Arcane Research

LMAX Digital
THE INSTITUTIONAL
CRYPTO CURRENCY EXCHANGE

The ₿itcoin Trading Ecosystem

And The Emerging Institutional Infrastructure

Arcane Research

Arcane Research is a part of Arcane Crypto, bringing data-driven analysis and research to the crypto currency space. After launch in August 2019, Arcane Research has become a trusted brand, helping clients strengthen their credibility and visibility through research reports and analysis. In addition, we regularly publish reports, weekly market updates and articles to educate and share insights.

Arcane Crypto develops and invests in projects, focusing on bitcoin and digital assets. Arcane operates a portfolio of businesses, spanning the value chain for digital finance. As a group, Arcane deliver services targeting payments, investment, and trading, in addition to a media and research leg.

Arcane has the ambition to become a leading player in the digital assets space by growing the existing businesses, invest in cutting edge projects, and through acquisitions and consolidation.

Arcane Crypto AB is listed on Nasdaq First North Growth Market in Sweden.

LMAX Digital

LMAX Digital is the leading institutional spot crypto currency exchange, run by the LMAX Group, which also operates several leading FCA regulated trading venues for FX, metals and indices. Based on proven, proprietary technology from LMAX Group, LMAX Digital allows global institutions to acquire, trade and hold the most liquid digital assets, Bitcoin, Ethereum, Litecoin, Bitcoin Cash and XRP, safely and securely.

Trading with all the largest institutions globally, LMAX Digital is a primary price discovery venue, streaming real-time market data to the industry's leading indices and analytics platforms, enhancing the quality of market information available to investors and enabling a credible overview of the spot crypto currency market.

LMAX Digital is regulated by the Gibraltar Financial Services Commission (GFSC) as a DLT provider for execution and custody services.

June 2021

Contents

1 The institutionalization of Bitcoin

Bitcoin has come a long way since the early days of relative obscurity. The evolution is fueled by a flood of institutional money, both around the infrastructure but also directly into the asset.

2021 has been marked by speedy institutional adoption, from corporates to hedge funds, to major investment banks revising their crypto initiatives. Most of the biggest names on Wall Street have now announced plans to offer their clients access to cryptocurrencies.

A few years ago, only technology-driven retail investors were interested in bitcoin. After the hype of 2017, many concluded that bitcoin was dead. However, large, traditional companies started building out the infrastructure around the leading cryptocurrency. In 2020, the institutional investors entered the public scene, embracing bitcoin as an ideal store of value and inflation hedge. This was partly a response to the monetary experiment from central banks and governments, initiated after the brutal market crash of March 2020.

From billionaire hedge fund managers such as Paul Tudor Jones, to U.S. banks given the green light to hold customers' digital assets, a remarkable shift in attitudes towards cryptocurrencies is evident. The recent increase in institutional demand highlights the growing legitimation of bitcoin as an asset class.

Bitcoin's unique properties separate it from nearly all other assets, with a fixed supply, a decreasing inflation rate, and a decentralized network maintained by thousands of computers worldwide without any central authority.

There are several factors both near and long-term to support the increased awareness around bitcoin. Unconventional monetary policies increase risks of inflation and currency devaluation and the digitalization of finance encourage the adoption of digital currencies and related technologies.

The brief bear market of 2020 marked the first time bitcoin faced a global economic crisis that threatened numerous investments across all financial markets. Bitcoin crashed brutally in mid-March but recovered quickly and never looked back.

There is a fundamental difference between the current market and the events last time bitcoin topped out. In late 2017, the market was fueled by unregulated speculation in ICOs, totally inconsistent with organic growth. The focus was only on the massive gains investors got in the cryptocurrency market. We all remember the article stating that "Everyone is getting hilariously rich and you're not", which summarized the peak euphoria during 2017.

