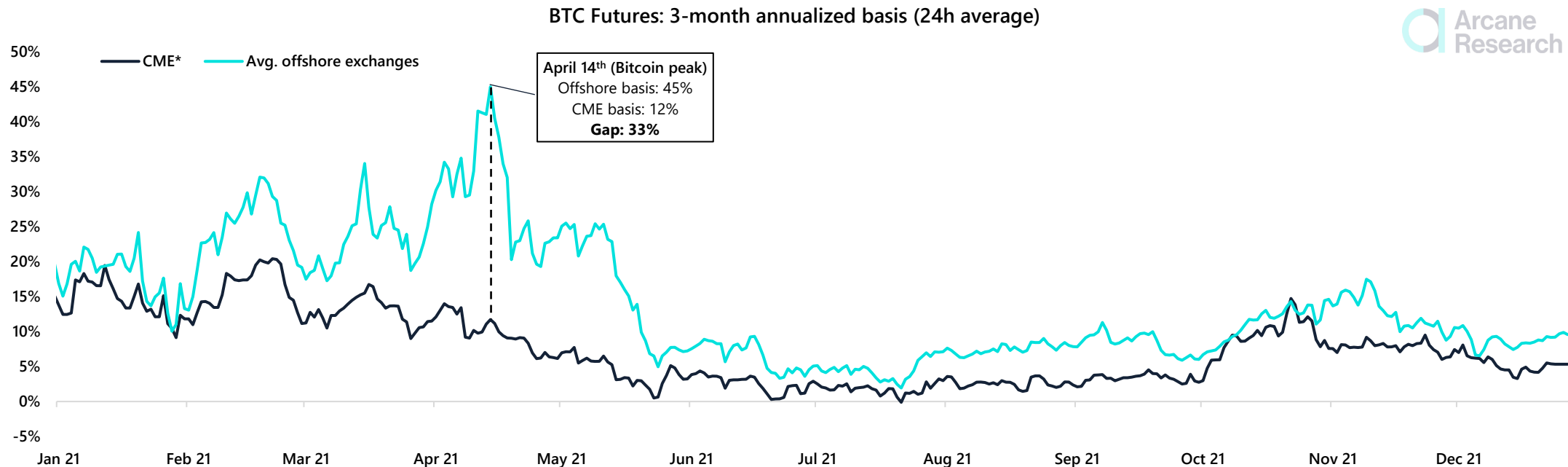
2022 prediction: We will never see sustained positive funding rates like those we saw in Q1, 2021 again.



2021 lesson: Be careful when offshore exchange sentiment outpaces CME

Activity in the futures market mirrors that of the perpetuals market.

Futures basis premiums ran wild from February to April. The froth in the futures market could be even more evidently seen by comparing the soaring basis premiums on the offshore exchanges to those on CME – the futures exchange of the accredited, institutional investors. On April 14th, the 3-month futures traded at an annualized premium of 45% on the offshore exchanges, while CME saw a far more conservative premium of 12%. The basis premium since evaporated following the sell-off in April and May but again grew as market participants wanted to increase exposure into an exciting Q4. Just like with the funding rates ([previous slide](#)), we saw far more suppressed basis premiums than in April, further backing our claim that specific traders gladly take the opposing trade to harness yield once markets brew with exuberance.

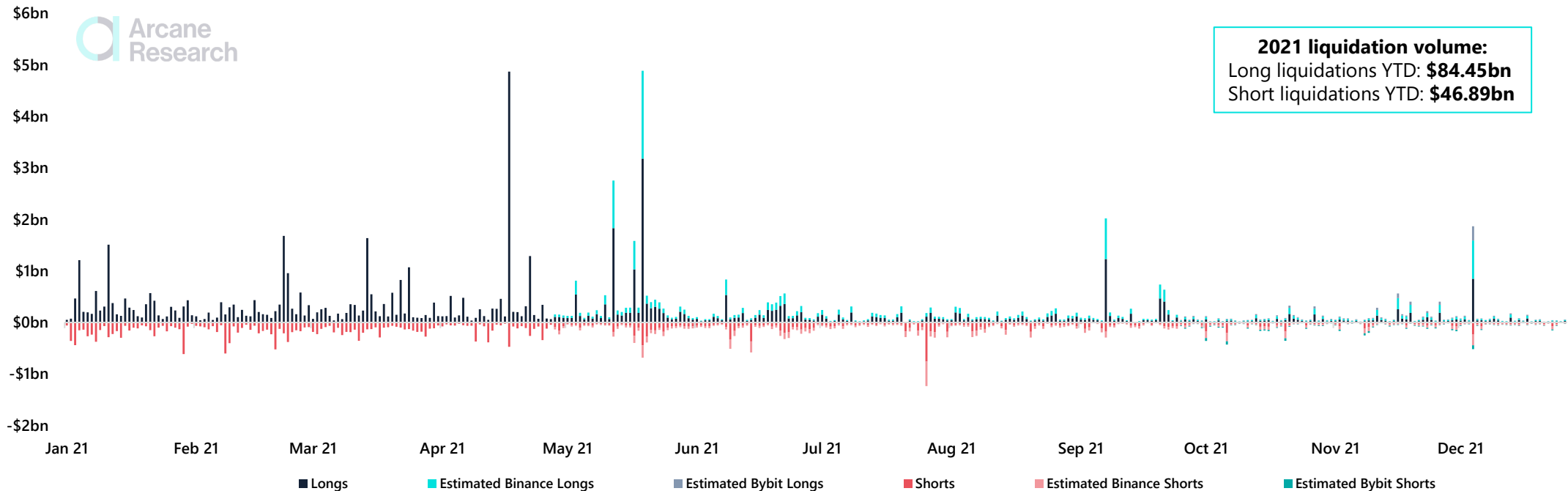


2022 prediction: We will never see sustained positive futures premiums like those we saw in Q1 2021 again. Nor will we see as immense of a gap between CME and the offshore market again as market efficiency improves.

The great rektoning

We frequently talk about funding rates, futures basis and leverage, but few stats are better at highlighting the extreme risk appetite seen in the market this year than the liquidation volumes. *We estimate that an astronomical \$84.45bn worth of longs and \$46.89bn worth of shorts have been liquidated in the BTC market alone this year.* This is the price you pay for impatience and greed in the free markets.

BTC Futures: Liquidations*

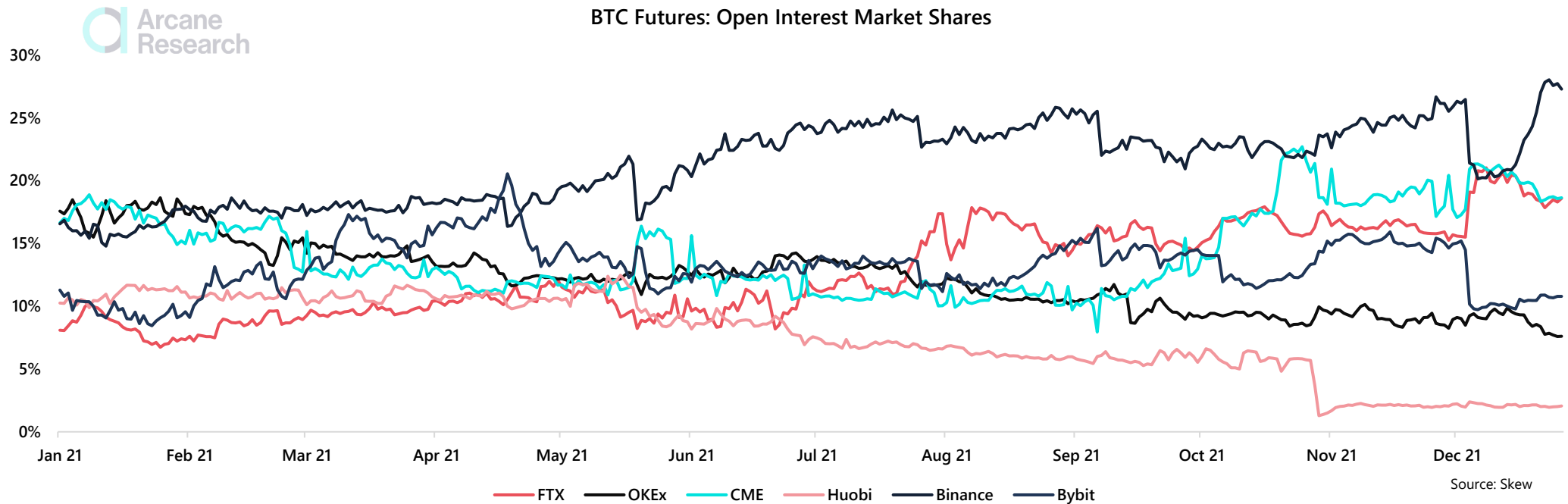


Source: Coinglass and Skew. *Binance (Since Apr 27th) and Bybit (Since September 20th) have restricted their liquidation APIs. We calculate the liquidation data from these exchanges through estimations based on historic data. [Methodology](#).

2022 prediction: We will continue to see liquidation cascades as animal spirits continuously attracts hopeful traders to the casino that is 20-100x longs and shorts in bitcoin.

