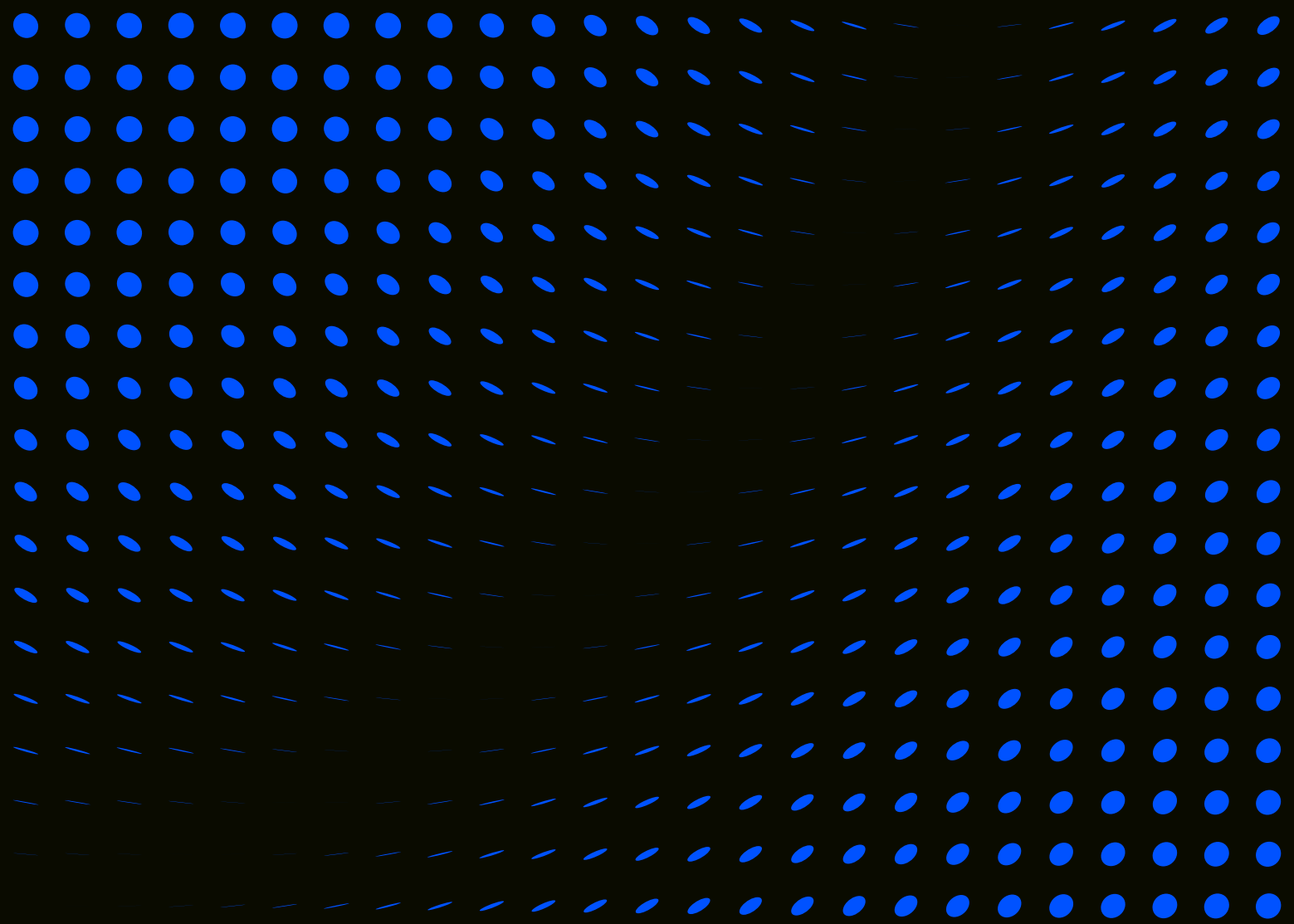


H1 2021 in Review

July 2021

coinbase INSTITUTIONAL



A note from the author

The first half of 2021 was one of the most active periods on record for crypto, ushering in new all-time highs in asset prices, user adoption, and trading activity. On the heels of a breakout in the second half of 2020, crypto cemented its place in the mainstream of the financial and technology sectors. Crypto saw continued price volatility — total market capitalization began the year at \$769 billion, peaked at \$2.4 trillion in May, and ended the period at \$1.4 trillion, registering a net gain of 86% year to date.¹

Coinbase continued to play a leading role in the market's development. Our institutional practice introduced a new integrated [Prime Broker](#), which offers clients unified access to multi-venue algorithmic trade execution in an agency model, cold storage security for more than 120 assets inside of our qualified custodian, and crypto and cash financing capabilities. We also added key new crypto market analytics and staking infrastructure products through our acquisitions of [skew](#) and [Bison Trails](#), respectively. In April, Coinbase made its debut in the public markets via a direct listing (NASDAQ: \$COIN), becoming the largest pure-play crypto platform to achieve this milestone.

Institutional investment in crypto accelerated in the first half of the year, and we saw pronounced growth in our two primary client segments: (i) institutional investors directly leveraging our Prime Broker to access crypto markets, including traditional hedge funds, endowments, and corporates; and (ii) banks, fintechs, and brokerages building on our Prime Broker's APIs to develop crypto products and services for their own clients. Our institutional clients transacted in record size: we executed nine- and 10-figure trades in large-cap crypto assets via the Prime Broker with minimal market impact.

In this report, we aim to take readers on a tour of the crypto horizon, summarizing the most important market developments we are tracking from our institutional practice. We cover core network and financial growth metrics for Bitcoin and Ethereum, exchange volumes, transaction cost analysis and the market impact of large trades, our institutional practice's product and strategy evolution, our outlook on ETFs, growth in the stablecoin market, DeFi, highlights from our M&A activity, Bitcoin and the environment, and the intersection of crypto and politics.

We hope you find the report useful. If you have questions about our work or want to understand how Coinbase's institutional practice can help your firm engage with the crypto markets, please contact us at institutional@coinbase.com.

Brian Foster

Coinbase Institutional Sales, Trading, and Prime Services

Coinbase Ventures



Brian Foster is a member of our Institutional Sales, Trading, and Prime Services team and Coinbase Ventures. Previously Brian held strategy and product roles at Curv, a digital asset security company (acquired by PayPal), and was VC at Founder Collective and Innovation Endeavors (FKA Marker LLC), where he focused primarily on crypto assets, cybersecurity, and enterprise software. He began his career in marketing and sales at BuysideFX, an FX trading software start-up. Brian holds an MBA from Harvard Business School and a BA from Middlebury College.



Additional Resources

The H1 2021 report is part of our semi-annual “in review” series highlighting market developments and updates on our institutional practice in long-form format. We also encourage readers to visit and subscribe to our team’s other publications to stay up to date:

- [Weekly market commentary from our trading team](#)
- [Institutional resource center](#)
- [Coinbase Institutional Twitter account](#)

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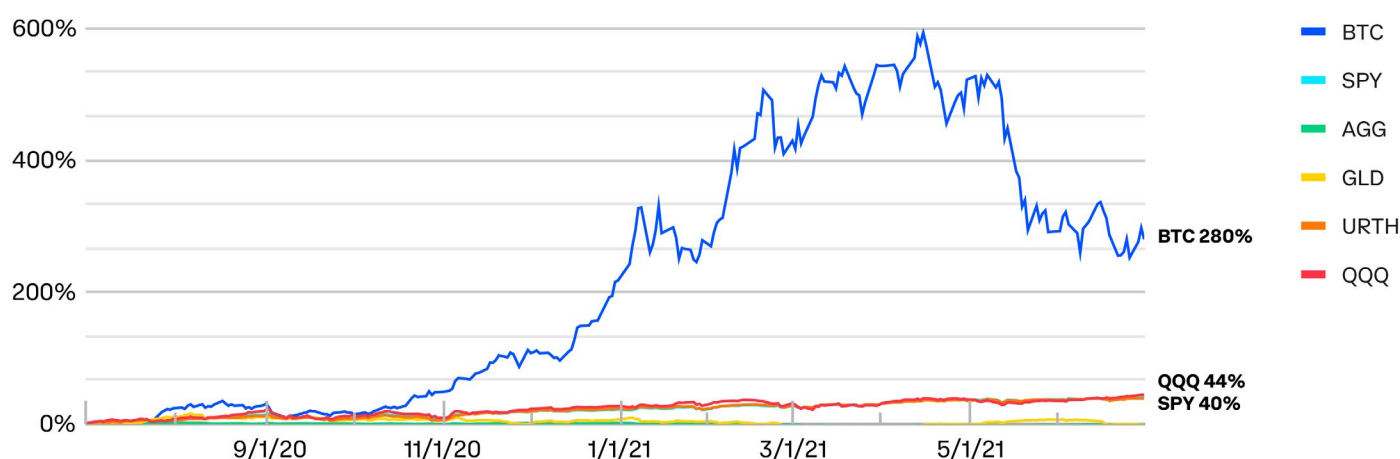
1. Bitcoin

BTC/USD performance

BTC/USD returned 280% for the 12-month period and 20% for the 6-month period ending June 30.² The bulk of BTC's returns came during the Q4 2020 and Q1 2021 periods before the crypto asset's price declined in Q2 2021. BTC/USD peaked at \$64,899 on April 13 and finished the period at \$34,996.

Coinbase's institutional practice saw strong demand from institutional investors in the first half of the year, continuing momentum from 2020. An increasing share of our clients now consider BTC to be a mainstay in their long-term portfolios, and an emergent store of wealth that competes with gold.

