

U.S. Mid- and Small-Cap Banks Crypto Banking Weekly

Collapse of FTX Might Prove to be the Catalyst that Moves the Utility Value of Crypto Two Steps Forward

- Collapse of FTX a Painful Step Back but Might Prove to be the Catalyst that Moves Crypto Two Steps Forward.** With FTX emerging earlier this year as a white knight, bailing out troubled crypto-related companies, the news of FTX itself collapsing this week sent shockwaves through the crypto markets. While this is certainly a major short-term setback, we see the widely publicized collapse of FTX as potentially dramatically *accelerating the timeline* to which crypto-related regulation will be ushered in (similar to new banking regulation which followed the GFC). As a result, we see the news surrounding FTX as one step back, but one that could prove to be the catalyst to move the crypto economy two steps forward (further unlocking the utility value of blockchain). In fact, we see the establishment of a regulatory framework as *the needed catalyst* to massively ramp the institutional adoption of crypto. Moreover, while the news of the collapse of FTX is empowering crypto skeptics, we would point out that *all of the recent collapses* in the crypto ecosystem have been from centralized players and not from decentralized protocols.
- USDC and USDT state that they have no exposure to FTX.** Circle CEO Jeremy Allaire clarified this week that Circle had never given loans to FTX or Alameda and has also never received FTX tokens (FTT) as collateral.
- The Federal Reserve states digital assets pose challenges to financial stability** similar to that of the traditional finance ecosystem and needs regulation.
- Swiss bank UBS prices the world's first digital bond** at 375mm Swiss franc (\$370mm) to yield a 2.33% return. The digital bond has the same structure, legal status and rating as a regular bond.
- New York Fed experiment Project Cedar shows FX transactions could occur in less than 10 seconds with central bank digital currencies (CBDCs),** a sharp increase in efficiency from the current 2-day process.
- Stablecoin issuer Circle set up its Circle Reserve Fund with BlackRock** in hopes of getting access to the Federal Reserve's (Fed) reverse-repo program.
- Crypto trading volumes are mixed in 4QTD.** As of 11/10, Bitcoin trading volume rose 31.7% q/q to \$1.51T while Ether trading volume has fallen 15.1% q/q to \$574B.

U.S. Mid and Small Cap Banks

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Table 1: Quick Snapshot of Trends in Key Cryptocurrency Prices, Crypto-Related Banks, Indices, and BTC/ETH Trading Volumes

	Current Market Cap	Current Price	1 Week Change	1 Month Change	3 Months Change	6 Months Change	1 Year Change	7-Day Avg Volume
Bitcoin (BTC)	\$320.1B	\$16,637	(17.8%)	(13.5%)	(30.4%)	(46.3%)	(74.1%)	\$65.1B
Ethereum (ETH)	\$145.7B	\$1,196	(22.4%)	(8.5%)	(35.1%)	(48.6%)	(73.7%)	\$22.0B
Defi Index (DPI)	\$34.8mm	\$89	4.1%	3.6%	(22.8%)	(17.7%)	(78.8%)	NA
Crypto-Related Banks								
Signature Bank (SBNY)	\$8.3B	\$132.02	(10.0%)	(11.1%)	(29.4%)	(39.4%)	(58.1%)	\$0.2B
Silergate Capital Corp (SI)	\$1.1B	\$34.69	(32.9%)	(48.1%)	(65.4%)	(59.6%)	(81.6%)	\$0.1B
Q/Q Change in Trading Volumes								
	4QTD Change	3QTD Change	2QTD Change	1QTD Change	3Q22 Change	2Q22 Change	1Q22 Change	4Q21 Change
Bitcoin (BTC)	31.7%	(6.0%)	7.7%	(22.6%)	3.6%	17.2%	(23.3%)	7.7%
Ethereum (ETH)	(15.1%)	(5.0%)	15.0%	(16.0%)	(5.7%)	25.1%	(24.0%)	(9.2%)

Source: Bloomberg Finance L.P., CoinMarketCap, and company reports. Note: Data as of 11/10/2022.

See page 36 for analyst certification and important disclosures, including non-US analyst disclosures.

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Off the Block: Our Take on the Week in Crypto

Collapse of FTX Might Prove to be the Catalyst that Moves the Utility Value of Crypto Two Steps Forward

Cryptocurrency markets experienced a tumultuous week, as Bitcoin prices dropped 17.8% to reach a two-year low, with the total cryptocurrency market cap dropping by 16.8% to \$0.84T this week, led by fears stemming from the collapse of FTX, a cryptocurrency exchange. The panicked frenzy initially began when CoinDesk reported on a private financial document of trading firm Alameda Research, which is owned by FTX CEO Sam Bankman-Fried. The CoinDesk report claimed that, as of June 30, Alameda's assets amounted to \$14.6B, with its single biggest asset being \$3.66B worth of "unlocked FTX tokens (FTT)" and the third largest item being \$2.16B of "FTT collateral." The straw that broke the camel's back came in a day later after Binance CEO Changpeng Zhao went on Twitter to announce that Binance would be selling the FTT tokens held on its books (worth \$580mm at the time), describing the move as "risk management, learning from LUNA", referring to the now collapsed LUNA ecosystem. There were also alarm bells ringing across the crypto ecosystem on Alameda having such a high exposure to FTT tokens on its balance sheet would also signal that these tokens could have been used as collateral by Alameda to FTX in exchange for borrowing customer's assets on the FTX exchange. All these fears led to mass withdrawal of assets off the FTX exchange, in a manner similar to that of a bank run. Sam Bankman-Fried said that the exchange received withdrawals of \$6B in 72 hours. Data from Coinglass showed that FTX's Bitcoin balances went from around 20,000 to essentially zero within 24 hours.

Soon after on Tuesday morning, in the words of Sam Bankman-Fried, things came full circle when Binance and FTX signed a non-binding letter of intent for Binance to fully acquire FTX given the extreme liquidity crunch faced by the exchange. This did settle the panic for a few hours in regards to the downside effects of the crash of an exchange of the size of FTX. However, concerns started resurfacing on whether Binance would actually want to go through the deal after conducting due diligence and whether they would be allowed to do so by regulatory authorities. The proposed sale was expected to draw concerns of antitrust retaliation in the US and elsewhere since it was between two of the top players in the space and could trigger concerns about market dominance of a combined entity, giving Binance more than 80% share of the global crypto market in the case the deal did go through. Another key concern was that the deal was non-binding and would also require a lot of due diligence at Binance's end before it could go through.

On Wednesday, things took another sharp downturn for the broader crypto market when Binance announced that it would be backing out of the potential acquisition of FTX, due to reports of FTX mishandling customer funds as well as alleged US agency investigations. The Binance spokesperson also stated that the issues at FTX were beyond Binance's ability to help and that there is a need for regulatory frameworks to be developed in the industry. Later, according to Reuters, it was also reported that these set of transactions between FTX and Alameda began in May, when Bankman-Fried transferred at least \$4B in FTX funds secured by assets including FTT and shares in the trading platform Robinhood Markets Inc (HOOD). It has also been reported that a portion of these funds were in fact customer deposits.

A purchase of FTX by Binance would have resembled the last minute buyout of Merrill Lynch by Bank of America in the 2008 Global Financial Crisis. Given that

there are no other big crypto players that seem interested or those who have the financial muscle equivalent to that of Binance, it seems unlikely for some other player to rescue FTX from bankruptcy. The falling apart of the deal also puts the funds of all the depositors on the platform at risk as well as those who invested in FTX. This was seen by the recent announcement made by Sequoia, which marked its entire exposure to FTX down to zero. Other investors, such as the likes of BlackRock, Tiger Global, and the Ontario Teachers' Pension Plan, are also expected to see erosion of their entire investments in FTX. Michael Novogratz, the CEO of crypto-focused financial services firm Galaxy Digital (GLXY), has also said that he does not think that the firm will be able to recover the \$77mm exposure linked to troubled crypto exchange FTX. Crypto-exposed banks such as Silvergate and Signature also saw sharp selling pressure, falling 32.9% and 10% respectively. It is known that FTX has had ties with Silvergate in the past and also uses the Silvergate Exchange Network (SEN) for its transactions. However, the type and extent of exposure that Silvergate faces to FTX is still unknown. In a recent press release by Silvergate Bank, the company reaffirmed that they had ample liquidity as well as access to funds from Federal Home Loan Bank and the Federal Reserve Bank, if needed.

The intensity with which the events unfolded this week shine the light on the need to have guardrails set on the cryptocurrency space with the help of comprehensive regulatory framework. With the implosions of Terra/Luna ecosystem and hedge fund Three Arrows Capital a few months ago, now followed by this, we see the need for regulatory guardrails and protections to be established. SEC Chair Gary Gensler recently stated that certain players in the cryptocurrency space use the combination of lack of disclosure, customer money, and too much leverage, along with investing and trading on this leverage, eventually leading to large losses for investors. According to Bloomberg, the Securities and Exchange Commission and the Commodity Futures Trading Commission have made inquiries in regards to the liquidity crisis at FTX. On Thursday, a White House spokesperson also stated that the current events underscore the concerns and highlights why prudent regulation of cryptocurrencies is needed.

Similarly, there needs to be a greater level of auditing and transparency at an exchange level as well as at the level of stablecoins. Steps need to be taken to create a framework for companies to be completely transparent about their balance sheets, safeguard the user's assets, and maintain proper risk management checks in place. This week, Binance CEO Changpeng Zhao urged industry players to provide "proof-of-reserves", which he believes would enhance transparency in the system. A PoR (PoR) is an independent audit conducted by a third party which seeks to ensure that a custodian holds the assets it claims to on behalf of its clients. The move by Binance was followed by many exchanges following suit and separately issuing statements that they would begin publish their PoR certificates to increase transparency.