Binance the new top dog in the futures market

Binance has been the largest bitcoin futures exchange by open interest 308 of the 360 days scoping this report. It started the year battling for the number one position against OKEx and CME, but as institutional interest dampened with the futures and perp markets running wild and Chinese regulatory pressure escalated, Binance manifested its position as top dog in the futures market. Bybit saw a brief stint as the largest exchange amid the craziest frenzy in April, whereas CME again had a period as the top market amid the launch of the futures-based ETFs. Lately, FTX has also seen impressive growth, showing signs of approaching Binance soon.

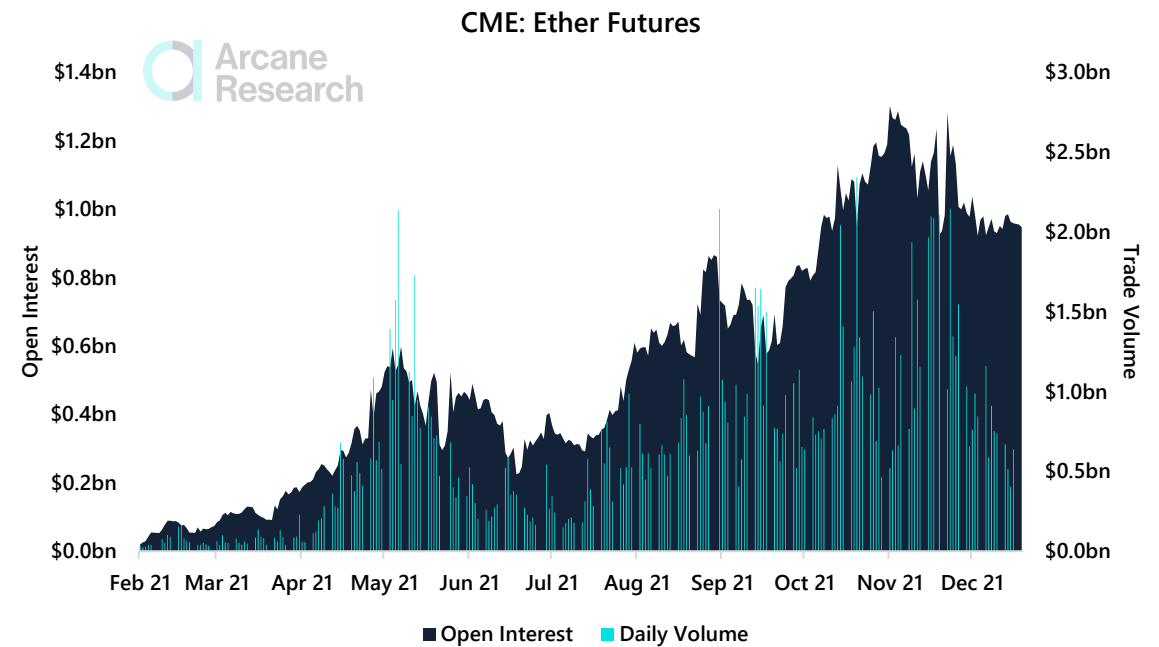
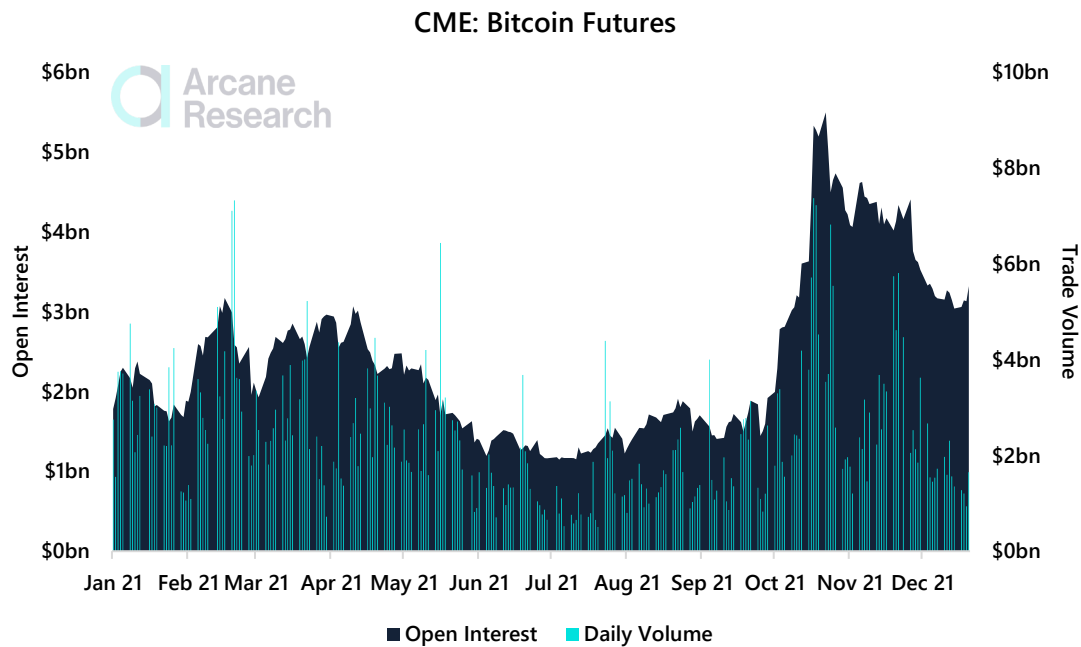


2022 prediction: Binance will maintain its position as the biggest bitcoin futures exchange by open interest but will face fierce competition from FTX.

2022 prediction: The market will experience even more stringent regulation, making it challenging to maintain modus operandi as a free port for all who seek to trade with high leverage. Because of this, decentralized derivatives exchanges will attract more traders, despite the associated protocol risk.

Continuous high institutional demand for BTC and ETH exposure

The open interest and trading volumes on CME’s bitcoin futures have ballooned this year. The activity on CME has particularly increased following the approval of several futures-based ETFs, with the open interest peaking at \$5.5 billion by the end of October. Additionally, the ether futures on CME has seen stable and maintained growth in open interest since launch in February. These two charts suggest that there is a high demand from institutions to trade both bitcoin and ether, and we do not expect it to end anytime soon.

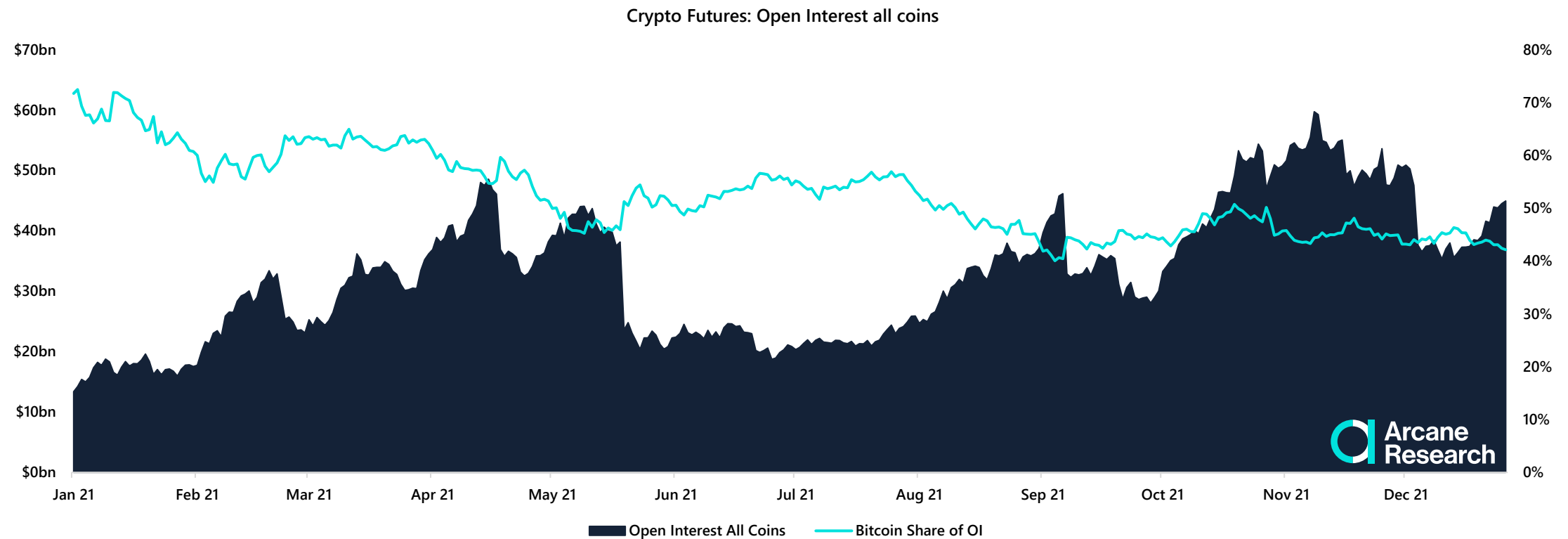


Source: Skew

2022 prediction: CME’s importance in the price discovery of ether will grow.

Open interest booming in all corners of the market

While bitcoin's open interest topped in April at \$27.3 billion, the overall open interest in the crypto markets topped at \$59.7 billion on November 8th. Throughout the year, we've seen interest into leveraged trades of altcoins explode, leading the bitcoin dominance to decline in tandem to the declining bitcoin dominance measured by market cap.