BTC versus other assets, last 12 months



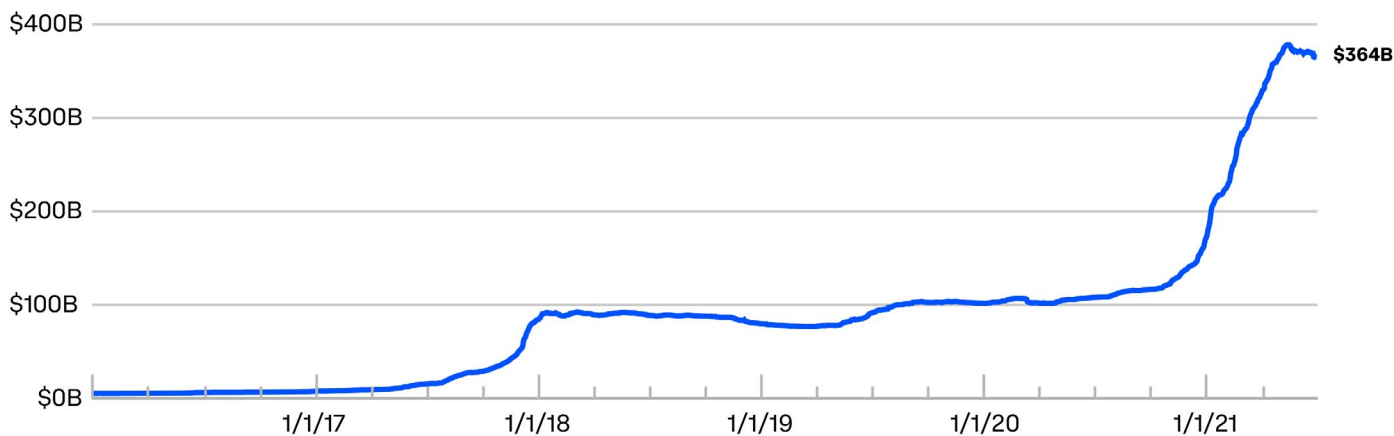
Source: IEX cloud/Coinbase Exchange

Realized capitalization

BTC stored \$657 billion in global wealth at the end of H1 as institutional investors such as traditional hedge funds, endowments, and corporates increased their exposure over the period.³ BTC's [realized capitalization](#), which values each unit of BTC at the price it most recently moved on-chain, reflected this growth and rose to \$364 billion by the end of the period.⁴

1.1

BTC realized cap



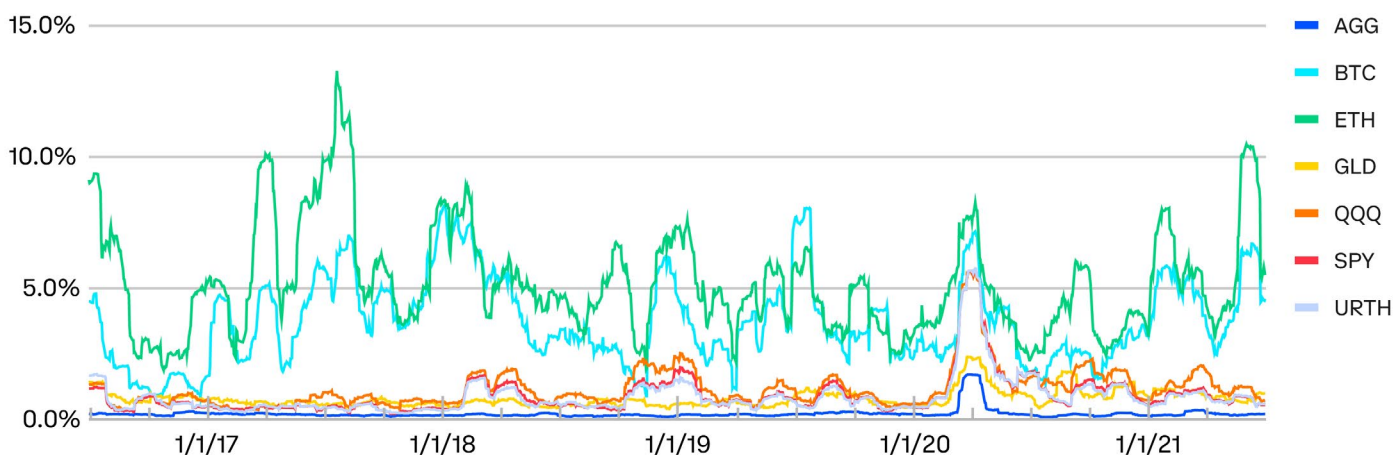
Source: Coin Metrics

Volatility

The benchmark crypto asset remained volatile in the first half of 2021. For the period, average rolling 30-day volatility stood at 4.8%, slightly higher than its H1 2020 mark of 3.7%.⁵

Volatility peaked in two pronounced phases in H1: first in the run-up to BTC's all-time high at \$64,899 on April 13, then in the May selloff, which saw a drawdown of 56% from the all-time high to \$28,800 on June 21, before finishing the period range bound in the \$30-40k price band.⁶

Rolling 30-day volatility



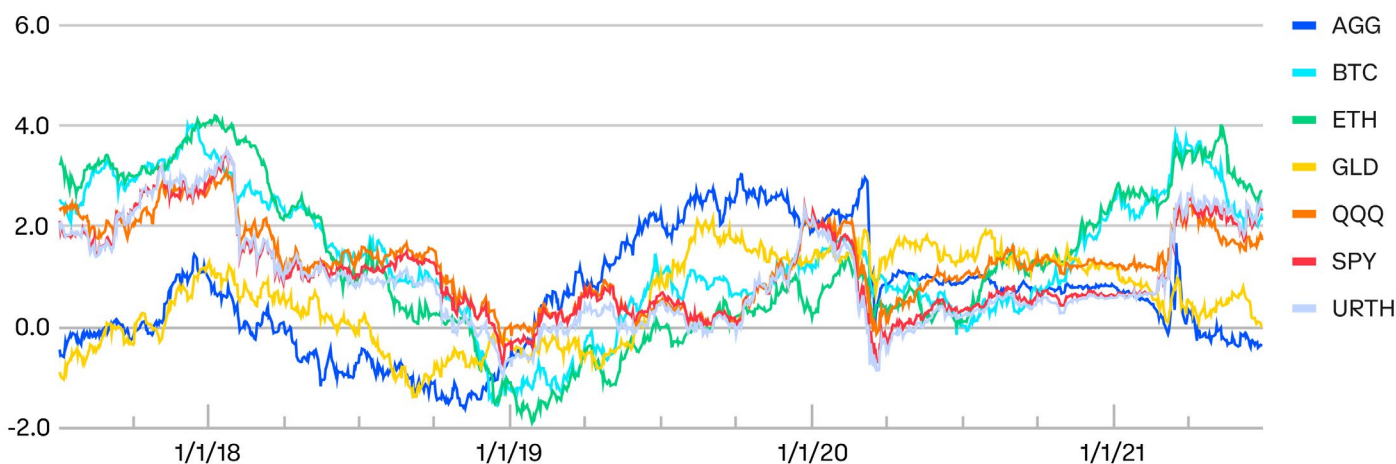
Source: EX cloud/Coinbase Exchange

Sharpe ratio

BTC's strong first quarter compensated investors for its volatility, although the second quarter began to negatively impact BTC's Sharpe ratio. For the period, BTC performed well against benchmarks, recording an average rolling annualized Sharpe ratio of 2.77 for the period, up from 1.01 in H1 2020.⁷

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Rolling 1 Year Sharpe ratio

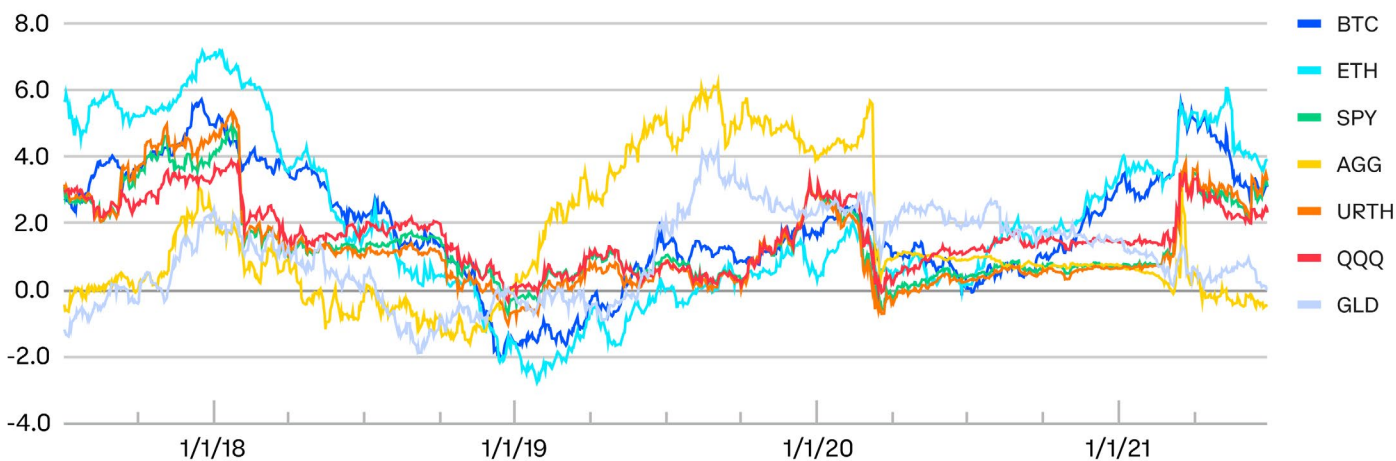


Source: IEX cloud/Coinbase Exchange

Sortino ratio

While the Sharpe ratio penalizes BTC for its “upwards” volatility as well as price drawdowns, the Sortino ratio penalizes only negative volatility. On this metric, BTC also performed well against benchmarks, posting an average rolling annualized Sortino ratio of 2.12 for the period, up from 1.40 in H1 2020.⁸

Annualized Sortino ratio



Source: IEX cloud/Coinbase Exchange

Correlation

BTC continued to show low correlation with other benchmarks in H1 2021. Its trailing twelve month correlation coefficient was 14.1% with the S&P 500 (SPY), 8.6% with the aggregate bond index (AGG), 10.6% with gold (GLD), and 15.7% with the MSCI world index (URTH).⁹

