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Coinbase Global Inc (Nasdaq: COIN)

Coinbase was started in 2012 by Brian Armstrong, an ex-AirBnb engineer, and was a start-up borne out of Y-Combinator. Brian started Coinbase originally to enable people to easily store, send and receive Bitcoin. Years later, it is now the largest crypto exchange in the US, with the mission to "increase economic freedom in the world". Coinbase serves customers in over 100 countries with a vast majority of total revenue from the US.

We are long the crypto economy and believe Coinbase is in the best position to capture this growth. Trading at ~12.4x estimated 2021 EBITDA, we think the market is placing a discount on the business considering it's explosive growth over past year (~12x year-on-year), and what we view as continued growth alongside the evolution of the crypto economy. This is also a highly cash generative business with 52% EBITDA margins off revenues of $2.2Bn in Q2'21 (we estimate ~$8.8Bn revenues for full-year 2021), and with a cash balance of ~$4.3Bn (as of Q2 2021).

We'll be addressing two key areas in this memo:

1) We view the crypto economy as here to stay, isn't a fad, and will grow substantially in the future. We also see Coinbase as a key beneficiary of this growth.

2) We explore areas of concern investors may have on the company. These include regulatory crackdowns, rising competition, and commission rate pressures. We have found these worries to be overblown, and think Coinbase is resilient to these challenges.

On point 1: We believe there are multiple growth drivers, along with associated network effects, that gives us confidence in our crypto thesis:

- Evidence of actual use cases of crypto and growth in adoption. We see blockchain technology being applied in the real world today, creating new areas of growth and disrupting profit pools long dominated by incumbent institutions.

- Increased understanding and acceptance by market participants from governments, to financial institutions, to institutional funds, and to retail investors.

- Increased talent shift into crypto. As more engineers build for the crypto ecosystem, the pace of innovation accelerates, and the less "fragile" the overall space becomes. Besides engineering, crypto firms are attracting more and more talent across various functions.

On point 2: We first need to define the market. Coinbase competes in the regulated spot trading markets primarily in the US (83% of total revenues), and also in other developed markets in Europe.

We specifically underwrite the retail user segment in this market (95% of trading revenues), and think Coinbase has the ability to hold on to and increase market share. This is a segment with great economics, as casual retail users are charged higher commission rates (1.5% vs. 0.5% on average) compared to sophisticated traders and institutional investors, and are likely to be a sticker and less price sensitive segment.

Coinbase charges a premium to other retail-focused exchanges, but we believe they are able to hold on to these prices for these reasons:

- Coinbase has an easy-to-use interface and offers the widest selection of tokens[1] available to users compared to their competitors (again, we emphasize this is for the regulated spot market in the US).

- Coinbase has wide lead in market share, with ~54% of the market (our estimates) and the second largest player (Kraken) is only a third of their size. Coinbase has never been hacked, and has been growing their brand as a trusted exchange since 2012.

- Crypto is a relatively new trading asset class coupled with high volatility, so we don't think retail users place pricing as their top priority. We think users will lean towards the security and brand recognition of Coinbase.

- Coinbase has stated that they do not intend to compete on price. Instead, Coinbase intends to launch more product and services for their users to provide additional value, which aids retention. These services include lending, staking, and custody solutions.

Next, we do not view regulatory pressures as negatively as other investors. Coinbase, in fact, has a regulatory moat as they were the first to work closely with regulators and hence have licenses to operate in all states in the US as well as in other regulated markets in Europe (they also recently launched in Germany and Japan, with a regulatory-first approach). We view this regulatory-first strategy of Coinbase as an advantage where other exchanges have to start from ground up to build relationships and gain licenses across many different jurisdictions.

On SEC clampdowns, we do recognize this as a risk to the overall growth of the crypto ecosystem. However, the market seems to be misunderstanding that these regulations are mostly on potential *new* products or services (i.e. the future growth of Coinbase), or on other parts of the crypto ecosystem that do not affect Coinbase's main business significantly, like requiring more disclosures on token launches. The current revenue generating businesses of Coinbase are fully above board and approved, and thus the current business as it stands today, is not at risk. SEC Chair Gary Gensler has stated that he does not intend to ban digital tokens.

We do also think that a certain degree of regulations are needed for crypto to take to gain mainstream adoption in the long run. Not all regulation is bad, and we think increased oversight will allow exponential adoption that will benefit Coinbase's business as well.

[1] We note that there are both "tokens" and "coins", but for simplicity we will use the term "tokens" in the rest of this memo. To read about the distinctions between the two, follow this link.

Coinbase's revenues are highly tied to volatile crypto asset prices therefore making modelling the stock in the short run difficult. We can see how this turns away many investors. However, we adopt a longer-term view and anchor on the belief the crypto asset base will be significantly larger in 5 years. Coinbase is the clear leader in the regulated exchange space, with clear moats to help them hold on to its high market share in the US and potentially other regulated markets, enabling the firm to ride the tailwind of increased crypto participation by investors over time.

Coinbase has larger ambitions beyond being the best crypto consumer app for their users. They are the go-to custody solution for the largest institutions and are building out a full suite of services targeting banks and funds as part of Coinbase Prime. Coinbase is turning their internal capabilities outward as they offer their technology and infrastructure to developers to build upon as part of Coinbase Cloud, a crypto equivalent of Amazon Web Services. Along with aggressive investments with their venture arm, we view Coinbase as an integral part of the global crypto ecosystem.

In summary, we think Coinbase is priced very well for its ability to capture value off the growth of the rapidly expanding crypto economy in the long run.

Business Overview

Coinbase recognizes revenue primarily from three different sources: retail, institutional, and subscription and services.

While the institutional trading volumes are larger than retail trading volume, the fees generated from the retail business far dwarfs revenues from institutions. Subscriptions and services revenue are a small part of the total but we see this as important as both an attraction and retention tool for customers.

Institutional trading volumes are just over double that of Retail…

TRADING VOLUME ($B)	Q2'20	Q3'20	Q4'20	Q1'21	Q2'21
Retail	11	18	32	120	145
Institutional	17	27	57	215	317
Total	**28**	**45**	**89**	**335**	**462**

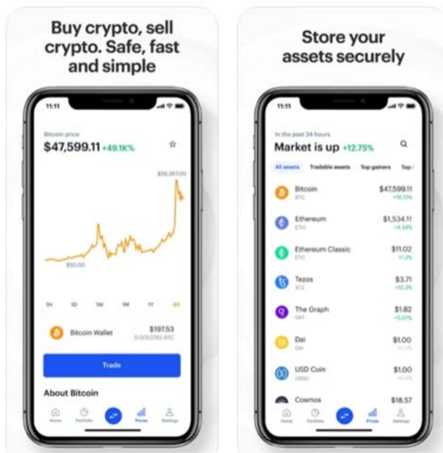
…but Retail revenues are 18x that of Institutional revenues.

NET REVENUE ($M)	Q2'20	Q3'20	Q4'20	Q1'21	Q2'21
Transaction revenue					
Retail, net	163.8	262.6	451.8	1,455.2	1,828.0
Institutional	8.0	13.3	24.6	85.4	102.4
Total Transaction revenue	**171.9**	**275.9**	**476.4**	**1,540.6**	**1,930.4**

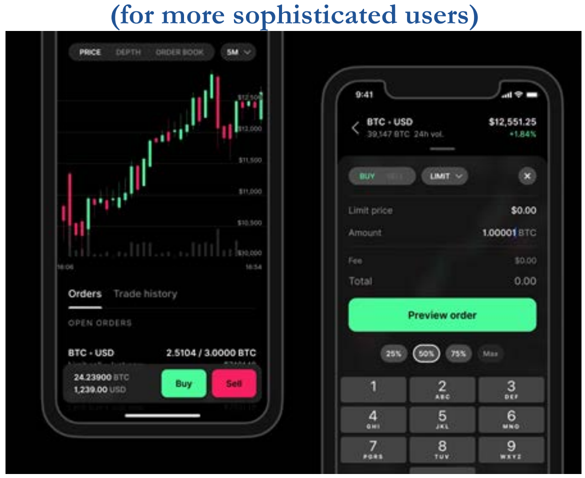
In Q2'21, the average take rate on retail business is 1.3%, while institutional take rates are at 0.3%. This is the reason why we spent the bulk of our thesis focused on underwriting the retail side of the business, while acknowledging that the growth in their institutional and services businesses are strong optionalities, and are bonuses to the thesis.

It is worth pointing out how trading volume is classified and to clear up terminology. This took a bit of inference from company documents as well as conversations with the Coinbase investor relations team. Retail volume listed above covers retail users who use both the Coinbase and Coinbase Pro app.

Coinbase app
(for the casual user)



Coinbase Pro app
(for more sophisticated users)



The 1.3% take rate is blended across both platforms, with 1.5-2% on average on the Coinbase app and 0.5% on average on the Coinbase Pro app (rates on Pro are much lower). We infer from here that the majority of volume still goes through the higher fee Coinbase app. Users are free to switch to Coinbase Pro but we have not seen a consistent trend of this migration in any significant way.

As new users join Coinbase, they start with the simpler Coinbase app, and we do think there is a vast majority of users who do not want to deal with the trouble of the more sophisticated interface of Coinbase Pro and where you need to key in limit orders and watch for trade executions. In fact, in Q2'21 we saw blended rates go up slightly (1.21% to 1.26%) when compared to Q1'21, indicating a higher mix of Coinbase vs. Coinbase Pro users (this may also be due to increased mix of new users).

[Sidenote: Why don't more users switch from Coinbase to Coinbase Pro even though fees are much lower? We summarize a few reasons below (inference from usage, with further evidence provided by user feedback; for example, see the replies in this tweet):

- *Coinbase allows users to use their debit card with 4% cashback towards select tokens and can also easily spend most tokens in your balance.*

- *Earning rewards via staking on Coinbase Pro is not available. This can only be done on Coinbase. (Search "Coinbase Pro" here). Users could very well buy/sell on Pro and move to Coinbase for staking yields, they'd just have to bother with the additional steps.*

- *Easier and simpler UX on Coinbase. No need to bother with the switch to Pro if a user is a long-term holder and doesn't trade often.*

- *Information presented on the app are catered to the casual user: price graphics, additional background information on tokens, news, crypto learn and earn, etc.*

- *Ability to partake in the learn to earn program where users are able to earn tokens by watching educational videos.]*

Institutional volume is currently double that of Retail volume but contributes just over 5% of trading revenues due to the dramatically lower take-rates. We think institutional business is important nonetheless because its growth could grow exponentially, and new forms of monetization could come from added services over time (albeit still small today).

Securing institutional clients also makes headlines which aids reputation & trustworthiness towards retail customers ("if Tesla and multi-billion dollar hedge funds are using Coinbase, it must be safe for my own assets"). Institutions also increase the liquidity of their exchange dramatically, providing better execution for retail (lower slippage and bid-ask spreads).

All retail volume and the vast majority of institutional trading volume goes through Coinbase's own exchange. These total volumes are what is reflected in the exchange volume leaderboards you'd see on sites like Coingecko. The only volumes that go to other exchanges are institutional trades via Coinbase's prime brokerage product, or Coinbase Prime. This is where Coinbase uses smart order routing to shop for best prices amongst them other exchanges, but this volume is not significant.

Coinbase is a regulated exchange that allows fiat on and off-ramp. They currently allow retail users to buy or sell crypto assets with the US dollar, Euro, British pound, Canadian dollar, and

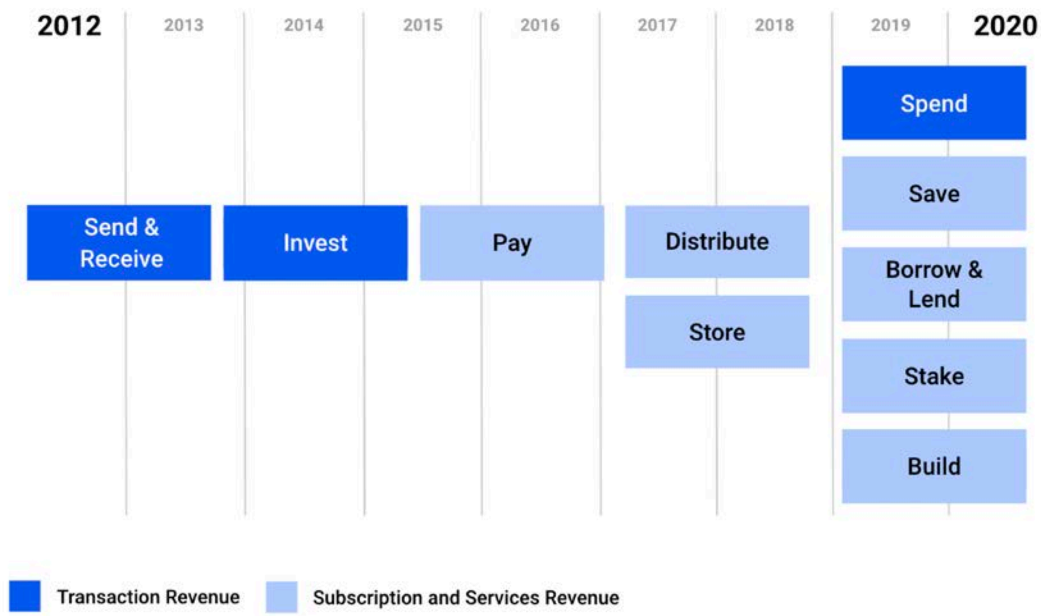
Singapore dollar in over 40 countries[2]. While they are remote-first, Coinbase has offices in the United States, as well as in the UK, Ireland, Germany, Canada, Japan, Singapore and the Philippines.

United States revenue share went from 74% of revenue to 84% of revenue in Q2'21

	Three Months Ended June 30, 2021	Three Months Ended June 30, 2020
United States	$ 1,870,465	$ 138,181
Rest of the World(1)	357,497	48,201
Total revenue	$ 2,227,962	$ 186,382

(1) No other individual country accounted for more than 10% of total revenue

Progress of product development since founding (from Coinbase S-1)



Trading revenue makes up 95% of total revenues. The last 5% of business consists of subscription and services revenue, the largest contributor to which are staking revenue (Coinbase takes 25% of all staking income) and custodial fees.

[2] Coinbase S-1

Why We Like Coinbase

1. Global crypto ownership going from 0 to 1, lifting all boats

i. "Crypto" is a much larger ecosystem that goes beyond Bitcoin as a transacting currency or as a "store of value", which has been the prevailing crypto-ownership narrative. We're seeing real use cases and adoption of crypto beyond mere price speculation as blockchain technology is used to disrupt multiple industries.

ii. Adoption has been led by a clear trend towards "productization" of crypto. With decentralized finance or DeFi, for example, a user may transact, borrow, or lend using an interface that is increasingly closer to that of a traditional banking app. The industry is on a path to abstracting user-friendly products out from base layer complexities.

iii. Hedge funds, pensions, and endowments are increasingly exploring allocations to crypto.

iv. As much as crypto is in the news, we believe we're still early in the technological and investing shifts that crypto could bring. Coinbase is a key beneficiary as adoption continues.

2. Exchanges are a great business

i. Exchanges are a winner-take-most type of business. The benefits to scale are enormous as more users lead to more transactions and liquidity, which in turn leads to better pricing. Higher transaction volumes also means new projects would want to launch their tokens on the platform first. Better pricing and wider product selection in turn helps attract new users.

ii. And not only is Coinbase an Exchange, but it's also the front-end brokerage, and therefore captures a larger margin through vertical integration. Imagine if Interactive Brokers also owned the exchanges like NASDAQ and CME, and had a direct plug into their inventory and liquidity. (We cover this aspect in greater detail at the end of this section)

iii. At the same time, by owning the front-end brokerage, they have a direct relationship with the end user, building a stronger business with a consumer-facing brand. More importantly, Coinbase has users' trading data that helps inform their product rollouts as well as monetization strategies. This is something exchanges do not possess.

3. Coinbase has dominant market share

i. **The numbers:** Based on Crypto.com's research, global crypto users reached 221mn in June 2021[4]. Coinbase had 68mn verified users at the end of Q2'21, which implies a 30% share of total global users that have an account with Coinbase.

Another angle to evaluate Coinbase's market share, is by looking at its asset base. As of March 31, 2021, assets on Coinbase's platform totaled $233bn, representing ~9.3% of total market cap of crypto assets (roughly split evenly between retail and institutions).

According to a survey done by The Ascent (5/18/21), 67% of American adults who own or have owned crypto have used Coinbase. No other exchange was used by more than 28% of respondents.

In our calculations (see market share analysis below), Coinbase commands ~55% market share of the regulated US spot market, with the next largest player Kraken only a third of their size.

ii. **First port of call for institutions**: Coinbase currently has 9,000 institutional clients. 10% of the top 100 hedge funds use Coinbase. Coinbase is the world's largest digital asset custodian for crypto and is the administrator of several high profile institutional accounts including the Grayscale Investment Trust (the de facto Bitcoin "ETF" for retail investors), Tesla, MicroStrategy, and various university endowments.

Even one of their most formidable competitors, FTX, has chosen Coinbase Custody International as their Primary Custodian. Facebook has also chosen Coinbase as its custody partner for its pilot of Novi, Facebook's digital wallet initiative.

Typically, an institutional client's first step to crypto is going to be custody, and Coinbase has an advantage by being the largest custodian. This leads to follow on revenue that comes from trading activity. As such, custody helps keep the platform sticky, even if it's not the highest source of revenue.

4. **Coinbase currently owns and continues to target the casual retail user market which we view as having superior long-term economics.**

Coinbase targets the long-tail of casual retail investors. As evidence of this, we can see through alternative data, that the average deposits sizes into Coinbase accounts are still small – 67% of deposits in June 2021 were below a $100, a proportion which grew from 59% in May 2021. The $500 and above range

[4] ~3% of the world's population

declined to 10% of deposits, from 15% in the May to June 2021[5]. This reflects an increasing proportion of casual retail investors on the platform.

Retail take rates are 1.5 - 2% on average, and they are 0.5% for institutions. 95% of trading revenues come from retail. This is the segment we'd like to see Coinbase own and defend against competitors. Because Coinbase charges a flat fee up until trades are above $200 in size (after which it's a variable percentage), lower volume users also face higher fees as a percentage.

We believe Coinbase's hold on the casual retail segment results in better economics over the long run, and is a customer segment that aggressively expanding competitors like Binance.US and FTX.US have not traditionally focused on (beginner onboarding and education; simple product interfaces).

Also, the retail-focused segment is where we feel competition (Kraken, Gemini) is weaker. Both companies have less tokens on the platform, have not been rolling out new features and services as frequently as Coinbase has, is showing lower growth across various usage metrics, and does not have the ambitions to build out crypto infrastructure for the whole ecosystem unlike Coinbase.

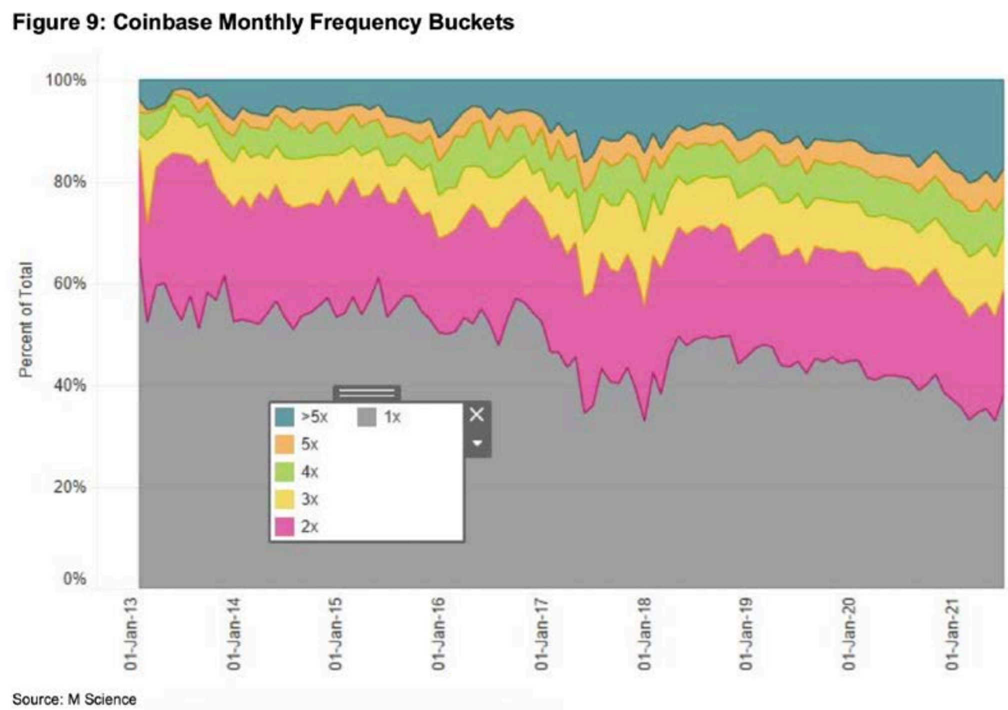
As Coinbase continues to maintain its dominant position with retail investors, we believe this will help alleviate the margin compression the overall industry will see in the coming years (listed in Risks below; though we do think margin pressure will not happen as quickly as others expect).

We also have seen evidence that Coinbase's core retail users show increased engagement over time. The proportion of accounts that trade more frequently per month has gone up over the years, as shown in the graphic below.

[5] M Science

Users are trading more frequently over time

Source: M Science



Also, from company filings, we know that conversion rates of monthly transacting users (MTUs) from total verified users has been going up over the quarters. It was 6.5% at end of 2020, and rose to 12.9% in Q2'21 (out of 68mn users). They are also using more products over time – 27% of Q2'21 MTUs have invested and engaged with at least one other non-investing product (like Staking or Earn), which is up from 25% in Q1'21.

We think an increasingly engaged large retail user base is a strong moat for Coinbase, and is a better segment focus on. Compared to sophisticated traders or institutions, retail users are less price sensitive (or are more willing to stay with an easier UI/UX with associated rewards that Pro users don't require), are a "stickier" segment (inertia to switch is higher if a user doesn't trade often or in large volumes, and therefore saving less than a $1 on fees is less important than providing a simple user experience), and are less willing to take risks with lesser known exchanges, and therefore, would rather stay with an established and trusted brand that is Coinbase.