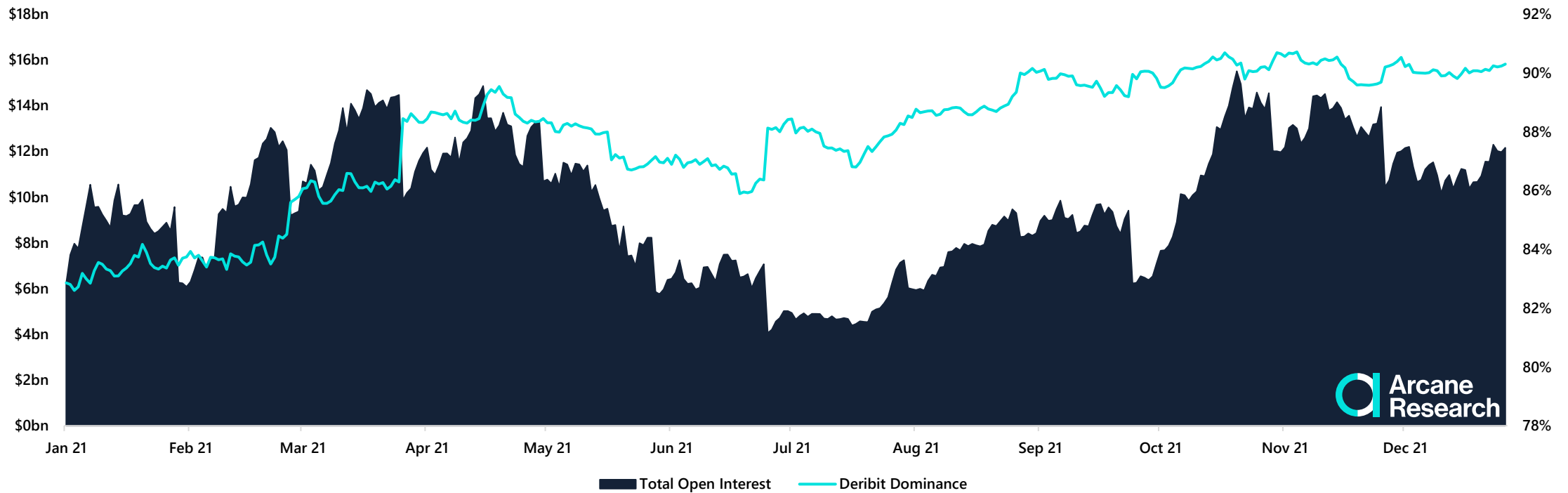
Source: Coinalyze, Skew

2022 prediction: The distribution of the open interest in the crypto futures market will continue to follow the market cap dominance closely. Relative differences between open interest share of an asset and its market dominance will create signal of oversaturated exposure in said asset.

Options see sustained traction in 2021

The options market has seen sustained traction throughout 2021. Deribit has seen its market share growing continuously throughout the year, accounting for more than 90% of the OI in the options market. Up from 82% starting the year. Option flows have become an increasingly critical signal from the market, with indicators such as skew and IV contributing to assessing the state of the market.

BTC Options: Open Interest vs Deribit's Market Share



Source: Skew

2022 prediction: Deribit will experience increased competition from tradfi venues.



INSTITUTIONAL DEMAND

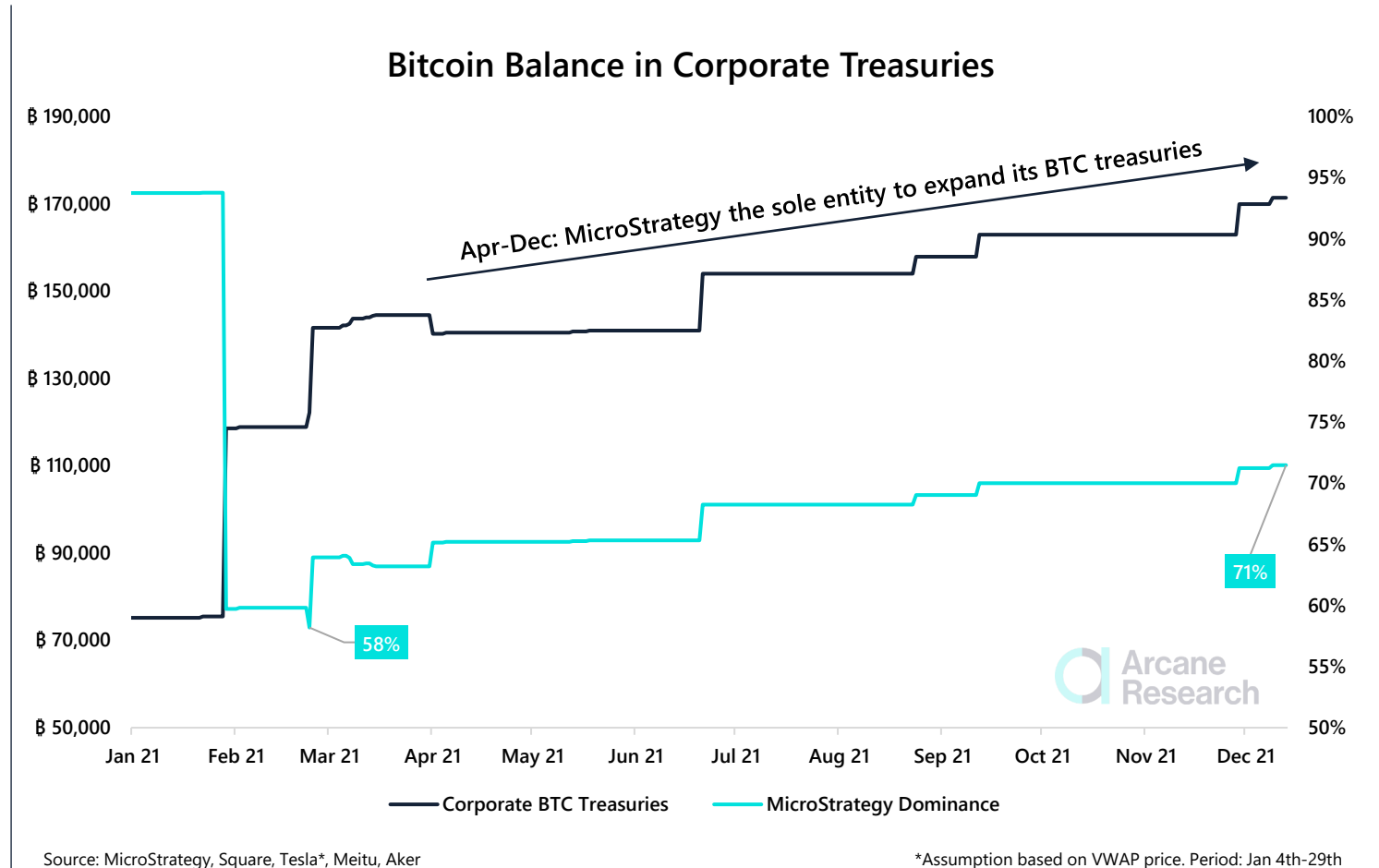


Bitcoin as a corporate treasury strategy

The defining trend of the first quarter in 2021 was the rise of bitcoin as a corporate treasury strategy among large publicly listed companies.

- MicroStrategy evangelized its strategy to other corporations in February. Later on, Tesla, Square, Aker and Meitu announced bitcoin purchases.
- However, in the months that followed, no new companies followed suit. Since April, MicroStrategy is the only company that has added bitcoin to its treasuries.
- MicroStrategy bitcoin treasuries account for 71.4% of the BTC held by publicly listed companies with bitcoin on their balance sheet.
- Tesla stopped accepting bitcoin payments due to environmental concerns. While we deem bitcoin to provide huge societal benefits, the ESG-narrative might disincentivize new corporations to follow the BTC trend.

2022 prediction: MicroStrategy will continue to buy bitcoin, while interest elsewhere will be muted.