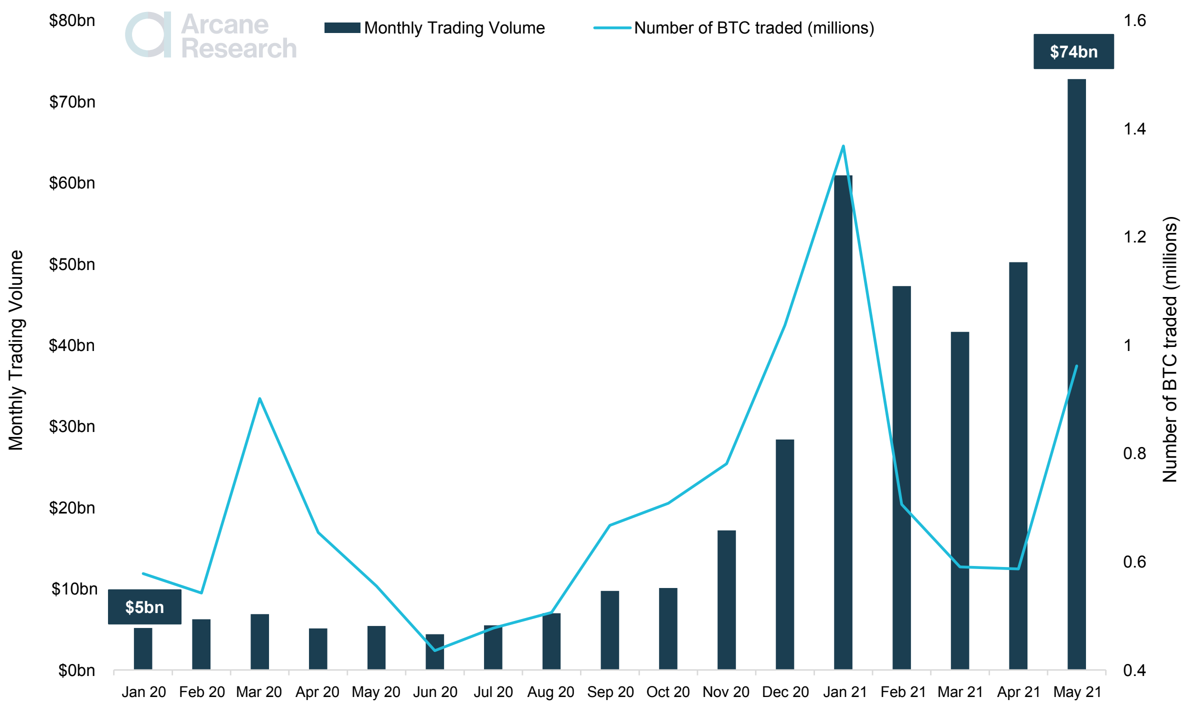
In this current market cycle, and especially in 2020, the focus has been on institutional investors opening up for this new asset. It's now being reported that public companies like Tesla acquiring bitcoin to hold as a reserve asset, and traditional financial institutions building out offerings to support bitcoin. The price of 1 bitcoin is currently hovering around $40,000 — 100% higher than the previous high in 2017 — confirming the strong demand.

Institutional investment in bitcoin has long been considered paramount to a reach a multi-trillion-dollar market capitalization. With institutional infrastructure in place and growing, an optimal macro backdrop, and broader acceptance as an asset, the leading cryptocurrency is primed to receive allocations from institutional investors.

It has become a lot easier from both a regulatory and practical perspective for institutional investors to hold and invest in bitcoin. Many institutions have been reluctant to embrace the asset, but this is now changing. Institutional investors have three main ways to invest in bitcoin: Exposure through spot markets like LMAX Digital, exposure through derivatives like CME's bitcoin futures, and exposure through investment vehicles like Grayscale's Bitcoin Trust. All have become exceptionally popular over the past year.

As seen from the chart below, the volume growth on spot exchange LMAX Digital has been explosive over the past year. The exchange had $2.4 billion changing hands per day on average in May and reached record highs last month. Since LMAX Digital facilitates trades for institutions only and already is among the leading bitcoin spot exchanges, this depicts the current institutionalization of the bitcoin market.