At the same time, it seems that another key reason for the downfall of FTX was the amount of leverage that it had on its assets. Given the volatility present in cryptocurrency assets, exchanges need to reduce the leverage they are exposed to. For example, in the Coinbase model, the exchange does not lend or take any action with the consumer's assets, meaning that Coinbase holds customer's assets 1:1 and the funds are always available to the customers. This model stops the exchange from ever facing a bank run due to lack of liquidity. So far, Sam Bankman-Fried has stated that FTX.US will remain unscathed from the entire situation, given that it holds all of its customer assets, making it completely liquid.

In order to maintain financial stability in the cryptocurrency space, it is also essential to do a similar level of audit for the reserves of stablecoins. In the current scenario, the two biggest stablecoins USDC and USDT, fortunately, did not have any significant exposure to FTX and FTT. Tether CTO Paolo Ardoino has clarified that the stablecoin has no exposure to both FTX and Alameda. Similarly, Circle CEO Jeremy Allaire clarified this week that Circle had never given loans to FTX or Alameda and has also never received FTT as collateral. Allaire added that both Circle and FTX hold only a small portion of equity in each other.

In recent months, Alameda Co-CEO Sam Trabucco and FTX President Brett Harrison both stepped down from their roles. There are lot of questions that remain to be answered in the coming weeks, such as whether the customers and investors will be able to get their money back as well as how much the fallout from FTX and Alameda would affect other players in the space. With the domino effect that was seen after the implosions of Terra/Luna and Three Arrows Capital, the likelihood of the collapse of FTX spreading to many other players in the industry in the coming weeks is very high. There is a silver lining to the sudden and unexpected collapse at FTX. While regulators and politicians agree that a regulatory framework for crypto needs to be established, given the widely publicized collapse of FTX, we believe this could dramatically accelerate the timeline in which new regulations are ushered in. To this end, we view the establishment of a regulatory framework as the key catalyst to not only drive a massive ramp in institutional adoption of crypto but a necessary catalyst to bring the power of blockchain technology to the masses. We would also point out that while the news of the collapse of FTX is empowering crypto skeptics at the moment, all of the recent collapses in the crypto ecosystem have been from centralized players and not from decentralized protocols.

Spotlight on FTX Ecosystem

FTX Exchange Deals in Sophisticated Crypto Derivative Products

FTX was the world's second-largest cryptocurrency exchange and largely specializes in institutional grade crypto derivatives and leveraged products. It was founded in 2019 by Sam Bankman-Fried (who earlier worked as an ETF trader at Jane Street) and Gary Wang (who earlier worked as a Software Engineer at Google). FTX has a separate platform for the US called FTX.US which has limited offerings because of regulatory restrictions on retail derivative trading.

The key products offered by FTX include:

- **Futures:** Traders on FTX can enter in quarterly and perpetual futures for over 250 pairs of cryptocurrencies with margins of up to 101x. To open and maintain long or short positions on these trades, traders are required to post margins in stablecoins like USDC or USDT.
- **Leveraged Tokens:** FTX's leveraged tokens are ERC20 compatible tokens which allow users to engage in leveraged positions without needing to deal with complexities of full margin trading i.e. more like a spot trading. For example, using a 3x short Bitcoin leveraged token, users can short Bitcoin with a leverage of 3 times i.e. if Bitcoin falls 10% from the time of purchase this token will gain 30%.
- **MOVE:** FTX offers a play on the daily, weekly and quarterly volatility of cryptocurrencies through its MOVE product. It allows users to get exposed to how the price of the cryptocurrency moves from a specific point, irrespective of the direction. Thus, the contract generates money over above a specific movement in price on upward as well as downward movements.
- **Spot:** FTX offers trading in over 300 currency pairs through its spot market including exposure to leading cryptocurrencies like Bitcoin, Ethereum, etc.
- **Prediction market:** FTX also allows users to profit from outcomes of future events through its prediction market. For example, the TRUMP2024 future contract expires to \$1 if Donald Trump wins 2024 US residential election and expire to \$0 otherwise.

As an exchange, FTX's primary role is to connect buyers and sellers of crypto products and to charge commissions on facilitating these transactions, however FTX also indulges in providing loans using customer deposited assets and earn interest in these loans. Unlike Coinbase, FTX is not listed hence information about such exposures is not publicly available.

During its last funding round, FTX was valued at \$32 billion and its major investors include Alameda Research (a trading firm owned by Sam Bankman-Fried), OTHP, Temasek, BlackRock, Coinbase Ventures and Sequoia Capital. As of 2022, the platform has over a million registered members, and the daily trading volume has reached billions of dollars. On November 8th, FTX stopped the withdrawals of all customer funds after its native token started plummeting sharply post a tweet from Binance CEO asserting to liquidate their large holdings of FTT token.

FTT Tokens are Not Backed by Any Assets but Derive Utility from Promotional Activities on FTX Ecosystem

Launched in 2019, FTT is a native cryptocurrency token of the FTX Exchange. It has a variety of use cases inside the FTX ecosystem just like other exchange tokens like Binance's BNB token and Huobi's HT token. FTT is based on the Ethereum's ERC20 standards and does not have its own blockchain. The FTT token is not available in the US and US residents can't transact through FTT tokens. While the FTT tokens are not backed by any tangible assets, it derives its value from its utility on the FTX platform as clients can use it to receive discounts on the FTX exchange and to receive a share of fees earned by FTX. It derives its utility from:

- **Discounted trading fees:** Traders on FTX can receive a discount of 3-60% based on the amount of FTT they hold. A trader with more than \$5 million worth of FTT holding can receive a 60% discount on trading fees. Similarly, they can receive up to 0.02% discount on the FTX's OTC platform too.
- **Token burns:** A total of 350 million FTT tokens were minted at inception and its supply over time was reduced by burning FTT tokens, thus leading to upward pressure on its price. FTX buys back FTT worth 33% of the fees generated on FTX markets and 5% of the fees earned from other uses of the FTX platform which it then burn on a weekly basis. It has stated to continue doing so until 50% of the FTT tokens are burned.
- **Socialized gains:** FTX has established an insurance funds that protects the exchange and the traders losses during extreme market volatility. FTT holders benefit from surplus in this insurance fund as 10% of the net additions to this backstop liquidity fund ("socialized gains") are used to buyback and burn FTT tokens. Thus, an extended bull market can trigger increased buybacks of FTT tokens.

Apart from the above mentioned use cases, FTT can also be used as collateral on the FTX exchange against futures positions.

Alameda Research is a Proprietary Crypto Trading Firm With Large Exposure to FTT and Linkages with FTX

Founded in 2017 by Sam Bankman-Fried (SBF), Alameda is a sister company of FTX and is involved in proprietary trading of digital assets. Recently, a crypto news agency published the balance sheet of Alameda and claimed that as of 2Q22 it has \$14.6 billion in total assets of which the largest asset is \$3.7 billion worth of unlocked FTT tokens and the third largest asset is \$2.6 billion of FTT collateral. Other assets include, \$3.4 billion of crypto held, \$2 billion in equity investments, and \$333 million in Solana. On the liabilities side, it has \$7.4 billion of loans and \$292 million of locked FTT tokens.

Since, the price of FTT has fell more than 80% since June-end, it's evident that Alameda is now sitting on large losses. Furthermore, FTX is believed to be exposed to credit risks on Alameda Research, despite SBF earlier convincing the market that the two entities have been operating at arm's length. As per media reports, it is believed that Alameda has used its FTT holdings as collateral to seek loans from FTX which has in turn used client funds to give out loans to Alameda.

FTT Backed Loans Exposed FTX to Wrong Way Risks

While the basic business model of exchanges to connect buyers and sellers, and earn a commission in between has limited credit risk, some of the exchanges do indulge in

lucrative and higher margin services like providing asset backed loans to earn interest income. In this context, Coinbase recently put a statement stating that they do not lend any of their customer assets unless specifically instructed, while Binance stated that they never used their native token BNB as collateral for loans. On the other hand, in the traditional finance world, brokers are required to keep clients funds segregated from the assets of the company.

However, FTX stood out in this risk management practice. As per WSJ reports, the crypto exchange FTX has loaned out more than half of its client assets (around ~\$10 billion) to Alameda. Given Alameda's balance sheet is majorly invested in FTT, these loans by FTX could likely be collateralized by FTT tokens which derive their value from buybacks led by FTX. This loan arrangement has the potential to implode all the parties involved.

Consider the scenario in which people started withdrawing funds from FTX believing that the financial health of FTX could deteriorate than the value of FTT will also decline as it is linked to buybacks from FTX. Hand in hand, the financial health of FTX also deteriorates further as the collateral on loans it has given out is also declining and the credit risks it is facing is rising. Thus, this has led to a vicious circle which hasn't ended well for all the parties involved.

Key Developments in the Week

Crypto Adoption/Offerings by Financial Services Companies

FTX (11/6)

Binance CEO Changpeng “CZ” Zhao announced that it liquidated its exposure to **FTX** token FTT, with the price of the token having fallen by 90% over the past week. The plummet in price comes after a CoinDesk report stated that a notable portion of Alameda’s balance sheet (FTX’s sister company) was made up of FTT. After this report was released, investors followed CZ on a withdrawal run on their positions in FTT due to liquidity concerns. CZ tweeted his exit was due to “post-exit risk management” after the collapse of LUNA.

Binance (11/9)

Following a withdrawal run of FTX’s token FTT, crypto exchanges—led by **Binance** CEO Changpeng “CZ” Zhao—are scrambling to publish their fund reserves through a “Proof-of-Reserve” (PoR) system. Exchanges have quickly issued separate statements that they would publish their PoR Merkle tree reserve certificate (a data structure where exchanges store each user account’s value of assets) and either removed their exposure or expressed they had limited exposure to FTT.

Binance (11/9)

A day after announcing a potential takeover of another crypto exchange in FTX, **Binance** has walked away from the deal due to “reports regarding mishandled customer funds and alleged U.S. agency investigations” as stated in a tweet by the company. Though the competitive landscape weakens with the crippling of FTX, Binance CEO Changpeng Zhao tweeted that FTX “going down is not good for anyone in the industry.”