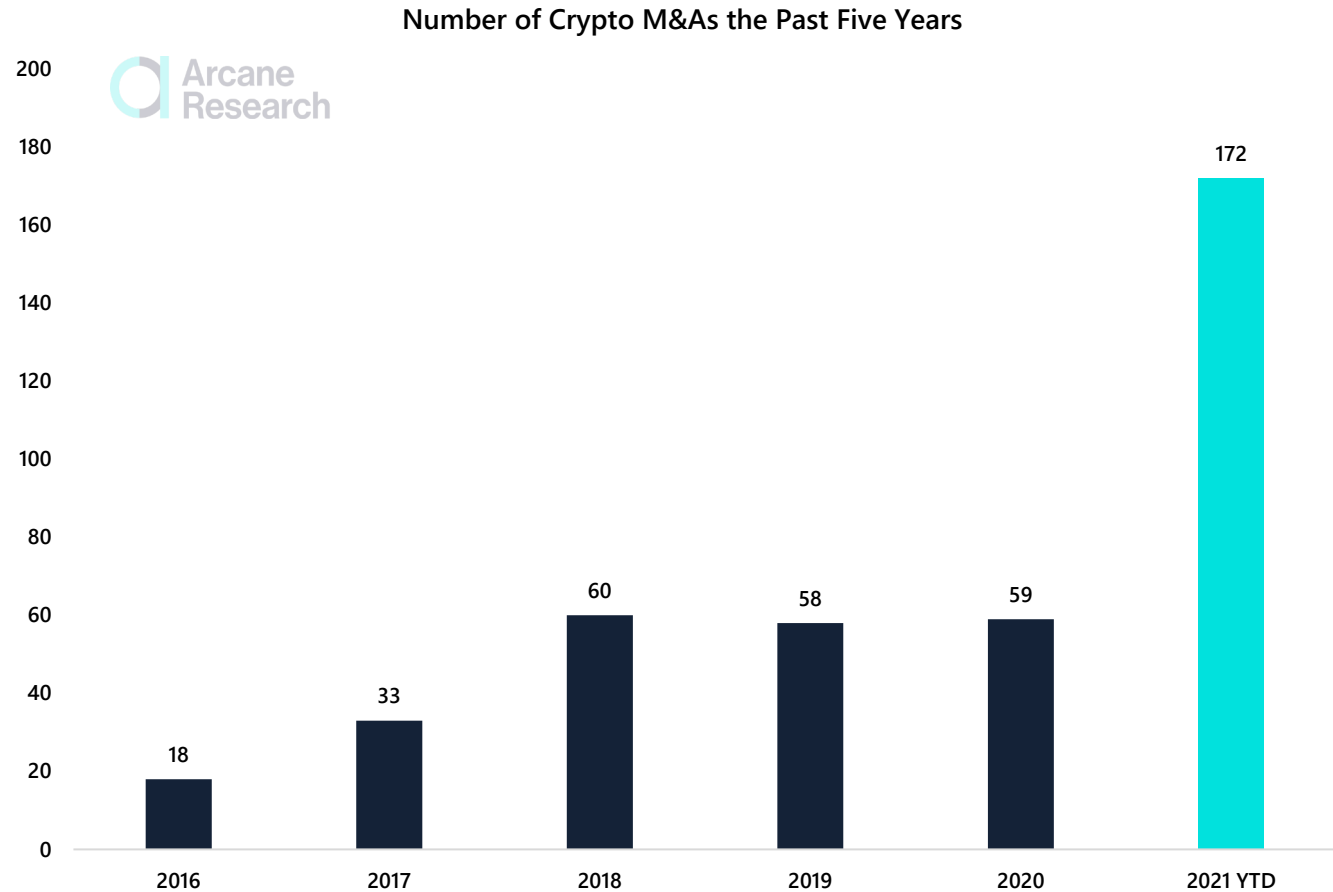


The year money started flowing into the crypto industry: M&A activity

In 2021 we saw 172 crypto-related M&A transactions – almost three times as many as in the previous record year, 2018.

- The M&A activity has increased throughout the year, with 50 M&As taking place in Q4 alone.
- In addition to a record-breaking number of M&As in 2021, we have also seen some massive funding rounds for private crypto companies. The Block estimates the number of crypto unicorns to be at least 64.
- Some of the biggest M&As this year has been SPAC-mergers, where crypto companies went public by merging with publicly traded companies ([next slide](#)).

2022 prediction: The number of crypto M&As will be even higher in 2022 than it was in 2021.

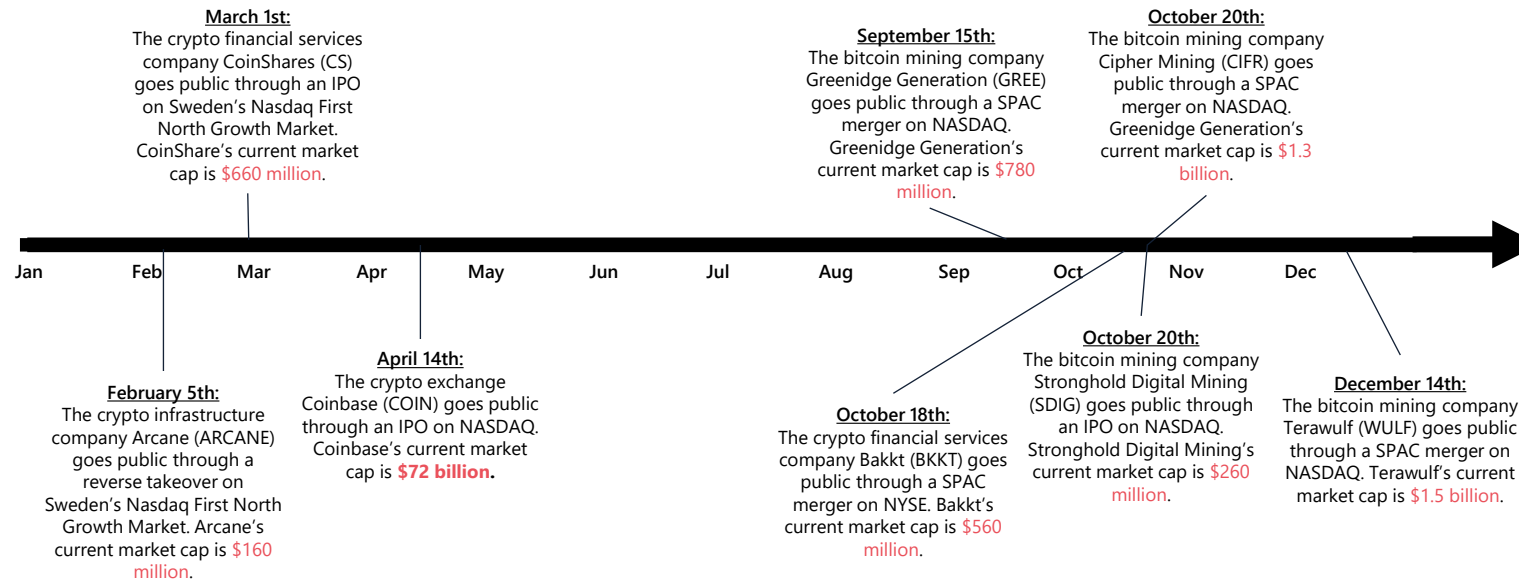


Source: Architect Partners

The year money started flowing into the crypto industry: Public listings

We saw many crypto companies go public in 2021. Coinbase was by far the biggest crypto public listing this year - and the seventh biggest U.S. public listing of all time.

Crypto Public Listings in 2021



- ### The 5 Biggest Crypto Public Listings Coming Up in 2022
- 1. Bullish.** Crypto exchange. \$9 billion SPAC merger.
 - 2. Circle Financial.** Crypto financial services company. \$4.5 billion SPAC merger.
 - 3. Bitdeer.** Bitcoin mining company. \$4 billion SPAC merger.
 - 4. Core Scientific.** Bitcoin mining company. \$4.3 billion SPAC merger.
 - 5. Primeblock.** Bitcoin mining company. \$1.5 billion SPAC merger.

2022 prediction: We will see even more crypto companies going public in 2022 than we saw in 2021, and several of them will have valuations of more than \$5 billion.

Grayscale - the premiums that turned into discounts

The notorious Grayscale premiums evaporated in 2021. Grayscale's flagship fund ended a five-year long streak with premiums in February as the Grayscale arb-trade got crowded.

The abysmal performance of the close-ended Grayscale funds:

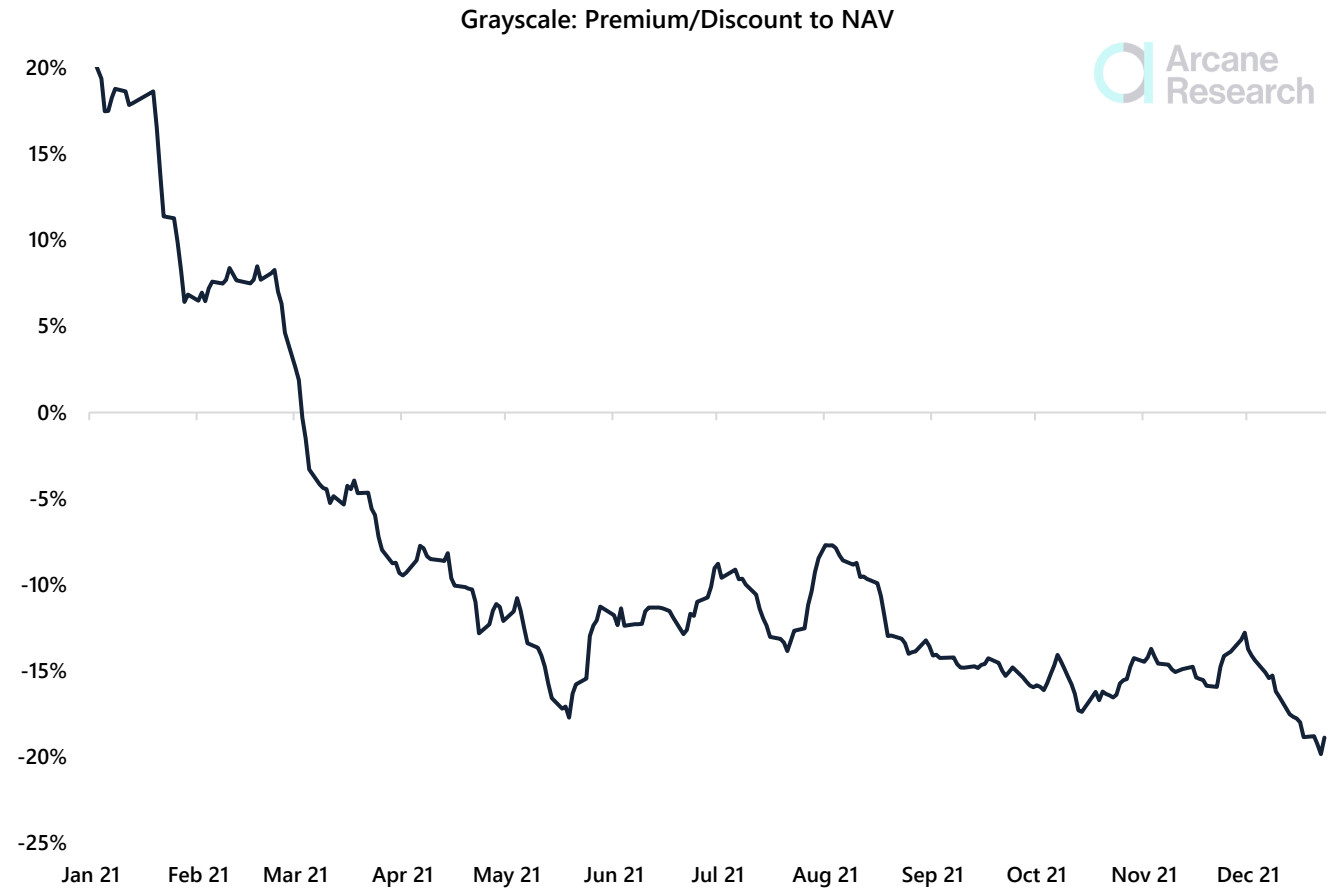
GBTC returns YTD: **14.8%**, BTC returns YTD: **77.32%**