Figure 1: LMAX Digital – Total Monthly Trading Volume* and BTC Traded

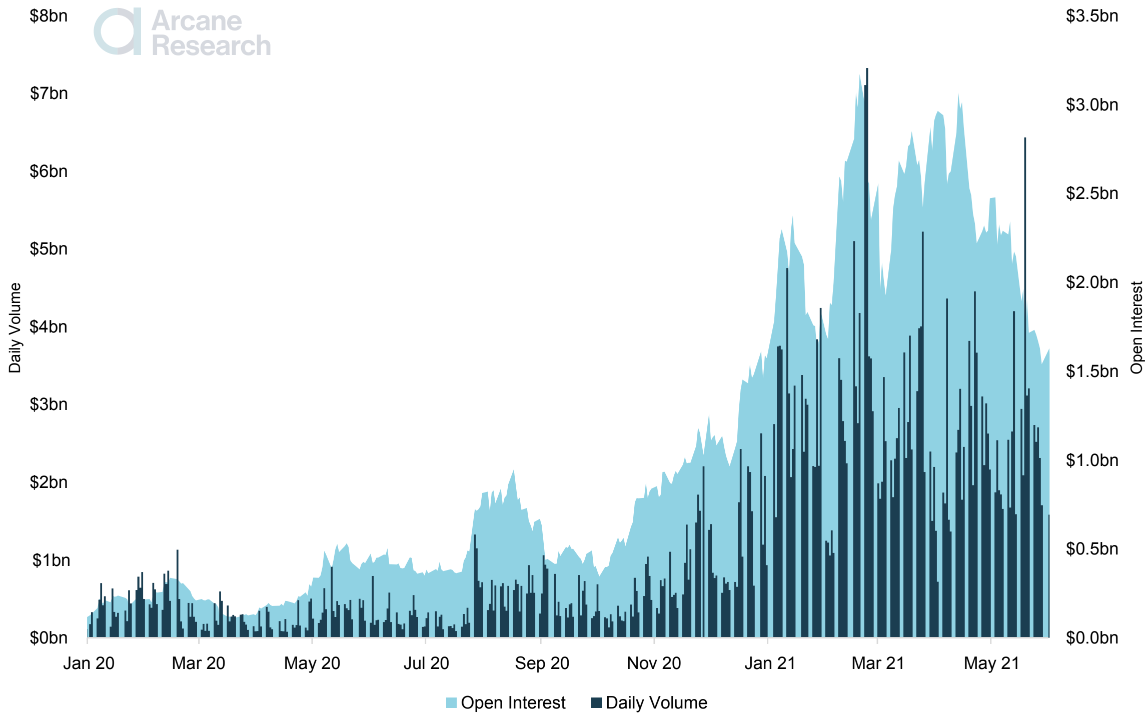


Source: LMAX Digital *Includes BTC, ETH, BCH and LTC

In terms of spot bitcoin to fiat trading, LMAX Digital has the second-largest volume in the market. The inflow of institutional money seems to have become a self-reinforcing mechanism, especially following the high-profile investments of Square, MicroStrategy, and Tesla.

As seen from the chart on the next page, the trading volume for CME's fully-regulated bitcoin futures has grown significantly since the beginning of 2020. On average, more than $2.6 billion worth of bitcoin futures changed hands daily on CME in May this year. Moreover, from the beginning of 2020, the open interest increased from around $200 million to above $3 billion, before decreasing to around $1.5 billion again with the latest market correction. These contracts are only available for institutional investors and show the explosive demand for bitcoin exposure from this investor group.

Figure 2: CME's Bitcoin Futures - Daily Volume & Open Interest



Source: Skew

Although several crypto funds today effectively work like an ETF, the first to carry the ETF label was introduced in Canada in February this year. Several issuers have lined up to get approval for the first Bitcoin ETF in the U.S., but none have been approved yet.

Part of bitcoin's value lies in its ability to be self custodied. However, many institutions are unwilling to expose themselves to the risks associated with it. Instead, they seek custody solutions for digital assets as robust as those for traditional assets. Lately, we have seen the arrival of trusted custodians in the bitcoin market. Large financial institutions like BNY Mellon, Standard Chartered, and Northern Trust are getting ready to enter bitcoin custody, eliminating one of the biggest hurdles to invest for many traditional investors.

Moreover, Fidelity has already built a bitcoin custody service for its institutional clients. These traditional firms are joining several crypto native custody providers, such as Coinbase, Gemini, and BitGo. The dominos are falling fast.

With the domino effect at play, the trend of rising institutional demand is expected to continue. Some are beginning to dip their toes into the market. We have seen traditional financial players gain exposure to the market through their investment portfolios. Examples include Goldman Sachs investing in BitGo, Visa investing in Anchorage, Boston Consulting Group investing in Bakkt and BNY Mellon investing in Fireblocks.

Bitcoin is becoming increasingly legitimized through the growing market and infrastructure, and continues to attract the attention of both retail and institutional investors as an emerging asset class.