5. **Reputational lead vs other exchanges.** Coinbase is the first brand of trust in the US, with a huge lead in mindshare with the public. Being a publicly listed company helps with legitimacy and awareness too.

   We think JP Morgan's research team framed it well (8/11/21 report):

   > *The process starts with Coinbase's brand, which we see as representing access to the cryptocurrency market for US and European investors.* ***For retail it represents***

simplified and intuitive access and for institutional/corporate customers it represents secure access and custody, with best execution. *We see Coinbase's brand, together with a new large marketing campaign increasing the number of users transacting on its platform.*

The US government has also relied on Coinbase for their crypto expertise as Homeland Security signs a deal with Coinbase to provide analytics software (9/21/21).

Lastly, Coinbase is one of the only exchanges to have never been hacked. This is especially impressive, considering the fact that they are one of the oldest exchanges and having been in business since 2012.

This is important in crypto especially (many exchanges have indeed been hacked in the past) and is what users place as the top of their decision funnel. (Please see Appendix for security protocols in place and for clarification on being "hacked" vs. users being subject to phishing scams.)

6. **Regulatory moat**. This is especially relevant in the US. As early as 2013, they were going to each state in the US gathering money transmission licenses, registering with FinCEN, and generally trying to be aligned with all government agencies. And ultimately as regulatory guidelines are increasingly put in place, this is going to be a strong competitive advantage against any new / yet-to-be registered players in the crypto space.

   Coinbase has already done the hard work on regulation, especially after becoming a public traded company, and earning the "trusted" reputation that comes along with it.

   Their regulatory-first approach carries into their international ambitions and has allowed them to launch in Japan and Germany most recently. In Germany, they are actually the first company to be issued a license for crypto custody and trading.[6]

   Coinbase is constantly interfacing with 54 different government agencies and regulators, which is something we believe smaller competitors will have a tougher time achieving. Coinbase has dozens of regulatory-facing staff, lawyers and lobbyists, while many competing exchanges have fewer employees than that *in total*.

   Anyone interested can see the Appendix section for a list of licenses held vs. competitors.

7. **Strong leader and management team.** You don't get a more crypto-native CEO than Brian Armstrong, who has been building out the crypto ecosystem since 2012, surviving multiple crypto winters since, and has been instrumental in the growth and adoption of crypto currencies globally.

   He has achieved this by being product-obsessed from the beginning, hence making it easy for new users to be onboarded into the crypto economy, mostly with Bitcoin as starting points.

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[6] Company 2Q'21 earnings call

Brian Armstrong also understands the importance of bring regulator friendly. This was not always the case from the early years of the company's founding[7]. But overtime, he and his team adapted to the realities of growing a nascent asset class and aligned themselves with regulators. We view this shift of attitudes and willingness to adapt an important part of the company's culture, and will help Coinbase thrive in a fast-changing regulatory environment into the future.

Brian Armstrong has built a deep bench of talent across all functions, especially as Coinbase prepared for an IPO. We think the evolution from relying on superstar engineers in the earlier years to a more "buttoned-up" and organized approach to management as the company grew was important and necessary.

Coinbase senior leadership includes:

Surojit Chatterjee as Chief Product Officer since Feb 2020. Was VP of Product Management for Google Shopping and Head of Product at Flipkart previously.

Emilie Choi as Chief Operating Officer, having joined in 2018. Spent 10 years at LinkedIn as VP and Head of Corporate Development.

Paul Grewal as Chief Legal Officer since August 2020. Was Deputy General Counsel of Facebook from 2016, and served as a US Magistrate Judge for the US District Court of the Northern District of California prior.

Alesia J. Haas as Chief Financial Officer since April 2018. Previous CFO for Sculptor Capital Management (formerly Och Ziff Capital Management Group LLC), a global institutional alternative asset manager.

Faryar Shirzad as Chief Policy Officer and previously Co-head of Government Affairs at Goldman Sachs and The White House National Security Council member. He was recently hired in May 2021.

Kate Rouch as Chief Marketing Officer. A 10-year veteran from Facebook, who last served as Global Head Of Brand and Product Marketing at Facebook. She is another recently hire, who joined in August 2021.

Crypto exchanges vs. traditional exchanges and brokerages

Crypto exchanges like Coinbase are integrated platforms, combining both brokerage and exchange functions, and hence have superior business models compared to traditional exchanges and brokerages. Coinbase's exchange, are much like NASDAQ or CME, acts as a platform allowing both retail investors and institutions to plug into directly (which is unique to crypto vs traditional finance).

[7] We'd recommend the book Kings of Crypto to learn more about the founding and evolution of Coinbase.

This vertical integration leads to increased margin (all else equal) and better pricing for customers. And this is not just from retail trades being plugged directly into an exchange owned by the same company, but from just the comparative efficiency of crypto exchanges when compared to traditional exchanges.

Here is Sam Bankman-Fried (founder of FTX), providing an explanation to this dynamic:

Crypto Exchanges are vertically integrated and therefore more efficient

Source: Twitter / SBF, founder of FTX

This disintermediation of traditional structures saves costs and increases execution speed for all parties. Savings are passed down to users, but also gives Coinbase space to have higher aggregate take rates (across both exchange and brokerage services).

Consumers benefit from vertical integration too, leading to a virtuous cycle. All investors, whether retail or institutional, have equal excess to the exchange, benefit from better pricing. A lot of cost is saved from no longer needing to pay middlemen for data or market access which is required with the traditional exchanges. One example is order book data which is paid for in the traditional markets, but is free and openly available via APIs with crypto exchanges.

Being Long the Crypto Economy

We are bullish on the crypto economy because at its core, we view blockchain technology[8] as a powerful force that can reshape many industries.

We are slowly seeing potential "killer app" use cases seep into different aspects of the economy, from discussions of central banks adopting their own central bank tokens, to pension funds considering allocations to crypto as an asset class, to retail users using blockchain technology for their daily banking transactions. The network effects of usage as well as mindshare ("killer app" memes or narratives) also means we are the early stages of widespread adoption.

While it's still too early to know what applications and use cases will emerge to be the most relevant over the next 5 – 10 years, what we're seeing is the ingredients being formed (venture funding, talent leaving universities to build companies on blockchain, a "crossing of the chasm" from early adopters to crypto entering the mainstream). There are thousands of "experiments" / start-ups being launched, and we believe that despite it being early in the ecosystem, we're already seeing early indications of what form it will take. This vibrancy will certainly create value in the future – we just can't predict in what ways yet.

As this happens though, there will be an increasing need for the on-ramp and wallet functionality that Coinbase provides into the crypto economy. In this way, we believe that Coinbase acts as a "toll-booth" / "tax collector" on this ecosystem, which benefits as the crypto ecosystem grows ever larger.

Here's a small sample of news items that show the increasing adoption of crypto across all areas of the economy:

Government:

- Fed Governor Randal Quarles discusses stablecoins [7/15/21]
- US Homeland Security Signs $1.36M Contract with Coinbase [9/19/21]
- France tests crypto assets in series of government bond deals [10/19/21]

Corporations:

- Visa moves to allow payment settlements using cryptocurrency [3/29/21]
- NCR acquires Bitcoin ATM operator LibertyX [8/3/21]
- Stripe is hiring a crypto engineering team to build Web3.0 payments integration [10/12/21]

[8] We recommended reading the Bitcoin whitepaper, which is only 9 pages long (a full understanding of the math isn't required). And from there, a scan through the Ethereum whitepaper to get a sense of the scale of ambition. We think having a high level grasp on a few underlying concepts is an important starting point.

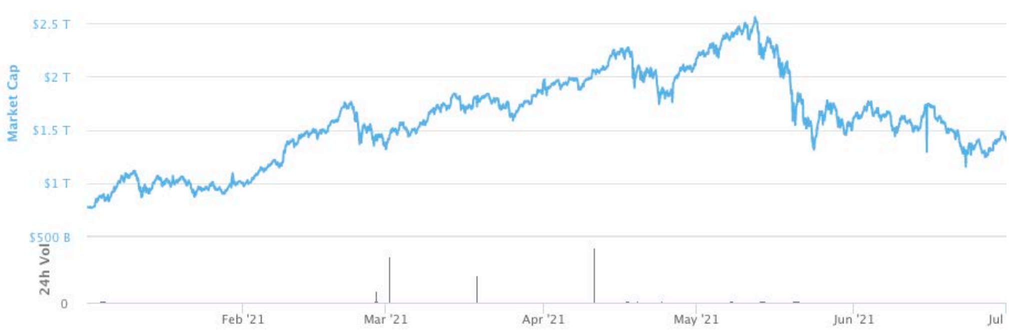
Institutions (hedge funds, banks, etc):

- JP Morgan Gives Wealth Management Clients Access to Bitcoin, Ethereum Funds [7/23/21]
- Goldman Sachs files for DeFi ETF [7/27/21]
- Interactive Brokers to launch cryptocurrency grading by the end of summer [7/21/21]
- German law allowing institutional funds to hold crypto comes to effect Aug. 2 [8/1/21]

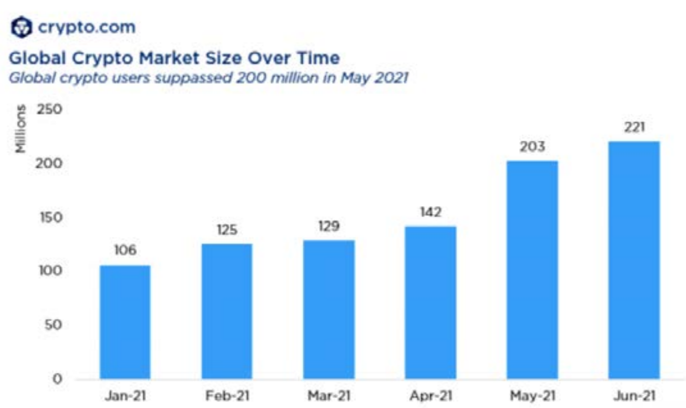
Retail investors:

- Half of family offices want to add digital currencies to their stable of investments [7/21/21]
- Crypto population doubled to over 200m users since January [7/29/21]

Crypto Market Cap Went Through a Bear Market From Jan to June 2021…



… Despite Market Cap Value Falling by ~40%, Users Kept Growing

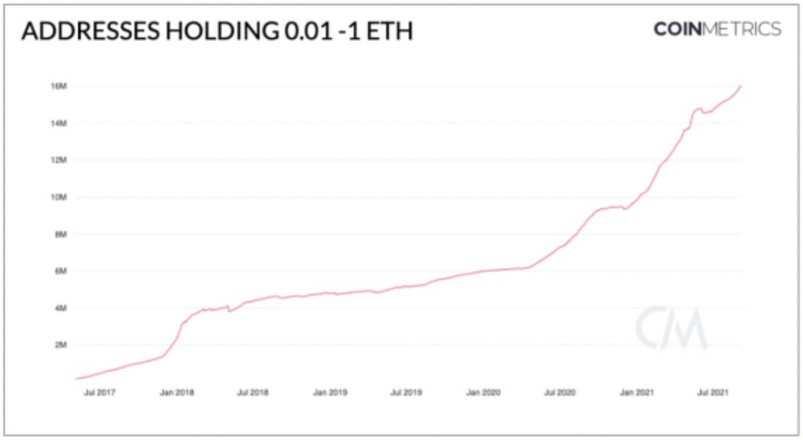


Source: Crypto.com

…While Ethereum Added New Addresses Through the Same Period.

Source: Coinmetrics

While liquidation cascades have dramatic effects on price, they don't change underlying fundamentals. Ethereum alone has added more than 6.2M addresses holding 0.01-1 ETH since the start of 2021. User adoption is growing at a rapid rate, and was not meaningfully impacted by the crash.



On the institutional adoption (from Accolade Partners):

> *With respect to institutional adoption, over $40 billion in digital assets are now held in corporate treasuries. BNY Mellon, the world's largest custodian bank with some $41 trillion in assets, will be rolling out a new digital custody unit for its clients. Goldman recently announced plans to offer options and futures trading in Ethereum. Paul Tudor Jones announced and reiterated his exposure to Bitcoin as a portfolio diversifier. State Street, a US custody bank that oversees more than $40 trillion in assets, is setting up a new digital asset division. Visa announced it would allow settlement of transactions on Ethereum. There are countless other examples of institutional adoption and as with the internet, we believe this adoption will compound on itself for decades to come.*

Financial institutions Are Investing in Blockchain Companies

Exponential adoption (LINK)

Note the typo on DEX Volume, where $162 billion is volume for May 2021, and not July 2020. As shown on The Block here.

Overall Crypto Market Cap[1]	$270 billion (Q2 2020) → $1.4 trillion (Q2 2021)
DeFi Total Value Locked[2]	$900 million (Q2 2020) → $55 billion (Q2 2021)
Monthly Decentralized Exchange (DEX) Volume[3]	$1.2 billion (May 2020) → $162 billion (July 2020)
NFT Sales Volume[4]	$7 million (Q2 2020) → $1.2 billion (Q2 2021)

1) CoinMarketCap; 2) DeFi Pulse; 3) The Block; 4) DappRadar

It's true, that the current bulk of crypto trading volume today involves:

1. Speculation on price action of tokens (which isn't necessarily a bad thing as this is the same liquidity that exists and is required in traditional financial markets)
2. The creation of crypto-versions of traditional financial services companies: DeFi applications for borrowing and lending, asset management, exchanges, wallets, etc. (we do see this as building the DeFi infrastructure first, and providing the required liquidity, before it can be extended into existing fiat systems, as it has begun to seep into.)
3. Infrastructure and base layer protocols that allow other crypto projects to be built upon. These include protocols like Ethereum or Chainlink for data feeds.

4. Trading of non-fungible tokens or NFTs.

The skeptical reader would view all these use cases as crypto-upon-crypto innovation (playing within its own walled garden), and removed from our daily lives / "real world" use cases. But while we may currently be heavier on the tokens-for-speculation end of the spectrum, there is increasing activity of tokens being bought and used for real-world applications. We list a few of these applications below – applications that are being used by millions of happy customers today. It's true that "the future is here, just unevenly distributed"[9].

The best example of crypto adoption today is for money transfers

Different coins can be used for money transfers. These include Ripple, Bitcoin, Litecoin or Dash. Stablecoins (which are pegged to trusted fiat currencies like the US Dollar) are also increasingly popular as they have both benefit of blockchain transfers, as well as the certainty of USD price stability.

The rise in these forms of money transfers takes margin away from incumbent wire services companies and forex fees from banks, while distributing the majority of savings to users, and retaining a smaller portion for the decentralized base of individuals who act as validators that confirm transactions and secures the network. There is no one central authority or organization that accrues profit.

With crypto, transfers are almost immediate , and can be done anytime of the day including weekends. This alone is transformative to the world, especially for repatriation of currencies in emerging markets, where the amounts tend to be smaller, and traditional money transfer services fees can comprise up to 9% of the total transaction value.

This Financial Times piece (9/5/2021) tracks the use of digital tokens in emerging economies:

Cryptocurrencies used as a superior alternative to fiat

An alternative to weak currencies

Emerging markets are fertile ground for cryptocurrencies, often because their own are failing to do their job. As a store of value, as a means of exchange and as a unit of account, national currencies in some developing countries too often fall short. Unpredictable inflation and fast-moving exchange rates, clunky and expensive banking systems, financial restrictions and regulatory uncertainty, especially the existence or threat of capital controls, all undermine their appeal.

[9] Quote attributed to science fiction writer William Gibson.

Crypto adoption is heavily weighted to lower-middle income countries:

Different digital currencies are used for different transfer amounts:

"We thought that people would adopt one cryptocurrency and that would be their primary one, and what we have found instead is they use different ones for different purposes," says Ryan Taylor, CEO of Dash Core Group, a cryptocurrency network that first entered Venezuela in 2016. Coins such as Dash get used more for smaller purchases, bitcoin for larger ones because of higher fees, and litecoin for things like paying satellite bills, he says.

Savings from 9% of transaction to 2-5%

Remittances companies are being intermediated (it's not just for side-stepping government controls)

According to the World Bank, the cost of sending $200 to countries in sub-Saharan Africa averaged 9 per cent of the transaction value in the first quarter of 2020, the highest of any world region, and can go into double digits in some places.

On peer-to-peer crypto networks, however, these fees are typically about 2-5 per cent, according to LocalBitcoins. Average transaction fees for bitcoin were below $3 in August 2021, according to data provider BitInfoCharts, while for ethereum they ranged between $8 and $44 over the same period.

Crypto use cases across the world

"In Brazil, almost all activity is related to investments and trading," says Daniel Cunha, a Mercado Bitcoin executive. "[But] in Argentina, stable coins have a very important presence as a strategy to defend [against the changing] value of the currency. In Mexico, the use of crypto for remittances represents a very large part of the market."

Leapfrog to blockchain

The speed with which many developing countries have taken to crypto is not the first example of such early-adopter behaviour.

Perhaps the best-known modern example is M-Pesa, a mobile payment system first developed in Kenya that allowed millions of people without bank accounts to make cash withdrawals and deposits, transfers and payments through their mobile phones, delivering financial inclusion through technological innovation.

Beyond investments and trading, crypto is used in emerging markets for remittances, and for financial inclusion to the traditionally unbanked. Interestingly, this is in countries where the digital wallet innovations we've seen in China and parts of South-East Asia have not yet been adopted, potentially signaling a leap-frogging of both traditional banks and fintech / neobanks, and going straight to the usage of crypto with crypto-enabled wallets.

Just this year, Bitcoin was recognized as legal tender in El Salvador, where remittances make up ~24% of the country's GDP (LINK). While the IMF has concerns regarding economic stability due to the volatile prices of Bitcoin, as well as the potential to enable illicit activity, there are also positives for the economy. We are aware that the government's Bitcoin push in El Salvador has been controversial, but here, we are merely using the data coming out of this development as a case study as to what's possible.

From this article titled, "El Salvador's new Bitcoin wallets could cost Western Union and similar companies $400 million a year", we can see that traditional money transfer services like Western Union are effectively a tax on countries like El Salvador. Companies like Western Union are currently taking several percent of El Salvador's GDP (24% of GDP are remittances x Western Union's Fee), which the country hopes to use crypto to disrupt and retake.

Commissions go down from 33% to zero

Remittances from abroad comprise nearly a quarter of El Salvador's GDP, and around 70% of the population receives them. The average monthly remittance transfer is $195, and for the households that receive remittances, it makes up 50% of their total income. So the funneling of cash from abroad back home to El Salvador is critical to survival for most of the country.

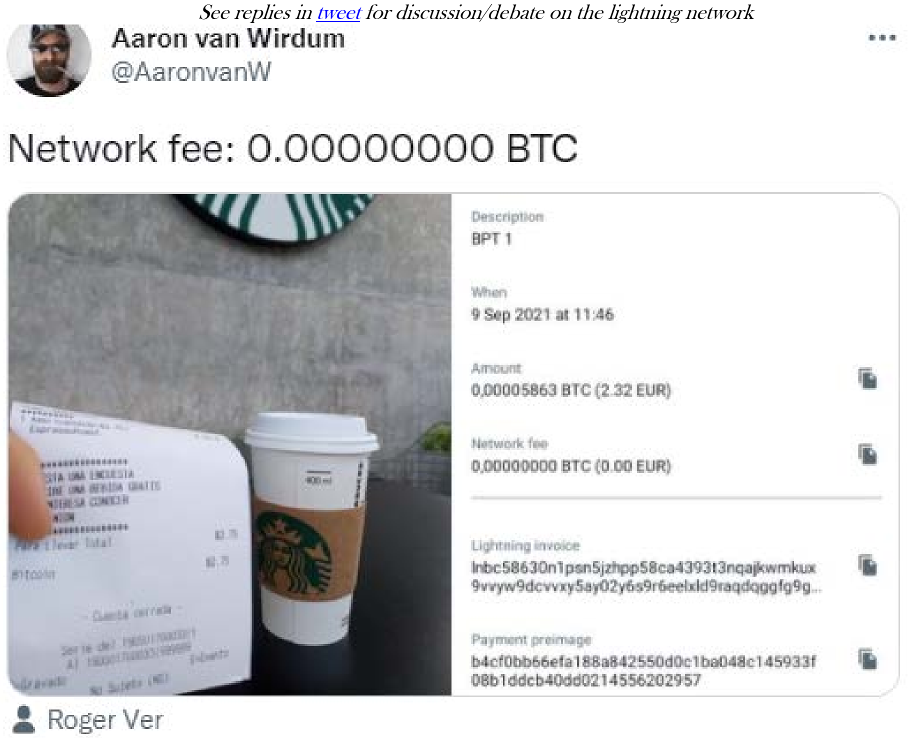
Around 60% of that cash comes via remittance companies and 38% through banking institutions, according to official data. Fees vary by company, but typically, the smaller the payment, the higher the percentage that goes to fees.

For instance, if García wants to send $10 to his cousin in San Salvador, he will pay $3.24, or a nearly 33% commission to Western Union.

If he uses his Muun self-custodial wallet for the transaction, however, he will pay 10 cents, or a 1% fee. And if García were to pay from a Chivo wallet, which is reserved for Salvadoran nationals living at home or abroad, the transaction would be free. Once his cousin receives the funds, he can then go to any of the 200 new Chivo ATMs the government has rolled out and withdraw U.S. dollars from his virtual wallet.

Here's example of a coffee bought in El Salvador

See replies in [tweet](#) for discussion/debate on the lightning network



Bitcoin transactions are sped up and costs are dropping close to zero for small transactions via the lightning network, which is a protocol that runs on top of the Bitcoin network.

One concern on using Bitcoin money transfers if its price is so volatile. In fact, anyone has the ability to immediately to convert their Bitcoin back to fiat if they choose to and off-ramp to a fiat bank account. Many users, both retail and institutions, are using crypto this way currently, and these transfers require the service of fiat-based crypto exchanges like Coinbase. The benefits of crypto transfers (in many but not all situations) outweighs the trouble of swopping in and out of fiat.