ETHE returns YTD: **217%**, ETH returns YTD: **455%**

BCHG returns YTD: **-83%**, BCH returns YTD: **37%**

LTCN returns YTD: **-97%**, LTC returns YTD: **28%**

2022 prediction: GBTC discounts will narrow as we approach the ETF verdict in June.



 Arcane Research

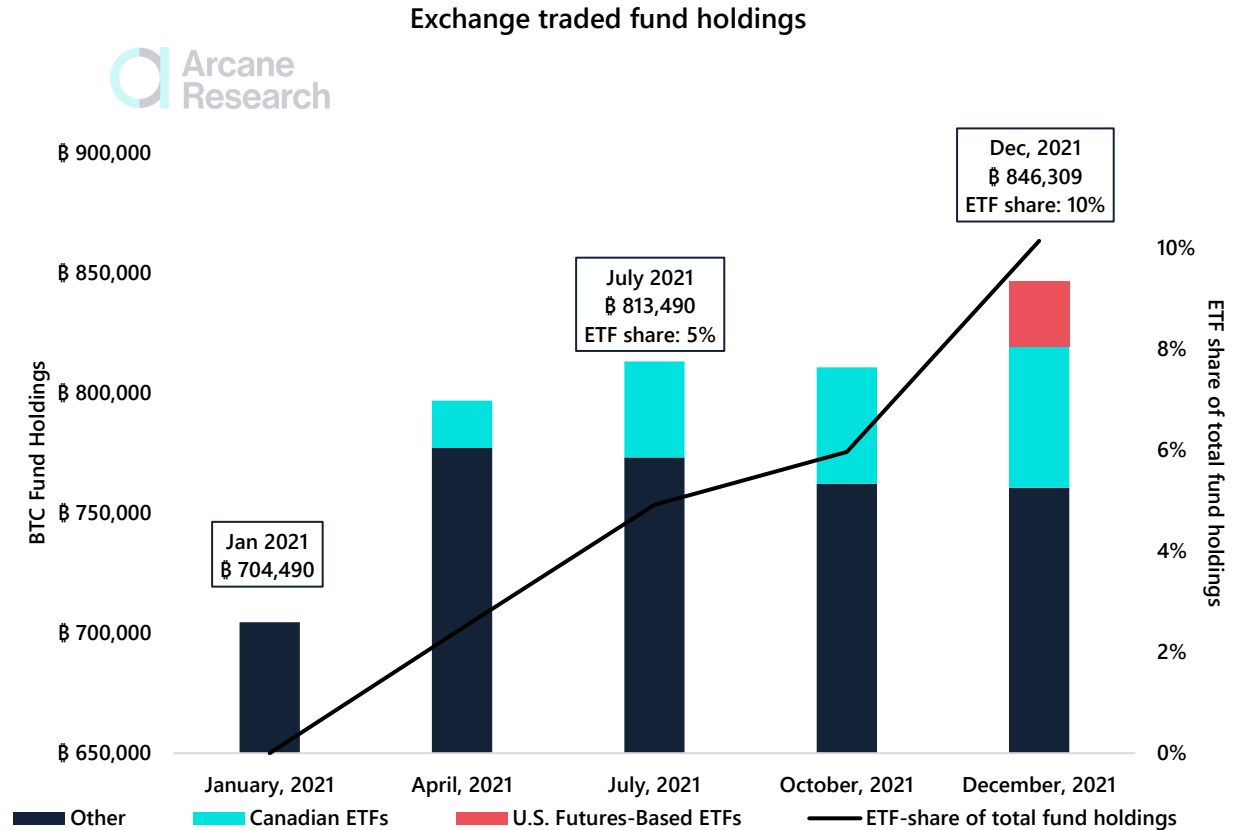
Source: Grayscale, NYDIG, yCharts

Investment vehicles' holdings grew by more than 140,000 BTC in 2021

2021 has been a massive year for bitcoin-related investment vehicles.

- The maturing market has led financial regulators to finally approve spot-based ETFs and physically backed ETPs in certain jurisdictions, in addition to the approval of the futures-based ETFs in the U.S.
- This has caused more BTC to get absorbed into investment vehicles, which saw their aggregated funds growing more than 140,000 BTC in 2021, with ETF's seeing a continuous uptrend in its market shares.

2022 prediction: Exchange-traded bitcoin investment vehicles will hold more than 1 million BTC by the end of next year.



Source: Bytetrete

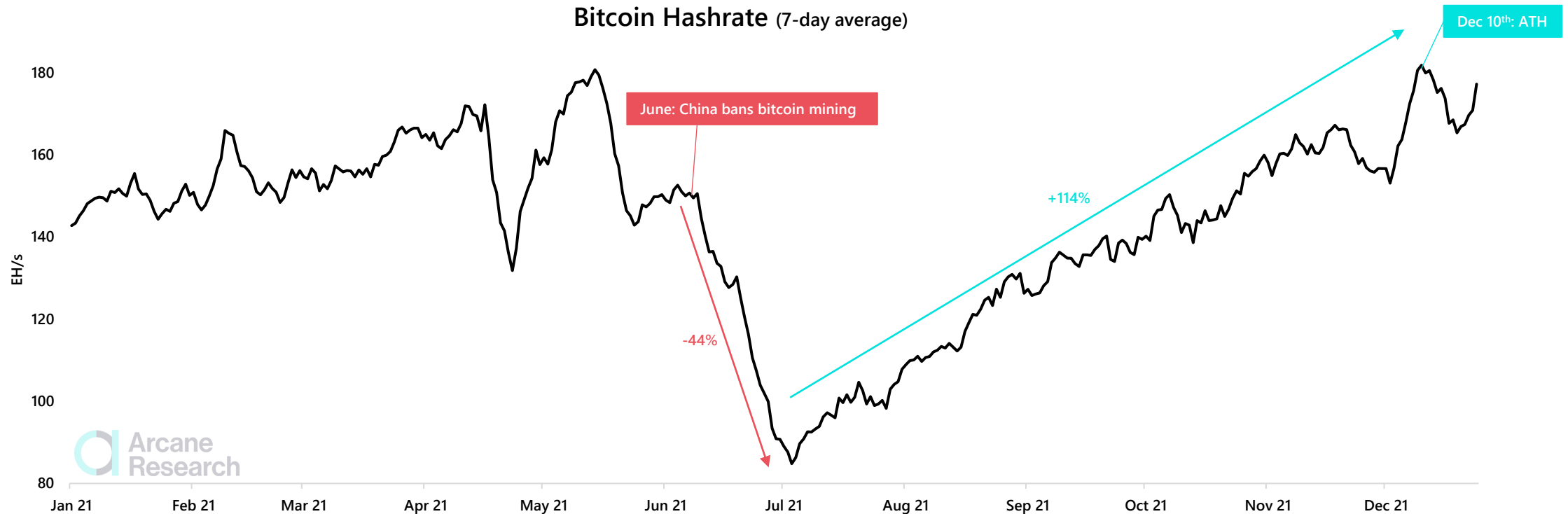


BLOCKCHAIN ACTIVITY



China bans bitcoin mining: The Bitcoin network proves its resilience

Bitcoin's hashrate plunged more than 40% as Chinese miners turned off their machines after China banned bitcoin mining in early June. The removal of mining capacity from China created an unfulfilled gap in bitcoin mining, which suddenly made the activity much more profitable. The super-profits of bitcoin mining incentivized miners outside of China to increase their mining capacity as fast as possible. In early December, the hashrate had more than doubled from the bottom. What is the takeaway here? The Bitcoin Network lost almost half of its computing power without severely impacting functionality and security, showcasing the most resilient computing network globally.