Coinbase (11/9)

Crypto exchange **Coinbase (COIN)** and stablecoins issuers Tether and Circle (which issue USDT and USDC, respectively) released public statements regarding their exposure to FTX and Alameda Research. Coinbase has no material exposure to FTX’s token FTT or FTX’s sister company Alameda Research. USDT has no exposure to FTT, but minimal exposure to Alameda. USDC has never given loans to FTX or Alameda and has never received FTT as collateral, but it does have a small portion of equity in FTX.

Source: Coindesk, Coinbase is covered by Kenneth B. Worthington at J.P. Morgan, Santander is covered by Sofie Peterzens at J.P. Morgan, Standard Chartered is covered by Raul Sinha at J.P. Morgan

Crypto Adoption/Offerings by Financial Services Companies

Coinbase (11/4)

Crypto exchange **Coinbase (COIN)** CEO Brian Armstrong states that he expects USDC to eventually surpass Tether to become the largest stablecoin in the world and be the de facto central bank digital currency (CBDC) in the United States. The United States has not started a pilot program for CBDCs, but has expressed interest in researching CBDCs.

UBS (11/4)

Swiss bank **UBS** has announced it has launched the world's first digital bond that is publicly traded and can be settled on both blockchain-based and traditional exchanges. The bond will be issued on the blockchain-based platform of SIX Digital Exchange (SDX), while being dual listed and traded on SDX and SIX Swiss Exchange (SIX), and it will have the same structure, legal status and rating as a regular bond. UBS believes that this move will make issuing bonds faster, more efficient, and simpler.

Goldman Sachs (11/3)

Investment Bank **Goldman Sachs (GS)** has partnered with MSCI and Coin Metrics to launch a new digital asset classification system that better tracks coins and tokens to help investors and industry participants monitor the space. The system will allow market participants to track trends in different segments of crypto, including smart contract platforms and decentralized finance (DeFi) protocols, and provide them with the feature to screen various assets.

Standard Chartered (11/3)

Multinational bank **Standard Chartered** has invested an undisclosed amount in Partior, a blockchain-based network that is partially founded by DBS Bank and Singapore government-owned investment fund Temasek. Partior was developed with the objective of creating wholesale payment rails and harnessing blockchain and smart contracts to allow instantaneous settlement between financial institutions.

Source: Coindesk, Coinbase is covered by Kenneth B. Worthington, UBS & Goldman Sachs are covered by Kian Abouhossein at J.P. Morgan

Crypto Adoption/Offerings by Financial Services Companies

Coinbase (11/3)

Crypto exchange **Coinbase (COIN)** cut its third quarter losses by 50% q/q from \$1.1B in 2Q22 to \$545mm in 3Q22, with transaction revenues decreasing by 44% from Q2 to \$366mm, led by a decline in trading volume. Firms' forward guidance showed optimism in its own platform but expressed fears that headwinds from the macro environment will persist (and potentially intensify) through 2023.

Ethereum (11/9)

Ethereum (ETH) CEO Vitalik Buterin has created an updated roadmap in which the Ethereum team focuses on improving the censorship of transactions and an exploitative process called maximal extractable value (MEV). This update is called the "Scourge," which includes the protocol-level proposer-builder separation (PBS) initiative. The PBS separates the processes of compiling transactions into blocks (building) and pitching those blocks out to other validators (proposing), showing how important centralization has become for Ethereum (ETH).

Neon Labs (11/7)

Software startup **Neon Labs** will open its gateway for Ethereum-based crypto projects on the competing Solana ecosystem on December 12 through Neon EVM, an Ethereum based smart contract layer that supports the Ethereum Virtual Machine (EVM). CEO Marina Guryeva wants to go on "each and every new layer 1 blockchain." The Solana blockchain currently has Ethereum decentralized finance (DeFi) heavy-hitters like Aave and Curve preparing to launch on Neon EVM once its mainnet goes live.

Santander UK (11/3)

The UK unit of banking giant Banco Santander, **Santander UK**, has set a \$1,000 limit on individual transactions and \$3,000 limit on total monthly transactions with crypto exchanges, which will take effect beginning November 15. These restrictions exist for money going out to crypto exchanges and do not apply to money coming in from crypto exchanges. The bank looks to follow their transaction limit with tighter regulations for the cryptocurrency space in the future.

Source: Coindesk, Coinbase is covered by Kenneth B. Worthington

Crypto Adoption by Non-Financial Services Companies/Entities

Helium Mobile (11/5)

Helium Mobile, a crypto-powered cellular service under Nova Labs, will provide SIM cards and a 30-day free trial to customers of Saga phones (Solana Labs' flagship Android device that is tightly integrated to its blockchain). Unlike hard-wired Internet or mobile data services, the Helium Network (Helium Mobile's network) will use a decentralized grid of wireless hotspots powered by cryptocurrency and provides rewards for its users.

Source: CoinDesk

Iris Energy (11/7)

Bitcoin mining firm **Iris Energy (IREN)** is facing default claims on \$103mm of equipment loans—held in two separate special purpose vehicles (SPVs)—from its lender due to IREN's failure to engage in "good faith restructuring discussions." If an agreement for restructuring the debt is unable to be reached, IREN will not be able to provide further financing support to its SPVs and have to foreclose its assets.



Key Regulatory Updates on Crypto



Federal Reserve (11/4)

In its latest Financial Stability Report, the **Federal Reserve** has stated that while digital assets can bring innovation to the traditional finance (TradFi) ecosystem, they pose challenges to financial stability. In its report, the Federal Reserve also mentioned that over the past few months, there have been vulnerabilities similar to the TradFi ecosystem in runs, excessive leverage, operational risk, opacity and fraud, and it is necessary to develop regulation.

European Union (11/4)

European Union (EU) lawmakers delay the vote on the Markets in Crypto Assets (MiCA) bill until February, pushing back the landmark regulation for crypto companies. The postponement comes after the bill was deemed too complex and lengthy to vote on by December. If passed, some of the bills' effects will include setting reserve requirements for stablecoins and requiring crypto companies to seek authorizations from national regulators.

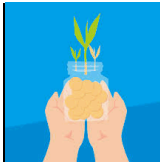
Canada (11/3)

Canada's federal government announced it is launching a consultation on "cryptocurrencies, stablecoins and central bank digital currencies (CBDC)," as per a fiscal update published Thursday. With the rise of stakeholders in digital assets in Canada, the government's consultation service will cover trends in the digitalization of money, including the necessity of a Canadian CBDC, and will look to maintain financial sector stability and security.

Sources: CoinDesk, Federal Reserve

Venture Capital Corner

VC Corner: Blockchain and Crypto VC Investments

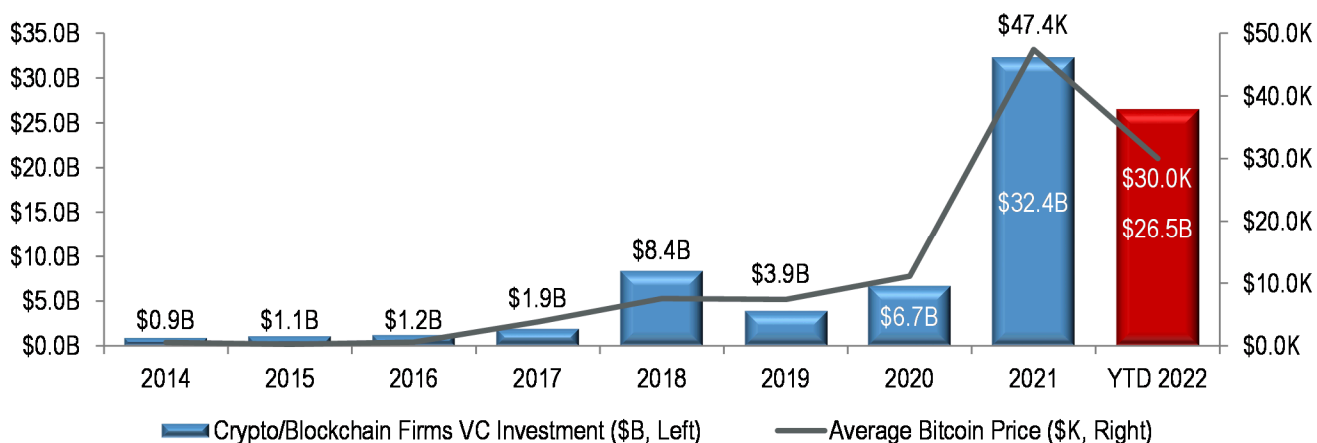
 VC Corner: Blockchain/Crypto VC Investments		
Alameda Research (11/9)	Ramp (11/9)	
<p>Crypto fund Alameda Research slumped 50%+ since the start of October, going from holding \$500mm to \$222mm in cryptocurrencies over 56 Ethereum addresses. The fund has come in recent scrutiny over its balance sheet being heavily populated with sister company FTX's token FTT, ringing alarms as their trading funds rests on a coin invented by its sister company and not an independent asset (i.e., fiat currency or another crypto).</p>	<p>Crypto payments firm Ramp raised \$70mm in a Series B that will be used for product building and expansion into Asia and Latin America. Currently, the company conducts majority of its business in Europe and UK, and its core product is a software development kit for on- and off-ramp payment features where users can buy cryptocurrencies via debt and credit cards, bank transfer and Apple Pay. The fundraising was an up round, which increased valuation by 50%+ according to the Block.</p>	

Sources: CoinDesk, The Block

Global VC Investment into Crypto/Blockchain Startups

Following a record 2021 that saw \$32.4B of VC investment globally into crypto/blockchain startups, YTD 2022 continues the trend with \$26.5B of VC investment as of November 10. The \$26.5B figure already exceeds most of the prior full year totals and has far surpassed the full year 2020 total of \$6.7B. A few of the largest VC deals so far in 2022 include brokerage firm Trade Republic raising \$1.15B at a \$5.3B valuation, crypto payments platform MoonPay raising \$550mm at a \$3.4B valuation, infrastructure firm Fireblocks raising \$550mm at an \$8B valuation, FTX raising \$500mm at a \$32.5B valuation, ConsenSys raising \$450mm at an \$8.5B valuation, and Bored Ape Yacht Club raising \$450mm at a \$4B valuation.