Intuitively, this one example of money transfers helps us imagine how blockchain technology is useful, and where value comes from – it is disrupting the pool of revenue and profits incumbent gatekeepers like remittance agencies have been capturing.

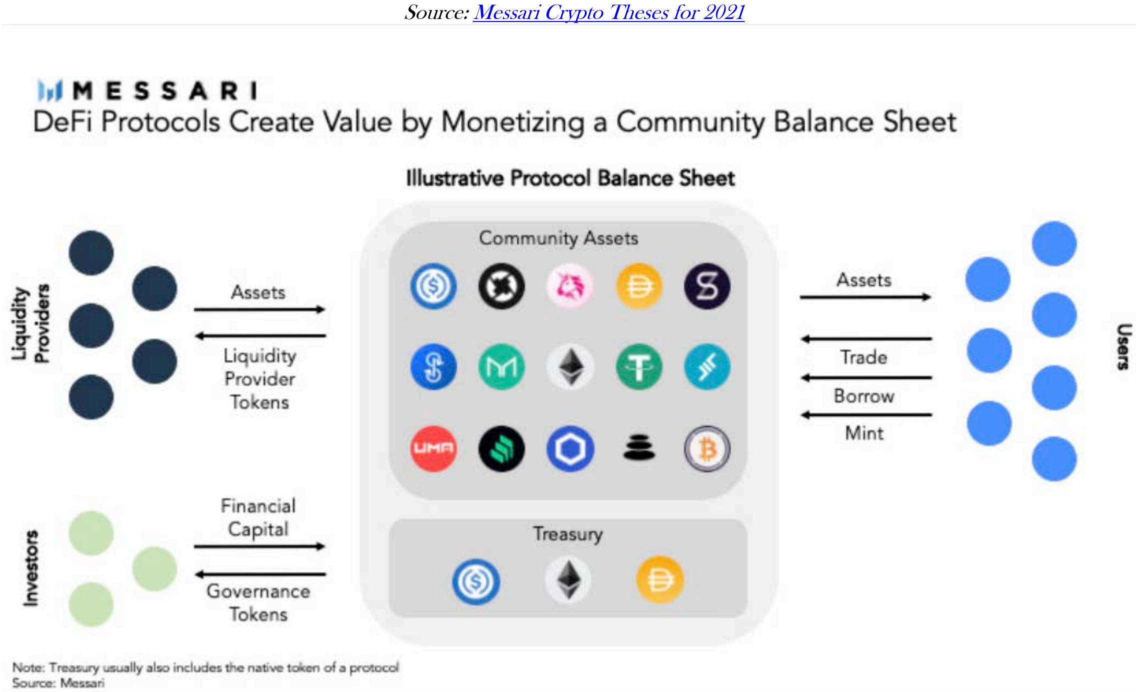
From here, we are able to imagine blockchain technology used in DeFi (decentralized finance) to disrupt pools of profit currently taken by other incumbent financial institutions and distributed to their decentralized crypto alternatives. Here are other examples:

- With borrowing and lending, from banks to peer-to-peer platforms like Aave and Compound, governed by smart contracts.

- With asset management, from fund administration and legal firms to platforms like Enzyme Finance or dHedge, and with real-time transparency and immediate liquidity by investors, all governed from fund launch by a smart contract (or by rules etched in code, no longer dependent on a central administrator).

- With exchanges and brokerages, from traditional brokerages to platforms like Uniswap or Sushiswap which connects buyers and sellers of assets directly. (We will address the trade-offs between centralized exchanges like Coinbase compared to these decentralized alternatives in later sections).

How DeFi stands to replace existing gatekeepers of finance
Source: Messari Crypto Theses for 2021



Many of the services mentioned above only have crypto assets on their platform (no traditional securities[11]), but it's proof of concept and proven infrastructure is a good starting point.

Many startups are issuing tokens instead of traditional equity today, and these tokens are being launched and traded on crypto-native platforms. Crypto funds are using Enzyme to launch their strategies and raise money from investors. Retail investors are turning to Aave to earn yield on their stablecoins or other crypto assets, which beats any traditional bank lending rates. The seep of crypto into real-world financial activity has begun.

Other real-world (not yet mainstream, but growing) use cases of blockchain technology:

Helium protocol: Decentralized Wi-Fi. Users set up a physical hotspot device and mine their native token, Helium. In turn, these tokens can be bought by anyone and used to pay for the use of Wi-Fi. There are 129,518 hotspots all over the world today. In fact, San Jose intends to fund low-income internet access with Helium crypto mining. If you live in a big city, do download the app and give it a try.

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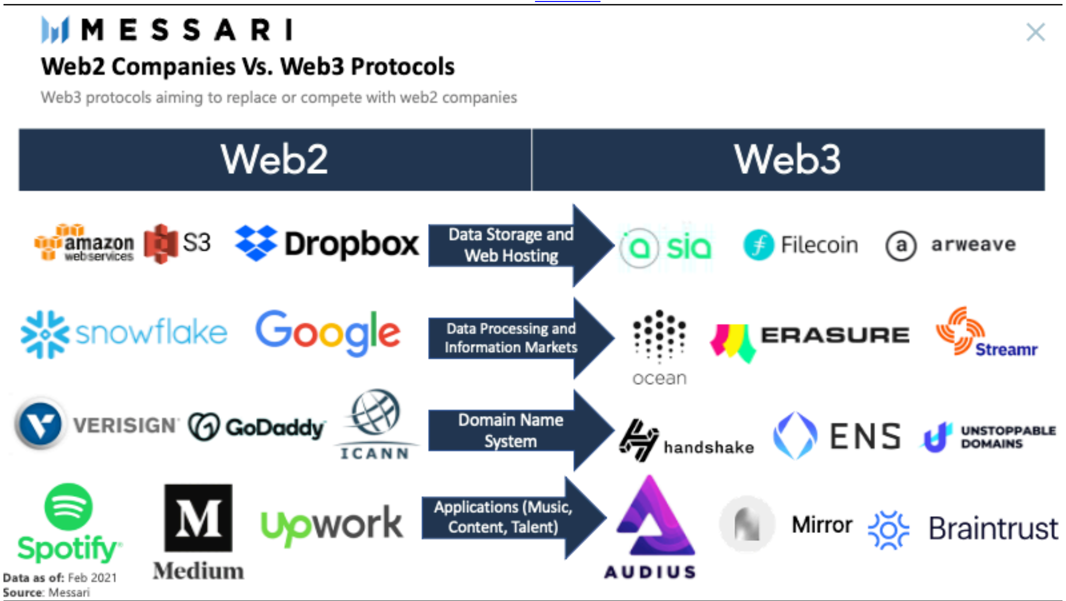
[11] We are leaving out synthetic versions of securities made to be on-chain and traded on crypto platforms. These are not significant volume drivers.

Audius: Disintermediates record labels and streaming platforms such that musicians can build their own fanbase directly, and reap the rewards (get paid) from fans listening to their music.

Filecoin: Decentralized cloud storage. Like Dropbox or Google Cloud, but with less worry. Allows people to be custodians of their own data and makes data easy to retrieve and hard to censor.

These protocols are part of the Web3 stack, replacing Web2 incumbents

Source: Messari



And lastly, there are NFTs (non-fungible tokens)

Think of it as modern art, but one where the provenance is never in question, the uniqueness and authenticity is verifiable, and you are able to confirm ownership. This concept can move beyond art to collectibles, and to in-game objects for video games (my sword, is literally, my sword), and even to ownership of real estate. To help wrap our heads around NFTs, do check out these articles:

- Why NFTs Aren't the Next Asset Bubble by Rex Woodbury
- Rock, Paper, Scissors Says GO! by Arthur Hayes (founder of Bitmex)
- NFTs help sell low-value land parcels online by Rex Salisbury (Forbes)
- A twitter thread on the longer term potential for NFTs by @punk6529

Excerpts from this Forbes piece lays it out clearly:

> *Ever buy a piece of digital content—a cool outfit or "skin" in a video game, a movie through a video-streaming service, a musical album via an audio-streaming site—and later realize that if you stop paying your monthly subscription fee, you effectively lose access to that content?*

People dish out many billions of dollars on so-called digital goods annually and, all too frequently, she suggests, the trade-off is a fundamentally unfair one.

Blockchain-powered NFTs, in contrast, enable digital scarcity; they allow people to lay claim to digital content that can be stashed in personal digital wallets

"Crypto is about much more than just currency," Haun said. "It's about digital goods ownership and how people will own things digitally in the future."

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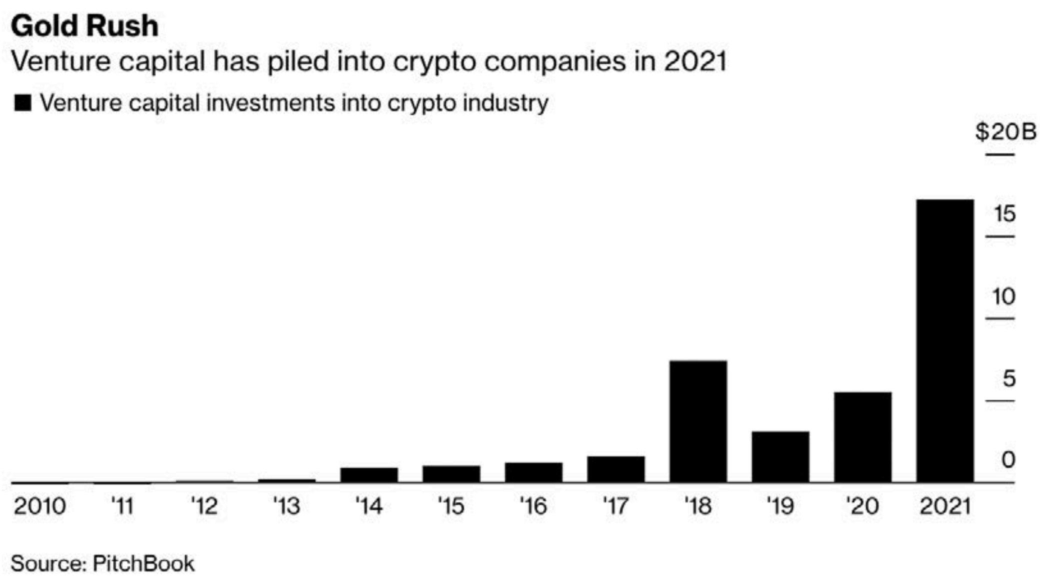
The sections above are a few examples of areas where crypto technology is used to disrupt existing platforms and to also create new sources of value. The point is that the crypto space is growing across many fronts, and is not just limited to Bitcoin and Ethereum. To tie it back to Coinbase, the proliferation of each protocol means more users need to buy and sell associated tokens and therefore would need to use an exchange.

Growth across many fronts, seeded by a boom in venture capital

Source: "Venture Capital Makes a Record $17 Billion Bet on Crypto World" - Bloomberg



If we think that crypto usage would be significantly larger in the future, and total crypto asset base (across all tokens) follows this growth, then this provides an anchor to our Coinbase thesis, and we are able to ignore the shorter-term asset price fluctuation that comes naturally with a nascent sector.

What we're focused on is the technology being developed, product market fit of applications, and user and developer network effects to develop a 5 to 10 year view. We'll also be tracking these developments as our thesis plays out over the next few years too.

"Okay, You're Long Crypto… But Why Coinbase?"

An investor could invest directly in coins or tokens to be long the crypto economy. However, we think there are benefits to gaining exposure via an investment in Coinbase instead.

Coinbase is a better way to take a wider view on crypto – only ~50% of trading volume today is from Bitcoin and Ethereum, and "other assets" take up the other half and is increasing as a proportion. What this means is an investor does not need to pick which token will win or lose, as the more active any token gets, Coinbase captures this growth via higher trading revenues.

Note that there currently aren't any highly-liquid crypto ETF today that provides diversified exposure like an S&P500 would to the US economy. We do not think there is good way to adopt an ETF approach to investing in crypto either way, as the high market caps of some tokens do not necessarily mean they have the widest adoption, use case, or have more reason to exist into the future.

This is compared to having to study and understand the ins and outs of each token you are purchasing, and to do so for all the tokens you'd need to form your own portfolio of tokens. We think the top 10 tokens in five years are probably hard to predict (especially application layer tokens), and likely to be different from those today. On the other hand, holding only the most established ones alone like Bitcoin and Ethereum has concentration risk, and may also run the risk of missing on higher potential gains via smaller but faster growing tokens.

In fact, we view Coinbase as a leverage play on the growth of total crypto market cap. Using historical data, we've seen strong correlation in the growth of crypto market cap with both higher number of users as well as an increase in revenue generated per user. This causes a multiplier effect on total revenues. And when coupled with the scaling of fixed costs over time, Coinbase's earnings growth outstrips that of crypto market cap by a wide margin (covered in our "Valuation" section below).

With Coinbase, you get both diversification across tokens and the benefit of a leveraged upside off total crypto market cap growth. "Risk of ruin" is also likely to be much lower compared to many of the smaller alternative tokens.

As a publicly listed stock, there is also less worry about security (tokens that may get hacked or have "rug pulls[12]") or liquidity. An investor would have higher transparency with respect to company accounts and management.

[12] A rug pull is a type of scam where developers abandon a project and take their investors' money. Source: LINK

That said, Coinbase needs to be able to capture the upside of token adoption and growth. We think Coinbase has the competitive moats for this to happen. We have listed reasons in the "Why we like Coinbase" section above, and here's a summary:

Since its founding, Coinbase has worked closely with regulators in the US and Europe and have the required licenses and trust of regulators to operate. This is a strong moat for Coinbase. New exchanges will have to overcome the same challenges – both working with the authorities, as well as on the engineering front to set up systems to meet equally high standards of security.

By being early and having the reputation for security, Coinbase has established a strong brand in consumers' minds in their markets. This reputation, especially for a nascent asset class with occasional negative headlines, is very important to retail customers.

When coupled with a product that is easy to use and a tech team that has integrated the greatest number of blockchains to offer the widest selection of tokens, we believe Coinbase will remain the app of choice for retail user who wants an easy way to participate in the crypto economy, even if it's just to speculate on tokens.

We therefore think the reputation, selection, and availability of additional services (staking, lending, etc) will keep the customers on their platform. It's not worth typical retail customer's effort to shop for a marginally cheaper price, if you can offer all these advantages, especially where security is particularly important.

Currently, ~67% of Coinbase deposits are less than $100[13]. Through their actions (and the objective data), retail-users are showing that they value the simplicity and streamlined user-interface of Coinbase vs. saving less than $1 (1% of $100 deposit) having to possibly navigate the complex web of using different providers for onboarding fiat, trading on an alternative exchange, or learning how to sign up and use MetaMask (for decentralized exchanges), etc.

It is for this reason that we think fee compression is less of an issue than people think (one of the primary controversies with the stock today).

Even with the boom in asset prices over the past year, which led to many new users into the crypto ecosystem, Coinbase has gained market share in the US. This shows that incremental new customers are increasingly choosing Coinbase (indicates top-of-mind branding and easy to use interface), when the "bear argument" would make you believe they would lose marginal customers to the cheaper platforms that have sprung up in the last two years.

Also, as discussed above, we believe the strength of the brand reputation for security, and by offering the widest selection would be enough reason to keep users on the platform, allowing Coinbase to maintain their fee structure over the medium term at the least. Pricing pressure is one key worry for other analysts but from our research we are quite comfortable.

[13] M Science research

We think Coinbase is able to capture the superior long-term economics of the crypto exchange business. This is especially so as they have the commanding lead in their current markets, namely in the US.

Exploring Coinbase's Market Share (And Why We Differ from The Street…)

The majority of market share studies in sell-side research focus on exchange volumes published on the main leaderboard page of CoinMarketCap, or the exchange volumes over time on The Block. We have instead parsed out data relevant to the market we care about, which is the US regulated spot market. Our thesis on Coinbase hinges on this segment.

While international growth is an important strategy for the company, we treat that as a "free option" in our thesis. Rest of World (mostly Europe) revenues are currently at 17%, down from 24% in 2020.

We cover Coinbase's lead in app downloads in the "Competition" section below. Coinbase has a commanding lead in the US using this metric. When it comes to estimating market share via exchange volume, it gets a little messier. First, we need to put aside derivatives volume, as no exchanges are currently allowed to offer derivatives to US citizens. And since our thesis is focused upon winning the US market, we need to clean the data to only look at spot volume. Afterwards, we need to disregard exchanges that operate outside the US or where US citizens are not allowed on their platform. This removes big players like Binance (that is why a separate but much smaller Binance US had to be set up) and Huobi.

Even then, different sites report very different volume numbers. There is an added complexity in crypto where reported trading volumes are not reliable, with "fake" volumes being commonplace. However, we can take directional volume inferring from the following data sources.

The first is FTX's volume monitor

Source: [FTX Volume Monitor](); Screenshot as of 9/20/21

Once derivatives volume and non-US exchange volume is removed, Coinbase Pro (referring to Coinbase exchange) holds a clear top position with number two Kraken doing only 35% of Coinbase's volume. That drops a bit if we consider the long tail of other spot exchanges, but the lead is clear nonetheless.

Position	Exchange	Adjusted Volume	Reported Volume	Reported Volume – Spot	Reported Volume – Derivatives	Open Interest – Derivatives
	Total	US$176,851,359,209	US$178,879,831,582	US$58,768,523,324	US$120,111,308,258	
1	Binance	US$84,951,575,441	US$84,951,575,441	US$23,197,044,258	US$61,754,531,183	US$9,202,584,911
2	OKEx	US$20,317,760,081	US$20,317,760,081	US$6,658,307,884	US$13,659,452,197	US$2,630,977,748
3	Huobi Global	US$18,900,536,648	US$18,900,536,648	US$5,319,956,499	US$13,580,580,149	US$3,101,009,873
4	FTX	US$14,508,870,025	US$14,508,870,025	US$2,897,499,988	US$11,611,370,037	US$5,844,570,910
5	Bybit	US$9,922,953,388	US$9,922,953,388		US$9,922,953,388	US$3,559,278,893
6	Upbit	US$4,838,653,729	US$4,838,653,729	US$4,838,653,729		
7	Coinbase Pro	US$3,616,499,611	US$3,616,499,611	US$3,616,499,611		
8	Kucoin	US$3,562,416,483	US$3,562,416,483	US$1,805,300,853	US$1,757,115,630	US$1,495,239,322
9	Gate.io	US$3,196,796,609	US$3,196,796,609	US$847,563,868	US$2,349,232,741	US$515,778,484
10	BitMEX	US$2,277,095,860	US$2,277,095,860		US$2,277,095,860	US$1,137,176,849
11	Kraken	US$1,331,964,527	US$1,331,964,527	US$1,005,592,177	US$326,372,350	US$212,927,600
12	CME	US$1,281,749,859	US$1,281,749,859		US$1,281,749,859	
13	HitBTC	US$1,224,300,188	US$2,448,600,375	US$2,448,600,375		
14	Bitfinex	US$1,098,056,009	US$1,098,056,009	US$950,395,004	US$147,661,005	US$1,647,207,943
15	Deribit	US$1,096,026,582	US$1,096,026,582		US$1,096,026,582	US$1,757,017,034
16	Binance US	US$1,015,161,059	US$1,015,161,059	US$1,015,161,059		
17	Bithumb	US$804,172,185	US$1,608,344,370	US$1,608,344,370		
18	bitFlyer	US$511,914,407	US$511,914,407	US$202,784,034	US$309,130,372	
19	LMAX	US$457,595,886	US$457,595,886	US$457,595,886		
20	Bitstamp	US$409,521,844	US$409,521,844	US$409,521,844		
21	FTX.US	US$324,689,516	US$324,689,516	US$324,689,516		

[Note: US citizens could very well use VPNs to access sites (not highlighted in yellow above) that explicitly state that US citizens are barred from using their platforms. Some exchanges may allow US addresses but do not KYC their US customers, restricting size of trades and deposits (like Kucoin).

But we note that US citizens trading on these sites are usually more sophisticated to bother to jump through technical hurdles, and are operating in a legal grey area we don't see existing in the long run. We also don't see these customers in the same target segment for Coinbase. While we may not have hard evidence of this yet, we believe this group is a minority of crypto investors in the US]

The second data source is Coingecko, filtered by US spot volumes only

Source: [Coingecko;](Coingecko) Screenshot as of 9/20/21

Coins: 9340 Exchanges: 494 Market Cap: $2,082,907,438,303 -7.4% 24h Vol: $127,581,202,972 Dominance: BTC 40.9% ETH 17.9% ETH Gas : 38 gwei

Spot DEX Derivatives

USD United States

Top Cryptocurrency Exchanges Ranking by Trust Score - Spot
* Read the methodology

Overview Cybersecurity New Social

#	Exchange	Trust Score Beta	24h Volume (Normalized)	24h Volume	Visits (SimilarWeb)	# Coins	# Pairs	Last 7 Days
1	Coinbase Exchange Centralized	10	$4,230,713,218	$4,230,713,218	14,962,048.0	101	302	
2	Kraken Centralized	10	$1,078,755,547	$1,078,755,547	13,195,314.0	87	389	
3	Binance US Centralized	10	$1,041,840,208	$1,041,840,208	3,879,846.0	59	115	
6	FTX.US Centralized	7	$321,069,963	$321,069,963	1,849,016.0	22	52	
4	Gemini Centralized	10	$175,220,433	$175,220,433	3,065,878.0	53	74	
5	Bittrex Centralized	10	$158,981,238	$158,981,238	3,424,540.0	412	934	
7	Okcoin Centralized	7	$32,936,719	$32,936,719	294,469.0	37	45	
15	Simex Centralized	N/A	$16,186,353	$828,570,490	2,970.0	4	6	
8	Coinlist Centralized	6	$7,314,022	$7,314,022	1,255,327.0	32	60	
9	Coinzoom Centralized	5	$5,292,409	$5,292,409	101,981.0	31	82	
11	itBit Centralized	3	$3,520,668	$27,530,737	646.0	5	5	
16	dYdX Decentralized	N/A	$3,430,227	$3,430,227	527,033.0	1	2	

This data shows the same story directionally, as our FTX data above.