1.3

Correlation of daily returns of assets, since 2016

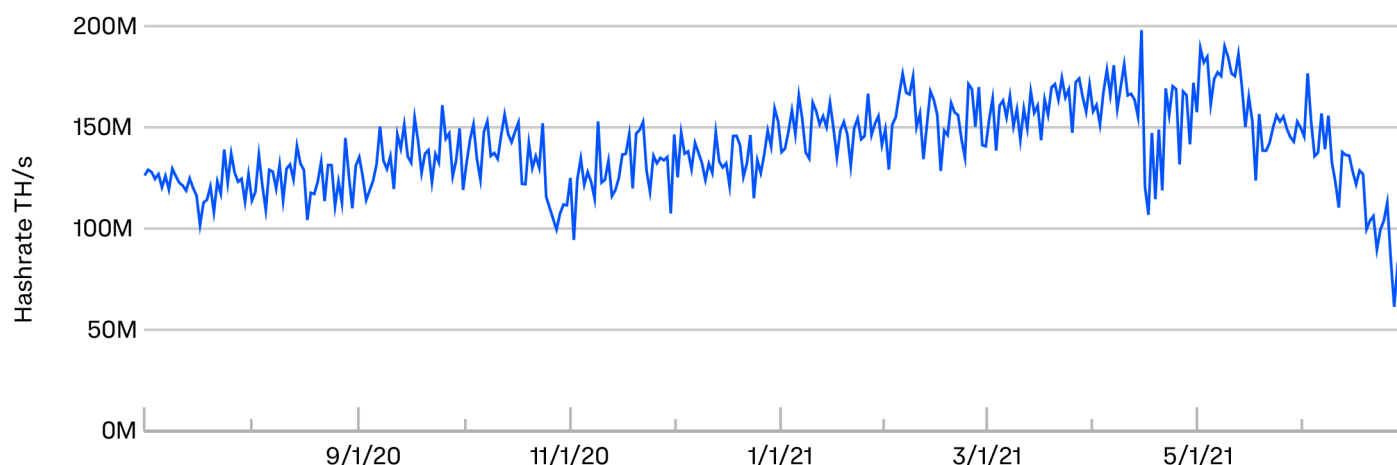
	BTC	ETH	SPY	AGG	GLD	URTH	AAPL	AMZN	GOOG	MSFT	FB
BTC	100.00%										
ETH	67.2%	100.00%									
SPY	14.1%	16.1%	100.00%								
AGG	8.6%	9.5%	5.6%	100.00%							
GLD	10.6%	11.8%	5.8%	35.3%	100.00%						
URTH	15.7%	18.4%	98.0%	8.5%	9.7%	100.00%					
AAPL	12.1%	12.7%	75.4%	4.9%	6.2%	71.8%	100.00%				
AMZN	8.8%	10.8%	61.3%	5.9%	6.9%	57.8%	63.1%	100.00%			
GOOG	10.6%	13.7%	76.8%	5.5%	5.3%	74.6%	65.8%	67.2%	100.00%		
MSFT	11.7%	13.2%	83.0%	7.1%	5.6%	79.9%	72.6%	71.3%	77.3%	100.00%	
FB	8.1%	10.9%	63.6%	8.1%	7.1%	61.1%	60.8%	62.8%	69.2%	63.8%	100.00%

Source: IEX cloud/Coinbase Exchange

Hashrate

The Bitcoin network's hashrate steadily climbed for the majority of H1 2021, with more miners contributing computation to the network to capture new BTC issuance. Hashrate reached an all-time high of 198 million terahashes per second in April.¹⁰

BTC hashrate, last 12 months



Source: Coinbase Analytics

Hashrate began to fluctuate in the second quarter, in connection with the Chinese government's [crackdown](#) on Bitcoin mining, and ended the period at a lower threshold of 91 million terahashes per second.

Among the Chinese mining community, we observed interest in relocation to areas that are embracing Bitcoin, particularly in North America. We anticipate that the increasing competitiveness of clean energy worldwide, coupled with a more balanced, regulatory approach towards Bitcoin in democratic nations, will continue

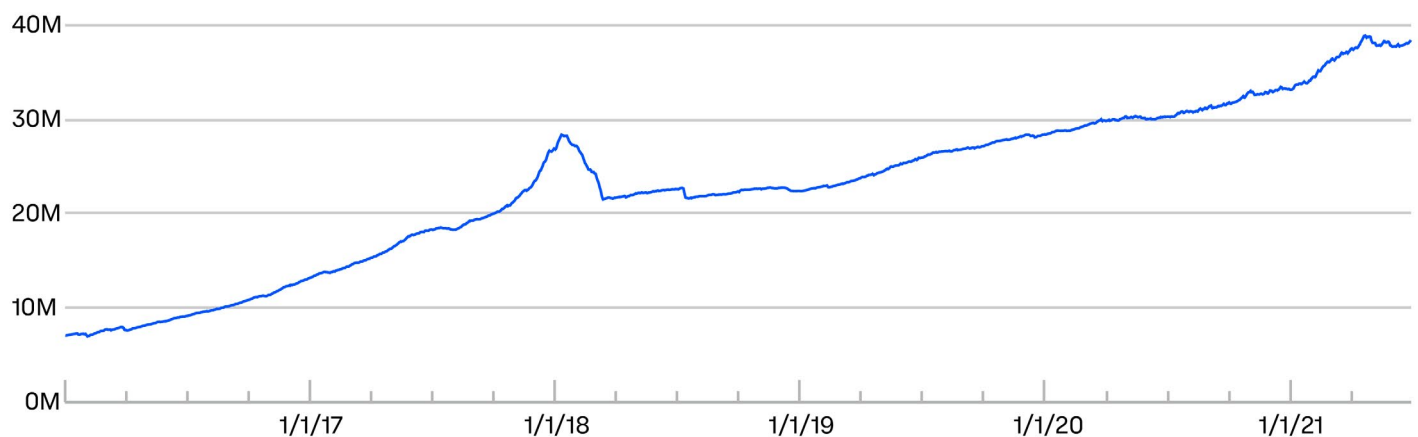
1.4

to decentralize the Bitcoin network and reduce China's share of total network hashpower over the long term. Rebalancing of hashrate in new geographies may take time as the largest companies work through the logistics of relocation, or in some cases, sell off hardware assets to opportunistic new entrants.

Active wallets

The global number of BTC holders continued to grow in H1 as crypto education and ease of access improved. The total number of unique Bitcoin addresses holding a BTC balance greater than zero ended H1 at 38 million, up from 33 million at the beginning of the period. We believe this metric likely trails real user growth number significantly, given that many of the fastest-growing access points for BTC holders are platforms that leverage omnibus wallet infrastructures on their backend that hold funds for many end users.

Bitcoin addresses with balance >0 over time

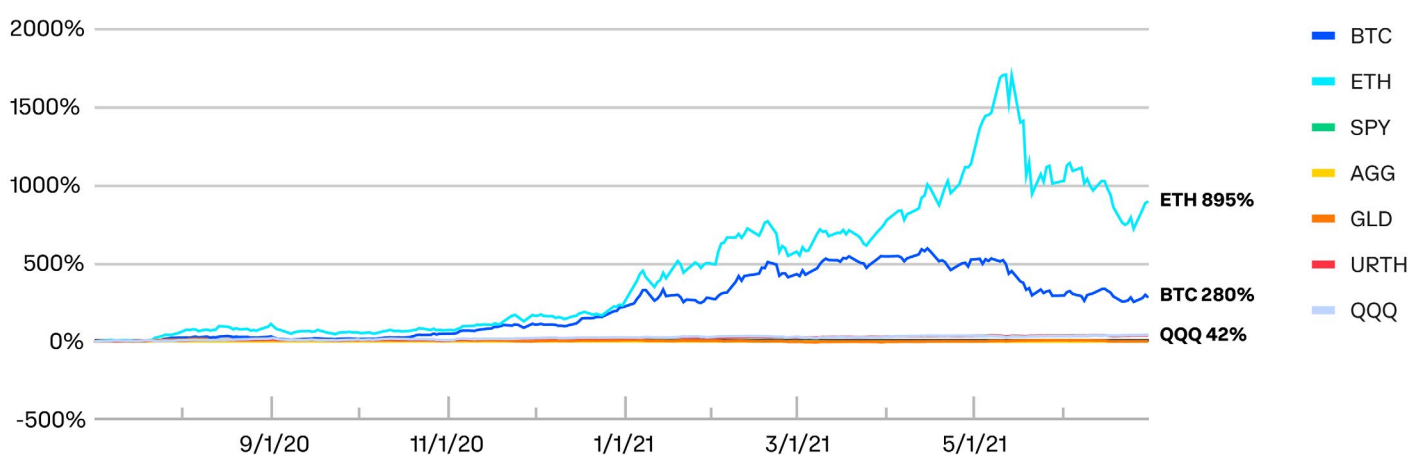


Source: Coin Metrics

2. Ethereum

ETH/USD outperformed benchmark assets, including BTC, in H1. The second most valuable crypto asset appreciated 895% over the 12-month period and 210% over the 6-month period ending June 30. Our institutional practice observed a handful of factors contributing to ETH's outperformance, chiefly: (i) increasing usage of DeFi protocols built on Ethereum, validating the network's value as a global financial utility and platform for developers; (ii) investor optimism in Ethereum's transition to "[ETH 2.0](#)," which will, among other changes, introduce a new proof-of-stake consensus mechanism to Ethereum that will turn ETH into a yielding asset; (iii) [EIP-1559](#), which is expected to decrease the supply of ETH by burning ETH gas fees as the network is used; and (iv) the rise of scaling solutions helping to improve network throughput, such as [Optimism](#) and [Polygon](#).

ETH versus other assets, last 12 months

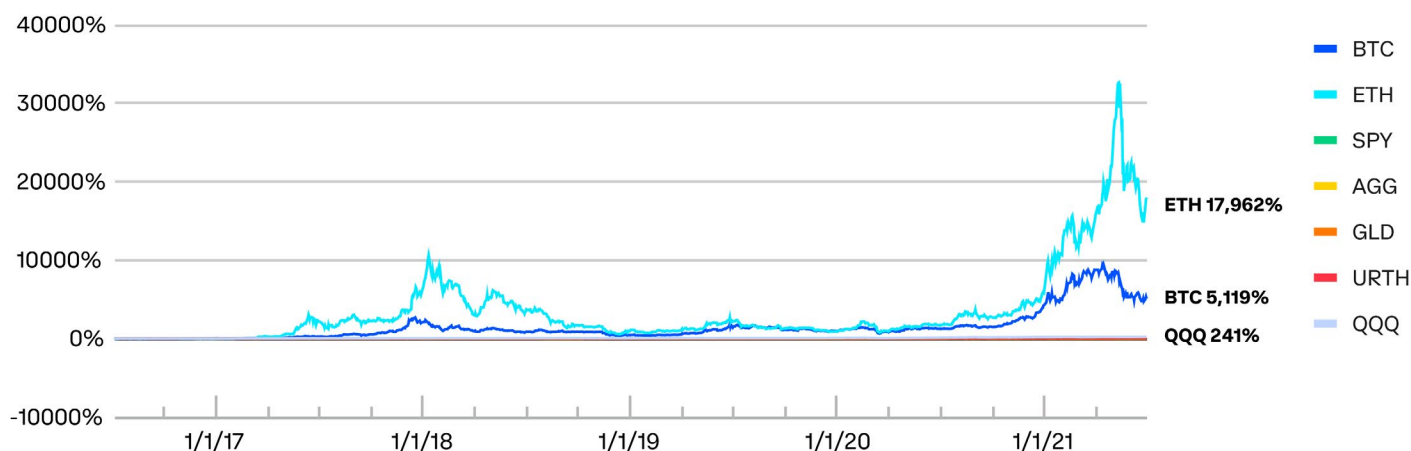


Source: IEX cloud/Coinbase Exchange

The first half of 2021 significantly improved ETH's five-year performance, bringing the asset's total return to 17,962% for the period.¹¹ Many of our largest institutional clients, including hedge funds, endowments, and corporates, increased or added first-time exposure to ETH in H1, believing the asset has long-term staying power tantamount to BTC's, while playing a differentiated role in their portfolios.