Figure 1: Global VC Investment into Crypto/Blockchain Firms and Average Bitcoin Price



Source: PitchBook and Bloomberg Finance L.P. YTD 2022 as of 11/10/2022.

Stablecoins

Stablecoins are cryptocurrencies that are pegged to a “stable” asset such as the US dollar to minimize the volatility of the price of the stablecoin. This compares to Bitcoin, which is not backed by any assets held in reserves and tends to see price volatility.

Key New Developments in the Stablecoin Space

European Union (11/3)

European Union (EU) commissioner Paolo Gentiloni states that central bank digital currencies (CBDCs) may require a network of international regulatory agreements to stop state-backed money from infringing on other countries’ sovereignty. The International Monetary Fund (IMF) has raised the possibility of an international CBDC platform that could ease cross-border payments, but the process is now beset by delays and costs.

Circle (11/3)

Circle Internet Financial has begun moving reserves for its USDC stablecoin into a dedicated fund—called the Circle Reserve Fund—set up by BlackRock and registered with the US Securities Exchange Commission (SEC). Circle hopes this fund will help them get into the Federal Reserve’s reverse-repo program to increase yields for their investors. All of the company’s short-term Treasury assets and ~80% of its cash reserve will be phased into the fund, with ~20% remaining in partner banks to allow easily redeemable USDC around the clock.

Federal Reserve Bank of NY (11/4)

Foreign exchange transactions could drop from a 2-day process to less than 10 seconds if central bank digital currencies (CBDCs) were involved, according to the first phase of Project Cedar conducted by the **Federal Reserve Bank of New York**. In future tests, participants will run different networks to test for cross-chain compatibility. The results of this experiment raises the question of whether the Federal Reserve should issue a CBDC.

Circle (11/7)

Stablecoin issuer **Circle** has announced that the Solana blockchain will add support in 2023 for a regulated and reserve-backed stablecoin pegged to the euro called Euro Coin (EUROC). EUROC is backed by a combination of cash and European government debt, but it only has \$80mm in market cap (well short of USDC’s market cap of \$42B). The shift to Solana is in spite of the desire to improve on-chain foreign-exchange functionality.

Source: CoinDesk.

Abracadabra (11/9)

Decentralized platform Abracadabra.money's dollar-pegged stablecoin Magic Internet Money (MIM) dropped as low as \$0.95 during the early Asian hours due to the price drop in FTX's token FTT.

MIM's largest collateral backing is FTT, which accounts for 33% of the total locked in Abracadabra's tokens ("cauldrons"). Although this news doesn't bode well for Abracadabra, MIM has recovered back to its dollar-pegged amount.

Source: Coindesk

Web 3.0

Web 3.0, or the third iteration of the World Wide Web, will provide a framework for the next generation of internet service providers and applications based around decentralized blockchain technology. The term was coined by Ethereum co-founder Gavin Wood in 2014 and has been adopted by crypto enthusiasts. Because of its support for blockchain-based technologies, Web 3.0 will also play a central role in the development of the Metaverse, augmented reality, and virtual reality worlds. Click [here](#) to read our primer on Web 3.0.

Key New Developments in the Web 3.0 Space

MultiversX (11/4)

Blockchain start-up Elrond has rebranded itself as **MultiversX** to reflect its pivot to metaverse exploration. The startup will look to build on its prior work as a layer 1 blockchain with a focus on scalability to advance Web3 technology in the form of metaverse-related products. It has introduced 3 new products: xPortal (home of one's avatar and finance related products), xFabric (multiple features and use cases for any creative brand or company) and xWorlds (combination of xFabric and xPortal experiences).

NTT Docomo (11/8)

Japan's largest mobile network **NTT Docomo** pledged to invest up to 600B yen (\$4B USD) into Web3 infrastructure. It will collaborate with public blockchain developer Astar Foundation and Accenture to speed up Web3 adoption globally and put Japan in the forefront. Docomo plans to launch its Web3 services after developing a technology infrastructure that can offer services for cryptocurrency issuance, exchange and electronic wallets.

Sources: CoinDesk, MarTech Series, Asia Nikkei

For our **DeFi Deep Dive Report**, click [here](#).

DeFi (Decentralized Finance)

Decentralized finance or DeFi is an umbrella term for peer-to-peer financial services such as borrowing, lending, and trading, to name a few. DeFi applications run on

blockchains and eliminate the need for a traditional financial middleman, such as a bank, a broker, or an exchange.

Click [here](#) to read our primer on Web 3.0.

Key New Developments in the DeFi Space

BITDAO (11/8)

Decentralized autonomous organization (DAO) **BITDAO** exchanged 100mm BIT (BITDAO tokens) tokens for 3.36mm FTT tokens (FTX's tokens). The token swap deal required Alameda to hold tokens for at least 3 years, and BITDAO recalled them amid the liquidity crisis Alameda is facing. Alameda promptly responded and returned the 100mm BIT tokens to BITDAO, showing they honored the initial holding agreement.

Source: CoinDesk.

Amber Group (11/8)

Digital asset companies **Amber Group**, Auros, LedgerPrime, Folkvang and Nibbio recently received a "warning" label on their Clearpool credit pools because their utilization reached 99% of the maximum amount of credit available for them on the protocol. The sudden warning labels came after investors withdrew large sums of money from the credit pools due to the FTX liquidity crisis. All the firms with warning signs paid off either all or part of their debt, putting them back in good standing.

NFTs (Non-Fungible Tokens)

For an introduction on non-fungible tokens (NFTs), click [here](#).

NFTs or non-fungible tokens are tokens used to represent ownership of unique items. These items can include things like collectibles, and even real estate, but are most commonly used to represent ownership of digital art. NFTs only have one official owner and are secured by the Ethereum blockchain.

Key New Developments in the NFT Space

Bank of Korea (11/7)

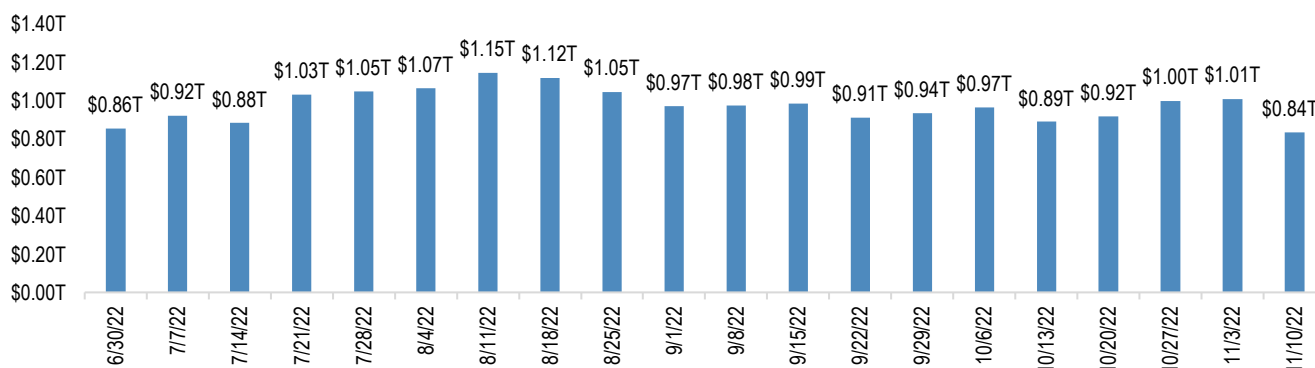
The **Bank of Korea (BoK)** has developed and tested a program for purchasing non-fungible tokens (NFTs) with central bank digital currencies (CBDCs) and aiding cross-border remittances by linking CBDCs from other countries. The experiment found CBDCs could process up to 2,000 transactions per second, but that distributed ledger technologies would not be able to have the scalability needed for a retail CBDC.

Source: CoinDesk

Global Crypto Market Size and Landscape

The size of the global crypto market decreased 17.2% in the past week. Now, the global crypto sector’s market cap stands at \$0.84T as of 11/10/2022.

Figure 2: Market Cap of the Global Crypto Market (in \$ Trillions)



Source: CoinMarketCap. Note: Data is as of 11/10/2022.

Currently, the top 5 cryptocurrencies by market cap are: (1) Bitcoin, (2) Ether, (3) Tether, (4) Binance Coin, and (5) USD Coin. Below we give brief explanations of each of these major cryptocurrencies:

Figure 3: Top 5 Cryptocurrencies by Market Cap and Brief Explanations

Bitcoin (BTC)	Launched in January 2009, Bitcoin is the first decentralized cryptocurrency, which was created by a person, or group of people with an alias Satoshi Nakamoto. According to Nakamoto in the whitepaper, Bitcoin was made to allow “online payments to be sent directly from one party to another without going through a financial institution.”
Ether (ETH)	Ethereum is a decentralized open-source blockchain-powered computing platform that features its own cryptocurrency, Ether (ETH). Ethereum serves as a platform for many other cryptocurrencies while featuring smart contract functionality. Ethereum is the most actively used blockchain platform.
Tether (USDT)	Tether (USDT) is a widely used stablecoin whose value is pegged to the U.S. dollar. The main objective of stable coins, such as Tether, is to provide stability to the valuations vs. high fluctuations observed in the prices of cryptocurrencies such as Bitcoin, Ether, and Dogecoin
Binance Coin (BNB)	Launched in 2017, Binance is the world’s largest cryptocurrency exchange. Binance has also launched a large ecosystem of functionalities for its users, including the Binance Chain, Academy, Trusted Wallet and Research projects, which all leverage the blockchain technology to bring new-age finance to the world. Binance Coin is a key part of the successful functioning of many of the Binance sub-projects.
USD Coin (USDC)	USD Coin is a stablecoin that is pegged to the U.S. dollar in a 1:1 ratio. The coin was designed to support digital transactions and to be accepted by as many wallets, exchanges, services provides and decentralized applications as possible. Every unit of cryptocurrency is backed up by \$1 held in reserves of cash and short-term U.S. Treasury bonds as claimed by USDC’s founding organization The Centre consortium.