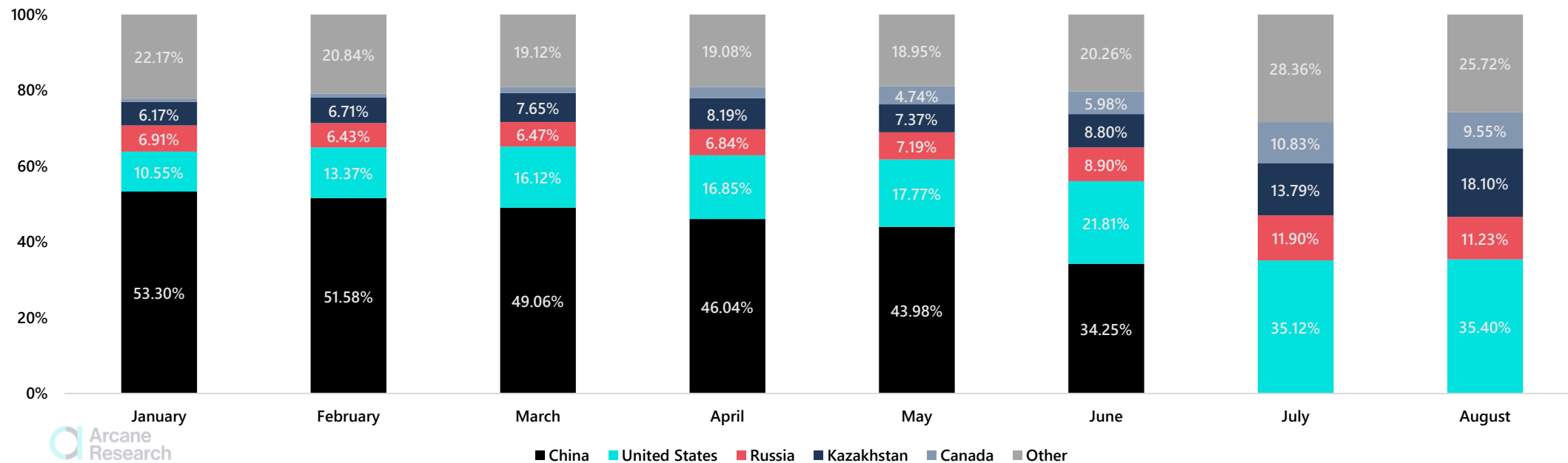
Source: Blockchain.com

2022 prediction: Bitcoin's hashrate will reach 300 EH/s in 2022.

China bans bitcoin mining: The great mining migration

China's decision to ban bitcoin mining kicked off a massive geographical shift in the industry. Chinese miners, who produced more than 40% of the hashrate, suddenly had to switch off their machines. After the ban, the U.S. emerged as the new leading bitcoin mining country, with the U.S. share of the global hashrate growing from 11% in January to 35% in August. Canada, Kazakhstan and Russia have also increased their share of the global hashrate. The rapid geographical shift of bitcoin mining shows us that although it's a physical industry, it's highly mobile, and the geographic distribution of hashrate can change quickly.

Bitcoin Mining: Change in Geographical Distribution 2021

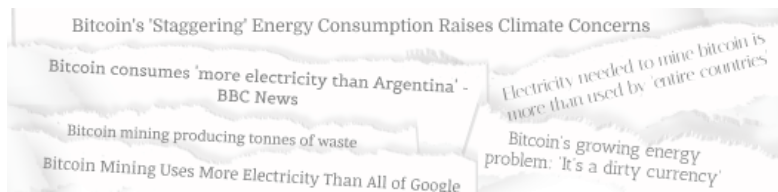


Source: Cambridge Centre for Alternative Finance

2022 prediction: Hashrate will become even more geographically distributed in 2022, as miners set up operations in new places, like Latin America.

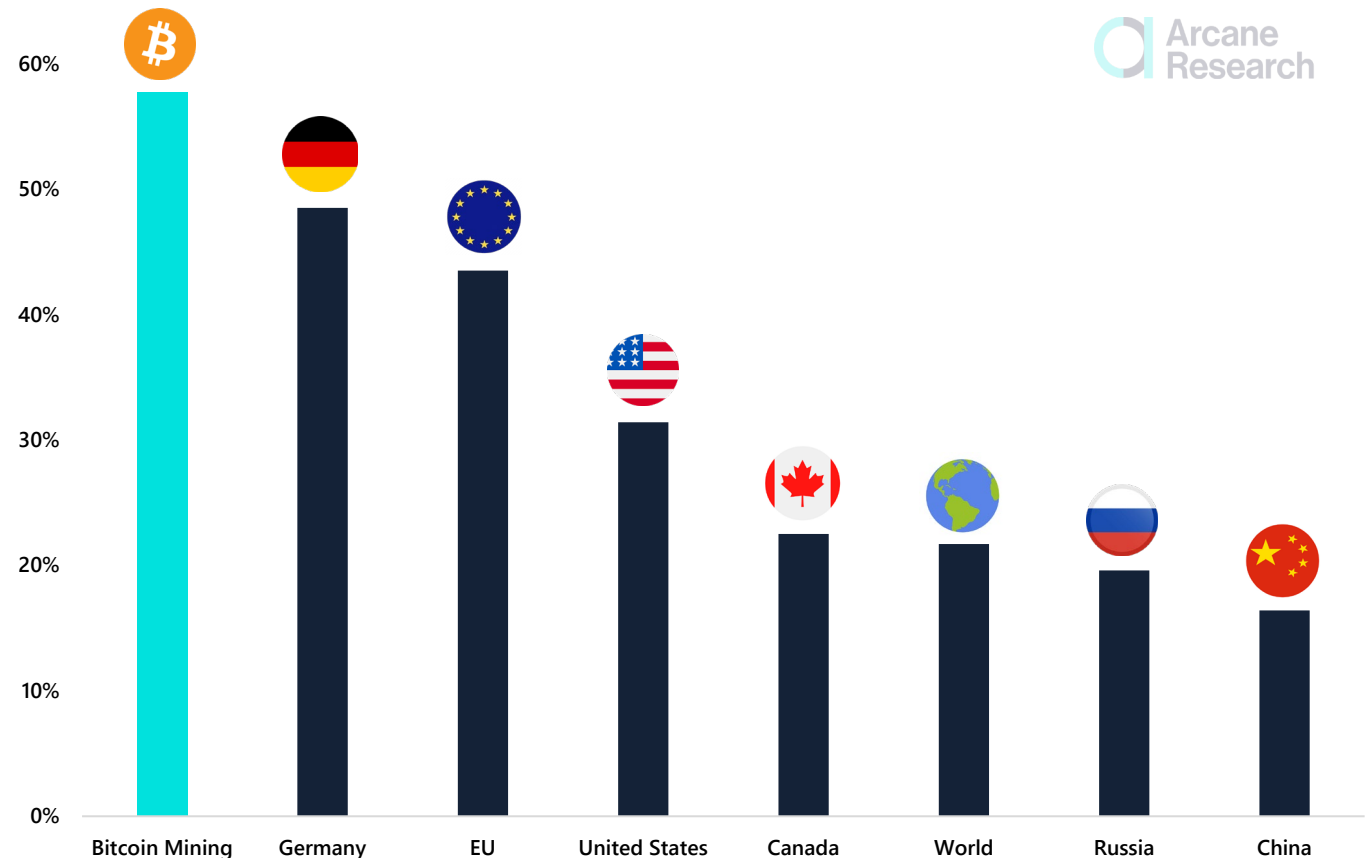
The bitcoin mining energy consumption debate

During the Spring bull run, Bitcoin's energy consumption debate took off, and many attacked Bitcoin for its allegedly harmful impact on the environment. In response, Michael Saylor and some of the biggest bitcoin miners formed The Bitcoin Mining Council as a forum for bitcoin miners to report their energy usage and carbon intensity. The Bitcoin Mining Council's first report found the sustainable power mix* of bitcoin miners to be almost three times as high as the global average.



2022 prediction: Bitcoin's energy consumption will continue to be a hot topic in 2022, leading certain jurisdictions to ban bitcoin mining – while other energy-rich jurisdictions will embrace the industry.