2.1

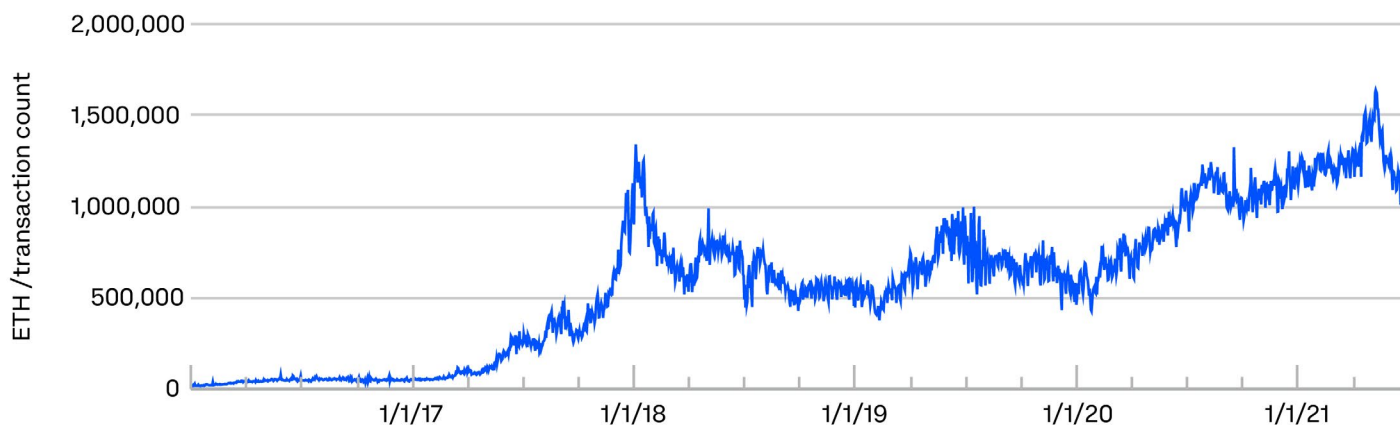
ETH versus other assets 2016-2021



Source: IEX cloud/Coinbase Exchange

Ethereum base layer network transactions grew again in H1, largely driven by Ethereum-based DeFi and stablecoin usage. Daily transactions reached a new all-time high of 1,638,890 on May 9th and finished the period at 1,189,577.¹²

Ethereum network daily transactions since inception

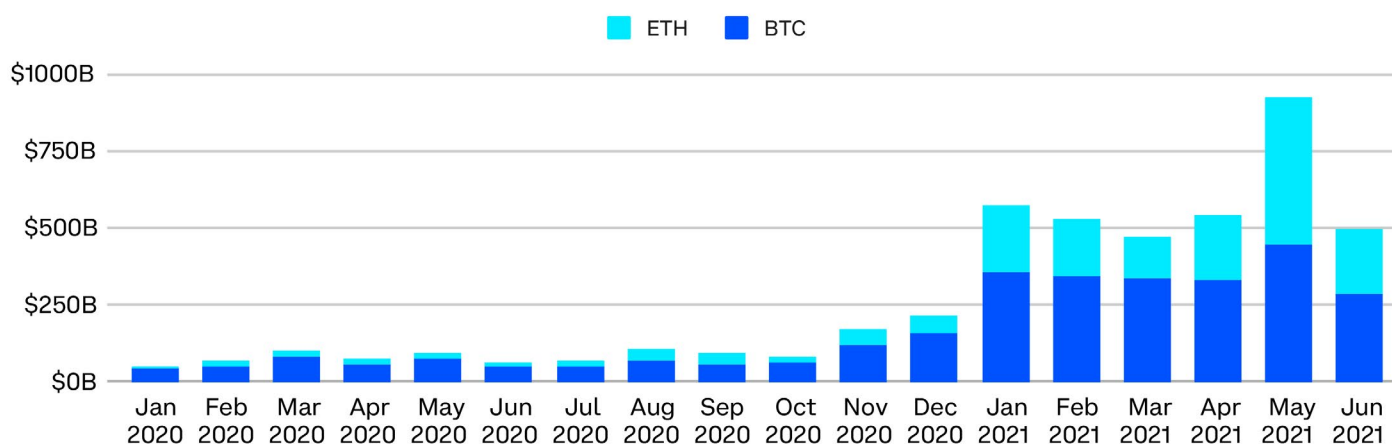


Source: Coinbase Analytics

3. Exchange volumes

Overall trading volumes rose in H1 across the major exchanges we track.¹³ Total BTC volume for the period reached \$2.1 trillion, up 489% from \$356 billion over the same period in 2020. Total ETH volume, meanwhile, reached \$1.4 trillion, up 1,461% from \$92 billion in H1 2020.¹⁴

BTC/USD and ETH/USD total volume



Source: Coinbase Analytics

A note to readers: Coinbase's institutional practice now operates both an exchange, the Coinbase Exchange, and a multi-venue algorithmic brokerage, Coinbase Prime. Coinbase Prime aggregates and optimally routes liquidity for our institutional clients across many exchanges and OTC desks, including the Coinbase Exchange, and acts as an agent by putting all liquidity venues in competition with each other for each child-fill of a trade. Coinbase Prime has an arm's-length relationship with the Coinbase Exchange and treats all execution venues equally; we represent this to our clients with fully transparent transaction cost analysis (TCA) reports, showing how we route every child order to optimize for the all-in best price for clients net of exchange fees.

4. Market impact of large transactions

The crypto market's rapidly improving liquidity profile — coupled with the more powerful trading capabilities now available to institutional investors such as Coinbase Prime — can now support much larger execution sizes with minimal market impact. Our institutional practice saw an increase in nine- and 10-figure trades in H1, primarily in the BTC/USD pair. Investors placing trades of this size sought to better understand market liquidity and the potential impact of their executions pre-trade.

We continued to resource our data science and research efforts to help answer these questions, including breaking ground on a pre-trade transaction cost analysis (TCA) capability that leverages our growing sample of large trades.

Estimating market impact by trade size

The Coinbase Prime Broker executes large trades in an agency model and in multiple tranches, programmatically subdividing each tranche into thousands of retail-sized child orders. The platform minimizes market impact and disguises clients' activity across up to 12 venues where we currently execute.

We can stitch together child-level data into larger meta-orders to provide reliable estimates for trade sub-tranches of up to \$150 million in BTC/USD spot and up to \$50 million in ETH/USD spot. (Note that real trade sizes can exceed \$1 billion and consist of multiple execution sub-tranches.)

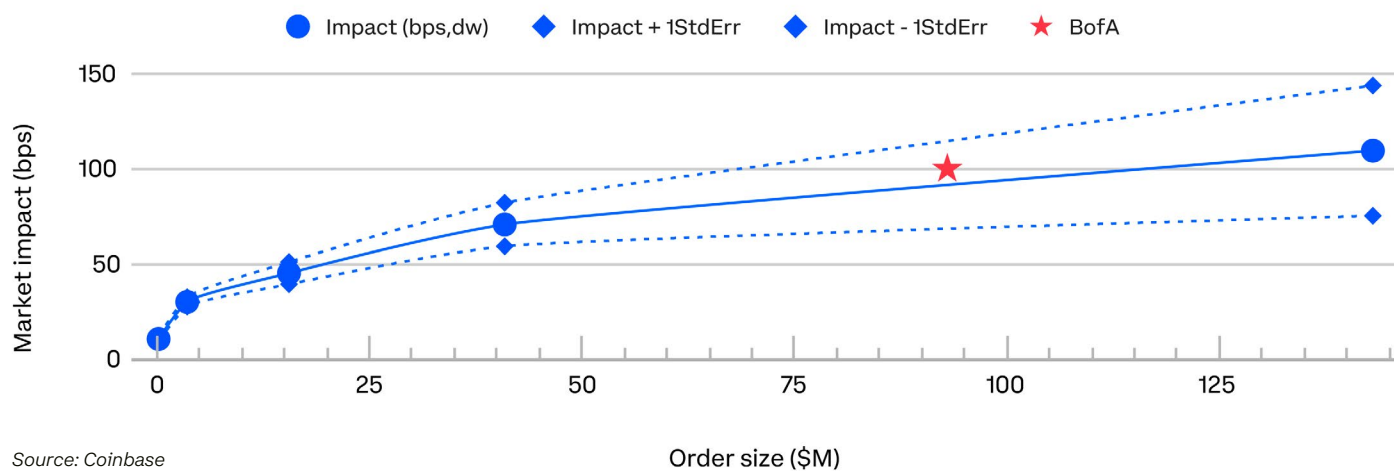
Our analysis examines the relationship between notional trade size (\$ millions, x-axis) and average impact (bps, y-axis) across different order size ranges for BTC/USD (buckets < \$1 million to > \$75 million) and ETH/USD pairs (buckets < \$1 million to > \$25 million).

For reference, our BTC/USD chart also includes Bank of America's recent [estimate](#) (see BofA in the chart below) that trading \$93 million of BTC/USD spot creates a market impact of 100bps. By comparison, our estimate based on real trade data from the Coinbase Prime Broker is slightly lower, suggesting a market impact of about 90 bps for the same size.

Our pre-trade TCA work is led by **Kilian Mie**, who joined us in Q1 as a Senior Staff Data Scientist after almost 17 years at Goldman Sachs, where he spent a decade on the sell side in algorithmic executions, undertook extensive research on market impact, and advised key accounts on trade execution and TCA. Subsequently, Kilian worked on the buy side in the Quantitative Investment Strategy (QIS) division as part of Goldman Sachs Asset Management, where he built alpha models to predict stock returns and advised on multi-day trade executions as part of QIS's Systematic Trading efforts.