Source: CoinMarketCap.

Figure 4: Top 100 Cryptocurrencies by Market Cap

Rank	Cryptocurrency Name	Market Cap	Rank	Cryptocurrency Name	Market Cap
1	Bitcoin	\$320.1B	51	Gemini Dollar	\$0.8B
2	Ethereum	\$145.7B	52	TrueUSD	\$0.8B
3	Tether	\$69.4B	53	KuCoin Token	\$0.8B
4	BNB	\$44.7B	54	Maker	\$0.7B
5	USD Coin	\$42.9B	55	Bitcoin SV	\$0.7B
6	Binance USD	\$23.0B	56	USDD	\$0.7B
7	XRP	\$18.1B	57	BitDAO	\$0.7B
8	Cardano	\$12.0B	58	BitTorrent-New	\$0.7B
9	Dogecoin	\$11.1B	59	Axie Infinity	\$0.7B
10	Polygon	\$8.1B	60	Neutrino USD	\$0.6B
11	Polkadot	\$6.5B	61	IOTA	\$0.6B
12	Dai	\$5.9B	62	PancakeSwap	\$0.6B
13	Shiba Inu	\$5.4B	63	eCash	\$0.6B
14	TRON	\$5.2B	64	Zcash	\$0.6B
15	Solana	\$5.1B	65	Synthetix	\$0.6B
16	Avalanche	\$4.2B	66	PAX Gold	\$0.6B
17	Uniswap	\$4.2B	67	Aptos	\$0.5B
18	Wrapped Bitcoin	\$4.0B	68	Klaytn	\$0.5B
19	Litecoin	\$3.9B	69	Fantom	\$0.5B
20	UNUS SED LEO	\$3.7B	70	Neo	\$0.5B
21	Chainlink	\$3.3B	71	Trust Wallet Token	\$0.5B
22	Cosmos	\$3.2B	72	The Graph	\$0.4B
23	Ethereum Classic	\$2.9B	73	EthereumPoW	\$0.4B
24	Stellar	\$2.3B	74	Nexo	\$0.4B
25	Monero	\$2.3B	75	Mina	\$0.4B
26	Cronos	\$2.2B	76	Fei USD	\$0.4B
27	Algorand	\$2.1B	77	GateToken	\$0.4B
28	Bitcoin Cash	\$1.9B	78	BinaryX	\$0.4B
29	NEAR Protocol	\$1.8B	79	Dash	\$0.4B
30	Toncoin	\$1.7B	80	Basic Attention Token	\$0.4B
31	VeChain	\$1.5B	81	THORChain	\$0.4B
32	Quant	\$1.5B	82	Helium	\$0.4B
33	Filecoin	\$1.4B	83	FTX Token	\$0.4B
34	Flow	\$1.3B	84	Loopring	\$0.4B
35	Terra Classic	\$1.2B	85	Casper	\$0.4B
36	OKB	\$1.2B	86	Enjin Coin	\$0.3B
37	Hedera	\$1.1B	87	Osmosis	\$0.3B
38	Chiliz	\$1.1B	88	1inch Network	\$0.3B
39	Internet Computer	\$1.1B	89	Curve DAO Token	\$0.3B
40	MultiversX (Elrond)	\$1.0B	90	XDC Network	\$0.3B
41	ApeCoin	\$1.0B	91	ImmutableX	\$0.3B
42	Tezos	\$1.0B	92	Lido DAO	\$0.3B
43	Huobi Token	\$0.9B	93	Arweave	\$0.3B
44	Theta Network	\$0.9B	94	Zilliqa	\$0.3B
45	Pax Dollar	\$0.9B	95	Stacks	\$0.3B
46	The Sandbox	\$0.9B	96	Decred	\$0.3B
47	Aave	\$0.9B	97	Kava	\$0.3B
48	Decentraland	\$0.9B	98	NEM	\$0.3B
49	Chain	\$0.9B	99	Holo	\$0.3B
50	EOS	\$0.9B	100	Convex Finance	\$0.3B
Top 50 Market Cap		\$0.79T	Top 100 Market Cap		\$0.81T
			Total Crypto Market Cap		\$0.84T

Source: CoinMarketCap. Note: Data is as of 11/10/2022.

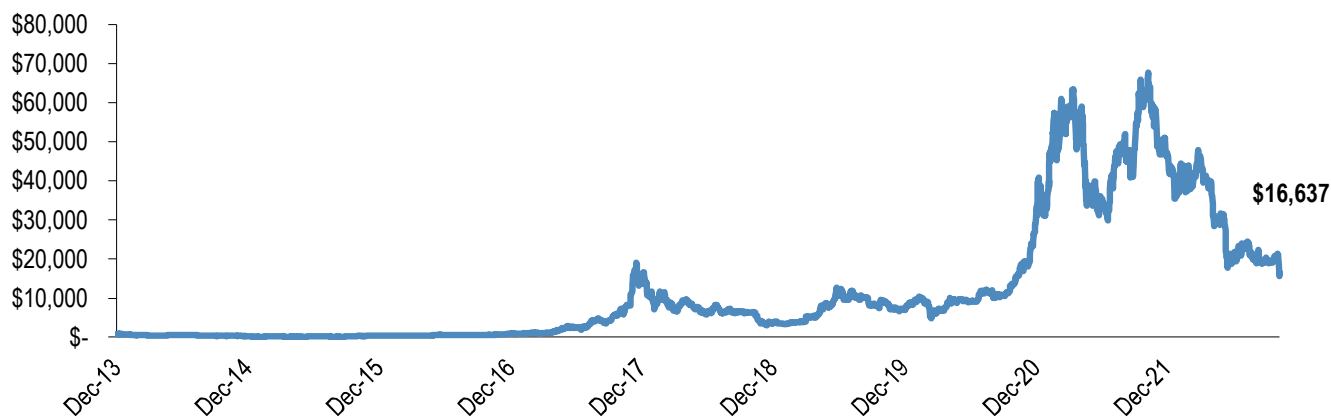
Cryptocurrencies and Index/Trust Prices

Table 2: Heat Map of Cryptocurrencies Prices

Cryptocurrencies	YTD	1 Week	1 Month	3 Month	6 Month	1 Year	2 Year	3 Year	4 Year	5 Year
Bitcoin	-65%	-20%	-15%	-33%	-45%	-75%	5%	85%	156%	146%
Ethereum	-68%	-24%	-9%	-39%	-41%	-74%	159%	552%	N/A	N/A
Bitcoin Cash	-78%	-18%	-15%	-34%	-57%	-86%	-63%	-64%	N/A	N/A
Ethereum Classic	-40%	-16%	-13%	-52%	1%	-62%	300%	352%	N/A	N/A
Litecoin	-64%	-15%	1%	-16%	-21%	-80%	-10%	-9%	N/A	N/A
Dogecoin	-49%	-33%	48%	25%	-5%	-68%	N/A	N/A	N/A	N/A
Uniswap	-70%	-22%	-8%	-38%	3%	N/A	N/A	N/A	N/A	N/A

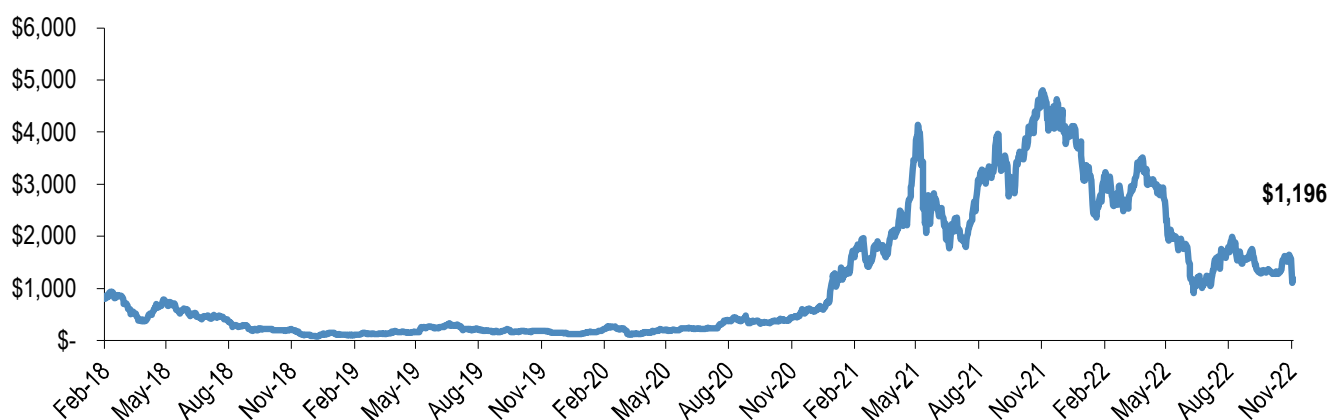
Source: Bloomberg Finance L.P. Note: Data is as of 11/10/2022.