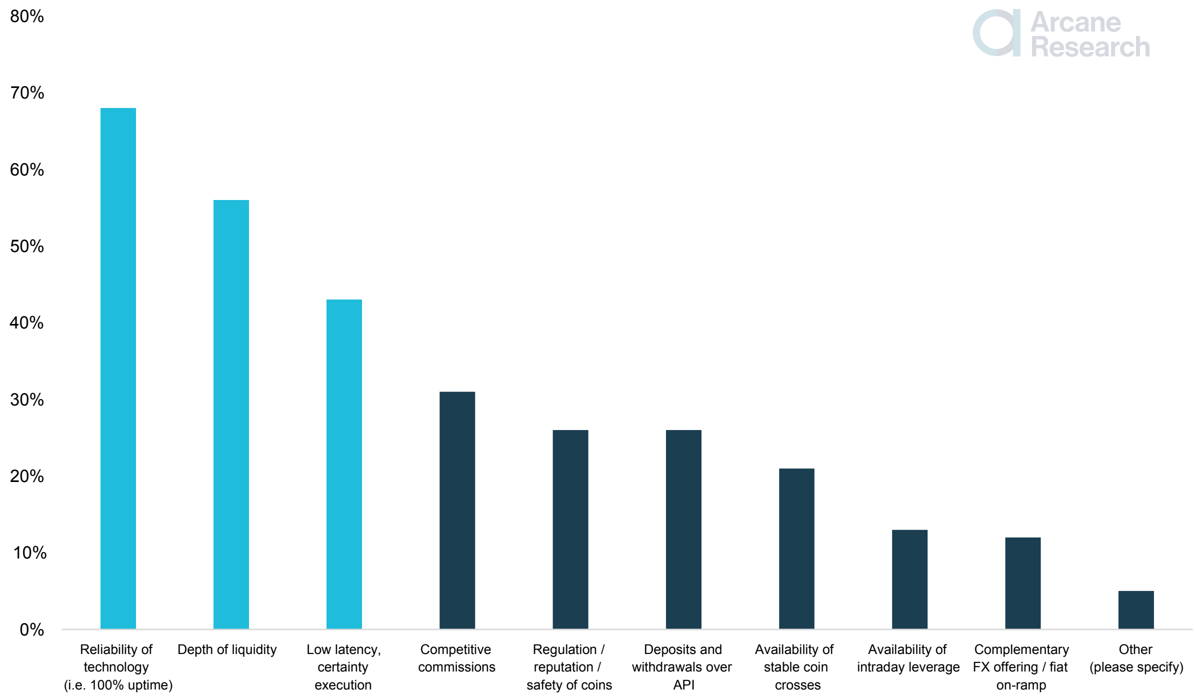
2 What's important for institutional clients?

LMAX Digital conducted a survey this spring among institutional market participants to better understand institutions' needs in the crypto space and identify infrastructure gaps. The institutional market participants include banks, funds, asset managers, proprietary trading firms, HFTs, brokers and corporates. The result, shared with Arcane Research, shows what's important for this group of institutional bitcoin traders.

Trading and choice of execution venues

The institutional market participants were asked about the most important factors that they consider when selecting a cryptocurrency trading venue. As seen from the chart below, three factors stood out: 1) Reliability of technology (i.e., 100% uptime), 2) low latency and certainty of execution, and 3) depth of liquidity.

Figure 3: What are the three most important factors you consider when selecting a cryptocurrency trading venue? (% of respondents agreed)