4.1

BTC/USD: Market impact (bps) vs order size (\$M)

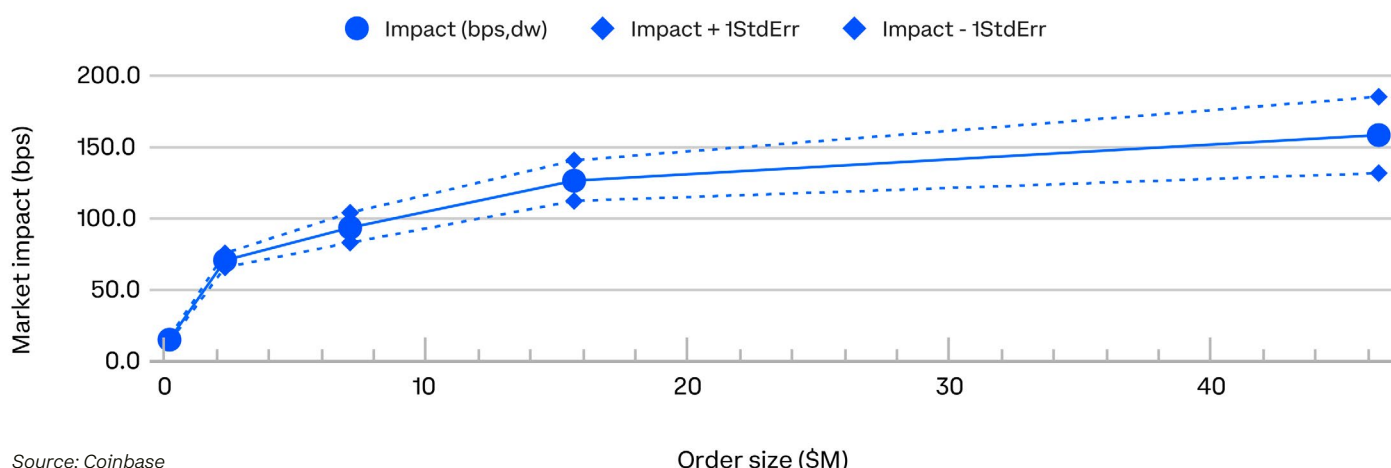


Order Size (\$M)	#	Part. Rate (% dw)	Order Size (\$M, ew)	Impact (bps, dw)	Impact StdErr (bps, dw)	Hours (ew)
<1	12,520	1.2	0.2	10.7	1.3	2.6
1 to 10	4,642	5.7	3.6	30.1	2.5	4.0
10 to 25	1,159	9.7	15.5	45.3	5.8	4.5
25 to 75	643	13.6	40.9	70.7	11.4	6.2
> 75	174	19.3	143.1	109.5	34.2	10.1

dw = dollar-weighted, ew = equal-weighted

4.2

ETH/USD: Market impact (bps) vs order size (\$M)



Order Size (\$M)	#	Part. Rate (% , dw)	Order Size (\$M, ew)	Impact (bps, dw)	Impact StdErr (bps, dw)	Hours (ew)
< 1	11,086	2.1	0.2	14.8	1.8	2.8
1 to 5	2,253	4.0	2.3	70.5	4.9	3.8
5 to 10	693	6.6	7.1	93.4	10.5	4.6
10 to 25	530	8.3	15.7	126.4	14.2	5.8
> 25	243	11.4	46.4	158.4	26.7	8.2

dw = dollar-weighted, ew = equal-weighted

Our methodology closely follows the approach and literature published by Jean-Philippe Bouchaud, a renowned researcher who was recognized as [Quant of the Year in 2017](#) and has studied market impact for over two decades.

While we have confidence in our approach based on today's data, it is important to acknowledge that crypto markets are still young, and underlying data will become more robust over time. We intend to monitor changes in market activity closely and will recalibrate our analysis as the data set for large trades grows.

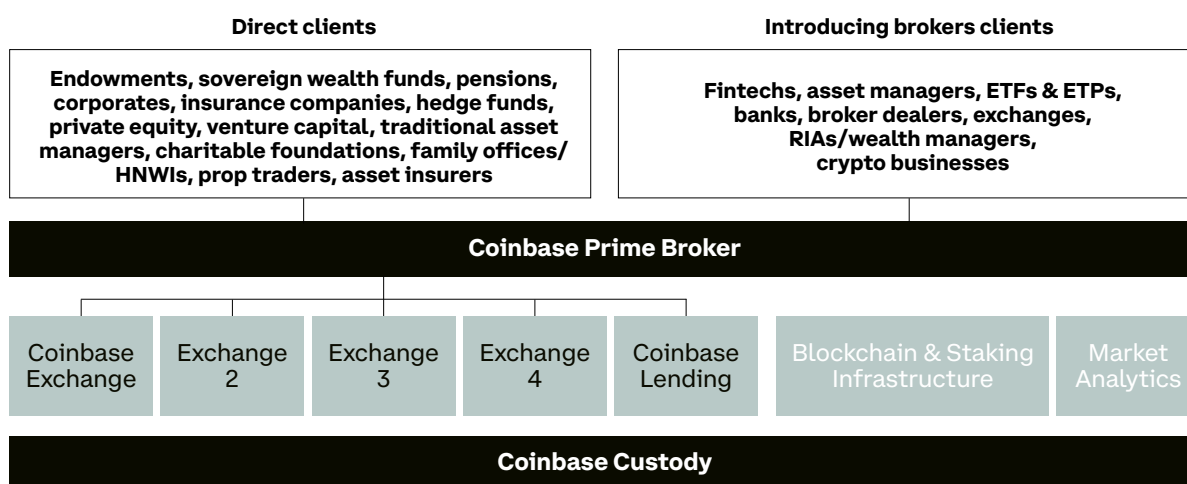
Encouragingly, our initial TCA research for major crypto pairs shows consistency with observations from other asset classes. Empirical research confirms that market impact for traditional asset classes usually follows the so-called "square-root law" (see slides 7-10 in "[Three models of Market Impact](#)" for details): that is, market impact is proportional to the square root of an order's speed in volume time. Our findings that this law holds true for crypto markets helps to extend TCA from traditional asset classes to crypto.

5. Coinbase

Institutional updates

Our institutional practice saw growth in both of our primary client segments in H1: (i) our institutional investor business, in which clients directly access the crypto markets via our prime broker; and (ii) our indirect introducing broker business, whereby other financial services businesses, such as banks, broker dealers, and fintechs, leverage our prime broker's infrastructure via APIs or white labeling to offer crypto capabilities of their own. Our acquisitions of Bison Trails and skew allowed us to better serve both of these segments, expanding the scope of our product suite to include leading blockchain and staking infrastructure as a service and comprehensive crypto market analytics.

Coinbase Institutional



Introducing brokers: institutional-grade crypto via API

To better serve this important client and growing segment of fintechs, banks, broker dealers, and wealth managers, we continued to transform our prime brokerage services — spanning agency-only algorithmic trade execution, crypto custody inside a qualified custodian, financing, staking, and data analytics — into a service offering that can be subsumed using our APIs and white labeling. In H1, financial services providers increasingly recognized the importance of supporting crypto for their clients and used our infrastructure to achieve their crypto objectives.

Our decision to invest aggressively in our introducing broker business stems from our view that every financial services business will need to integrate crypto into its product suite to meet client demand, but very few will want to deal with the high costs and complexity associated with doing so. By using our technology instead, these players can accelerate their speed to market and instantly assume a leading position — inheriting benefits such as the broadest range of asset support among regulated crypto service providers, multi-venue algorithmic trade execution without the need to pre-fund multiple exchanges, and a spotless security track record.

We look to Amazon, Google, and Microsoft for inspiration as we develop our introducing broker business. Just as these tech giants have built highly scalable

5.1

cloud services for compute and storage, Coinbase is providing crypto infrastructure as a service that makes it easy and affordable for any business to develop crypto products of its own. Based on our observations of high growth in this segment over the past year, we expect that incumbent banks and fintechs entering the crypto market may become some of our most important customers over time. They will be critical partners in Coinbase's aim to help bring 1 billion people globally into the crypto economy.

The fintech platforms we work with primarily focused their resources in H1 on crypto retail brokerage, savings, peer-to-peer, and payments products, relying on our new multi-venue algo brokerage, staking-as-a-service tools, and custodial capabilities to power their products.

Banks also made significant progress in adding crypto to their offerings in the first half of the year, with leadership at nearly all of the largest firms now recognizing that crypto is here to stay — a marked shift from the attitudes we observed among this group as recently as a year ago.

Our banking implementations take on many forms, and over time are trending towards multi-product offerings; these banks can leverage our Prime Broker's infrastructure to meet a wide range of their client's crypto needs. Common examples include:

- Using Coinbase as a sub-custodian
- Adding the ability to trade for institutional clients via our multi-venue algo brokerage
- Crypto-collateralized lending
- Wealth managers placing high-net-worth clients in crypto

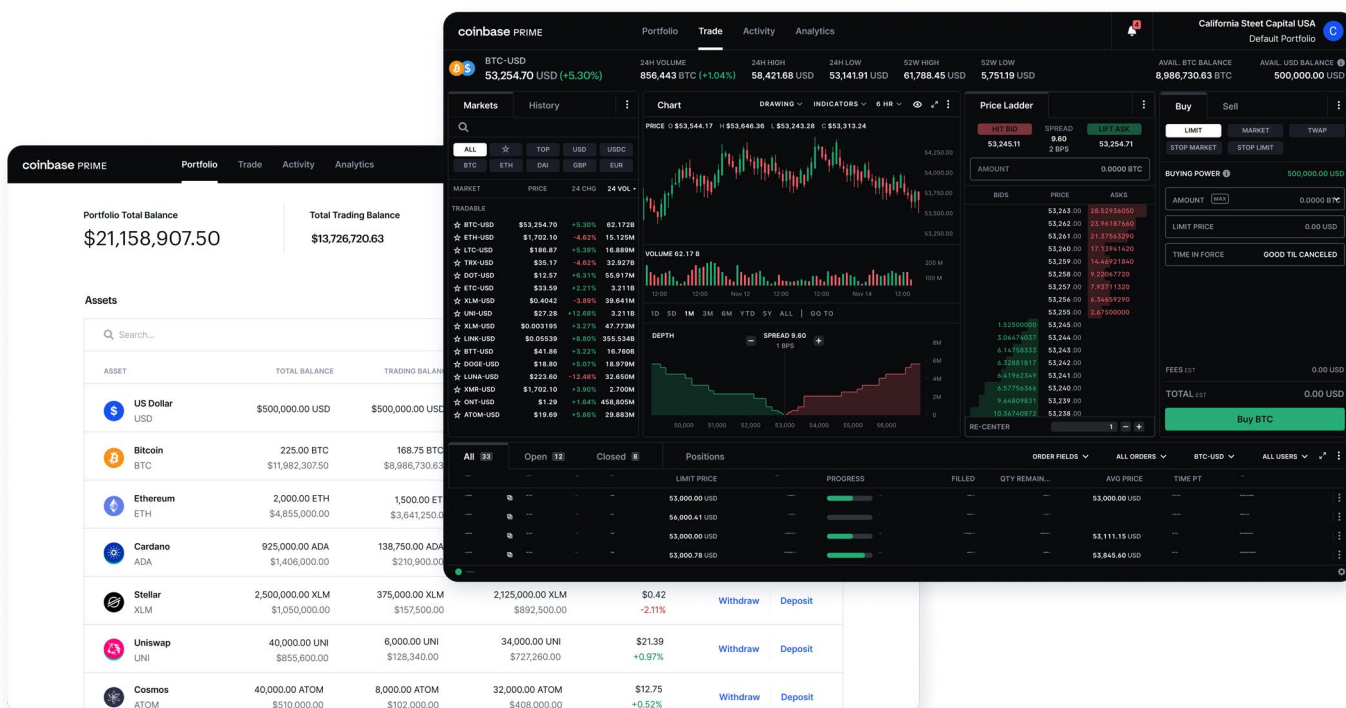
While banks have been slower than fintechs to announce their crypto developments, we expect continued activity in the second half of the year and into 2022. Most banks only formally began their pursuit of crypto capabilities in late 2020 following new [guidance](#) from the OCC.