Figure 5: Price of Bitcoin (BTC)



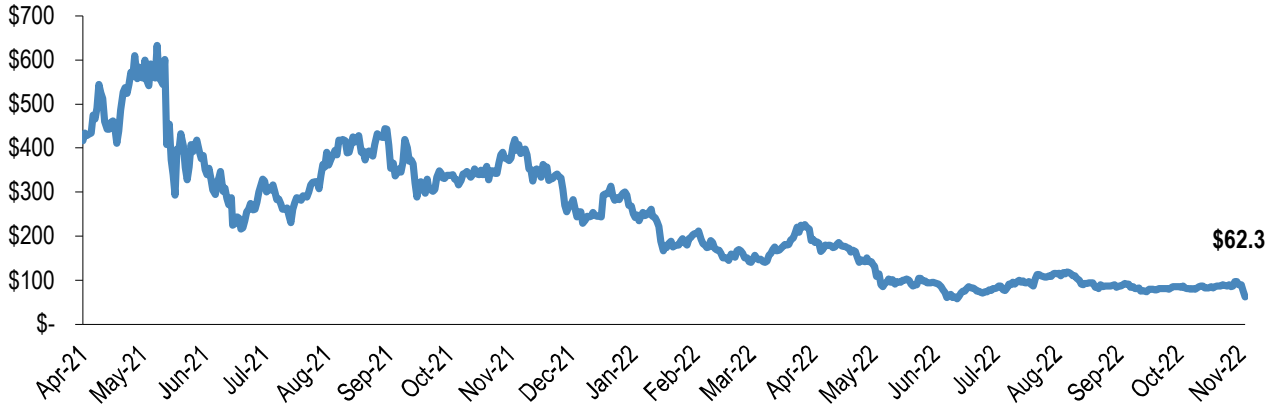
Source: Bloomberg Finance L.P. Note: Data is as of 11/10/2022.

Figure 6: Price of Ether (ETH)



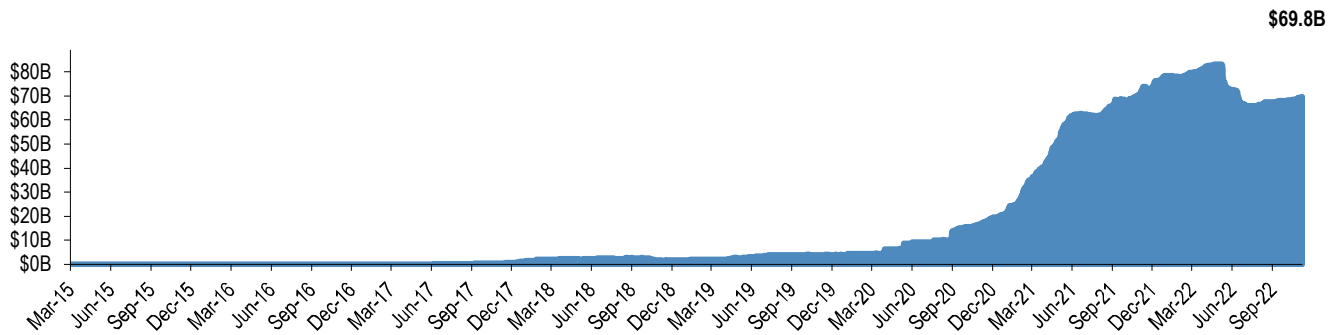
Source: Bloomberg Finance L.P. Note: Data is as of 11/10/2022.

Figure 7: Price of DeFi Pulse Index Token



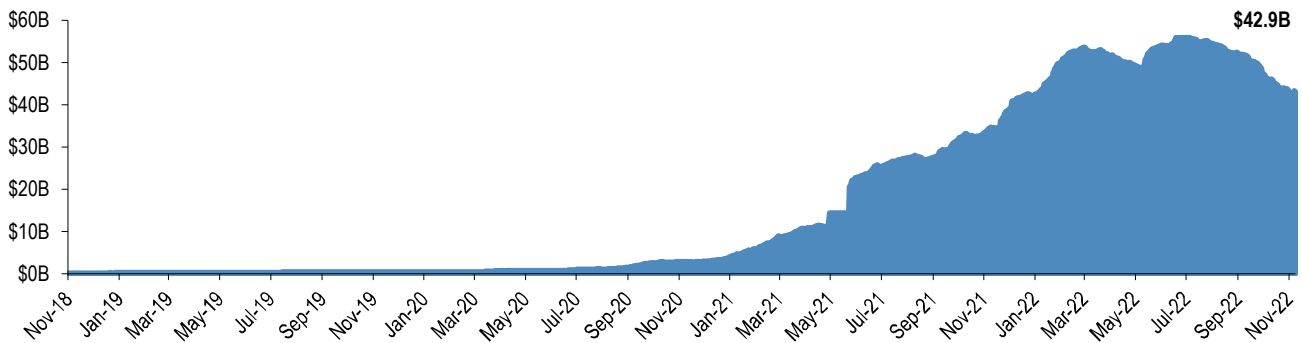
Source: Coinmarketcap.com. Note: Data is as of 11/9/2022. The DeFi Pulse Index is a capitalization-weighted index that tracks the performance of decentralized financial assets across the market.

Figure 8: Market Cap of Tether (USDT)



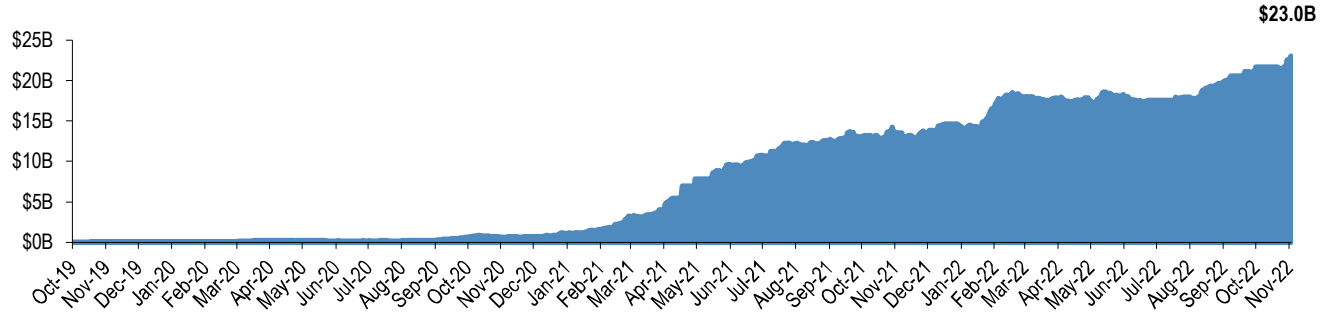
Source: CoinMarketCap. Note: Data is as of 11/9/2022.

Figure 9: Market Cap of USD Coin (USDC)



Source: CoinMarketCap. Note: Data is as of 11/9/2022.

Figure 10: Market Cap of Binance USD (BUSD)



Source: CoinMarketCap. Note: Data is as of 11/9/2022.

Cryptocurrencies Trading Volumes

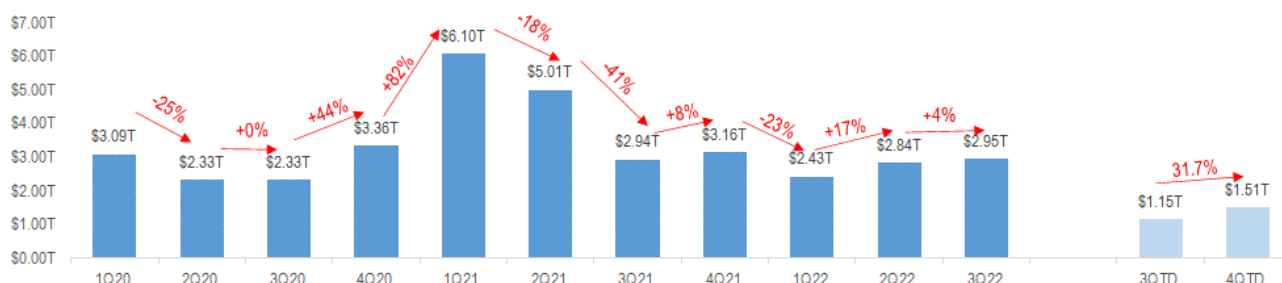
Bitcoin’s 7-day average daily volumes stand at \$65.1B, which compares to that of Ethereum at \$22.0B. Over the past week, Bitcoin’s trading volumes increased by 48.7% w/w, while Ethereum’s trading volumes increased by 13.6% w/w. Trading volumes of most of the major cryptocurrencies were up during the week.

Table 3: Cryptocurrencies Trading Volumes

	Last 7 Day Avg Daily Volume	1 Week Change	1-Month Change	6-Month Change	Y/Y Change	4Q22 QTD Avg Daily Volume	3Q22 Avg Daily Volume	2Q22 Avg Daily Volume
Bitcoin (BTC)	\$65.1B	48.7%	135.2%	25.0%	92.5%	\$37.7B	\$32.0B	\$31.2B
Ethereum (ETH)	\$22.0B	13.6%	147.8%	(30.6%)	25.3%	\$14.3B	\$17.2B	\$18.5B
Tether (USDT)	\$91.0B	41.3%	152.2%	(17.5%)	15.9%	\$52.4B	\$50.6B	\$61.6B
USD Coin (USDC)	\$5.2B	15.4%	57.0%	(46.1%)	16.3%	\$3.8B	\$6.1B	\$5.2B
Binance USD (BUSD)	\$11.6B	55.4%	110.4%	2.2%	67.4%	\$7.2B	\$6.7B	\$5.7B

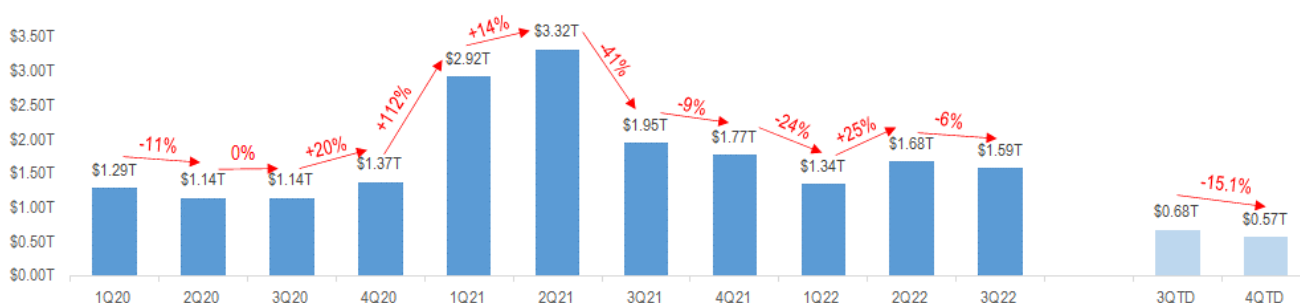
Source: CoinMarketCap. Note: Data is as of 11/9/2022.