Sustainable Power Mix*: Bitcoin Mining vs Countries



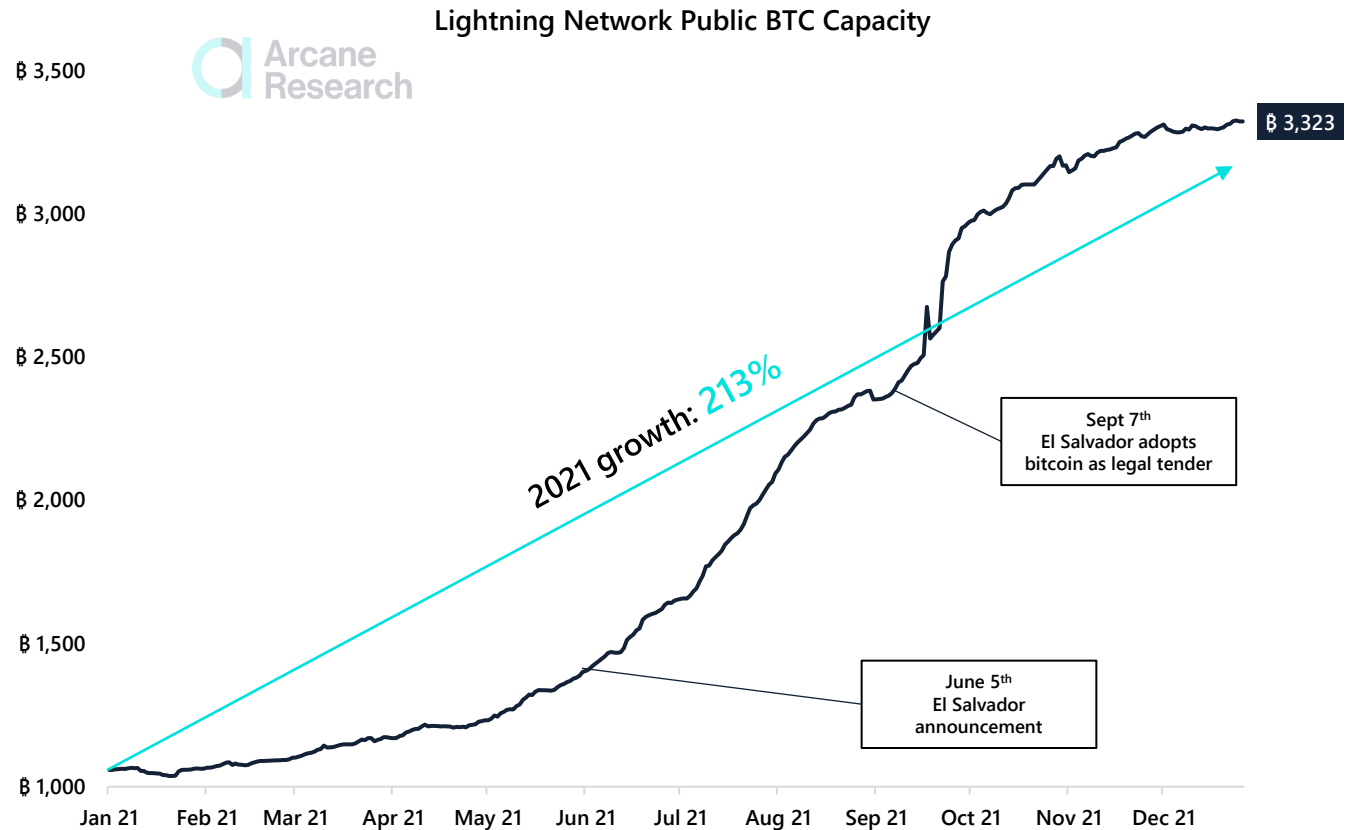
Source: Bitcoin Mining Council

*Hydro, wind, solar, nuclear, geothermal, and carbon-based generation with net carbon credits.

The Lightning Network's breakthrough year

The public bitcoin capacity on the Lightning Network grew by 213% in what was a breakthrough year for the layer-2 bitcoin scaling solution. El Salvador adopted Bitcoin as legal tender, and several exchanges and Twitter integrated Lightning solutions to their offerings.

2022 prediction: The Lightning Network adoption will remain in 2022, pushing the public capacity above 5,000 BTC by year-end.

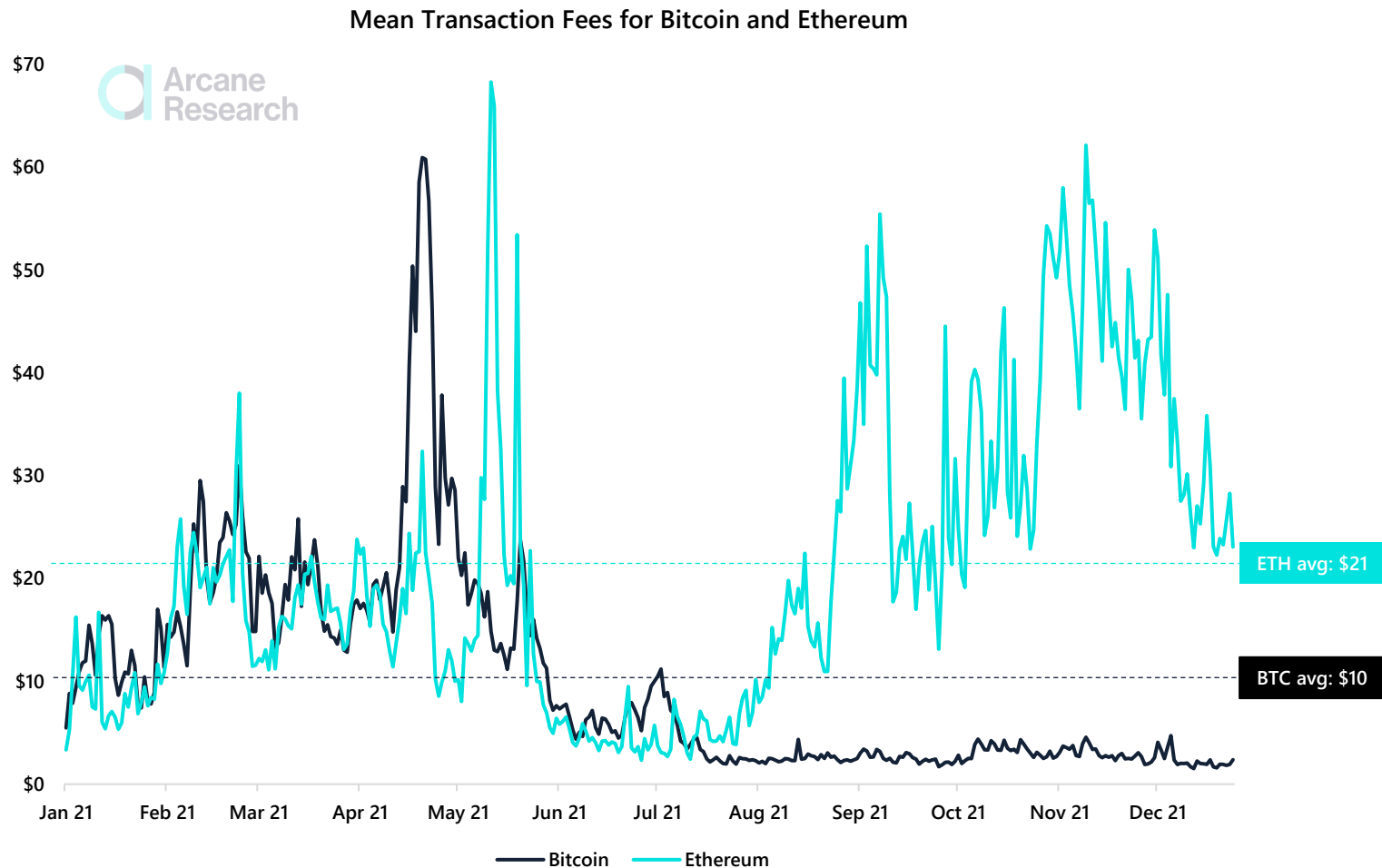


High transaction fees for Ethereum – but abnormally low for Bitcoin

Transaction fees on Ethereum have been on extreme levels throughout most of 2021, while Bitcoin has seen abnormally low transaction fees for most of the year.

- Since June, Bitcoin's transaction fees have been only \$3.5 on average. Bitcoin's low transaction fees highlight the low on-chain activity on Bitcoin in the second half of 2021 as crypto traders were more focused on altcoins ([slide 12](#)).
- In the same period, Ethereum's transaction fees have exploded because of the surge in popularity of DeFi and NFTs.
- Because of the high transaction fees, there's currently no room for small transactions on Ethereum – giving rise to other, competing layer-1 platforms ([slide 14](#)) and layer-2 scaling solutions.

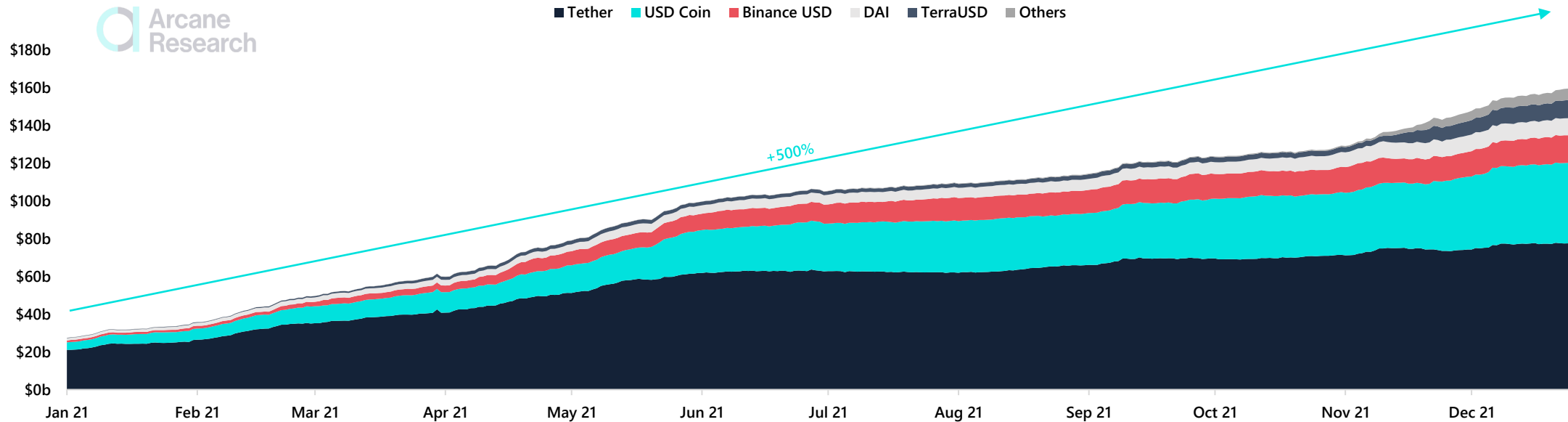
2022 prediction: Ethereum's scaling debate will increase in force, leading to increased adoption of layer-2 Ethereum scaling solutions and other layer-1 platforms.