Coinbase Prime launch

In Q2 2021, Coinbase launched the beta version of [Coinbase Prime](#), our fully integrated prime brokerage solution, which provides best-in-class custody, advanced multi-venue trading, data analytics, and prime services. Clients can now manage the entire trade lifecycle — from execution through post-trade settlement to cold storage — in a unified experience.

5.2

Prime trading and custodial vault



Financing

We expanded our Prime financing capabilities significantly in H1, in concert with the launch of the new Prime platform. Our lending business comprises three core areas of focus to service clients' needs:

Prime services

Our prime services support clients such as introducing brokers, hedge funds, and asset managers, who depend on lending to optimize capital and trade more efficiently. We aim to solve the problem of under-utilized assets, especially around margin products, by providing post-trade credit that eliminates the need to pre-fund trading activity on our platform.

Portfolio leverage

Via our portfolio leverage capability, Coinbase Prime advances loans to borrowers seeking to leverage their positions. For example, in a BTC/ETH cross-trade, Coinbase will put crypto to work in the same way that a traditional prime broker would loan fiat.

Short financing

Coinbase Prime now facilitates short financing, whereby market participants borrow crypto with the intention of repaying it at a future date, with the expectation that the price will have fallen. Our short clients aim to profit on the difference in price between the borrow and repayment dates.

5.3

Custody and new token liquidity

Coinbase's institutional practice saw heightened demand in H1 for custodial lending¹⁵, where firms aimed to achieve yield on assets held with us in custody. One of the ways we can enhance yield for these long-term asset holders who do not want to sell is by lending their assets on platform to traders and market participants needing liquidity in the borrowed asset. This type of lending is particularly powerful for newer assets that need liquidity support at trading launch; Coinbase can help facilitate loans to trading firms to supply sufficient liquidity for healthy trading as we stand up a new order book.

Credit risk

Coinbase has a seasoned team of credit professionals underwriting all of our counterparties, and we currently lend out only on a collateralized basis.

For Coinbase, margin lending, asset lending, short financing, and post-trade credit are all overcollateralized products — which means our clients can be confident about our control of credit risk. In addition, because there are not yet standards in rating crypto products, we have developed our own credit-rating systems. Principal preservation is the foremost objective.

This year we hired **Matt Boyd** as our Head of Prime Brokerage Financing. Previously, as President and Chief Operating Officer of hedge fund Numerai, he was responsible for the design and development of its investment platforms. Before Numerai, Matt worked for BlackRock for almost 11 years as Global Head of International Equity Finance Trading, and was the Head of Securities Finance Trading for EMEA and Asia Pacific.

6. ETF outlook

Our institutional practice is closely monitoring developments in the crypto exchange-traded fund (ETF) market. We expect an eventual U.S. crypto ETF approval to be a landmark moment for the industry, unlocking new inflows from traditional distribution channels such as broker-dealers and tax-advantaged accounts, which have historically been disconnected from crypto.

ETF issuers will be key new clients for Coinbase's Prime Broker, and in H1 we accelerated our work with many of the largest players, responding to their increased urgency as the demand picture became clearer. These ETF issuers will leverage our custodial, staking, and trade-execution capabilities to provide the most competitive products to their clients.

Many major ETF issuers believe the U.S. Securities and Exchange Commission (SEC) may give the go-ahead to crypto exchange-traded funds in 2021 or 2022. There are a number of factors driving this optimism. The new chairman of the SEC, Gary Gensler, is viewed as knowledgeable in the crypto space and more likely than members of the previous administration to be comfortable with allowing a crypto ETF to list.

Furthermore, appetite for crypto has increased among both institutional and retail investors, with growing demand for exposure without the need to buy, hold, or sell underlying assets directly. Successful [ETF debuts](#) in the Canadian market have provided added fuel to mounting speculation that the U.S. SEC will follow suit.

At least a dozen applications to list a Bitcoin ETF have been knocked back by the U.S. SEC in the past. The SEC rejected them on the basis of the [Exchange Act Section 6\(b\)\(5\)](#), which requires that exchange rules are designed to prevent fraudulent and manipulative acts and practices, to protect investors and the public interest. The U.S. SEC found that the Bitcoin ETF proposals were "susceptible to fraud and manipulative acts,"¹⁶ meaning it believed individuals would be able to manipulate the price of the Bitcoin ETF and go undetected.

The market has changed considerably since then, however, and a growing base of well-known institutions have begun to engage with crypto. Further, the regulated BTC futures market is much larger than it was previously. As a point of reference, the CME's monthly notional trading volumes swelled to over \$34 billion in June 2021, up from \$6 billion in June 2020¹⁷. In previous disapproval orders, the U.S. SEC referenced the existing futures contract markets of other commodities, stating that the BTC futures market was not "significant" and therefore could not be relied upon for surveillance.¹⁸ Now, the BTC market is larger than those cited.

In December 2020, the U.S. SEC proposed granting crypto-focused broker-dealers a five-year window to operate without fear of an enforcement action, providing the commission time to build experience in overseeing broker-dealer custody of digital asset securities.¹⁹

6.1

In the same month, the U.S. regulator made the Strategic Hub for Innovation and Financial Technology (FinHub) a stand-alone office.²⁰ FinHub has led efforts to encourage responsible innovation in the financial sector, including in digital assets. Spinning off FinHub will likely increase the prominence of a Bitcoin ETF and other crypto-related issues on the U.S. SEC's priority list.

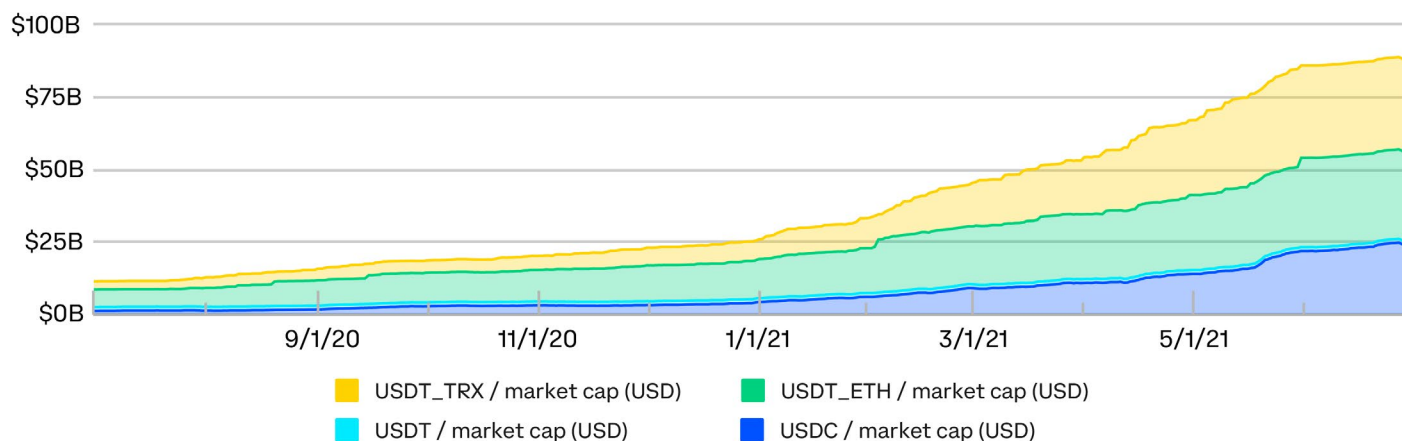
A flurry of new applications have landed on the SEC's doorstep in recent months — we saw ten in June 2021 from firms such as [Fidelity](#), [WisdomTree](#) and [VanEck](#). Coinbase Institutional is regularly in discussions with ETF issuer clients seeking approval from the SEC. Our institutional team has a unique vantage point in the cryptocurrency space, taking account of numerous historical policy changes, along with the market's rapid evolution.

Coinbase's institutional practice aims to play a leading role in market education as crypto expands. **Brett Redfearn**, whom we hired in H1 as our VP of Product, Capital Markets, brings more than 25 years of experience in senior leadership roles across the financial services landscape. Previously, he was Director of the Division of Trading and Markets at the SEC. Prior to that he spent 13 years at JP Morgan, serving as Global Head of Market Structure, Algorithmic Trading, and Liquidity Products throughout his tenure.

7. Stablecoins

The stablecoin market continued its growth streak in H1 2021, with Tether and USDC retaining their dominance. Tether's market capitalization swelled to \$64 billion at the end of the period, up 526% from \$10 billion at the midpoint of 2020. USDC grew to \$24 billion, up 2,308% over the previous 12 months.²¹

Tether and USDC growth



Source: Coin Metrics

Coinbase made two major advancements to help bolster the stablecoin market in H1, first by adding [support](#) for USDT (Tether) in May, and second by lowering pricing for stablecoin/fiat conversions across all major stable pairs we support (DAI-USDC, DAI-USD, USDC-EUR, USDC-GBP, USDT-EUR, USDT-GBP, USDT-USDC, USDT-USD, and WBTC-BTC). Effective June 1, all Coinbase Exchange stablecoin fees moved to 0 bps for maker volumes and 1 bps for taker volumes, across all volume tiers.

Our institutional practice sees stablecoins delivering significant value to users, and we want to help make fiat currency in its improved tokenized format as widely available as possible within the crypto economy. Stablecoins provide crypto users with lower transaction costs, faster settlement, and compatibility with DeFi, and are the preferred format for many of our clients, offering them an alternative to “exiting” crypto altogether when they have a need to de-risk their positions or quickly and cheaply transfer cash.