(Note: the one number that stands out vs other data sources is Bittrex's number of coins listed. We have verified this on their website, and confirm that the bulk of them are not available to US-based customers)

The point here is that Coinbase has a much larger share of the regulated spot markets in the US than is widely understood, as opposed to looking at the usual trading volume leaderboards (which many sell-side research reports cite).

Next, we took at stab at calculating Coinbase's market share in the US. We were not able to get trading volume data at the exchange-level (not for individual trading pairs) over time (not just 24hr snapshots). So what we did was collect daily data but over a month from FTX Volume Monitor.

Our ambitions here were simple. From our daily volume snapshots, we could see that Coinbase had a commanding lead. We just needed to know if this directionally shifted in a big way over time, enough to change our conclusions at least.

For our methodology, we calculated the average volume over that period, to reach what we estimate is Coinbase market share in the US. Note, that while not all volume in the data is US based, 83% of Coinbase's revenue is from the US so this acts as a decent proxy. For competitors (US regulated) where we weren't sure of their proportion of volumes from the US, we took a

50/50% split (highlighted in pale yellow). The proportions here are not material to our conclusions, and we were able to cross check via geographical split numbers from web visits (using Semrush).

We've also looked at each exchange in the list, and excluded those that we don't consider competitors – again, we are only looking at the spot market (derivatives are not widely approved in the US yet), and on US regulated exchanges.

We extracted spot volumes only, twice a week, for over a month

Source: via FTX Volume Monitor; in US Dollars

Spot Volumes Only (via FTX Volume Monitor)

Exchanges	Jusrisdictions	25-Aug	30-Aug	02-Sep	06-Sep	09-Sep	13-Sep	16-Sep	20-Sep	23-Sep	27-Sep
Binance	International Ex-US, Asia focus	31,926,630,844	19,190,895,782	28,555,709,522	26,256,520,843	42,572,422,576	25,120,607,791	23,703,694,270	17,580,628,410	26,306,502,859	26,109,445,911
Upbit	International Ex-US, Korea focus	9,813,550,626	8,897,321,474	8,550,964,350	15,942,084,642	11,912,373,369	6,060,086,394	5,508,484,659	3,794,314,444	6,737,156,147	4,076,343,981
OKEx	International Ex-US, Asia focus	6,808,003,584	4,784,521,328	6,320,043,393	6,375,365,457	10,717,455,392	6,531,962,194	5,494,345,447	4,934,174,595	6,754,247,093	7,097,490,434
Huobi Global	International Ex-US, Asia focus	6,607,694,154	4,143,813,700	5,823,080,295	7,410,614,010	10,504,668,636	6,069,005,789	5,193,551,531	3,900,895,672	5,019,303,097	7,152,062,597
Coinbase Pro	International, U.S. Regulated	3,792,226,359	2,461,553,399	4,826,795,056	3,910,570,616	7,986,538,056	3,591,142,034	3,884,060,105	2,601,511,038	5,039,380,954	3,278,358,869
HitBTC	International Ex-US, Russia with highest web traffic	2,340,642,850	3,303,225,578	5,471,251,099	3,458,234,901	6,202,255,850	3,797,635,025	3,285,081,541	3,288,159,636	4,882,282,059	2,242,879,738
FTX	International Ex-US	2,662,530,273	1,521,717,660	3,440,313,947	2,409,737,696	4,988,168,814	1,981,021,806	2,421,158,180	1,875,805,762	3,251,538,494	2,673,240,308
Kucoin	International Ex-US (non KYC in the US)	1,979,176,755	1,278,325,982	1,834,402,280	1,570,289,336	2,587,083,279	1,759,815,536	1,571,115,539	1,359,847,009	1,965,945,443	1,551,821,538
Bithumb	Internationa Ex-US, Korea focus	1,230,317,108	933,873,047	1,480,438,016	1,263,787,719	1,884,364,394	1,112,959,808	1,077,176,109	1,341,167,801	1,276,636,836	1,122,847,792
Kraken	International, U.S. Regulated	1,464,682,378	663,331,883	1,514,164,272	892,789,175	1,975,125,821	919,091,990	1,050,107,439	562,132,280	1,388,115,303	842,383,323
Binance US	International, U.S. Regulated	1,061,689,892	600,606,508	1,026,011,597	842,201,965	1,799,086,471	1,114,469,770	840,818,235	728,526,817	882,165,986	613,170,075
Bitfinex	International Ex-US, Asia focus	1,001,936,981	578,400,712	1,282,354,466	1,031,875,840	1,684,265,815	768,281,441	765,581,008	571,265,601	1,142,053,064	1,070,996,911
Gate.io	International, Limited US	760,402,264	483,821,348	610,509,530	651,309,569	951,497,523	694,361,141	727,323,028	634,498,620	1,031,035,060	1,313,626,571
LMAX	International, institutional only; 5 tokens	481,451,543	217,173,969	626,793,462	321,332,748	746,294,718	254,258,653	480,872,485	267,223,069	523,951,811	476,652,417
FTX.US	International, U.S. Regulated	187,288,985	203,277,770	361,997,699	206,099,349	780,585,344	175,388,602	312,642,739	223,271,067	322,844,182	370,584,673
Bitstamp	International, Limited US; UK/Germany focus	454,289,662	172,892,706	444,769,155	251,048,414	646,136,532	207,477,395	306,796,209	208,306,180	424,823,678	354,011,028
Gemini	International, U.S. Regulated	233,472,040	92,741,305	296,651,414	207,523,505	384,219,067	121,798,481	211,325,227	91,244,991	209,297,546	177,784,791
bitFlyer	International, limited US, Japan focus	258,599,162	244,441,757	310,004,207	192,988,080	377,591,555	147,500,758	165,951,117	126,308,913	252,195,658	186,994,573
AscendEX (BitMax)	International Ex-US	174,330,746	124,318,822	211,423,468	196,246,897	265,734,513	171,648,070	157,234,180	125,117,738	177,699,539	159,118,349
Bittrex	International, U.S. Regulated	210,092,987	196,611,085	168,858,615	138,695,426	227,372,040	144,466,837	127,094,100	98,861,301	155,658,719	130,575,930
Poloniex	International Ex-US	191,782,247	123,933,564	161,993,126	134,696,961	228,583,918	131,372,906	122,937,828	129,798,015	152,091,247	131,858,836
Coincheck	International Ex-US, Japan focus	118,183,672	77,910,619	118,925,401	99,064,688	189,902,358	78,226,913	103,356,005	77,000,703	148,863,521	121,565,448
Serum	Decentalized exchange			83,678,261	88,115,031	281,086,103	102,428,280	87,156,129	49,494,512	81,028,722	64,641,240
Liquid	International Ex-US	87,231,469	79,059,564	115,206,056	87,121,026	143,762,404	78,133,710	65,408,827	62,846,335	104,537,087	88,134,059
Bitbank	International Ex-US, Japan focus	140,745,567	75,020,375	130,638,623	139,935,599	184,491,251	67,695,043	59,158,280	62,147,145	106,115,393	73,957,699
GOPAX	Korea only	62,180,054	34,480,114	142,994,517	39,689,395	42,332,109	32,953,780	40,530,229	37,969,886	31,447,946	74,198,422
OKCoin	International, Limited US	36,139,233	15,506,064	38,293,639	45,991,702	51,495,101	13,826,919	27,983,986	22,521,581	27,118,177	32,381,870
BitMEX	Derivatives only	-	-	-	-	-	-	-	-	-	-
Bybit	Derivatives only	-	-	-	-	-	-	-	-	-	-
CME	Derivatives only	-	-	-	-	-	-	-	-	-	-
Deribit	Derivatives only	-	-	-	-	-	-	-	-	-	-

From here, we observe that Coinbase maintains their lead directionally, and the fluctuations in standings or market share (amongst those highlighted only) don't shift dramatically. We then calculated the estimated share, taking in only 50% of the ones with limited US business.

Coinbase has ~55% market share in the US

Average volume is calculated over a one-month period; market share % is for US regulated spot markets

Spot Volumes Only (via FTX Volume Monitor)

Exchanges	Jusrisdictions	Average	% Share
Binance	International Ex-US, Asia focus	26,732,305,881	
Upbit	International Ex-US, Korea focus	8,129,268,009	
OKEx	International Ex-US, Asia focus	6,581,760,892	
Huobi Global	International Ex-US, Asia focus	6,182,468,948	
Coinbase Pro	International, U.S. Regulated	4,137,213,649	54.5%
HitBTC	International Ex-US, Russia with highest web traffic	3,827,164,828	
FTX	International Ex-US	2,722,523,294	
Kucoin	International Ex-US (non KYC in the US)	1,745,782,270	
Bithumb	Internationa Ex-US, Korea focus	1,272,356,863	
Kraken	International, U.S. Regulated	1,127,192,386	14.9%
Binance US	International, U.S. Regulated	950,874,732	12.5%
Bitfinex	International Ex-US, Asia focus	989,701,184	
Gate.io	International, Limited US	785,838,465	5.2%
LMAX	International, institutional only; 5 tokens	439,600,487	
FTX.US	International, U.S. Regulated	314,398,041	4.1%
Bitstamp	International, Limited US; UK/Germany focus	347,055,096	2.3%
Gemini	International, U.S. Regulated	202,605,837	2.7%
bitFlyer	International, limited US, Japan focus	226,257,578	1.5%
AscendEX (BitMax)	International Ex-US	176,287,232	
Bittrex	International, U.S. Regulated	159,828,704	2.1%
Poloniex	International Ex-US	150,904,865	
Coincheck	International Ex-US, Japan focus	113,299,933	
Serum	Decentalized exchange	104,703,535	
Liquid	International Ex-US	91,144,054	
Bitbank	International Ex-US, Japan focus	103,990,497	
GOPAX	Korea only	53,877,645	
OKCoin	International, Limited US	31,125,827	0.2%
BitMEX	Derivatives only		
Bybit	Derivatives only		
CME	Derivatives only		
Deribit	Derivatives only		
	Total (US only)	7,587,251,831	100.0%

[Note: FTX Volume Monitor data is for all exchanges with above $10mn average trading volume. We think the market share numbers reflect the overall market closely as we do not think the exchanges with sub $10mn volumes skew the data above in a meaningful way.]

From here we see Coinbase currently has a 54.5% market share, with Kraken in second place at 14.9%, and Binance US in third at 12.5%.

There is one moderating factor to add. Crypto.com data is conspicuously missing from FTX's volume monitor. Coingecko has Crypto.com information but it's filtered out when selecting by US (An aside: The lack of a cohesive read on exchange volumes across established sites goes to show how nascent the industry still is.) However, if were to triangulate from various sources and estimate a US trading volume, we believe they are in the ballpark around or slightly above Kraken's size. If so, Coinbase's market share would drop to the 45-48% range, but still maintaining a clear lead.

Competition

Another major controversy among investors is regarding the potential competition from other fintech companies such as Paypal, Square and Robinhood. However, we believe Coinbase has enduring advantages that will help them maintain their lead, even if these competitors place a greater focus on crypto[14].

For example, Robinhood, PayPal, and Square's Cash App only offer a few major currencies, while Coinbase has over 100 crypto assets. What many investors overlook is that the engineering required to offer new crypto assets is actually quite complex.

To give a sense of the complexities surrounding both listing of new tokens, as well as the added services that are necessary to make full use of each token, here are excerpts from Coinbase's Q2'21 earnings call:

> *"People sometimes don't realize that integrating with all these different blockchains, doing transaction monitoring for compliance, storing these private keys and material in a way that's distributed globally so it has redundancy and consensus mechanisms and its audited and then tested. This is all really a core differentiator for us."*
> – Brian Armstrong, Co-Founder & CEO of Coinbase

Each new asset requires its own node infrastructure and security protocol. With increased diversification of assets over time, Coinbase is able to capture the incremental long tail of new

[14] There's also the "fun fact" that Jack Dorsey at Square is well-known to be a Bitcoin maximalist, and so besides technical complexity, there are also ideological issues that may prevent Cash App from listing other tokens.

asset growth as they have the technical know-how and resources to list these tokens at a faster rate than their competitors.

Coinbase is diversifying away from BTC and ETH

Source: Coinbase

Trading Volume (% of total)	Q1'20	Q2'20	Q3'20	Q4'20	Q1'21
Bitcoin	50	57	32	38	39
Ethereum	16	15	18	14	21
Other Crypto Assets	34	28	50	48	40
Total	**100**	**100**	**100**	**100**	**100**

Assets on Platform (% of total)	Q1'20	Q2'20	Q3'20	Q4'20	Q1'21
Bitcoin	66	64	57	70	62
Ethereum	10	12	15	13	14
Other Crypto Assets	15	18	23	13	21
Fiat	9	6	5	4	3
Total	**100**	**100**	**100**	**100**	**100**

The diversification of crypto activity away from BTC and ETH will benefit Coinbase. This trend has started and will only grow as crypto ecosystem diversifies with a larger number of use cases.

These competitors would also need to build the infrastructure to enable productive use of these new tokens. One example is allowing users to stake their tokens like Polkadot or Ethereum on the platform easily. Users would not be able to earn yield via staking on Robinhood or PayPal, for example. You can also do on-chain governance on Coinbase, which is also something that competitors have not built.

Another major distinction is that on platforms like Robinhood and eToro, you don't actually own the tokens you buy, you just get price exposure. What this means is that you don't have your own crypto wallet, and therefore cannot send or receive tokens. Robinhood CEO Vlad Tenev understands the demand for a wallet but has said that "integrating one was tricky to do at scale" (thus indicating the previously mentioned technical complexity). While Robinhood is putting in the effort to launch such a wallet in the near future, we do think this will prove to be a bigger challenge for other brokerages without the scale / resources to catch up.

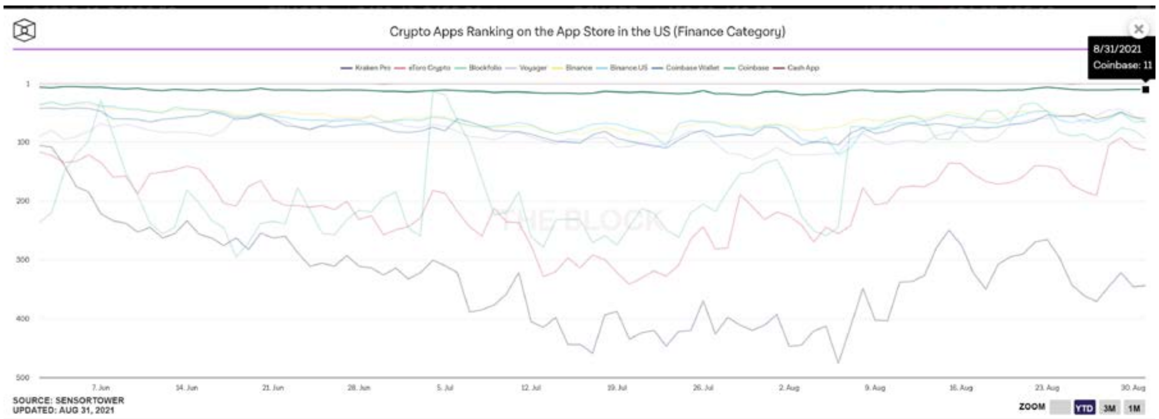
Additionally, other traditional stock brokerage firms (Interactive Brokers or Charles Schwab) will likely have a tough time as well. They may not be willing to devote the resources necessary (typical "Innovators Dilemma" issues), nor the ability to attract the needed engineering talent to build out the infrastructure needed for a full-fledged crypto platform with its associated services, which customers are increasingly coming to expect. As a stand-alone brokerage, they would also be disadvantaged without an integrated exchange to source tokens (inventory) from, and would not be able to provide deep liquidity to their customers.

We admit, there is will likely be a lot more competition in Asia with established players like Binance, OKEx and Huobi operating in more diverse regulatory environments. However, Coinbase's main markets are in the US and Europe (UK, Germany) where regulation is much stricter and hence, they are more protected from new entrants.

With respect to other crypto exchanges in the US, Coinbase has a large market share lead, with next largest exchange Kraken doing about a third of their volume. Based on app downloads, Coinbase has a clear lead:

Coinbase is consistently the highest ranked crypto exchange app, by downloads

Cash app is ranked higher but it is also downloaded primarily for other non-crypto use cases

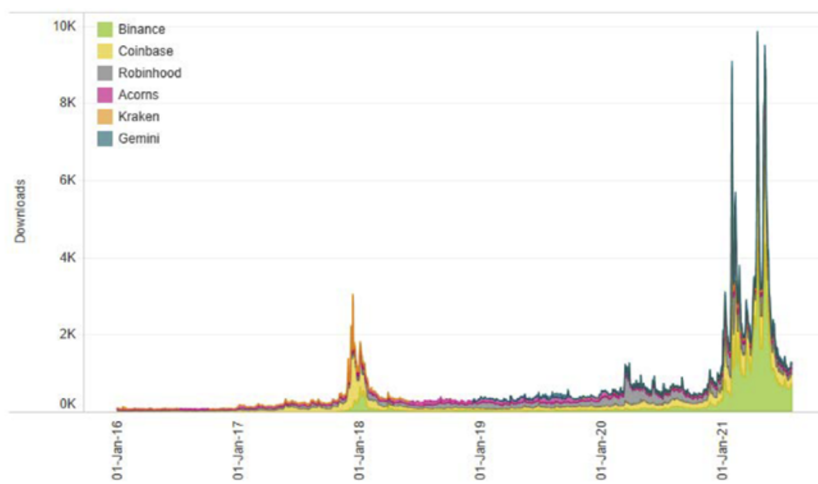


Coinbase has the highest downloads (US-only)

Source: M Science

Our app metric data provides insights into aggregate downloads by country and by app platform for a select group of exchanges. Binance is by far the most downloaded, though we note the majority of the volume is international. From a U.S.-only perspective, their presence is minimal, with Coinbase receiving roughly three times as many downloads as Binance.

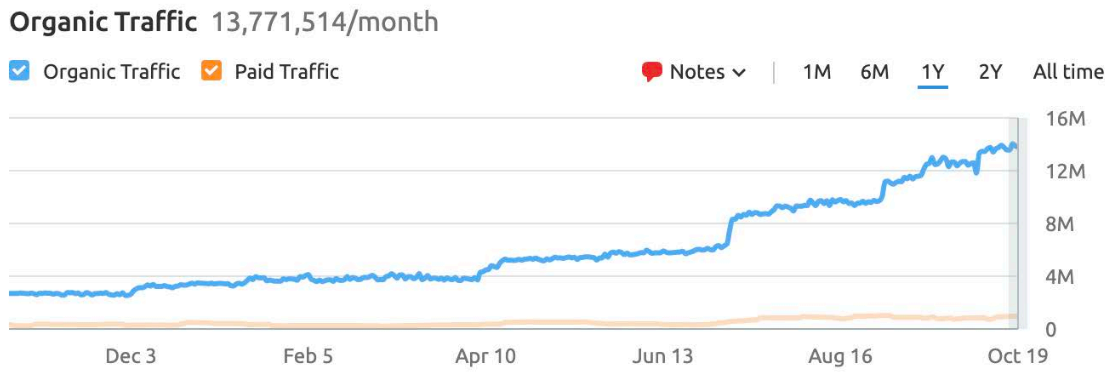
Figure 10: Indexed Global App Downloads by Exchange



Source: M Science

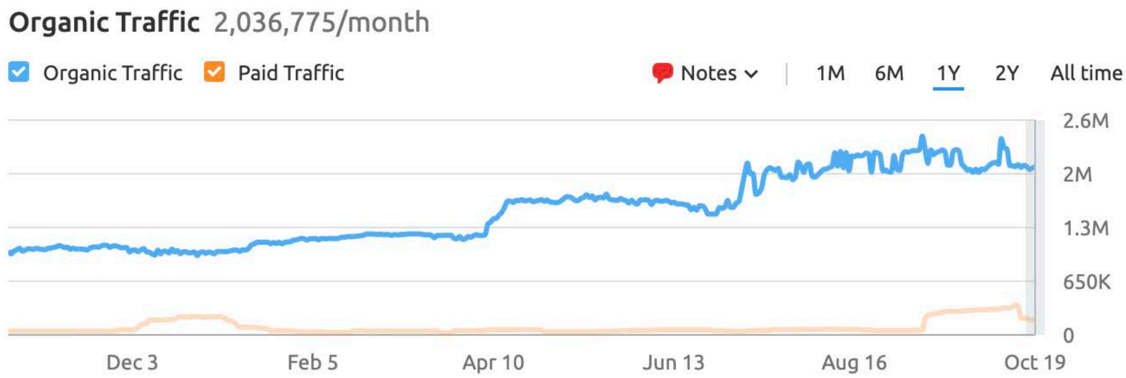
Coinbase has grown organic traffic ~5x in the past year

Also, current traffic is 6-7x above that of Kraken; Source: Semrush



…While Kraken has grown organic traffic by ~2x, with growth tapering in recent months

Source: Semrush



We believe Coinbase has the trust of customers, by taking a regulation-first stance and having a pristine history of never being hacked. Coinbase also offers the widest selection of tokens amongst the competitor set we've identified (US-regulated, spot market, via Coinmarketcap): Coinbase: 103, Kraken: 91, Binance US: 62, FTX US: 22, Gemini: 54

We are watching the growth of FTX closely as a relatively newer, but fast growing competitor. At this point, they seem to be targeting a different segment from Coinbase though. Their tagline, "FTX – *Built by Traders, For Traders*", exemplifies their focus on sophisticated traders. With FTX.US, the separate regulated-US entity of FTX, their product and features have largely stayed the same as being geared towards active traders.

FTX.US's trading volumes (again, distinct from FTX, and is the one we care about) are still about a tenth of Coinbase's, and recently closed a private valuation round at a sales multiple that is roughly double that of Coinbase. We are watching their development closely nonetheless, as they have purchased BlockFolio, a simpler retail-focused app, with the intention of targeting more casual users.