Figure 11: Quarterly Trading Volume Trends for Bitcoin



Source: CoinMarketCap. Note: Data as of 11/9/2022.

Figure 12: Quarterly Trading Volume Trends for Ethereum



Source: CoinMarketCap. Note: Data as of 11/9/2022.

Fund Flows in Digital Asset Investment Products

The week-over-week net outflows from digital asset investment products (including crypto mutual funds, OTC trusts, and exchange-traded products) for the week ending 11/7 stood at \$15.6 million (vs. net inflows of \$6.1 million in prior week) largely driven by outflows from Proshares. During the week, Bitcoin saw net outflows of \$13.2 million (vs. net inflows of \$13.4 million in prior week) and Ethereum saw net inflows of \$2.7 million (vs. net outflows of \$2.1 million in prior week). Total AUM of digital asset investment funds increased 3.2% w/w to \$28.3 billion.

Figure 13: Net Fund Flows by Investment Product Provider (\$mm)

	W/W Flows	YTD Flows	AUM
Grayscale	N/A	\$5	\$18,913
CoinShares XBT	(\$1.9)	(\$409)	\$1,481
CoinShares Physical	\$1.1	\$266	\$417
21Shares	\$6.5	\$138	\$1,152
Proshares	(\$23.6)	\$300	\$758
Purpose	\$0.6	\$89	\$717
3iQ	(\$1.6)	(\$526)	\$601
CI Investments	\$0.3	(\$33)	\$558
Other	\$3.0	\$642	\$3,672
Total	(\$15.6)	\$472	\$28,269

Source: Bloomberg Finance L.P. and CoinShares. Note: Data is as of 11/7/2022.

Figure 14: Net Fund Flows by Assets (\$mm)

	W/W Flows	YTD Flows	AUM
Bitcoin	(\$13.2)	\$297.7	\$17,479
Ethereum	\$2.7	(\$370.6)	\$7,341
Multi-asset	\$0.0	\$205.1	\$2,388
Binance	NA	(\$21.6)	\$370
Short Bitcoin	(\$7.1)	\$96.1	\$127
Solana	\$0.2	\$124.3	\$95
Litecoin	NA	\$2.9	\$113
Tron	NA	(\$3.4)	\$62
Polygon	\$0.2	\$1.7	\$34
XRP	\$1.1	\$11.0	\$48
Other	\$0.5	\$129	\$212
Total	(\$15.6)	\$472	\$28,269

Source: Bloomberg Finance L.P. and CoinShares. Note: Data is as of 11/7/2022.

Bitcoin Flows and Liquidity

Below is a series of flows/technical analysis charts for Bitcoin that our JPM Global Market Strategy analyst, Nikolaos Panigirtzoglou, publishes in his weekly publication Flows and Liquidity (click [here](#) for link to the latest publication).

Chart A36: Open interest in CME Bitcoin futures contracts

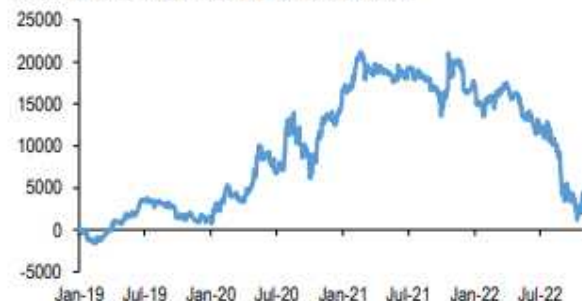
\$mn. Last obs. for 07 Nov 2022.



Source: CME, J.P. Morgan.

Chart A37: Our Bitcoin position proxy based on open interest in CME Bitcoin futures contracts

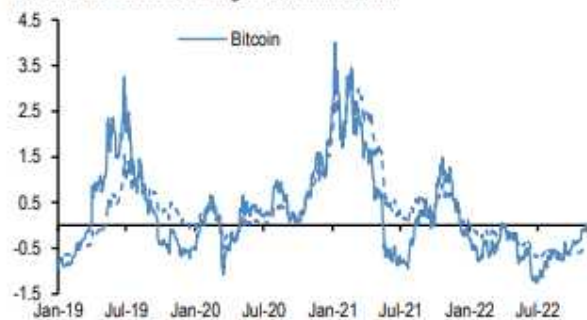
In number of contracts. Last obs. for 07 Nov 2022.



Source: J.P. Morgan

Chart A38: Momentum signals for Bitcoin

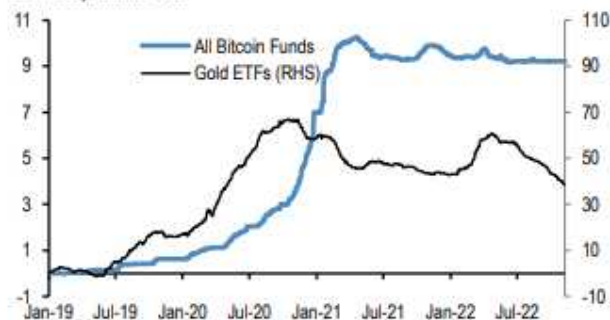
z-score of the momentum signal in our Trend Following Strategy framework shown in Tables A5 and A6 in the Appendix. Solid lines are for the shorter term and dotted lines for longer-term momentum.



Source: Bloomberg Finance L.P., J.P. Morgan.

Chart A39: Cumulative Flows in all Bitcoin funds and Gold ETF holdings

Both the y-axis in \$bn



Source: Bloomberg Finance L.P., J.P. Morgan.

Chart A40: Ratio of Bitcoin market price to production cost

Based on the cost of production approach following Hayes (2018).



Source: J.P. Morgan

Chart A41: Flow pace into publicly listed Bitcoin funds including Bitcoin ETFs

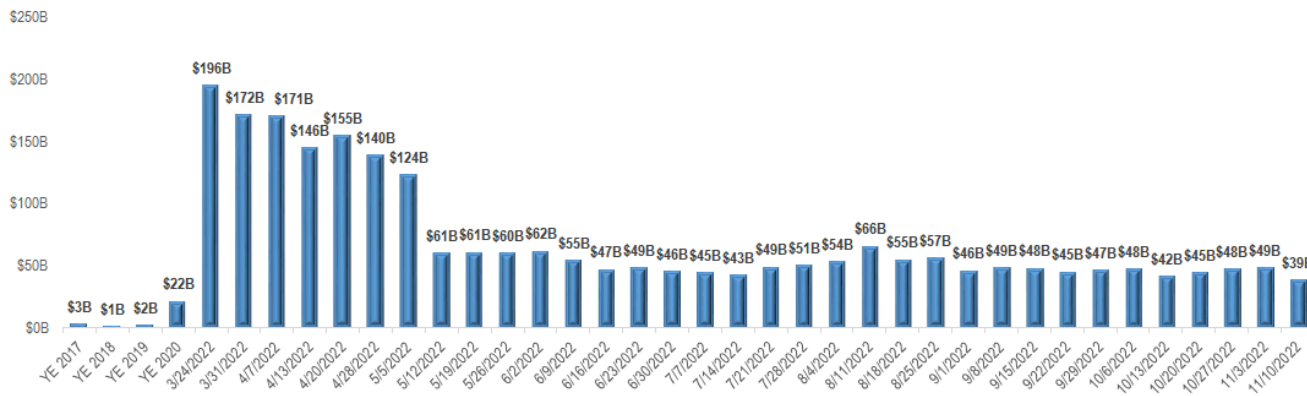
\$mm per week, 4-week rolling average flow



Source: Bloomberg Finance L.P., J.P. Morgan

DeFi Market Cap

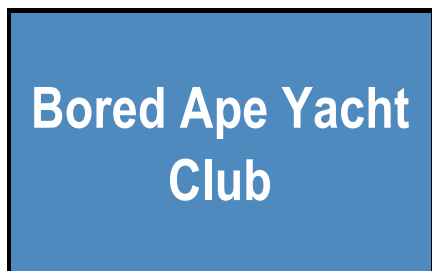
Figure 15: Decentralized Finance (DeFi) Market Cap (\$B), 2017-2022 YTD



Source: CoinMarketCap. Note: Data is as of 11/9/2022.

NFT Collections of the Week

7-day sale volume: \$11.0 million



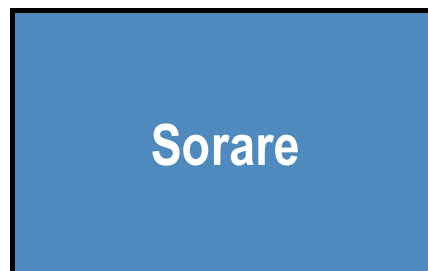
Bored Ape Yacht Club: Developed by Yuga Labs in April 2021, Bored Ape Yacht Club is a collection of 10,000 profile pictures of unique apes with randomly-generated traits and accessories. Ownership of an NFT gives its holder access to a Discord server, where they can meet other owners including celebrities and pro-athletes, and also unlocks additional NFT collectibles.

7-day sale volume: \$9.2 million



Art Gobblers: Created by Rick & Morty co-creator Justin Roiland and Web3 firm Paradigm, Art Gobblers "gobble" art, i.e., they eat the art that the artists of the project create and all the gobbled art belongs to a Gobbler on chain and it can be displayed on the Gobbler's "belly" gallery. They produce Goo tokens to make more blank pages to make more art.

7-day sale volume: \$8.0 million



Sorare: A global fantasy soccer game, Sorare allows users to buy, sell and trade digital cards for soccer players that they can manage in their team. The game is based on the Ethereum blockchain. Sorare has secured the rights for various top European teams, as well as for international leagues like MLS, Korean League and Japanese League.