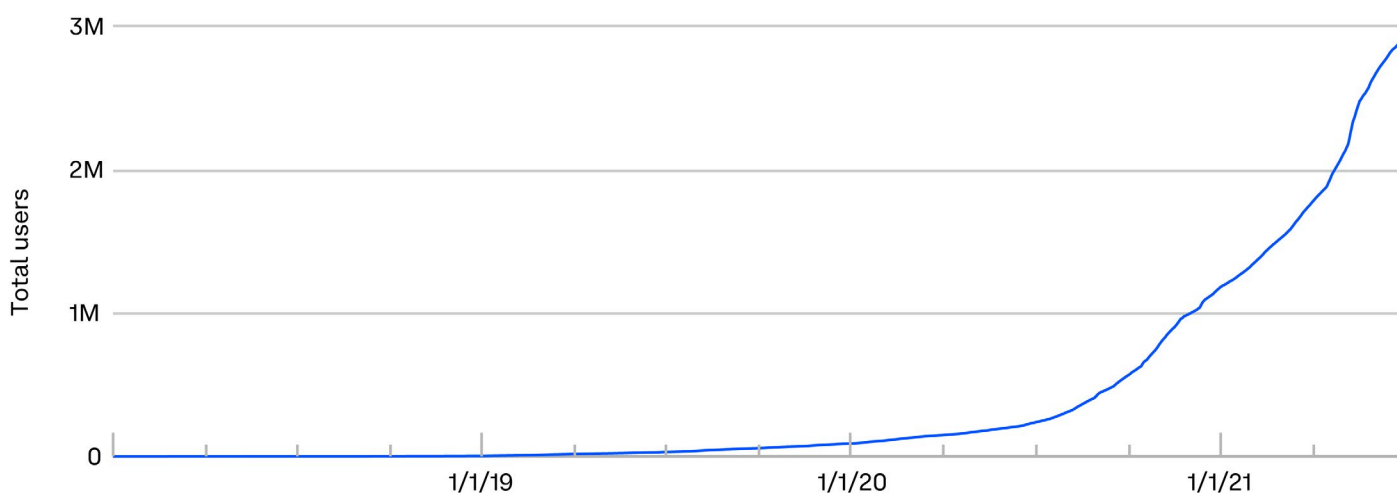
8. DeFi

DeFi's momentum also continued in H1, as more crypto investors and users around the world saw the benefits of programmatic, decentralized, global markets for financial services built on open-source software.

While DeFi was defined by retail investors for the majority of 2020, in H1 2021, we saw a surge in DeFi interest among our institutional client base. Many of our largest clients and partners, including traditional hedge funds and global investment banks, looked to our institutional practice for advice on navigating DeFi, and a growing portion of our clients built direct positions in the most prominent DeFi protocols' native tokens.

We continue to monitor key DeFi metrics closely. Wallet address growth and decentralized exchange (DEX) volumes are top of mind for many of our clients. Total DeFi Wallet addresses grew to 2.9 million in H1, up 1,131% over the previous 12 months.²²

Total DeFi wallet addresses

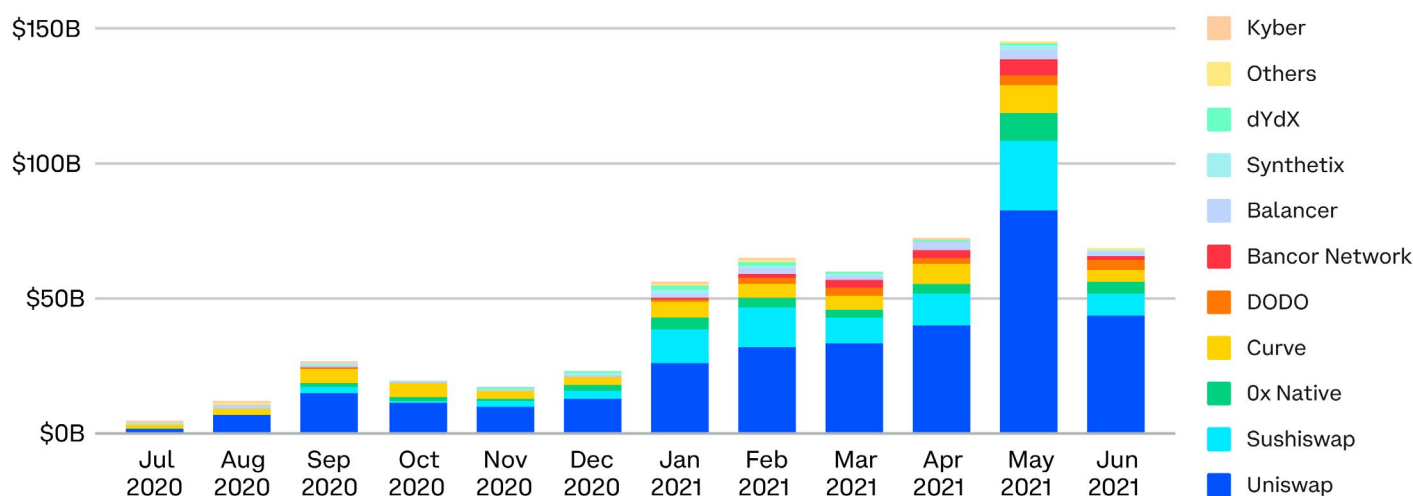


Source: Dune Analytics by Richard Chen

Decentralized exchange volumes also accelerated, providing investors and traders with a wide range of supported assets and the ability to trade from non-custodial wallets with lightweight onboarding. Aggregate volume across the major venues reached \$468 billion for the period, up 7,715% from \$6 billion in H1 2020.

8.1

Trading volume by DEX



Source: Dune Analytics by Fredrik Haga

Coinbase is committed to supporting DeFi via our institutional practice. Today, we do this by enabling compliant trading and custody of major DeFi assets on our Prime platform. We see two primary risk factors keeping further institutional capital from entering the DeFi markets, and are actively working to help mitigate these factors and drive further adoption of DeFi: (i) a lack of clarity from regulators on how DeFi protocols can be accessed and used; and (ii) smart contract security risk.

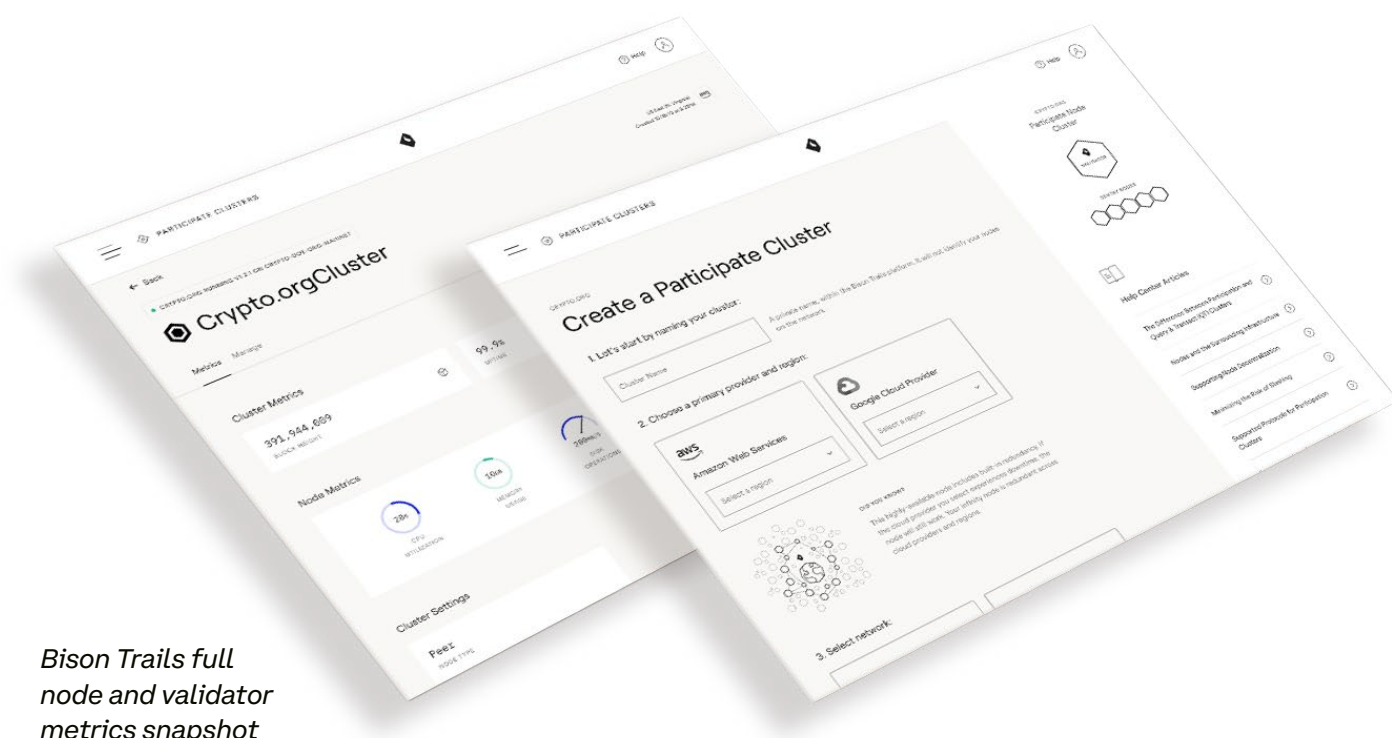
Coinbase will continue to take a proactive approach towards educating regulators about DeFi, highlighting how this new frontier can help create more financial inclusion and drive badly needed innovation in capital markets. We are also monitoring the maturation of smart contracts, and expect the trajectory of trust in DeFi smart contracts to mirror that of leading custodial platforms — i.e. improving with time, investment, and competition.

9. Coinbase M&A

M&A continues to be a core focus for Coinbase and we were active in the first half of the year, completing five acquisitions — including Bison Trails, a leading crypto infrastructure provider, and skew, a leading institutional data analytics platform. We have known both companies for some time, having invested in Bison Trails in 2019 through our venture arm and partnering with skew in 2020. After witnessing their growth and strong reviews from our most demanding clients, it made sense to join forces, bringing these world-class management teams who share our long-term vision for crypto to Coinbase. The two companies substantially deepen our product capabilities and support our mission to grow the crypto economy.

Bison Trails

Bison Trails provides fully managed crypto infrastructure as a service. With its [Participate](#) product, it enables staking and active network participation across more than 20 crypto protocols. Bison Trails' [Query & Transact](#) capability allows developers to access blockchain data from 30 protocols to build Web 3.0 applications, validate transactions, request transaction information, and write data including transfers and smart contract actions.