Massive stablecoin growth in 2021

In 2021, the total market cap of stablecoins has increased 500% - growing more than twice as fast as the rest of the crypto market. Innovative lending products paying out high yields for stablecoin deposits have primarily been the drivers for stablecoin growth. Especially USD Coin has ridden the lending product wave, as the stablecoin has grown much faster than the biggest stablecoin, Tether. Binance USD has also had tremendous growth in 2021 as the Binance Smart Chain ecosystem has seen a surge in popularity.

Stablecoins: Total Market Cap



Source: CoinGecko

2022 prediction: The stablecoin supply will continue to balloon in 2022 – leading to increased regulatory scrutiny of stablecoins.

2022 prediction: USD Coin will overtake Tether’s position as the biggest stablecoin.

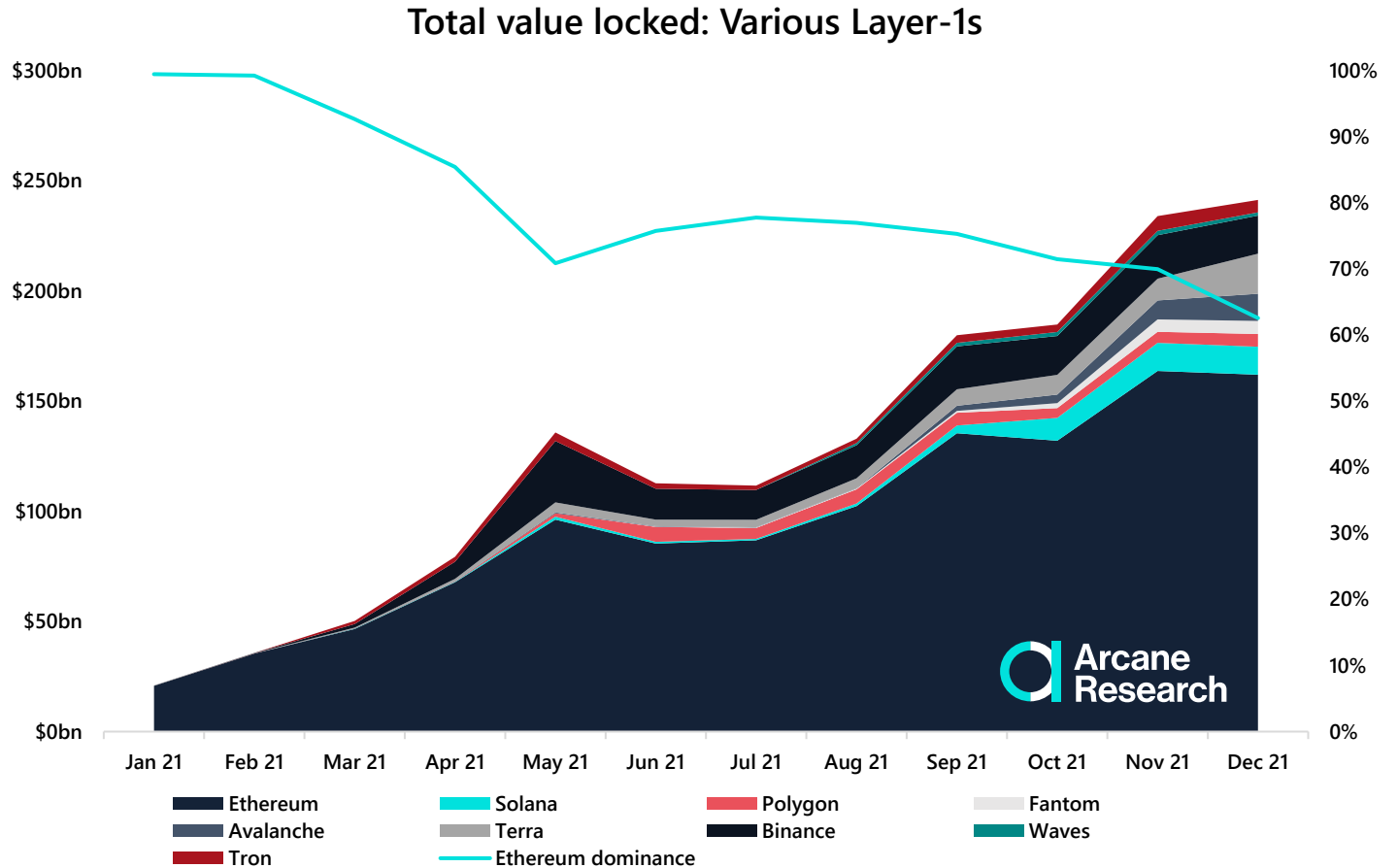
2022 prediction: Increased regulatory scrutiny of centralized stablecoins will lead to a massive growth of algorithmic stablecoins in 2022.

Ethereum under pressure from other L1s as TVL climbs towards \$250 billion

In 2021 DeFi spread its wings to other layer-1 protocols, as Ethereum fees remained continuously high (slide 37).

- On Jan 1st, Ethereum-based DeFi accounted for 99% of the total value locked in the DeFi ecosystem. Now, Ethereum's market share has declined to 63%.
- Binance Smart Chain was the first alternative ecosystem to take market shares from Ethereum. Later on, Solana, Avalanche and Terra have seen a growing penetration with other layer-1 protocols lurking slightly behind.
- High throughput and low fees have contributed to the growth of alternative layer-1s. While these qualities to some extent are caused by more centralized structures, market participants don't seem to care.
- Layer-2 scaling solutions are currently seeing growing adoption on Ethereum. These scaling solutions will be important for Ethereum to maintain its leading role in the ecosystem.

2022 prediction: Ethereum users will increasingly adopt layer-2 solutions.



Source: DefiLlama



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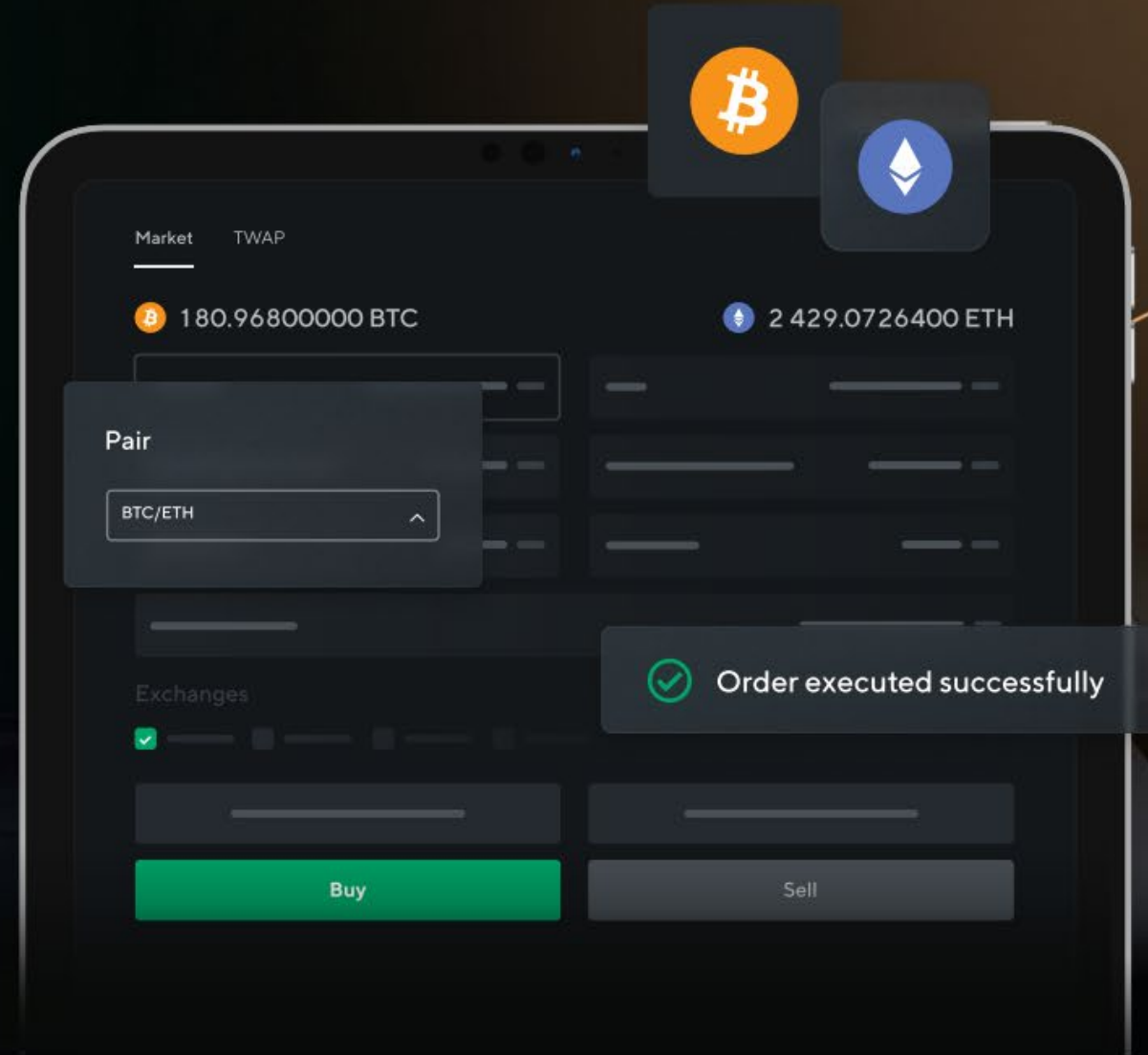
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