Source: CryptoSlam and company reports. Note: Data is as of 11/10/2022.

Comp Sheet for Cryptocurrency-Related Companies

Ticker	Company	JPM Rating	Senior Analyst	Last Price	Market Cap (\$ Bil.)	P/E 2022E	P/E 2023E	Current Short Interest (% of o/s)
SI	Silvergate Capital Corporation	Overweight	Steven Alexopoulos	\$32.68	\$1.0	7.0	5.1	10.1%
SBNY	Signature Bank	Overweight	Steven Alexopoulos	\$140.94	\$8.9	6.8	6.7	2.6%
COIN	Coinbase Global	Neutral	Kenneth Worthington	\$50.92	\$11.6	N/A	N/A	14.7%
HOOD	Robinhood	Underweight	Kenneth Worthington	\$9.27	\$8.2	N/A	N/A	4.6%
MA	Mastercard	Overweight	Tien-tsin Huang	\$337.27	\$324.3	32.1	27.9	0.5%
V	Visa	Overweight	Tien-tsin Huang	\$205.57	\$439.1	27.7	24.6	2.3%
PYPL	Pay Pal Holdings	Overweight	Tien-tsin Huang	\$86.80	\$99.0	21.3	18.3	1.8%
SQ	Square	Overweight	Tien-tsin Huang	\$67.40	\$40.3	63.6	32.4	4.8%
NVDA	Nvidia	Overweight	Harlan Sur	\$157.50	\$392.2	36.3	47.4	1.3%
MNXBF	Monex Group	Not Rated	Matthew Henderson	\$3.18	\$0.9	0.1	0.1	1.2%
BRPHF	Galaxy Digital Holdings	Not Covered	Not Covered	\$3.50	\$1.2	N/A	N/A	5.4%
MSTR	MicroStrategy	Not Covered	Not Covered	\$175.00	\$2.0	N/A	50.4	35.1%
Median						24.5	21.5	2.6%

Source: J.P. Morgan, Bloomberg Finance, L.P. Note: Data is as of 11/10/2022.

Banks Serving the Crypto/Blockchain Industry

Below we provide a recurring tracker of banks either serving the crypto industry and/or leveraging blockchain technology.

Bank	Description of bank usage of blockchain technology and products offered
Blue Ridge Bank (BRBS)	+ First commercial bank in the US to allow anyone with an ATM card to transact Bitcoin from its branches and ATMs + This service is offered to Blue Ridge as well as non-Blue Ridge customers
Customers Bank (CUBI)	+ Customers Bank is starting to serve crypto customers with deposit accounts and real-time payments capabilities + CUBI and digital payment provider Tassat launched Customers Bank Instant Token (CBIT) on Tassat Pay which would allow real-time payments for B2B clients + The on-chain fiat payments will be free, and the platform went live on 10/18/2021 + As of 9/30/2021, the platform has \$1.9B in no-cost deposits and expects these to grow in the coming quarters
First Foundation (FFWM)	+ First Foundation is building the capabilities to buy, hold, and sell Bitcoin + The bank is also invested in the cryptocurrency software company NYDIG + The bank is expecting to go-live with its crypto product by the end of 2021
Metropolitan Commercial Bank (MCB)	+ MCB was an early entrant to banking crypto clients such as Voyager Digital, Crypto.com, Paxos, and Genesis, to name a few + As of 2Q22, the bank had \$1B in crypto-related deposits.
New York Community (NYCB)	+ NYCB announced a partnership with a fintech, Figure Technologies, to collaborate on blockchain projects with an initial focus on the operational and cost benefits from blockchain technology that can be applied across the bank
Quontic Bank	+ In Dec 2020, Quontic became the first FDIC-insured financial institution to offer a Bitcoin rewards checking program + The program allowed customers to hold their Bitcoin with crypto custodian NYDIG or redeem it in cash
Signature Bank (SBNY)	+ The Signature digital asset banking team was formed in 2018 to provide banking services for crypto clients + Signature offers 24/7 real-time payments to crypto clients through Signet (introduced in January 2019) + The bank is in the process of testing out a crypto-backed lending product
Silvergate Bank (SI)	+ Silvergate started pursuing crypto customers in 2013, an early entrant in banking this industry + The bank serves over 1,500+ crypto customers today and provides banking and payment services + Silvergate offers SEN, a 24/7 real-time payments platform to crypto customers + Silvergate also offers SEN leverage, a Bitcoin-backed lending product
Vast Bank	+ Vast Bank is the first US Bank with FDIC insurance and a Federal Reserve charter to offer the ability to buy, sell, and custody eight different cryptocurrencies directly from a checking account + It also provides Bitcoin custody solutions which has a mobile trading platform with instant settlement to its accounts + Vast Bank first looked into custodying crypto in July 2020, after the OCC announced that with a National Bank charter the company could custody Bitcoin and other crypto assets
U.S. Bancorp (USB)	+ U.S. Bancorp now offers cryptocurrency custody services to institutional investment managers with private funds in the U.S or the Cayman Islands + The service is presently limited to Bitcoin, Bitcoin cash and Litecoin and support for other tokens will be added soon + Bitcoin technology and financial services firm NYDIG will act as the bank's first crypto sub-custodian

Source: Company reports.

Links to Recent Other J.P. Morgan Reports on Cryptocurrencies

11/9/2022

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11/7/2022

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- [Cryptocurrency Markets: JPM Bitcoin Mining Monthly](#)

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- [After the Crypto Crash - Lessons Learned and the Future Role of CBDCs](#)

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- [SBNY : Deep Dive Into Digital Asset Banking and Blockchain Payments Takeaways; Maintain OW](#)

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- [Highlights from the Global Markets Conference in Paris: Policy and Political Miscalculations Drive Bearish Market Sentiment](#)

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- [Cryptocurrency Markets Monthly : Crypto Prices Plummet in April -- Bitcoin Outperforms and Crypto Waits for the Next Catalyst](#)
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4/20/2022

- [SBNY : 1Q22: Institutional Crypto Adoption Strong While Overhang From Credit Concern Fades; TOP IDEA](#)
- [Silvergate Capital Corporation: With Balance Sheet a Coiled Spring to Higher Rates and Client Wins Accelerating, Shares are a Bargain](#)

Links to Past Spotlights, Deep Dives and Primers

Spotlights

Date	Coin (Click on links)
9/23/2022	Abra
12/3/2021	Algorand
4/1/2022	Apecoin
2/11/2022	Avalanche
9/17/2021	Audio
6/11/2021	Binance Coin
10/15/2021	Binance USD
5/21/2021	Bitcoin
10/22/2021	Bitcoin Cash
9/10/2021	BitTorrent
6/18/2021	Cardano
10/7/2022	Cardano: Vasil Upgrade
8/20/2021	Chainlink
12/23/2021	Crypto.com
8/13/2021	Cosmos
4/22/2022	Dai
12/17/2021	Decentraland
6/4/2021	Dogecoin
1/14/2022	Elrond
4/8/2022	EOS
5/28/2021	Ethereum
2/4/2022	Ethereum Classic
2/18/2022	Fantom
5/27/2022	Fei USD
8/5/2021	Filecoin
9/30/2022	Figure Technologies
3/25/2022	Flow
6/24/2022	FRAX

Date	Coin (Click on links)
1/28/2021	FTX Token
6/3/2021	Gemini Dollar
8/5/2022	GHO
3/11/2022	Hedera Hashgraph
12/10/2021	Internet Computer
2/25/2022	Klaytn
10/14/2022	Lens Protocol
7/16/2021	Litecoin
7/23/2021	Monero
1/21/2022	Near Protocol
5/20/2022	Neutrino Dollar
5/6/2022	Pax Dollar
11/19/2021	Polkadot
11/12/2021	Polygon
10/21/2022	Polygon Studios
9/24/2021	Reputation
11/5/2021	Ripple
11/26/2021	Shiba Inu
7/2/2021	Solana
10/29/2021	Terra
10/1/2021	Tether
7/30/2021	Theta
8/27/2021	Tron
4/29/2022	TrueUSD
6/25/2021	Uniswap
10/8/2021	USD Coin
8/26/2022	USDF
9/3/2021	VeChain
1/7/2022	Wrapped Bitcoin
7/9/2021	XRP

Deep Dives

Date	Deep Dives (Click on links)
7/8/2022	SBNY: Digital Asset Banking and Blockchain Payments Deep Dive
12/15/2021	DeFi Disruption Deep Dive
12/1/2021	JPM's 2021 Crypto Economy Forum: Silvergate an Indispensable Banking Partner in Crypto Ecosystem

Past Primers

Date	Primer (Click on links)
11/4/2022	Ethereum Virtual Machine
10/28/2022	Smart Contracts
9/16/2022	Airdrops
9/9/2022	Lightning Network
9/2/2022	51% Attack
8/26/2022	Layer-2 Rollups
8/19/2022	Zero-knowledge Proofs
8/5/2022	Gas Fees
7/29/2022	Bitcoin Halving
7/22/2022	Non-Fungible Tokens (NFTs)
7/15/2022	Crypto Custody
7/8/2022	Yield Farming
7/1/2022	Forks
6/24/2022	How a Blockchain Works
6/17/2022	Bitcoin's Mining Difficulty Adjustment
5/6/2022	Central bank digital currencies (CBDCs)
4/22/2022	Decentralized Autonomous Organizations (DAOs)
4/14/2022	Ethereum 2.0
1/14/2022	Hash Rate
6/24/2022	How a Blockchain Works?
3/4/2022	Layer-2 Scaling Solutions
3/11/2022	Non-Fungible Tokens
3/25/2022	Proof of Stake
2/4/2022	Proof of Work
2/11/2022	Virtual Real Estate
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5/27/2022	Sharding
4/29/2022	Staking
1/21/2022	Web 3.0

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