Sam Bankman-Fried, founder of FTX, explained the differences between the companies in a recent podcast episode:

"We have about four times [Coinbase's] daily trading volume [on a global level] and about 3% of their user base. So it's a factor of 100 difference in volume per user. They [Coinbase] have done spectacularly at the long tail retail consumer, and we have done much better at the more sophisticated, more highly engaged users who trade larger volume each.[15]"

- Sam Bankman-Fried

Coinbase is doubling down on targeting the retail segment, ramping up marketing this year with a 65% increase in marketing spend in Q2'21. They have not traditionally focused or spent much on marketing, but that's about to change. The company has guided year-end total marketing spend of between 12-15% of net revenues, which is more than doubled that of 2020 from our estimates. This also implies that a large proportion of growth to date has been organically driven.

They hired (announced 8/27/21) their first Chief Marketing Officer, Kate Rouch, a 10-year veteran from Facebook, who last served as Global Head Of Brand and Product Marketing there. The marketing team is starting to develop internal metrics to track effectiveness of their marketing spend and we look forward to seeing how their marketing strategy plays out.

We expect Coinbase to focus on widening mainstream adoption of crypto, and are likely using a multi-prong approach of both digital and brand marketing.

On decentralized exchanges as competition

There are some that also see decentralized exchanges like Uniswap and Sushiswap as potential threats.

While there are benefits to decentralization, many users (especially retail) would defer to centralization for its ease of use and brand of trust

Source: Tegus

Because one of the big things that I see with DeFi, in general, is people don't like a trustless system because you're relying upon somebody's code, protocol for the security, you've got nobody to blame. And so I think that a player like Coinbase can uniquely position themselves to establish that trust, which still is a main concern in crypto. And people will accept a potentially lesser yield or slightly limited features to go with the brand recognition, security and trust that comes with Coinbase.

Decentralized exchanges also currently have slower transaction speeds and more price slippage than centralized exchanges. Most importantly, using decentralization requires more technical know-how, increases the risk of being targeted by scams, and is generally more troublesome. For starters, it requires self-custody, which means setting up your own wallet and managing your own private keys.

Going the decentralized route is useful for the longer tail of currencies that aren't widely available on centralized exchanges, for users that feel the need to maintain full custody at all times (though

[15] Although the FTX being compared here is on a global basis, including outside the US and including derivatives volume, we note that the volume per user for FTX's US subsidiary is likely to be much higher than Coinbase as well.

one could easily perform a trade on a centralized exchange and immediately transfer custody to their own wallet), or for users who were not able to open accounts on centralized exchanges.

Brian Armstrong did mention on Coinbase's Q1 2021 call that there is a future for both central and decentralized exchanges. Coinbase does not want to fight this trend, but rather to provide the tools to also enable their customers to use decentralized exchanges. For example, users are able to use Coinbase wallet for self-custody and to use that with decentralized exchanges.

CEO Brian Armstrong on the Q1'21 earnings call:

> *"The customer doesn't even really need to know, is it going to a centralized exchange, a decentralized exchange…as long as they're getting the best pricing, they probably don't really care."*

Decentralized exchanges could be integrated on the backend to help users price shop between them, though these would likely make sense for smaller tokens with less liquidity.

Valuation

What's interesting about Coinbase as an investment, is that its valuation isn't taxing at all – considering the rapidly growing crypto ecosystem it benefits from, it's superior business model vs. traditional exchanges, the regulatory moat that offers protection from competitors, and its dominant market leadership in the Western markets.

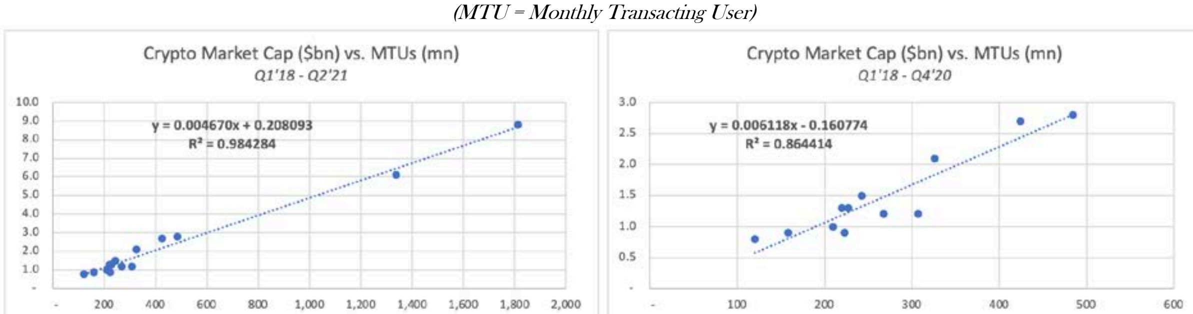
For example, Coinbase is currently trading at just 12.4x 2021 EBITDA multiples (our estimates), despite our expectations for earnings power to grow multiple-fold over the next few years.

Before we get into our target IRRs for this investment though, we'd like to first note the link between total crypto asset market cap growth and Coinbase's corresponding profit growth.

<u>Charting the growth of Coinbase with total crypto market cap</u>

High correlation between crypto market cap and MTUs

R-squared of 98% for data till Q2'21, and 86% for data till end 2020
(MTU = Monthly Transacting User)



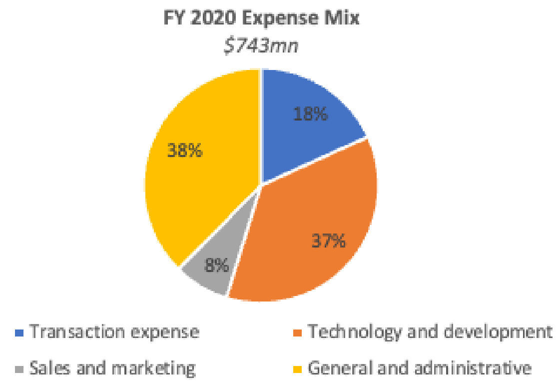
High correlation between crypto market cap and Rev per MTU

Source: Goldman Sachs Equity Research, Coinbase Initiation (5/24/21)

In our analysis, by introducing asset volatility as a second variable, the R-square goes up to 90%

Tracking revenue is a good proxy for profit growth as expenses scale over time

Coinbase expenses are heavily weighted to fixed costs such as G&A and Technology & Development



[Company 2021 guidance implies a significant drop of G&A and Tech expenses as a proportion of net revenues over 2020]

Even without multiple expansion, the IRR of an investment in Coinbase tracks growth in total crypto market cap and volatility. There is reflexivity involved too, as an increase or decrease in total crypto market cap will influence the number of users as well as how much each user trades, as shown in the regression tables above.

Coinbase's 2021 full year guidance from the Q2'21 earnings call indicates high cost leverage on fixed expenses, allowing us to project sustained high Q2'21 margins even as Sales and Marketing spend increases. This evidence of scaling also helps us feel comfortable projecting earnings growth above that of revenue growth in the next few years.

For these reasons, we do see the growth in Coinbase as a leveraged play on the growth of total crypto market cap. The potential return increases further if we consider a re-rating of multiples. We expect multiples to be in-line with or above traditional exchanges, as crypto as an asset class proves its durability / use-cases over time.

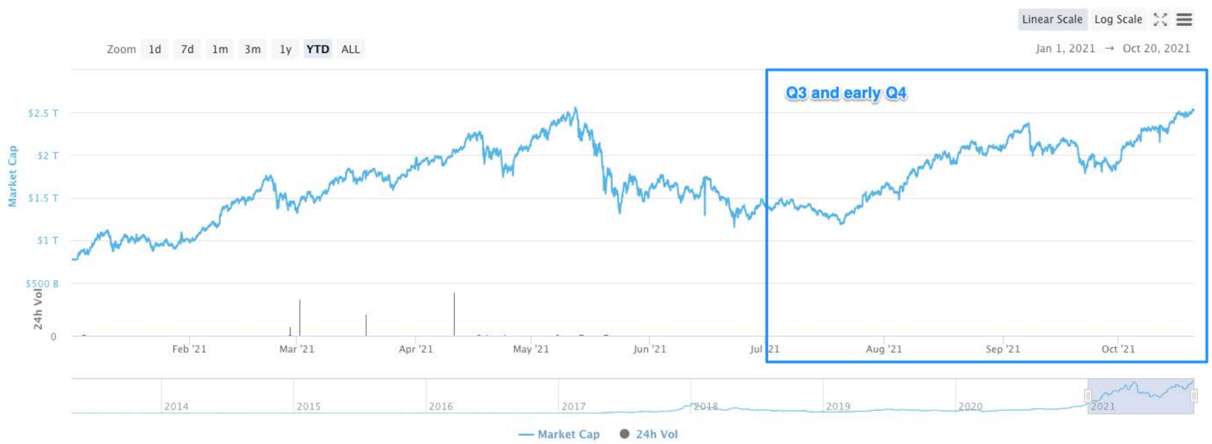
Projecting 2021 full year estimates

Coinbase revenues for the first half of 2021 was $4Bn, with $2.2Bn coming from Q2 as trading activity picked up. We project revenues of $8.8Bn for full-year 2021.

This is higher than other analyst's estimates for 2021, but we feel comfortable with our estimates as we have total crypto market cap data from Q3 to date and have used this to estimate revenues. We also factor in a continued rise in users and the accelerated growth of institution trading volume and services revenues.

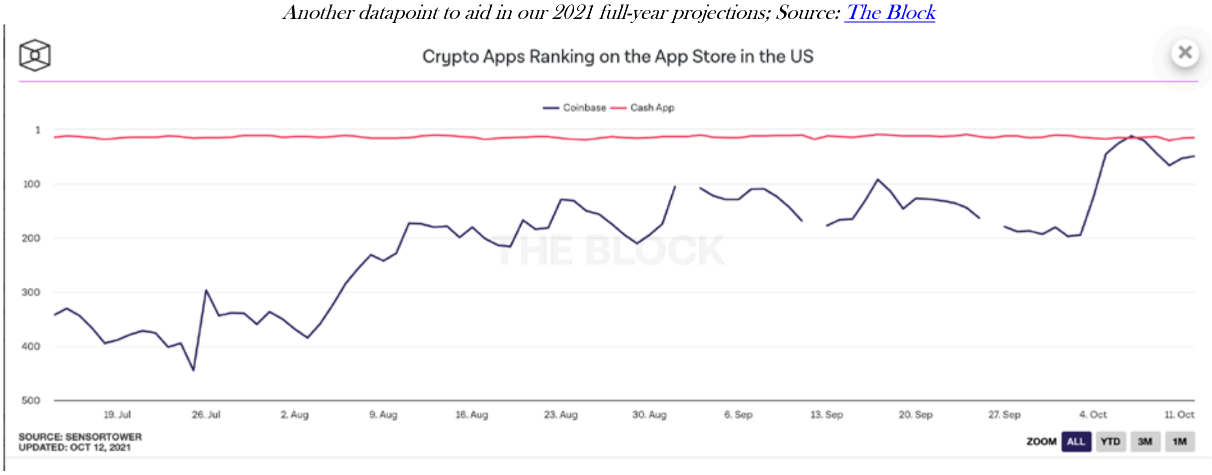
Sustained growth of total crypto market cap from Q3 onwards

Graph showing total crypto market cap year to date; Source: Coinmarketcap



Growth in Coinbase app downloads through Q3 and early Q4

Another datapoint to aid in our 2021 full-year projections; Source: The Block



Company's guidance in Q2'21 indicates scaling in Tech and G&A costs (drop in % of revenues) along with an increase in Sales and Marketing spend. We've estimated a year end EBITDA margin of 52%, in line with Q2'21 margins.

<u>Comparable valuations</u>

We admit that pinpointing Coinbase's revenue and earnings years into the future is tough, given the volatility and inherent unpredictability of the space. However, we are confident in the directionality over time.

Regardless, we can also see that even at today's earnings, Coinbase is trading at much lower multiples than comparable companies, even ignoring its higher future growth rates.

Coinbase Comps Table

Coinbase is growing faster, but yet trading at lower multiples to peers
Source: Koyfin, company filings; Our Coinbase 2022 base case estimates.

Coinbase comps as of 10/15/21; (millions)						2021				2022				2021	'22/'21
Ticker	Name	Category	Price	Mkt Cap	EV	Revenue	EBITDA	EV /sales	EV / EBITDA	Revenue	EBITDA	EV /sales	EV / EBITDA	EBITDA Margin	Revenue Growth
MKTX	MarketAxess	Exchange	$405.77	15,420	15,070	724	401	20.8x	37.5x	815	461	18.5x	32.7x	55.4%	12.6%
TW	Tradeweb	Exchange	$ 83.48	19,430	18,828	1,065	536	17.7x	35.1x	1,184	615	15.9x	30.6x	50.3%	11.2%
CME	CME Group	Exchange	$211.90	76,100	78,990	4,804	3,148	16.4x	25.1x	5,115	3,473	15.4x	22.7x	65.5%	6.5%
NDAQ	Nasdaq	Exchange	$203.02	33,950	39,640	3,372	1,883	11.8x	21.1x	3,518	1,942	11.3x	20.4x	55.8%	4.3%
ICE	Intercontinental Exchange	Exchange	$129.39	72,870	86,460	6,956	4,440	12.4x	19.5x	7,191	4,678	12.0x	18.5x	63.8%	3.4%
IBKR	Interactive Brokers	E broker	$ 71.09	29,793	26,782	2,806	1,955	9.5x	13.7x	2,687	1,703	10.0x	15.7x	69.7%	(4.2)%
SCHW	Charles Schwab	E broker	$ 80.90	152,740	141,111	18,326	9,557	7.7x	14.8x	19,143	10,413	7.4x	13.6x	52.1%	4.5%
HOOD	Robinhood Markets Inc	High-growth Fintech /Broker	$ 41.03	35,280	39,067	2,019	217	19.3x	180.0x	2,723	571	14.3x	68.4x	10.7%	34.9%
PYPL	Paypal	Payments/Fintech	$268.35	315,320	312,610	25,788	7,587	12.1x	41.2x	31,624	9,425	9.9x	33.2x	29.4%	22.6%
SQ	Square	Payments/Fintech	$249.00	114,990	115,570	19,161	1,052	6.0x	109.9x	21,365	1,361	5.4x	84.9x	5.5%	11.5%
average - All								**13.4x**	**49.8x**			**12.0x**	**34.1x**		
average - Exchanges Only								**15.8x**	**27.7x**			**14.6x**	**25.0x**		
average - Exchanges and E Brokers								**13.8x**	**23.8x**			**12.9x**	**22.0x**		
COIN	Coinbase Global		$280.61	59,209	56,646	8,823	4,568	**6.4x**	**12.4x**	7,334	3,683	**7.7x**	**15.4x**	51.8%	(16.9)%

Other comps data from The Generalist

Excellent work and access to FTX data by author Mario Gabriele. We have taken the liberty to update Coinbase's valuation and added revenue multiples; Source: The Generalist

(millions)	Revenue / ARR	Avg Daily Volume (July 21)	Estimate Valuation	Valuation / Revenue
FTX	1,000	7,246	18,000	18.0x
Kraken	-	733	20,000	
BitMEX	-	1,318	-	
BlockFi *	100	-	5,000	50.0x
eToro	1,388	-	10,000	7.2x
Revolut	361	-	33,000	91.4x
Uniswap (V3)	1,364	850	27,500	20.2x
Sushiswap	423	165	2,500	5.9x
Bakkt	28	8,847	2,100	75.0x
DraftKings	1,249	-	21,000	16.8x
Binance **	4,000	32,249	-	-
Robinhood	2,089	-	46,000	22.0x
Coinbase	8,823	1,818	56,646	6.4x

Fully diluted market cap used to value Uniswap and Sushiswap
****Uses 2020 revenue (no more recent figures available)***
*****Based on Sam Bankman-Fried's estimation (FTX CEO)***

Overall, we think Coinbase offers a certain amount of "margin of safety" with its current lower valuations compared to peers, both public and private.

IRR Range of Outcomes

Base Case

Total transaction revenues are highly dependent on where we think total crypto market cap is going to be in 2025.

Our conservative base case is where we think crypto adoption, in its current imaginable use cases, grows and on boards more users at a steady pace. If this holds true, we project total crypto market cap to double in 2025, reaching $3.4Tn (we estimate average across 2021 to be ~$1.7Tn), with a corresponding increase in MTUs (monthly transacting users) to 16mn, up from 9mn from end Q2'21.

With increased users, trading activity (both retail and institutions), and subscriptions and services revenues, we estimate total revenues growing 2.4x to $21.3Bn, and a leverage off costs for EBITDA to grow 2.8x to $12.8Bn.

Our 2025 margin estimates for Coinbase margins lie closer to an exchange business (~50-65% margins, see comps table above), though for reasons explained, we think longer-term steady state margins may exceed those of traditional exchanges. To be conservative, we have EBITDA margins in 2025 at 61%.

Other traditional exchanges currently trade at an average EBITDA multiple of 27.7x, and it's lowered to 23.8x if we include E-brokers. For our base case, we assume a conservative forward exit multiple of 20x EBITDA in 2024 year-end (~3.5 years holding period), which implies a 12x EV / Revs multiple. We think an even further upwards re-rating from this 12x revenue multiple is possible, as uncertainty over the nascent asset class and overhangs from regulation fears eases over time (if our thesis holds true).

We assume a moderate increase in share count that leads to some dilution, and with what we feel are conservative estimates above, we project an IRR of 41%, or a 3.3x return. End state enterprise value stands at ~$255Bn.

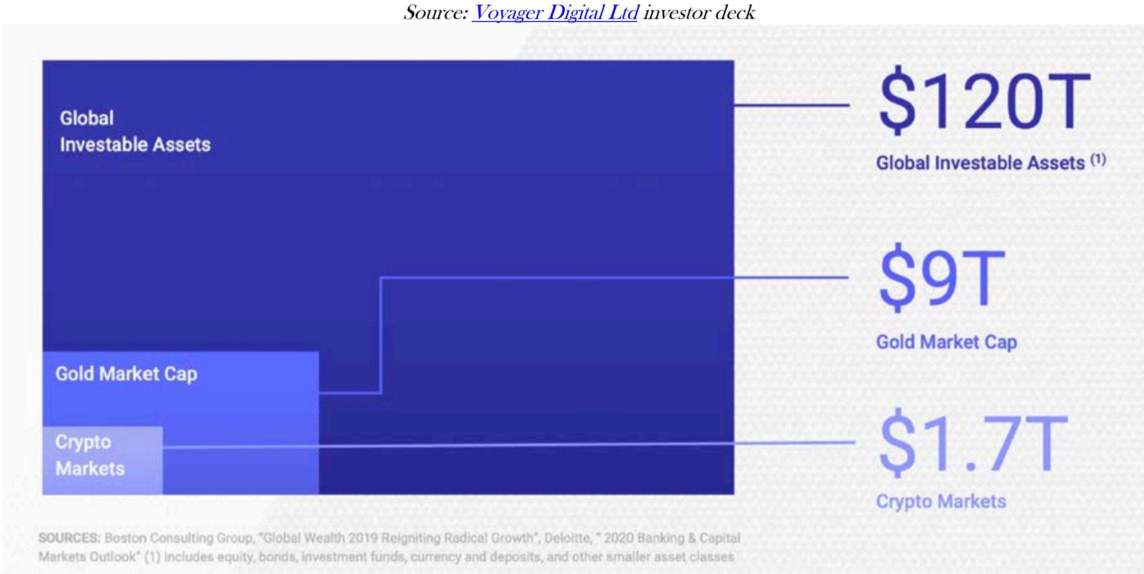
Next, Our Bull Case

As we have laid out in other sections of this memo, we believe total crypto market cap will be much larger in the future. We think a 4x increase from 2021 to 2025 is within reason in a more optimistic scenario.

Our bull case total crypto market cap estimate

In determining this, the bulk of our research time went directly into understanding the underlying technologies, and the structural forces that are shaping the crypto economy.

Current size of crypto markets vs. total global markets
Source: [Voyager Digital Ltd] investor deck



With a 4x growth in 2025, crypto assets would be ~$6.8Tn, or 5.7% of total global investable assets, at today's value (will be a smaller percentage if we factor in growth of total assets), or an annual growth rate of 41% from the end-2021 average of $1.7Tn. (Note today's market cap as of 10/18/21 is already at $2.5Tn.) We feel this is conservative considering the multiple industries that potentially could be disrupted as well as value creation from incremental technological innovation.

It seems an opportune time to rehash some of the reasons we are long the crypto economy. We think that there are multiple tailwinds and network effects in play with crypto:

- Narrative shift (acceptance) across retail and institutional investors.

- A growing community of builders including engineers, designers, crossover finance professionals, and community managers (e.g. Discord moderators, etc.).

- Exponential increase in usage metrics like active wallet addresses, total value locked, user sign ups, etc.

- Increasing evidence of real world applications ("the future is here, just unevenly distributed[16]") that lie beyond speculative behavior.

- Most importantly, we see how existing gate keepers and profit pools are being disintermediated, which helps us pass the intuitive "why should this exist?" test.

[16] Quote attributed to science fiction writer William Gibson.

To further underwrite total crypto asset size, it first makes sense to have a view on the current larger tokens like Bitcoin (42% of current total) and Ethereum (18%).

We have looked into available valuation efforts and frameworks from the investing community. Most of Bitcoin's valuation estimates are based off adoption by institutions, funds and governments as a store of value, as a supplement or replacement allocation to Gold[17]. For Ethereum, estimates are based off the amount of Ether used to perform transactions, from simple transfers of the token, to validating more complex smart contracts (the "gas fees" that are paid by users; check out Token Terminal). These valuation frameworks help us estimate long-term crypto market cap with a certain level of conservatism.

If the $6.8Tn market cap estimate holds (note that this is in 2025), and if Bitcoin dominance drops from 47% to a range of ~35% (decreased share as other tokens increase in market cap), that gives Bitcoin a market cap of ~$2.4Tn, or about 27% the size of current gold market cap. At a $2.4Tn dollar market cap, Bitcoin would be slightly over 2x the price today[18] or ~$128,000.