Bison Trails full node and validator metrics snapshot

9.1

We anticipate that Bison Trails will play an increasingly important role in supporting our clients' activity in the market as part of our new [Coinbase Cloud](#) infrastructure suite, as we are observing growing institutional demand for newer assets that feature proof-of-stake consensus and on-chain governance. Bison Trails' technology makes it easy for individuals, investors, and companies to participate in the crypto ecosystem across a number of protocols — whether through staking, offering value-added crypto services to customers, or building new crypto applications and services. We are excited to work with Bison Trails to offer Coinbase Cloud as part of our core institutional product suite, doubling down on our commitment to make the crypto frontier accessible and safe for the world's largest investors, innovative companies, and developer teams.

Bison Trails was founded in 2018 by CEO Joe Lallouz and CTO Aaron Henshaw.

Skew

As outlined in our [previous reports](#), institutional investors are becoming increasingly sophisticated at leveraging rich data to inform their trading and investment strategies in crypto. Skew has rapidly emerged as a leader in institutional-grade data over the past few years, and is universally loved by our clients for its platform's quality, depth, and flexibility. Our actively trading clients are particularly dependent on skew's wide range of analytics, which span spot and derivatives markets for both exchanges and DeFi, exploring volume, spreads, funding rates, buy/sell ratios, and many more customizable metrics.

Coinbase's institutional clients will now be able to consume skew's analytics platform directly within Coinbase Prime, tracking cryptocurrency spot and derivatives markets in real-time. Further, we will continue to leverage skew's data in our research and trading commentary to help keep clients abreast of the latest developments in the crypto market. Skew was founded in 2018 by CEO Emmanuel Goh and COO Tim Noat.



*Skew data analytics
platform snapshot*

10. Bitcoin and the environment

Tesla made waves in February when CEO Elon Musk [announced](#) that the electric carmaker had purchased \$1.5 billion of BTC and would start enabling its customers to use BTC to purchase its cars. The news bolstered investor confidence in BTC as Tesla became the next major public company to back the leading crypto asset, following investments from others such as Microstrategy and Square. Just three months later, and to the surprise of investors, Musk [tweeted](#) that Tesla would cease the payments portion of its BTC activity, citing concerns over the Bitcoin network's environmental impact.

Musk's tweets incited a frenzy of interest in the topic of Bitcoin mining's electricity consumption, which had yet to receive serious attention from mainstream media and most investors until the first half of this year. In our institutional practice, we saw a spike in ESG related inquiries from traditional allocators and corporates seeking to separate fact from fiction. Misinformation from a handful of prominent media publications and politicians added to the confusion.

The exact magnitude of the Bitcoin network's electricity consumption remains difficult to quantify given the decentralized nature of mining and its rapidly shifting make-up of participants. However, we have begun to provide our clients with a set of observations to help them in their research on this topic. We summarize these observations below and encourage readers to visit our [Fact Check](#) blog for more on this topic.

- Bitcoin's proof of work consensus mechanism requires electricity consumption. Miners use electricity to power specialized computers (ASICs) that compete to solve computational challenges that propagate new blocks, extending the Bitcoin blockchain and rewarding miners with small amounts of BTC.
- The costs associated with proof of work, in combination with its decentralized design, directly secure the Bitcoin network by increasing the difficulty of overtaking it via a [51% attack](#).
- Over the past 12 years, the market has shown increasing confidence in this proof of work consensus and security system. Underpinned by proof of work, Bitcoin stores more value than any other crypto asset (\$657 billion as of June 30, 2021).²³
- Public views on the merits of proof of work's consumption are polarized, and we observe that they are generally a function of the value someone derives from the Bitcoin network. Those who use the network to store their wealth via BTC, send or receive remittance payments, or borrow and lend in BTC generally believe its consumption is merited, while those who do not use BTC (and therefore do not derive value from it) are more likely to believe it is wasteful.
- Many commentators believe Bitcoin's electricity consumption is linearly correlated to transaction activity. This is untrue, as it fails to take into account batched transactions and layer two: e.g. transactions occurring on the Lightning Network or via crypto and fintech companies providing off-chain peer-to-peer transfers (including Coinbase).

10.1

- Similarly, some commentators believe that Bitcoin trading activity contributes to its electricity consumption in the same way that on-chain transactions do. This is untrue as exchange order books, like the Coinbase Exchange, are run off-chain.
- Unlike other sources of electricity demand, the Bitcoin network is a consistent and reliable “buyer,” meaning that it can capture and monetize excess output and [waste](#) from power sources.
- Bitcoin mining is more mobile than other types of electricity consumers and can be run on site. Miners are incentivized to find the cheapest available electricity. As renewables become increasingly competitive, we expect that the miner energy mix will shift correspondingly.
- Over the past few months, we have seen industry actors (including our mining clients) rapidly taking steps of their own to address electricity consumption concerns, starting to report their energy mix (see the new [Bitcoin Mining Council](#)) and debuting green asset management products with [carbon offsets](#).

We are optimistic about recent developments in proof of work mining and will continue to monitor this area closely, advising clients who are navigating the rapidly evolving frontier.

11. Crypto meets politics

As the first half of 2021 ushered in new all-time highs in asset prices and user adoption, crypto garnered newfound attention from world leaders who contemplated what this new technological and monetary movement may mean for their nations. We believe we are now in the early stages of the “crypto policy era,” and a handful of actors who have the most to gain or lose from crypto’s growth have begun taking proactive measures. China and El Salvador stand out as case studies from the first half of the year and possible templates for others. The former is taking an adversarial stance towards crypto, while the latter is decisively embracing it.

China

China’s [latest](#) crypto crackdown is nothing new. The authoritarian state previously [barred](#) its financial institutions from transacting in BTC in 2013, then outlawed conducting ICOs (initial coin offerings) in 2017. But unlike in the prior two crypto price cycles, its 2021 measures came with heightened enforcement action, including [shutting down](#) local mining operations.

The Chinese Communist Party’s distaste for crypto is unsurprising given its penchant for central planning, blocking capital flight, and surveillance of its citizens — these tendencies conflict in many ways with crypto’s free-market, decentralized characteristics. While concerns over crypto-related financial crime and electricity consumption have been public scapegoats for the CCP’s activity, the likeliest motive for China’s anti-crypto stance is its aggressive development of a government-controlled digital currency, which [varies dramatically](#) in design from BTC and other free-market crypto assets. Many industry observers believe China’s digital currency will provide the government with a powerful toolkit to directly surveil its citizens’ financial activity, enforce new fiscal policy, and create real-time restrictions on the size and destination of financial transactions. China’s work is beginning to raise questions in democratic nations about the potential for certain CBDC designs to enable government overreach and impinge upon individual freedoms.

China’s crypto hostility closely mirrors its prior censorship of Western internet companies enabling free speech. We anticipate that the government will continue to block its citizens from accessing decentralized monetary networks, which, like the technology companies that came before them, conflict with the CCP’s political agenda.

El Salvador

While China shunned crypto in the first half of 2021, El Salvador emerged as the first country to proactively endorse BTC. In June, President Nayib Bukele [introduced legislation](#) that resulted in the native crypto asset achieving status as legal tender — a first for a sovereign nation. In El Salvador, citizens and merchants now have the option to legally transact in either BTC or USD, and BTC’s currency status also means its holders benefit from the elimination of capital gains tax.

The government’s pro-Bitcoin stance came on the heels of growth in its citizens using the Bitcoin network for [remittance](#), which, while still a small share of total volume, significantly reduces costs and settlement times compared to legacy options.

11.1

President Bukele's embrace of Bitcoin clearly aims to position El Salvador as a forward-thinking and tech-savvy country while attracting entrepreneurial activity. Notably, Bitcoin now has sufficient global relevance and a large enough user base (which we estimate to be in the low hundreds of millions of users) for "Bitcoiners" to be considered an emerging and greenfield political demographic. As the size and wealth of this demographic grows, we believe more political leaders are likely to cater to their interests.

Towards the end of the first half period, we saw further [signals](#) that El Salvador's moves may be indicative of a future trend. While El Salvador has been the swiftest and most aggressive proponent of BTC via its legal tender verdict, politicians from other LatAm nations, including Paraguay, Panama, and Mexico, are now pushing legislation that would provide greater regulatory clarity for crypto and potentially make way for legal adoption and increased entrepreneurial crypto activity.

Looking ahead

The continued global growth and reliability of crypto networks on display amidst starkly opposing policy from China and El Salvador give credence to the power of these networks' decentralized design. Just like the internet, blockchain networks are open, public technology infrastructures, and governments can choose to embrace their benefits or to ban their constituents from reaping them. National policy measures can certainly impact the adoption rate of crypto assets — especially in larger markets — but we believe the major crypto networks have now achieved sufficient scale and decentralization that they will continue to grow and produce new blocks regardless.

We anticipate that free market nations aiming to foster innovation will encourage the usage of these networks — alongside sensible regulation — rather than taking more draconian measures. The incentives for economic growth, as well as alignment with free market economic ideals, are likely to be tailwinds for their support.

Coinbase will continue to work proactively with governments to promote education and help inform policy decisions that support public crypto networks. We believe this effort is central to our mission of creating an open financial system for the world.



12. About Coinbase Institutional

Coinbase Institutional provides integrated solutions that marry our advanced trading platform, custody, and prime services. Institutional investors have all the tools they need from staking and governance to secure cold storage via Coinbase Prime, our prime brokerage platform. With Coinbase Prime, investors can easily manage their crypto in one place, execute large trades, and rely on high-touch support as they navigate digital assets.

Contact us

To learn more about Coinbase Institutional, please email us at: institutional@coinbase.com

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Endnotes

- ¹ [TradingView](#)
- ² [Coinbase](#)
- ³ [Skew](#)
- ⁴ [Coin Metrics](#)
- ⁵ [Coinbase](#)
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- ⁹ [Coinbase, IEX Cloud](#)
- ¹⁰ [Coin Metrics](#)
- ¹¹ [Coinbase](#)
- ¹² [Coinbase Analytics](#)
- ¹³ Coinbase, Binance, Kraken, Bitfinex, Binance US, Bitstamp, BitFlyer, Gemini, Poloniex, ItBit, HitBTC, FTX, Gate.io, LMAX Digital, Bittrex, Liquid, CoinField, Nominex, Bitso, Mercado Bitcoin
- ¹⁴ [Coinbase Analytics](#)
- ¹⁵ Custodial lending is currently offered through CCI and awaiting approval for CCTC.
- ¹⁶ [U.S. Securities and Exchange Commission](#)
- ¹⁷ [Skew](#)
- ¹⁸ [U.S. Securities and Exchange Commission](#)
- ¹⁹ [U.S. Securities and Exchange Commission](#)
- ²⁰ [U.S. Securities and Exchange Commission](#)
- ²¹ [Coin Metrics](#)
- ²² [Dune Analytics](#), Richard Chen
- ²³ [Skew](#)

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