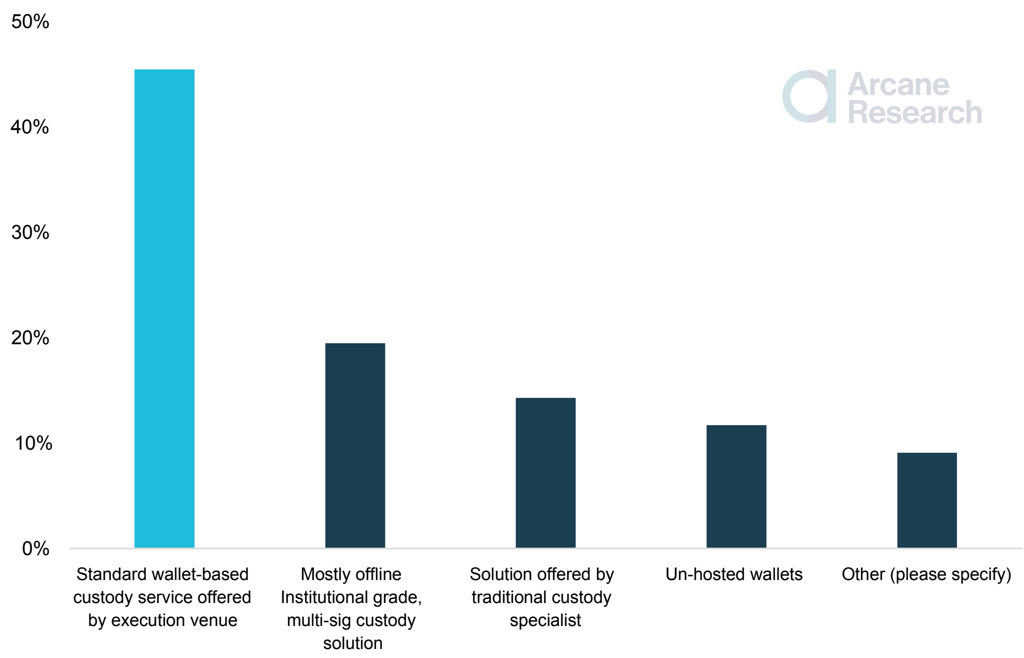


Source: LMAX Digital

Custody

When asked about the choice of custody solutions, most of the respondents said they use standard wallet-based custody services offered by the trading venue itself. Interestingly, a significant share of the respondents said that they use solutions provided by traditional custody specialists. The results are presented in the chart on the next page. In another custody question in the survey, security was unsurprisingly highlighted as the most critical factor when selecting a custody offering. In addition, accessibility and convenience, together with exchange/liquidity connectivity, were also highlighted.

Figure 4: What do you use for custody of your crypto assets? (% of respondents)

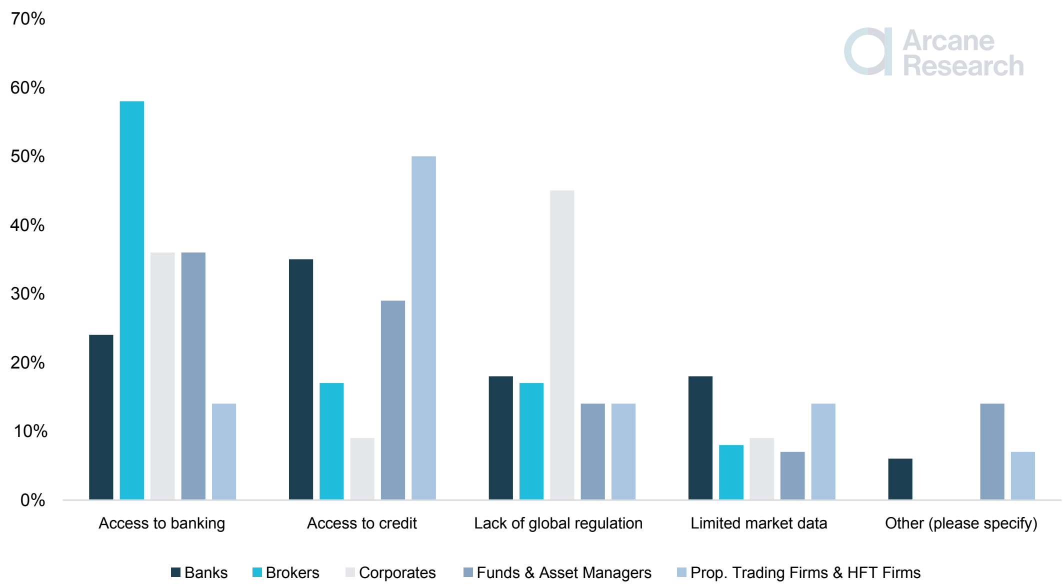


Source: LMAX Digital

Infrastructure gaps

As already mentioned, the infrastructure has improved, and it is now easier for institutional investors to hold and invest in bitcoin. But what are the most significant infrastructure gaps in today's bitcoin market, according to the institutional market participants? As seen from the chart below, access to banking and access to credit are the two main issues today. Access to banking has been particularly highlighted by brokers, while proprietary trading firms and HFT firms see access to credit as a big gap. Notably, corporates see a lack of global regulation as a major concern.