If Ethereum dominance drops to ~14% (an estimate as other tokens gain ground), that would imply a market cap of ~$950Bn, 2.1x today's price[19] or ~$8,100. The drop in both Bitcoin and Ethereum dominance tracks Coinbase's trading volume trends too (the "other assets" category is becoming a larger portion of volumes). Intuitively, this makes sense – as crypto adoption continues, the base of tokens diversifies across different use cases.

Both implied Bitcoin and Ethereum prices here are far below most valuation estimates we have come across for each coin, especially considering the timeframe of 4-5 years out from today. These ballpark figures help us get comfortable with the $6.8Tn total crypto market cap estimate for 2025, or 4x from 2021's average.

Bull case IRR

With crypto asset market cap going up 4x, this would mean our thesis of crypto hitting mainstream has taken hold. There would be wider understanding, adoption, and use cases across different industries. Therefore, we can expect the corresponding user numbers to accelerate as well.

We project an increase in MTUs by ~4x too, coupled with an increase in volume per MTU, to give us a retail revenue growth of 5.3x. We used our regression models for these estimates.

We see a larger jump in both institutional revenues and services and subscription revenues, which takes us to total revenues of $49.2Bn in 2025, or a 5.6x increase from 2021.

[17] We thought this piece by John Pfeffer was instructive.

[18] As of 10/18/21, with Bitcoin price at ~$62,000.

[19] As of 10/18/21, with Ethereum price at ~$3,850.

MTUs stand at 32mn in 2025, and with an increased active user base of MTUs, we project total verified users to be 217mn, from 68mn at end Q2'21. This would mean maintaining their leading position in the US, but also decent growth in the Rest of World segment.

This user growth is believable considering 20% of American adults that have never owned crypto – over 50mn Americans – are likely to buy crypto in the next year alone[20].

Currently, ~3% of the global population are crypto users[21], so our bull thesis implies ownership penetration goes to ~9%, if we assume Coinbase global user market share stays in the same range[22]. We think 9% of the global population as users is reasonable considering current growth trajectory of use cases and investor adoption.

We see Coinbase as a leveraged play on the growth in total crypto market cap (note again that we are token agnostic) and see EBITDA growing by 6.5x by 2025. Earnings growth outstrips revenue as the bulk of current costs are fixed, and are expected to scale over time.

We think a re-rating to 25x from 12.4x EBITDA today is plausible considering current comparables trade at 24-28x multiples, and Coinbase has a superior business model and higher growth. At a 25x exit EBITDA multiple, we get to an IRR of 92%.

For our bull case, we see an exit revenue of $49Bn in 2025, with EBITDA of $30Bn (60% EBITDA margins), and an enterprise value of $740Bn. This would likely make Coinbase at least one of the top 50 largest companies in the world. We frame this in a few ways:

- If the rise of the crypto economy thesis holds true, we are entering a new epoch in technological progress, and Coinbase is in a leading position to capture value from this shift.

- We know that Binance does ~6-7x Coinbase's spot volume today with a much larger derivatives business (albeit with lower fees), so there currently exists a competitor in the same business that already shows those levels of volumes are achievable[23].

- This makes Coinbase larger than any other non-crypto exchange or brokerage today. We think this makes sense as Coinbase is vertically integrated and with higher margins, has a more dominant market position (both with users as well as supply of tokens), would be growing at a dramatically faster rate, and has better pricing power.

It's even possible that Coinbase could exceed our target valuation in the next 4 years (9.7x today's price, including multiple expansion), derived from several imbedded "free options" in the business. We discuss this in the following section.

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[20] Survey conducted by The Ascent (n = 2000; 5/18/21)

[21] 221mn crypto users via Crypto.com, out of global population of 7.9Bn.

[22] 30% share of global crypto users. Coinbase has 68mn users as at Q2'21

[23] We understand that both companies are operating in different markets (our Coinbase thesis is not predicated on them beating or gaining significant market share from Binance) and Binance's profit structure is unknown, but a comparison to Binance's size is a decent sensibility check.

[Note: For both our bull and base cases, we have modelled in a moderate drop in retail take rates as we see price pressures in the next few years, even as we think this drop would happen slower and less sharply than other investors fear. We also factor in a slight fall in crypto asset volatility which dampens revenue per MTU. We think as adoption widens, market participants increase, and token dominance becomes more diversified, there would be less speculative pressure on prices, leading to a drop in volatility. Both these factors are small when compared to the other revenue and profit drivers, hence do not impact IRRs in a significant way.]

Free Options

While we remain comfortable with an investment based off growing transaction revenues over time, we think Coinbase's ambitions are much bigger, and view new monetization across different areas of the crypto ecosystem as upside optionality to our thesis (and potential IRR).

We think there are two major optionalities with Coinbase's upside valuation.

1. **Building Amazon-like infrastructure for the crypto ecosystem.** Subscription and services revenue is currently 5% of total revenue, but we think this could grow substantially.

   The company is developing the infrastructure for crypto (turning internal expertise outwards), expanding into ancillary areas that intersect with owning and selling assets (custody, staking, borrowing/lending, etc), and as the ecosystem evolves, has the potential to touch every aspect of the crypto economy.

   The company's strategy seems to be in line with what Amazon has accomplished, where they leveraged their expertise in technology and logistics to spawn new industries. Over time, we expect new services and monetization strategies from Coinbase surfacing.

   One clear example currently is Coinbase Cloud, which acts like the AWS of crypto, where Coinbase offers a platform for developers to plug into, allowing customers like banks or large funds to offer crypto services to their clients. This non-trading revenue side of the business could potentially grow exponentially.

   Coinbase Cloud, AWS-like service for financial institutions

   Alesia Haas: Sure, happy to answer both. Coinbase Cloud we plan to offer a number of products underneath that. Some of those will be monetized as a traditional license fee where we will license our technology to other users. So that is a future line item that I would expect in our financials as that grows over time.

   equally to get the cryptoeconomy really off the ground and to have a billion people using it. Now, in terms of banks starting to work with cryptocurrency, I think there's actually an opportunity here for Coinbase to help anc by that I mean, there's a lot of really difficult technology problems that we've had to solve in terms of how we integrate with dozens of blockchains, how we store cryptocurrency securely in a geographically distributed way, which is very difficult, how we do compliance on blockchains and do blockchain analytics and transaction monitoring in a way that meets our compliance obligations. And so what I think we can do is start to expose some of these solutions that we've built that other companies can build upon, and we're doing that through a product called Coinbase Cloud. You can imagine it is kind of like our AWS for crypto where we're starting to offer more APIs and services like this that other banks and really any other kind of company can use to integrate with the blockchain. So I think that'll be a big opportunity for us over time.

2. **Coinbase Ventures is a hidden asset on the balance sheet.** As of Q2'21, the carrying value of Coinbase Ventures holdings was marked at only $66mn. Coinbase Ventures is

very active with 150 investments in their three years of existence, funding companies in all parts of the crypto ecosystem, even including competing exchanges like FTX.

They have participated in funding rounds in many of the most sought-after startups. We find this is similar to Tencent's investment arm and think value could accrue over the years in the same way.

Coinbase Ventures was the most active Corporate VC in Q3'21

Source: Anand Sanwal / CB Insights (Twitter)

Anand Sanwal
@asanwal

16/ back to financing

Corporate VCs continue to be a notable force in the venture ecosystem

New kid on the block @coinbase Ventures took the top spot as most active CVC

Global: Top 10 CVCs in Q3'21 by company count

	Company	Company Count	Investor Group	Country	Percent of Total Quarter Deals
1	Coinbase Ventures	30	CVC	United States	0.3%
2	Salesforce Ventures	27	CVC	United States	0.3%
3	Google Ventures	26	CVC	United States	0.2%
4	Lenovo Capital and Incubator Group	20	CVC	China	0.2%
5	M12	17	CVC	United States	0.2%
5	Lilly Asia Ventures	17	CVC	China	0.2%
7	Intel Capital	15	CVC	United States	0.2%
8	Alexandria Venture Investments	14	CVC	United States	0.1%
9	Qualcomm Ventures	13	CVC	United States	0.1%
10	Habo Investment	12	CVC	China	0.1%
10	SMBC Venture Capital	12	CVC	Japan	0.1%

State Of Venture | Global Trends | Investors — CBINSIGHTS 83

11:06 PM · Oct 8, 2021 · Twitter Web App

Coinbase as a company is dependent upon the success of the entire crypto universe. It seems that through their Coinbase Ventures division, they are also seeking to control their own destiny, by funding other startups who are expanding and building the future of the crypto universe's infrastructure and use-cases. As the ecosystem grows more vibrant and as use-cases expand, Coinbase sits at the center of all this, and the value of their own wallet / exchange grows as well.

We are able to take indications from valuations of private crypto companies and startups to see how Coinbase's investments could be worth a lot more than the $66mn it's marked at on the books today. As valuations are marked to market or gains are realized, this could potentially be a huge part of Coinbase's overall company value as the crypto ecosystem continues to grow.

For example, here are a select few Coinbase Ventures investments and their current valuations:

- Invested in OpenSea in 2018 as part of a $2Mn seed round. OpenSea last raised Series B at a $1.5Bn valuation (7/20/21).

- Invested in BlockFi in 2019 as part of $4Mn raise, pre Series A. BlockFi last raised Series D at a $3Bn valuation (3/11/21).

- Invested in Dapper Labs in 2020 as part of $12Mn Series B. Last raised Series D at $7.6Bn valuation (9/22/21).

Besides these two larger optionalities listed here, we think there are other potential areas of growth that we cover in a later section.

The Downside

For our bear thesis, we do not view the downside of crypto to be a zero. We think the biggest risks are two-fold. First, government regulations that stem the growth of the ecosystem, and not an outright ban on ownership or on access to websites. Second, that crypto adoption does not become more mainstream than it is today. We discuss these risks in further detail later in this memo.

These risks do not bring crypto prices to zero, as there are existing use cases that will continue, even if the larger ecosystem does not grow. With no outright ban on holding cryptocurrencies, we think there will be an established base of holders that will continue usage (or to just hold as a store or transfer of value). There are currently enough network effects in play, whether it's public understanding or user and developer communities, that would prevent a collapse of the entire ecosystem.

In this bear scenario, we model out a 50% drop in total crypto asset market cap, and a similar drop in MTUs. With an exit EBITDA multiple of 11x (slightly lower than today's multiples which we feel already price in substantial bearishness), we get a -29% IRR, or a drop in value of 70% from today's price to an enterprise value of $24.3Bn.

Coinbase is currently cash generative with 52% margins, plus $4.2Bn cash on the balance sheet. We think even in this tough scenario going forward they would be cashflow positive. Therefore, we do not think they'd be at risk of doing under in the event this bear case plays out.

We think the risk/reward set up for this opportunity is highly attractive over the next few years (+230% to +870% upside vs. -70% downside), especially since we believe the odds of our base / bullish scenarios occurring are much higher than that of our downside scenario.

Management and Culture

We think Brian Armstrong is a strong leader with a clear vision for crypto executed via Coinbase since its founding. It's hard to believe that this was a crypto business that was started back in 2012, and the team has ridden through multiple "crypto winters" to date. This speaks to the founder's tenacity to stick to their vision of increasing crypto adoption globally.

We also see Brian Armstrong as being committed to the crypto economy at large, especially investing in areas of product growth (that helps build a foundation for wider adoption) not clearly tied to short-term revenue generation. Examples include the commitment to integrations with decentralized finance, and purposefully sacrificing speed of growth in order to be on the right side of regulations – not just in the US, but in every new country they intend to expand to. Most recently, they worked for over two years with regulators in Germany to be the first to secure a crypto license (announced on 6/29/21).

Building a team

Brian Armstrong has shown the ability to attract and work with star engineer-types early in the company's founding, and also to evolve talent management to attract a wide suite of experienced corporate executives.

His early co-founder and CTO are now widely regarded as leaders and thinkers in the crypto space:

Fred Ehrsam first met Brian Armstrong on a Bitcoin subreddit forum, and co-founded Coinbase with Brian in 2012 out of an apartment in San Francisco. Fred left in 2017, though he stays on the board and still owns 9% of the company. Since leaving, he started a crypto-focused investment firm called Paradigm, which is one of the largest and most important investors in the crypto space today. Paradigm co-invests with Coinbase Ventures, and has also been instrumental in key M&A activity for Coinbase, such as the acquisition of Tagomi Holdings in May 2020.

Balaji Srinivasan was CTO for a year in 2018-2019 after Coinbase acquired Earn, his startup. Balaji was instrumental in shipping USDC and getting staking and voting set up on the Coinbase platform. Most importantly, Balaji rejuvenated the engineering teams and pushed for the listing of many new tokens, an area Coinbase was weak on before his arrival. He was previously a GP at A16z.

As the company grew and prepared for an IPO, Brian had to attract a new cadre of senior leaders. His current senior leadership consists of veterans across different industries, as laid out earlier in this memo. We think this bodes well for the long-term success of the business.

Acquisitions

We think Coinbase has done an impressive job with acquisitions–cobbling together important complementary companies to Coinbase into a full service, one-stop crypto offering for retail or institutional clients over the years. Here are a few of their major acquisitions:

- Earn.com became Coinbase Earn post acquisition and introduced Balaji Srinivasan as CTO into the company. (paid $100mn, April 2018)

- Acquired the custody business of Xapo, a service best known for storing Bitcoin in a vault under a Swiss mountain. Augments Coinbase's custody business. (paid $15mn, 5/16/19)

- Acquired Tagomi, a prime brokerage platform which caters to deep-pocketed crypto traders. The service and talent were absorbed into Coinbase Prime, it's platform for institutions. (paid between $75 and $100mn, 05/27/20)

- Acquired Bison Trails, a firm that specializes in building blockchain infrastructure for banks and other financial institutions. This forms the basis for Coinbase Cloud, an AWS-like service helping firms with setting up crypto infrastructure. This includes connecting, reading, and writing to a blockchain network, and doing blockchain-native activities like staking and mining. (paid above $80mn in stock, 1/20/21)

- Acquired Skew, a crypto market analytics firm, to provide institutional clients with real-time actionable spot and derivative market data. This has been integrated into their Coinbase Prime offering. (undisclosed deal terms, 4/30/21)

Culture

It is always difficult to have a definite read on culture, however there are certain developments along Coinbase's journey, which can shed some light on how the company culturally thinks and operates.

The early days of Coinbase founding paints a militaristic culture with Brian Armstrong's and Fred Ehrsam's no-nonsense approach. Here are some excerpts from the book Kings of Crypto, which charts the initial founding of Coinbase from its early years (2012-2014):

> *"Coinbase's cold and non-fuzzy culture would later lead Bloomberg Businessweek to describe Brian and Fred as "**Vulcan Swiss bankers . . . do not try to make them laugh**." Meanwhile, the company's already arduous hiring culture—with its sink-or-swim work trials and Google-style interview riddles—became more intense still…"*
>
> *""**Coinbase was very hierarchical, like the military**," he recalled. "I idolized Fred as a leader. He was the blend of an elite software developer and a Goldman Sachs trader."*
>
> *"Together, Martine [Niejadlik; Chief Compliance Officer] and Juan [Suarez; first legal hire] began to impose some order on Coinbase's cavalier approach to legal and financial filings. They also commenced a series of diplomatic visits to the Secret Service, the FBI, Homeland Security, and other powerful agencies, explaining the potential of bitcoin and assuring them Coinbase wasn't a money-laundering front. Encountering unexpected allies*

like the prosecutor Katie Haun [now a Coinbase independent director, and partner at A16z], their message started to resonate, and ***Coinbase began to acquire a faint halo of respectability. Presiding over all of this like a pair of drill instructors stood Brian and Fred.****"*

It's been many years since the founding days and naturally, the culture has evolved. For the work culture today, we thought a few indicators stand out.

First is the founding of Coinbase Ventures. Coinbase Ventures is one of the most active investors in crypto startups globally. Yet Coinbase Ventures has no fixed fund size and has zero full-time employees. Coinbase Ventures was originally launched by Emilie Choi, Coinbase's COO, with all investments made off the companies' balance sheet, as opposed to from a dedicated fund structure.

This Forbes article describes the genesis behind Coinbase Ventures, and is indicative of the "scrappy" culture at Coinbase:

Approached by Choi, Armstrong's response was simple, she says: "Write the blog post." ***Within 24 hours, Choi had drafted up a mission statement for Coinbase Ventures*** *in such a public-facing format and published it. The company's venture arm was now announced.*

But that doesn't mean Choi, later promoted to Coinbase's COO and president, went on a hiring spree. Coinbase employees, many of them not only in corporate development (more mindful of acquisitions or big partnerships) but also in product and its coverage team, among others, communicate via a dedicated Slack channel. ***"We were, like, we're just going to wing it with resources that exist today," Choi says. "And it's a labor of love. We just work on it nights and weekends."***

While Coinbase often co-invests alongside the VC firm specialists it knows, many of its ***potential deals come in from its employees' activity in the broader crypto ecosystem; others are Coinbase employees striking out on their own****. "There is some amazing machinery behind the traditional VC ecosystem. Ours is using Google Docs," says Choi.*

Another indicator is Brian Armstrong's medium post on re-aligning company culture, where he sought to curtail activism and political debates within the organization. This caused quite a bit of a stir within the tech industry, and led to 5% of the organization (60 people) eventually taking take up his offer of an exit package, leaving the company.

A memo to employees…

We won't:

- Debate causes or political candidates internally that are unrelated to work
- Expect the company to represent our personal beliefs externally
- Assume negative intent, or not have each others back
- Take on activism outside of our core mission at work

…And a re-focus on the company mission

We need to do a better job of being authentic about who we are, and hopefully this blog post is a first step in that direction. We are an intense culture and we are an apolitical culture. We're also committed to making Coinbase a place that creates incredible job opportunities and a welcoming environment for people of every age, race, gender, sexual orientation, etc.

With a strong, united culture, we can build a company that changes the world. At Coinbase, that culture means staying focused on our mission and being the best company we can be. I believe this is how we will have the greatest impact. With this clarity, hopefully everyone can make an informed decision and we can move forward as #OneCoinbase.

[Brian Armstrong recently posted a follow up on this post, on its one-year anniversary. TLDR: It turned out well.]

Lastly, we can characterize Coinbase relative to its competition. The Generalist has an exhaustive piece on FTX, that compares FTX to Coinbase, mostly in more favorable terms to FTX.

However, in light of our thesis on Coinbase, we believe their observations are actually positives. We are happy to own and grow the regulated, fiat on-ramp crypto exchange in developed markets like US and the UK, with the longer tail of casual retail users as target consumers.

In markets like the US and Europe that face higher regulatory barriers, we believe the "ask for permission first, then innovate" culture is the correct approach – while FTX's "innovate, then ask for permission later" approach may be more suitable for less regulated markets like in Asia.

Comparing FTX and Coinbase's culture

Source: The Generalist

> To understand FTX's culture, you have to first grasp what the company is not. In particular, SBF's firm seems to sit in opposition to Coinbase.
>
> Over the last few years, Coinbase has effectively geared itself to build trust. It has become the most recognizable exchange in the US by moving slowly but carefully, while maintaining an easy to use application. In many respects, it operates like a classic large Silicon Valley company, sourcing talent from the same pool of elite businesses: Facebook, Google, Airbnb and so on.
>
> FTX is geared for speed. Everything the firm does seems to be toward this end. Rather than hiring tenured Big Tech engineers, used to the sanity and balance of working at an established corporation, FTX favors young, hungry, Wall Street types. In addition to being willing to work extremely hard, these individuals have the benefit of context. This was something SBF stressed in our conversation: FTX strongly prefers hiring people that actually understand the *product* and genuinely know trading. The result is a culture more similar to an East Coast quant fund than a Valley startup.

We believe both Coinbase and FTX are going for different markets, and the culture at Coinbase is one that is suited for their mission (and the risk/reward we are looking for as investors).

That said, we are closely following how FTX evolves, especially with FTX US, where they are adapting to a regulatory-heavy environment, and have been building out a simpler consumer-facing app with the acquisition of BlockFolio.

Glassdoor reviews are positive (Overall: 4.3/5.0)

Higher than other exchanges, and in line with Facebook (Facebook 4.3; Gemini 4.0; Kraken 4.0; FTX (no rating yet with only 1 review); Binance.US 4.1 (only 7 reviews)

Coinbase Ratings and Trends

About Glassdoor ratings

Ratings may vary depending on what filters are applied, but ratings include reviews in all languages. Learn More

Overall	4.3
Culture & Values	4.2
Diversity & Inclusion	4.1
Work/Life Balance	3.6
Senior Management	3.9
Compensation and Benefits	4.5
Career Opportunities	4.3

82%	Recommend to a Friend
86%	CEO Approval
85%	Positive Business Outlook

Building new capabilities and areas of growth

In Brian Armstrong's blogpost (6/31/21), we get a sense of the areas the company is focused on going forward:

- Accelerated process in listing new tokens.

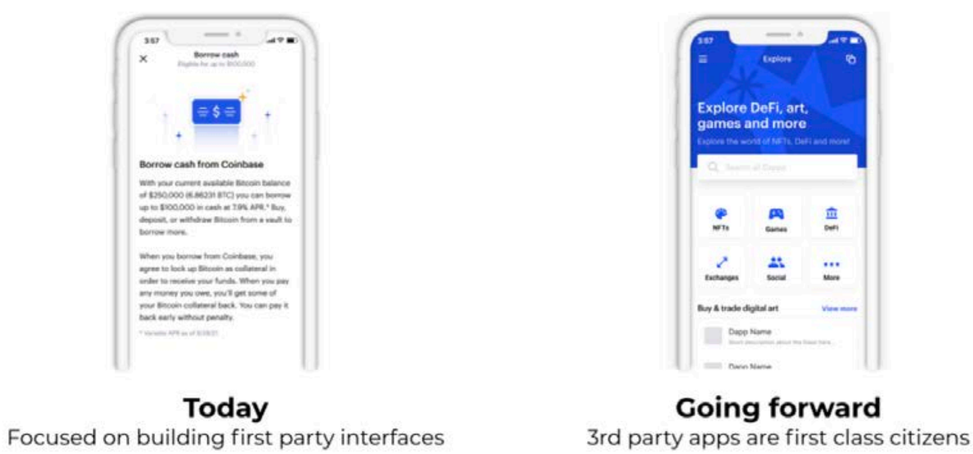
- A shift to a "international-first mindset". As regulators globally start paying attention to crypto, Coinbase's experience with US regulators and its regulation-first culture puts them in a strong position compared to competitors in new geographies.