Figure 5: What do you see as the most significant infrastructure gap in today's crypto marketplace? (% of respondents agreed)

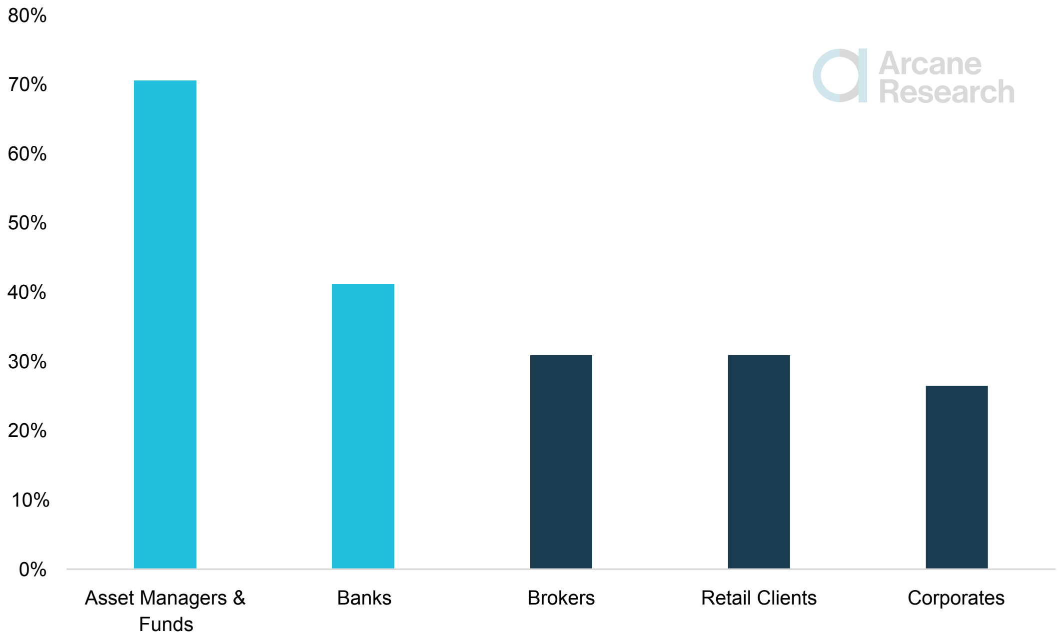


Source: LMAX Digital

Institutions to dominate bitcoin trading?

Institutions are fully embracing the cryptocurrency space, and as seen in the previous section, bitcoin trading volumes have grown substantially among institutional investors since the beginning of 2020. This trend will not stop here, according to the respondents of the survey. As seen from the chart below, they expect asset managers, funds, and banks to be the most significant contributors to trading volume in the next three years.

Figure 6: In the next three years, which two segments of the crypto market will account for most volumes traded? (% of respondents agreed)