- To build the crypto app store:

  "Soon any app built on decentralized crypto rails will be accessible to users of the Coinbase app…In the future you will have the option to do self-custody of your crypto, right in the main Coinbase app."

  We view this as important to keep users within the Coinbase ecosystem as well as to allow new decentralized apps access to the large Coinbase user base. This shows the team's commitment to growing the larger crypto ecosystem with the knowledge that this app store could have longer-term monetization potential for the firm. A super-app model also aids user retention and boosts time-on-app, which feeds into the firm's existing trading and services revenue models.

Coinbase as the Crypto Ecosystem's Super-App



Other recent announcements of note:

- Coinbase is allowing users to direct deposit of paychecks into their Coinbase account and automatically converting the fiat into tokens of their choice – essentially allowing users to be paid in crypto (9/28/21). This helps retain users and is a step towards normalizing crypto use with a bridge into the traditional banking system.

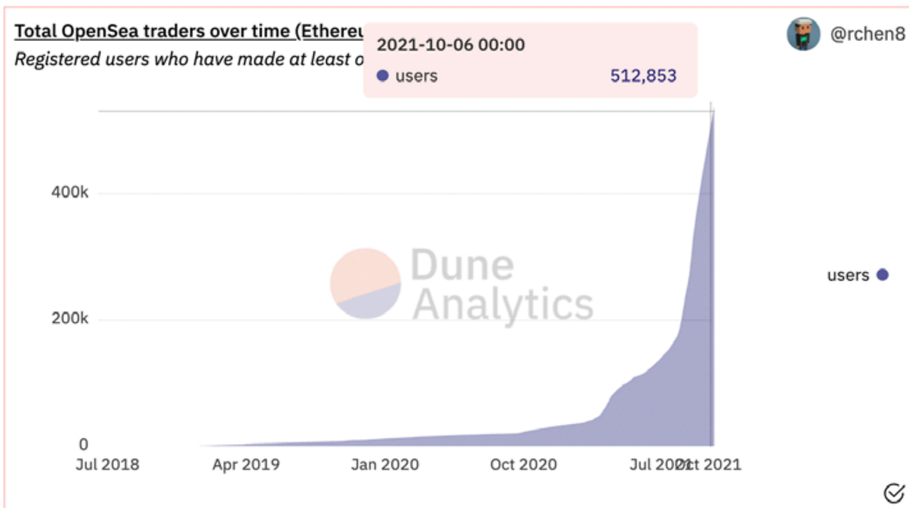
- Coinbase intends to hold crypto assets on their balance sheet. In August 2021, Brian Armstrong announced that they have put aside $500Mn of cash to invest in a diverse portfolio of crypto assets, and going forward will continue to invest 10% of its quarterly net income in this manner. Any accumulated crypto asset growth on the balance sheet would be an additional boost to the firm's value.

- Coinbase is applying to trade crypto futures in a derivatives push (9/16/21). Many US exchanges have stayed away from this fast-growing market due to regulatory uncertainty. If approved, it could be an additional source of trading volume.

- Coinbase is launching an NFT marketplace, to rival OpenSea (10/13/21). This could be a significant area of growth. Global NFT trading volume is running at an ~$50Bn transaction volume annual run-rate, and could grow to over $100Bn next year. Based on our estimates, we think this could be a $0.8-$1Bn revenue opportunity for Coinbase in 2022.

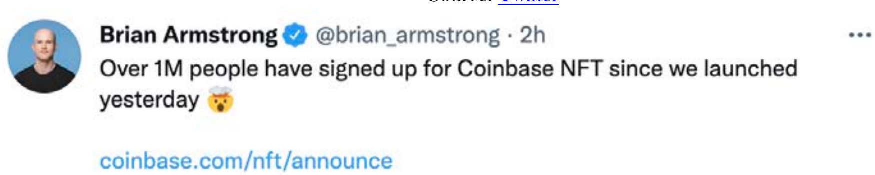
OpenSea currently has over 500K registered users

And with >97% market share of NFT trading volume. Source: Dune Analytics



…While Coinbase collected over 1M users on their waitlist on the first day of release

Source: Twitter



The Market's Perceived Investment Risks (And Why We're Less Worried)

We believe there are several overhangs to the stock resulting in the low trading multiple today. This stems from a set of perceived risks which we acknowledge, but also feel may be overblown.

1. Regulatory risk

No single government has full control over crypto, by its very nature. As an industry, talent and companies could always move to jurisdictions that are more crypto friendly and continue to build and operate. One recent example is how the US has become the biggest source of bitcoin mining a few months after China banned the practice in May 2021.

We think politicians globally are aware of this regulation arbitrage and understand that it may not be in their interest to be the first or strongest in imposing strict regulations. There exists a trade-off, and governments do want to attract crypto talent and businesses to their countries.

Next, politicians are also aware of what their constituents want. With 68mn users (and increasing) on Coinbase, there is an large number of people who are seeking crypto product and services. And with each passing day, as more Americans have their hands on Bitcoin or other tokens, it becomes harder for the government to ignore these sets of voters.

If governments do eventually decide to shut down the fiat on and off-ramp on all exchanges, which is one of the most drastic of measures, there are still many existing holders of crypto assets and there's no turning that back. The existing holders have entered the crypto-economy and can perform transactions on the blockchain with comparative ease. The show, in a sense, will go on. A fiat-to-crypto ban may also give rise to a black market for exchange services, which is leads to more problems for policy makers.

Coinbase is committed to work with regulators, even after the recent pushback by the SEC. Below is a tweet right after they announced they were suspending the Lend product, after SEC threatened to sue.

Coinbase wants to educate the public (bring them on their side) and increase transparency

Link to thread here.

> **Coinbase** @coinbase
>
> Let's talk about compliance. A thread 🧵
>
> At Coinbase, we think about compliance a little differently. Over the coming months, we plan to give the public a look "under the hood" at the programs and technologies we use to keep customers safe and bad actors off our platforms.
>
> 6:19 AM · Sep 22, 2021 · Twitter Web App
>
> **291** Retweets **17** Quote Tweets **1,841** Likes

…and formulate regulations alongside regulators.

Policy

Coinbase to Propose Crypto Regulations to US Officials: Sources

Coinbase is said to be working on a pitch to federal regulators on how to oversee the crypto industry.

By Nikhilesh De · Sep 22, 2021 at 4:16 a.m. · Updated Sep 22, 2021 at 4:33 a.m.

Coinbase is also aggressively building their legal and compliance teams.

> Among 24 legal and compliance jobs, Coinbase is looking for a "head of international compliance country governance and oversight" based in London, as well as "global anti-bribery and corruption managers" in the U.K. and U.S. There are associate general counsel positions dealing with such legal issues as "data infrastructure, payments, risk, client onboarding, identity and trust and safety."

As much as they want to help shape policy, we think that this exemplifies the investments they feel is needed to lay the groundwork for regulators - especially in new, unchartered areas.

More regulation, especially those specifically focused on consumer protections, would also lead to increased mainstream adoption, where Coinbase could ultimately benefit as the pie grows larger. Regulations would also increase barriers of entry to the industry, making it harder for smaller players to compete. This strengthens Coinbase's position, as it would be the companies with the size and resources needed (i.e. lawyers) to stay compliant with regulations.

We'd note that for all of Coinbase's current business, every single dollar of profit an investor sees today, is above board and passes existing regulations. This had to be the case to be a publicly listed company. The recent run-in with the SEC is with [Coinbase's yet to be launched Lend product](). Any further regulations like these, are on potential new services to be offered, and will not affect Coinbase's current bread and butter business–which is to enable both retail and institutional investors to buy, sell and store crypto assets (already approved by regulators and on their platform) safely and easily.

Gary Gensler of the SEC is not absolute with his stand on crypto. He has recently reiterated his support (9/30/21) for Bitcoin futures ETFs and mulls the approval for crypto funds, and has stated that he has no intention of banning crypto. Federal Reserve Chairman Jerome Powell has also said that the US didn't have plans to ban cryptocurrencies.

However, that is not to say Coinbase's business is immune to further regulatory impacts. The worry isn't on the rollback of existing approved regulations, but that the clamp down on the other parts of the ecosystem (say the ban on DeFi, self-custody wallets like Metamask, or stablecoins), which will cause total crypto activity to fall. If this were to happen, Coinbase's business growth will slow along with the rest of the crypto ecosystem.

We have laid out further details of the Digital Asset Bill as well as reviewing China's attempts to ban crypto in the Appendix.

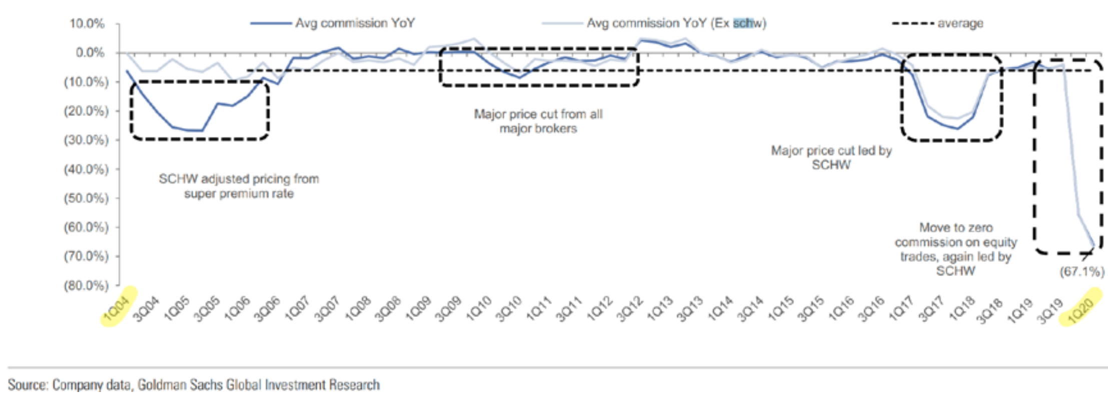
2. Fee compression on retail business

Coinbase is currently charging more than competitors, and we do think rates will drop over time (note that Coinbase does not intend to compete on price) but it will be episodic and slow.

We think fee compression will take longer than other analysts think as there is a high level of stickiness to trading platforms especially for the casual retail user (the target market we care about). Coinbase has the first-mover advantage being early and having the largest market share by far, and therefore has the largest set of consumers who are in the habit of using their platform.

Taking cue from traditional online brokerage business

Source: Goldman Sachs Equity Research, Coinbase Initiation (5/24/21)



We thought above chart from Goldman Sachs' research team was interesting (note the start and end date of this graph). It took 16 years for prices in the traditional brokerage space to adjust to where they are today. Even then, crypto is set up differently, with structural advantages compared to traditional exchanges, and therefore have a better hold on prices.

Though, even if commission rates do go down, we agree with Goldman's statement that:

> *"Trading revenues are extremely high incremental margin (80%+), [so] we believe it's possible for Coinbase to maintain its margin profile and offset pricing pressure over time by leveraging its fixed cost base (similar to how pretax margins in the brokerage industry remained in the 40-50% range over time despite pricing moving to zero.)"*[24]

With such a high volatility asset class, the 100-150bps trading fees are less impactful to users, who therefore, may be willing to stick around based on just the simplicity that Coinbase's UX provides, even if they know are paying more (remember, most deposits are currently less than $100, which equates to a less than $1 savings).

Coinbase can charge a premium because it's one of the easiest exchanges on which to open and fund an account via ACH as a result of their focus on regulatory compliance and strong banking relationships. Users are happy to pay a premium for a higher level of trust and ease of funding.

Over time, Coinbase is expected to build up revenue from other services, which reduces the impact of narrowing trading margins. If overall industry margin compresses, Coinbase has a competitive advantage in having the largest scale (hence lowest costs), and is also further along in tech and infrastructure investments to diversify their earnings to other services.

Coinbase prices vs competitors

Source: Goldman Sachs Equity Research, Coinbase Initiation (5/24/21)

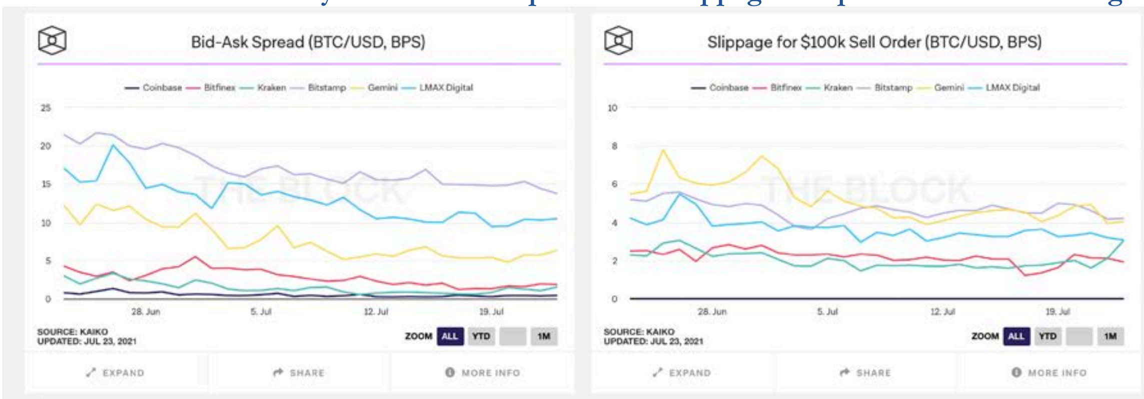
Retail take-rates will be the ultimate driver of overall company rates. Here, we think the retail rates will be sustained. As we have shown previously, the marginal retail user starts on Coinbase, and has not shown to shift to the cheaper Coinbase Pro platform in any significant way. Also, as crypto interest matures and as adoption moves from core crypto and blockchain evangelists to more casual and diversified investors, this trend alleviates some take-rate pressure as lower-volume users face higher fees (as a percentage of total ticket size)[25].

[24] Goldman Sachs [6/1/21]

[25] M Science research report.

Another important factor is that Coinbase customers may be paying higher commissions, but get the best pricing by far, as shown below.

Coinbase has dramatically lower bid-ask spreads and slippage compared to other exchanges



3. <u>High volatility is expected</u>

The crypto industry is still very nascent and this is one industry where having a strong longer-term mental anchor is very important. High fluctuations in total asset market cap are expected due to shifts in narratives and in an asset class without wide institutional adoption. This lack of diversity of holders or non-sentiment driven holders exacerbates market swings.

4. <u>Coinbase has limited product offering and does not launch new products as fast</u>

This is due to their careful, regulatory friendly approach. They do not adopt the "move fast, break things" mentality that may be more prevalent with other globally larger crypto exchanges.

That said, they have the most number of tokens listed compared to their US regulated peers, just not as many as a company like Binance that operates outside of US regulations.

Eventually, as they own the largest customer relationships, they could integrate with other products and act as a distribution platform for these apps, as shown with the Coinbase App Store initiative. Services like DeFi would be integrated to Coinbase's backend and use Coinbase as the customer-facing front, benefitting from the company's infrastructure and compliance measures in place.

5. <u>Customer service is lacking</u>

With the speed of growth in users and trading activity over the past year, Coinbase has struggled to keep up with customers' questions. There are a lot of new users that aren't familiar with crypto, and crypto by nature is a new industry so there is undoubtedly more support needed.

Coinbase has recognized the problem, have ramped up hiring, and are investing heavily in this area. We feel it's a matter of time before they would have the support to meet customer demands.

Announced phone support on 9/22/21

Coinbase @coinbase · 3m
Phone support is coming

> **Coinbase Support** @CoinbaseSupport · 17m
> Our goal is to provide customers with the most trusted customer service experience in crypto. We are excited to announce the upcoming launches of 24/7 live phone & messaging support. Learn more via our blog: blog.coinbase.com/coinbase-to-la...

Along with aggressive hiring to their customer support team

> There are also 60 listings in the "Customer Experience" category. Coinbase, whose users have been known to complain when they get locked out of their accounts or have their holdings stolen by hackers, is advertising jobs located in Dublin and remote-work in the U.S. to deal with "formal, regulatory and litigation complaints." The company said in July it had already increased its customer support staff by five times since January.

Phone support seems a basic service ("why is this news?") and would be expected of traditional stock brokerages. However, we'd note that this is not the norm for crypto exchanges (Kraken, FTX, Binance, and Gemini do not offer phone support), and Coinbase is taking the lead on providing this service.

Coinbase is normalizing similar standards of customer support expected from traditional brokerages. Just being compared to a traditional stock brokerage is a strong sign to the emergent legitimacy of crypto. We take this for granted, but before the listing of Coinbase and before crypto trading became more popular, the idea of a platform for trading crypto assets (mostly Bitcoin for many years) was a seen as a risky fringe activity dismissed by traditional financial market participants. And now we have phone support.

6. <u>There have been concerns that a lot of insiders have sold their shares.</u>

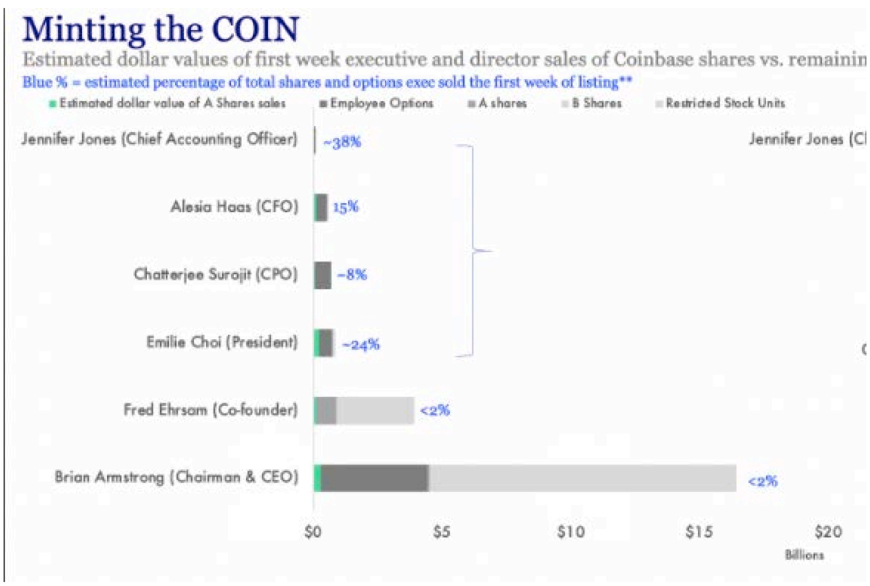
   This is a result of direct listings. We'd refer to Coinbase's medium article, which seeks to clear up misunderstandings.

From Coinbase's response to share sales upon IPO 4/18/21, and more recent sales on 9/12/21

Coinbase executives and early investors sold portions of their total holdings to create liquidity on the opening day of trading for Coinbase stock. These sales are critical to a direct listing. Despite misguided commentary on social media and in some news outlets, these sales represented small percentages of their overall holdings. Our executives and investors may continue to sell their holdings — or buy additional stock — at various points in the future. ***These transactions will always be publicly visible*** via SEC disclosures.

**Based on a review public disclosures of executive sales following the direct listings of Asana, Palantir, Roblox and Slack. Asana's executive officers sold 1.67%; Palantir's executive officers sold 7.29%; Roblox executive officers sold 4.21%; and Slack executives sold 4.18% of total executive officer holdings. Coinbase Section 16 officers sold 3.32% of total Section 16 officer holdings.*

Upon IPO, these were the percentage of ownerships sold (in green):



We have examined all further sales by company management to date (9/28/21) and they have not been a significant percentage of their holdings post IPO sales, and none have come from Brian Armstrong.

The "Real" Risks
(And What Investors Should Watch Out For)

1. **Draconian regulation.** We think if there is a coordinated global effort to not only regulate future crypto products, but to rollback existing approved services or tokens, the crypto ecosystem would shrink significantly. This would include:

    i. The ending of all fiat on and off-ramps for all exchanges in current regulated markets in the US and U.K.

    ii. Ownership of crypto is made outright criminal.

    iii. The blocking of all exchange websites, and search results and links leadings to these sites.

China is going down this path of tough regulations

...though many would still find a way to trade. Source: [Wu Blockchain on Twitter]

It would likely take an anti-crypto political backlash in Western democracies of unforeseen magnitude for these regulations to even be on the table. We do not currently see any signs of this happening. (Please see "Details of regulations" in the Appendix.)

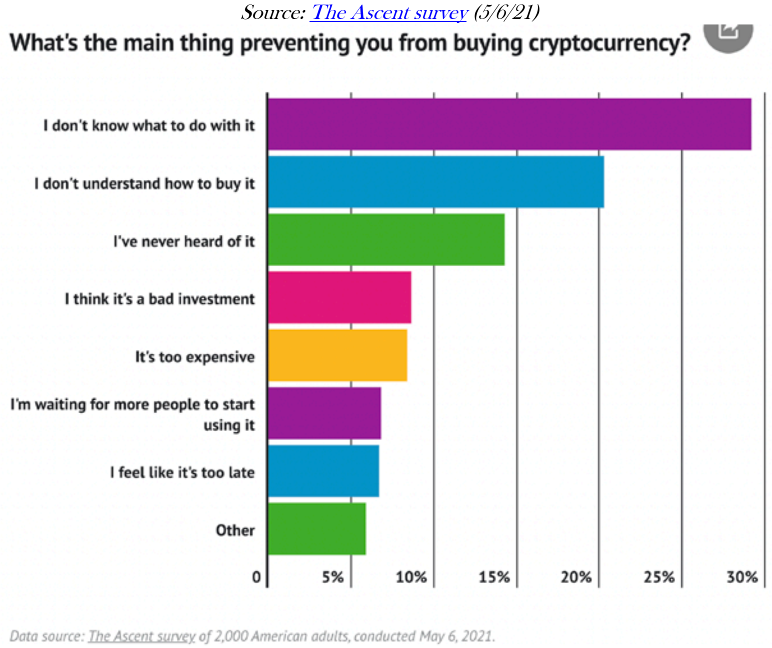
2. **Lack of mainstream adoption.** While engineers across different protocols are working hard to achieve ease of use, or to abstract base-layer complexities, we aren't there yet.

    Many crypto products and services are not user-friendly enough to gain mainstream adoption. For example, Metamask is the most common Ethereum wallet today, and it's certainly not the easiest to use or set up. The need to store your own seed phrases (Metamask or with hardware wallets), and with the associated fears and risks (for example, losing your seed phrase or having it stolen), are basic unsolved issues that hinder widespread adoption of crypto usage.

    Education on how to buy and use cryptocurrencies would also need to accelerate. This survey is telling on the current issues facing usage:

Most people just don't know how to buy or use crypto today

Source: The Ascent survey (5/6/21)



3. **Major hacks or scams.** If there was a system wide hack of any major crypto protocol or on any large exchange (Coinbase or otherwise) that affects most users, including those who are crypto-native, there could be a sharp drop in trust and usage. Trading activity and investements would thus fall correspondingly. Also, if the number of scams spiral out of control, requiring too much technical knowhow to avoid, it would become unfeasible for the average user to be on-boarded, and future growth of the ecosystem would be severely curtailed.

4. **Coinbase loses it's intense product-driven culture and falls behind competitors.** If management and culture shifts significantly, causing top leaders and talent to leave, Coinbase would stop shipping new innovative product, become complacent, and fall the way of a tech dinosaur. Aggressive competition could easily move in to gain market share at that point.

Conclusion

We are first and foremost long the crypto economy. Crypto can easily be dismissed on first look as an industry rampant with hacks, scams, degenerate gambling, and frequent run-ins with regulators.

There are elements of truth to that. However, we believe what we are seeing is growing pains of a nascent industry that has been evolving very publicly since its founding. Bitcoin and Ethereum have been open source from the beginning, being built upon by curious engineers. This is unlike startups launched by co-founders in a garage, with their pitfalls and successes hidden from public view, and only known to employees or a small group of venture capital investors. With crypto, we are watching the proverbial sausage being made, with all the messiness that is par for course.

Beyond the negative headlines are thousands of engineers working hard to apply blockchain technology to various areas of the economy. Crypto has come a long way since. The depth of innovation happening in crypto today is dramatically different from the bull run in late 2017.

We currently see various real world use cases for crypto, be it for money transfers, for other financial services like earning yields or asset management, for creators and athletes to have a direct relationship with their fans with their own self-issued tokens[26], or to vote from any mobile device without fear of hacking or data corruption[27]. With NFTs, we have a better way to create and sell art, an efficient way to issue tickets to prevent scalping[28], a reliable way to record life experiences through proof of attendance protocols[29], and to create a more equitable gaming environment, where you can own and move your in-game purchases.

Despite all the headlines crypto gets in the news, only 3% of the global population[30] today are crypto users. We believe we are still early. For mainstream adoption to take place, base layer complexities need to be abstracted away.

Crypto is still in the beginning stages of developing consumer applications that are easy to use. In the past, most users never needed to learn about TCP/IP to use the internet, nor set up their own email server to email their friends. This was what Coinbase managed to solve by making it easy to store, send and receive Bitcoin back in 2012. That was just the start, but the crypto space still has a long way to go. We think it's a matter of time before we see a Cambrian explosion of user-friendly applications built upon blockchain technology.

Tokens exist in each of these use cases to play any combination of roles–they could be used as a currency on each network (to pay for services on a network, or to pay for confirmation of transactions), they could be used to reward validators who secure the network, they could be used for governance, or they could also act like shares of a company, where value accrues to token holders. With an increasing variety of tokens and use cases, comes the need for crypto exchanges for users to buy or sell these tokens. Exchanges form the backbone of the crypto economy.

Like the stock market, there are speculators alongside long-term investors trading on exchanges. The latter see themselves as buying a part of and helping to fund a business or crypto project they believe in. We think crypto price volatility will drop as adoption widens, like how large cap stocks are less volatile than small cap stocks. We already see this with Bitcoin today, whose volatility is lower compared to other smaller crypto tokens.

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[26] Rally – Fueling new forms of engagement for creators and their community
[27] Voatz – Secure, accessible voting at your fingertips
[28] GET Protocol – Benefits of truly digital NFT blockchain ticketing
[29] POAP – A new way of keeping a reliable record of life experiences
[30] 221mn crypto users via Crypto.com, out of a global population of 7.9Bn

Brian Armstrong is one of these early members of the community, and played a large part in growing the ecosystem we see today. He built one of the first crypto-native companies, one that not only has thrived since, but also gained legitimacy with regulators, and also with the general public, especially since being publicly listed.

We believe Coinbase is one of the best ways to ride the growth of the crypto ecosystem (like a "toll-booth" into the regulated, Western crypto ecosystem). We view it as a de-risked approach to crypto, as it's not dependent upon the success of any single token. Coinbase captures trading revenue no matter which tokens become increasingly adopted. In fact, Coinbase is a leveraged play on total crypto market cap as multiple reinforcing levers drive earnings growth.

Coinbase is trading at an undemanding valuation today due to various overhangs or worries over the stock. After looking into each issue, we have developed a differentiated view, and that's why we see opportunity.

Firstly, while regulations are a concern, we think its impact is not fully understood. Regulators in each country see crypto as an opportunity too. In the US, the SEC has publicly stated that they are not endorsing an outright ban. Therefore, the existing operations of Coinbase remain above board, and the downside is limited to new product launches, or a slowdown in the growth of the ecosystem if certain regulations in the Digital Asset Bill are passed. We do not think this means an end to the crypto as we know it – and besides, these risks are already priced into the stock.

Next, we think Coinbase has a sustainable long-term competitive position in the US, as they have the highest brand recognition and reputation of trust. The retail user is an ideal segment for the business as take rates are dramatically higher. We don't think the retail user is as price sensitive as with traditional brokerages because of the volatile nature of crypto as well as the need for a trusted exchange with low security risk. Coinbase also has the largest selection of tokens in the US, and offer the best pricing (bid / ask spreads) and liquidity. For these reasons, we believe Coinbase would be able to hold on to their large lead in market share.

With a dominant lead and by adding more services that increases retention, we think the take rates can be sustained over time. While we think there will be downward pricing pressure, it would be slow and gradual and would not have a large impact in the firm's revenue and profits in the next few years, considering other larger drivers of growth that will more than offset this.

We think Brian Armstrong has assembled an A+ team, and has larger ambitions to drive crypto adoption. For one, Coinbase Ventures has invested in all parts of the ecosystem, enabling many areas of growth. We also see Coinbase Cloud as an important optionality in the business, providing crypto know-how to other companies to plug into. On the retail end, the creation of a crypto super-app provides a one stop shop to users for anything crypto-related which improves stickiness and also opens up new opportunities for monetization.

Overall, with Coinbase trading at 12.4x 2021E EBITDA and with 52% margins today, along with the potential to grow multiple-fold in just the next few years, we think the risk/reward is extremely favorable considering the potential growth of the crypto economy, and Coinbase's dominant position as a business to capture value from this growth.

Note: We established our initial position for partners at ~$240 per share, and will continue to adjust our position as our thesis develops over time.

Appendix

Coinbase has the most complete set of licenses in the US[31]

Licenses	MSB (BSA)	Broker-dealer license	BitLicense (NY)	States Not Available
Coinbase	yes	yes	yes	-
Kraken	yes	not enough info	no	WA, NY
Binance US	yes	not enough info	no	NY, LA, CT, HI, ID, TX, VT
FTX US	yes	applying	no	NY
Gemini	no, exempt	applying	yes	-
Voyager	yes	yes	no	NY

MSB: Money Services Business with FinCEN
BSA: Compliant with requirements of the Bank Secrecy Act (BSA)
BitLicense: NYDFS's Virtual Currency Business Acitivity

Coinbase's security protocols and phishing scams

To clarify, "to not have been hacked" means that no malicious party has managed to breach Coinbase's security systems to steal tokens in their custody (either hot or cold wallets). However, users have indeed lost tokens via successful phishing attacks (and these make headlines).

Phishing attacks on users accounts can happen on any website and is not Coinbase or crypto specific. This is a method where cyber criminals obtain login details fraudulently via fake emails, links or via other methods. Coinbase is aware that their customers are vulnerable to such attacks and have instituted warnings and measures to help their users.

We think the security steps taken, and culture around security imbued since founding, far surpass other exchanges. Some highlights (from Coinbase security):

- Funds are insured, including FDIC insurance up to $250,000 for cash balances.
- 98% of customers funds are stored offline.
- Bitcoin drives and paper backups are distributed geographically in safe deposit boxes and vaults around the world. (Xapo, now owned by Coinbase, famously stores Bitcoin deep in the Swiss Alps, inside a decommissioned military bunker.)

31 *Sources:*
https://help.ftx.us/hc/en-us/articles/360043578573-Terms-of-Service
https://www.binance.us/en/terms-of-use
https://www.coindesk.com/markets/2019/06/13/binance-says-its-launching-a-us-exchange-with-fincen-registered-partner/
https://support.kraken.com/hc/en-us/articles/360031282351-Is-Kraken-licensed-or-regulated-
https://www.investvoyager.com/pressreleases/voyager-digital-completes-acquisition-of-registered-broker-dealer

Details of regulations

Crypto legislation currently being put through US congress is the game-changing Digital Asset Bill introduced to the house on 7/28/21.

This is not the same as the earlier bill introduced as part of the "Infrastructure Investment and Jobs Act" on 4/6/21, which passed after much debate but turns out was not as invasive as initially feared. The most fiercely debated point surrounding crypto entities reporting taxes don't come into effect till end of 2023. Till then, we expect there to be more clarification and push back on what constitutes income from crypto services.

The Digital Asset Bill:

US Congress intends to regulate crypto on a level far deeper than currently understood (credit to the excellent work by Wesley Thysse, linked here):

1. Designate Bitcoin, Ether, and their hard-forks as commodities and regulate their transactions accordingly;
2. Create legal uncertainty for all other crypto projects and ICOs by allowing them to be labeled as securities;
3. Ban the use of (unauthorized) stablecoins;
4. Introduce prison sentences for the use of mixers and privacy coins;
5. Rebrand smart-contracts that take longer than 24 hours to deliver as futures contracts and regulate them accordingly;
6. Re-define legal tender and change the way money is created by the Federal Reserve; and authorize the issuing of a digital USD of which all transactions are recorded;
7. Introduce foreign regulations into US law for all virtual asset service providers in the US (and with US clients).

In short: Congress wants to bring crypto-currencies under full oversight and control.

Points 2, 4, and 5 are indeed far reaching but do not impact Coinbase's business directly as these are not activities that Coinbase engages in, nor do they currently offer such services. Point 3 has a minor impact as Coinbase is part of the Circle consortium that manages the stablecoin USDC, however the revenues from this segment is insignificant. Taken together, these regulations if enacted *do* still impact Coinbase's business but only because the wider ecosystem would be less active and potentially shrink.

On point 1, Bitcoin and Ether designated as commodities does not affect Coinbase's current business. They are already considered commodities and are under CFTC oversight. Most of the regulations surrounding commodity designation lies in futures contracts (or other derivatives) which Coinbase does not offer. It is perfectly legal for an American citizen to open a Coinbase account, perform required KYC checks (verification of identity via the app), and buy or sell Bitcoin and Ethereum at spot prices. This process is not under threat.

Point 6 is a surprising one, but out of the scope of this memo. For the first time, the Fed would have direct control over money, and not just via adjustments of reserve ratios with banks or other less direct policy tools. (more in the paper linked above).

Point 7 is a catch-all clause that allows the US government to open itself up to be part of the larger international regulation being reviewed which is covered below.

FATF Recommended Regulations

Next is the Financial Action Task Force (FATF) recommended regulations, updated as of June 2021. We defer to Wesley Thysse at The Decentralized Legal System with this summary. FATF is a global task force planning worldwide regulation of crypto currencies.

The crux of the regulations here were worded above in the Digital Asset Bill, namely, defining what is considered a crypto project (casting broadest possible net), banning the use of stablecoins, and restricting the use of unhosted wallets like Metamask, which curtails participation in many Web 3.0 projects like DeFi and NFTs.

We think Coinbase is well positioned even if the furthest extent of regulations are recommended.

Wesley Thysse on who the "winners" may be post-regulation

> First will be those that will fully comply with these regulations. In terms of participants, these will be the big exchanges and onramps, banks, and institutional investors. A lot of participants exclusively use VASPs already for their coins anyway, and for them nothing changes. In fact, institutional adoption might increase, an idea supported by the fact that the Bank of International Settlements issued new guidance for banks on the prudential treatment of crypto assets.[10] Assets which might succeed in such an environment are projects that have focused on transparency and KYC from the start, or are already too decentralized and operate without any VASPs.

Those at biggest risk are privacy coins, decentralized exchanges, decentralized finance, and other peer-to-peer systems. If these recommendations are passed, it is likely that US regulators will follow suit. We are not predicting this would happen, nor do we think the chances are high. However, if these changes do come to pass, many ideal uses cases of crypto would be severely challenged. This may decrease the TAM for Coinbase, restricting growth, but many other potential use cases for crypto would hum along fine, perhaps just in a different shape or form.

Ethereum could still be bought and spent to mint or buy NFTs as digital artwork or for in-game items. Social tokens still used for creators to have a direct relationship with their fans. Filecoin and Arweave could still be used for decentralized data storage. We can imagine all these activities taking place outside the proposed regulations as they aren't flouting the rules as we read them to be.

We suspect utility tokens like these aren't under threat because they don't fall under token categories that reduce a government's control over the levers of monetary policy, or their ability to clampdown on illicit activity. Basically, we do not think increased regulations means all of crypto goes to zero.

Another facet of regulation: crypto and illicit activity

It is true that bitcoin is used for illicit trades and ransomware payments. But criminal activity accounts for just 0.34% of all crypto activity in 2020, according to Chainalysis, a blockchain data platform used for security and compliance.

A study by Rand Corporation noted that despite the "perceived attractiveness of cryptocurrencies for money laundering purposes…an estimated 99 percent of cryptocurrency transactions are performed through centralized exchanges, which can be subject to AML/CFT regulation similar to traditional banks or exchanges". Any reader who has opened a crypto exchange account in one of the exchanges mentioned in this memo would also note the need to pass KYC with stringent self-taken picture and/or photo ID verification.

In fact, because Bitcoin is on chain, it may be easier to trace funds as criminals move their coins. The ability of Justice Department to recover the majority of Bitcoin in a matter of weeks from the Colonial Pipeline ransomware attack is a good example.

Katie Haun, co-Chair of A16z's crypto fund, on Bitcoin and ransomware attacks:

As a former prosecutor, how do you think about crypto being used in so many ransomware attacks like the one on Colonial Pipeline? Why do criminals love Bitcoin so much?

Criminals are early adopters and in some ways they make great beta testers for new technology. They're always looking for a way around the system. Frankly, law enforcement officials actually really like when payment is made in Bitcoin as opposed to fiat. I think it's funny because as a former prosecutor, I take this for granted. There's a real false sense of security where wires are used or traditional financial services are used. People think, "Oh, we know everything about that. So we'll just go subpoena. The bank will give us these records and we'll just go get the money." That is just so far from the reality of the situation.

We do not think regulators are able to use illicit activity as enough of a reason to "shut down" crypto completely, or more specifically Bitcoin. But what does it really mean to "ban" Bitcoin?

China's repeated attempts to ban Bitcoin

Katie Haun on the Chinese Bitcoin ban

The Chinese government has stopped allowing fiat on and off-ramps on exchanges in the past

What happens if Bitcoin is shut down in China completely? Is that market for Bitcoin off the table?

The best analog for this is the Great Firewall of China, with the internet. Of course, this will be harder for China to just completely ban. They can do things like control on and off ramps, which they've done before. If you look back to that 2017 news, it actually shows the tremendous staying power of a decentralized, open system like Bitcoin.

And here, from @JohnStCapital (years featured: 2013, 2017, 2018, 2019)

China bans banks from handling Bitcoin trade

5 December 2013

Bitcoin drops $500 after more reports China will ban cryptocurrency exchanges

Shona Ghosh Sep 11, 2017, 6:09 AM

Beijing bans bitcoin, but when did it all go wrong cryptocurrencies in China?

Sidney Leng + FOLLOW
Published: 8:25pm, 5 Feb, 2018

Why you can trust SCMP

CHINA ECONOMY

China clamps down on cryptocurrency speculation, but not blockchain development

PUBLISHED MON, SEP 3 2018-3:48 AM EDT | UPDATED TUE, SEP 4 2018-7:09 AM EDT

WILLIAM SUBERG NOV 22, 2019

Bitcoin Drops to $7,000 as China Vows to 'Dispose of' Local Exchanges

A new official statement from China's central bank confirms it is taking fresh action against businesses offering cryptocurrency trading.

Timeline of Recent China Actions
Source: Galaxy Digital Research

- May 21 — Chinese financial oversight cmte. (FSDC) announces goal to "crack down on bitcoin mining and trading"
- May 25 — Inner Mongolia announces 8 proposed measures to restrict bitcoin mining.
- May 27 — Sichuan province, which hosts a large amount of hydro-powered bitcoin mining, announces public meeting to assess impact of a ban on mining
- June 5 — Weibo, a major social media platform, suspends accounts owned by major Chinese crypto influencers
- June 9 — Major web platforms Baidu & Weibo begin censoring keywords related to major crypto exchanges Huobi, OKEx, and Binance
- Some bitcoin miners in Xinjiang province ordered to shut down
- Miners in Qinghai province ordered to shut down
- June 11 — Yunnan province, a major hydro-electric generating province, announces that bitcoin mining farms would be "inspected" by end of June
- June 16 — Huobi slashes leverage available to Chinese nationals from 125x to 5x
- June 19 — Sichuan province, a major hydro-electric generating province, orders state-owned energy suppliers to cut power to 26 local mining farms
- June 21 — Peoples Bank of China (PBoC) orders Chinese banks and payment processors to "immediately cut off... payment

…And subsequent Bitcoin price movements

China "Banning" Bitcoin / Crypto			
"Ban Date"	BTC Price	% Move Since	Annualized
12/5/13	$1,153	3623.3%	58.9%
9/11/17	$4,122	941.1%	78.6%
2/5/18	$8,271	419.0%	57.3%
9/3/18	$7,279	489.6%	78.6%
11/22/19	$7,748	454.0%	153.4%
5/21/21	$37,174	15.5%	51.6%
9/24/21	Present		

Bloomberg reports on the most recent Bitcoin ban, China Crypto Investors Are Buying More as Beijing Circles (9/28/21):

> *"These policies are not new to us, so we view them as a buy signal," said Stephen, a Shanghai-based crypto investor who preferred to be identified by his first name only. He bought $20,000 of Bitcoin over the weekend, he said, adding that* ***it's still possible via many centralized and over-the-counter exchanges****.*
>
> *"While Chinese regulators have already banned trading and mining of Bitcoin and other virtual currencies, they are unlikely to implement an* ***outright ban on the holding of digital assets because it would be too difficult to enforce****, Stephen predicted.*
>
> *"The government is smart," he said.* ***"They won't issue a policy they cannot implement."***

Similarly, we do not expect the US government or FAFT to attempt any variant of a ban on crypto. By extension, we also think there won't be outright bans on allowing many other tokens to *exist*.

Even if China is able to use the full weight of the law to end the use of Bitcoin and other cryptocurrencies, the global network of users and circulation is large enough such that usage and demand ex-China will continue, and crypto survives.

An end note on investing in early stage crypto projects and the associated volatility

The volatile nature of crypto as an asset class is because the industry is nascent and for the first time, available to all investors whether big or small. As new and easily traded tokens, it leads inevitably to speculative behavior and large price movements that come from lower liquidity and a less diverse base of investors.

This was not the case for other technological platforms in the past. Even today, the most important (non-crypto) startups raise funds from a small group of VCs, usually based out of a few cities. On the other hand, a crypto startup is able to raise by issuing tokens to a large base of users or retail investors (hence, the importance of community building), who in turn are incentivized to use the platform, as owning a token means having skin in the game.

VCs may also buy these tokens but are on the same playing field as retail investors. There are debates around VC access to current token launches, but on the balance, token launches are still a huge improvement over the closed-in VC industry in the past, allowing a larger base of smaller investors to get in early with startups (with both high upsides and downsides; this is also an area where we feel some regulation, especially in areas of consumer protection, would make sense).

Early access to tokens give users a sense of ownership

In the case of Facebook, retail investors and users had a chance to buy only upon IPO[32], when the company was already worth billions.

Imagine if seed-stage or Series A Facebook shares were publicly traded and available to all investors – that's the kind of volatility we are seeing with many crypto tokens. Or imagine if early-stage internet companies like Netscape raised money via a token sale – what would the volatility look like in its first five years of existence?

As a crypto project grows and adoption widens, their tokens would be in the hands on a larger base of investors which lowers volatility over time. This is the case with Bitcoin as its volatility has been dropping over time.

Making this distinction with crypto startups puts the volatile nature of the asset class in perspective. While speculation definitely still takes place, what we are seeing at the same time is the democratization of access to early stage startups. Early adopters or users are now able to invest and partake in the upside alongside the growing organization.

Additional Resources

Comprehensive Resource:

- https://messari.io/

Pricing and Rankings:

- https://www.coingecko.com/en

[32] We note that Facebook reached a valuation of $104Bn on opening day (5/18/2012), and the $15Bn number quoted in the tweet exchange was likely referring to the amount raised.

- https://coinmarketcap.com/

Chain Analysis / Data :

- https://app.intotheblock.com/
- https://studio.glassnode.com/
- https://charts.coinmetrics.io/network-data/
- https://www.theblockcrypto.com/data/crypto-markets/spot
- https://www.tokenterminal.com/ [fundamental analysis]
- https://www.cryptocompare.com/
- https://duneanalytics.com/browse/dashboards
- https://www.nansen.ai/

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