Source: LMAX Digital

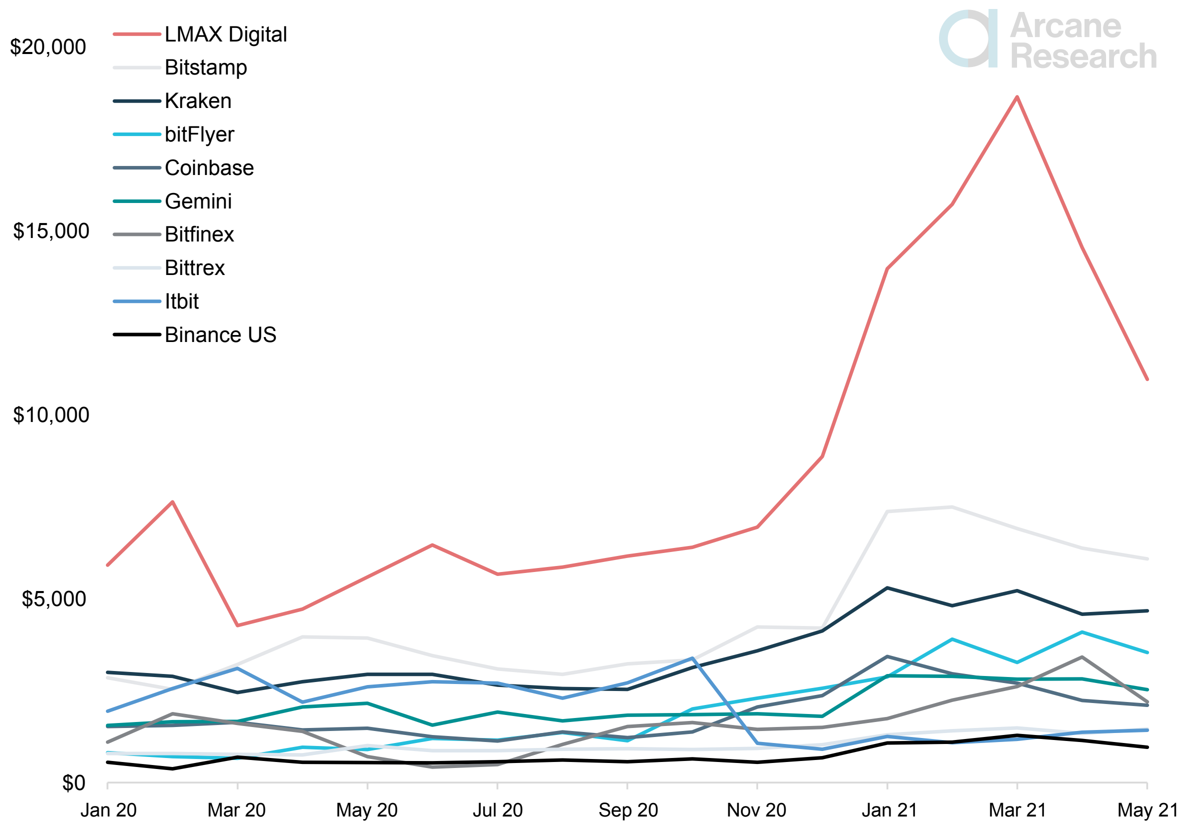
These survey results show us that institutional investors still see some issues with the current crypto market, but they expect to be a central part of it in the future. Throughout this report, you will see that several of these issues are being addressed already and that the bitcoin trading ecosystem is evolving rapidly. Traditional custody players are entering, lending markets and access to credit are on the rise, banks are embracing bitcoin, and liquidity in the market is improving substantially. All is set for institutions to continue their entrance into bitcoin.

3 The different type of traders

The crypto trading ecosystem is unique. Before we go into the different sections of the ecosystem, we will look at the traders who participate. Crypto trading is available on more than 450 exchanges, all offering trading infrastructure for participants to buy and sell crypto. The users of these platforms vary in kind – and numerous exchanges position themselves to serve the different traders.

The chart below shows that the average trading size for the pair BTC/USD varies between exchanges and gives us a deeper understanding of the users on each platform. For example, LMAX Digital has the largest average trade size, with a trade size of ~$11,000 in May 2021, according to data made available by the data provider Kaiko. On the other hand, the likes of Binance US, Itbit and Bittrex, seem to be more occupied by smaller traders, with an average trade size of ~$1,000.

Figure 7: Average Bitcoin Trade Size by Exchange



Source: Kaiko

3.1.1 Small fishes

Some market participants are small retail customers seeking to buy or sell bitcoin and other cryptocurrencies vs. their local currency. They primarily participate on exchange platforms as takers and are relatively careless about bid/ask spreads and other fees.

3.1.2 Bigger fishes

We also have more sophisticated market participants who could also be classified as retail traders. These are more price sensitive; they seek platforms where the spreads and fees are lower. You find these traders on the major retail platforms, usually with accounts on several exchanges, and they are relatively active.

The battle between exchanges to get these customers is fierce. They could provide a significant revenue stream, but are open to changing platforms. Exchanges seeking to attract these traders must provide tight spreads and relatively low fees, in addition to a hefty marketing budget to remain visible and relevant in the growing market.

Then, we have the institutional investors. In crypto, it makes sense to bundle out institutional investors into two types. The crypto-native trader with institutional size (crypto-institutional), and institutional investors from traditional finance (traditional-institutional).

3.1.3 Crypto whales

The crypto-institutional traders seek the best liquidity and the platforms with low latency and robust technology. They trade across most platforms, are comfortable navigating the market, and have crypto as their top priority.

These traders handle trades on their own or through brokerages and OTC desks, and use crypto-native derivatives platform to perform more sophisticated trades.

3.1.4 Whales in suits

The traditional-institutional traders are more limited in their setup. They want to trade crypto, but also trade in multiple other assets. Their priority is to trade on familiar systems, in a structure that meets their strict regulatory requirements. Low latency and robust technology are also of utmost importance.

Of course, liquidity, fees, fast settlement, and security are important concerns for these investors as well. Still, they face more restrictions on their trading than the crypto-institutions and need to act accordingly.

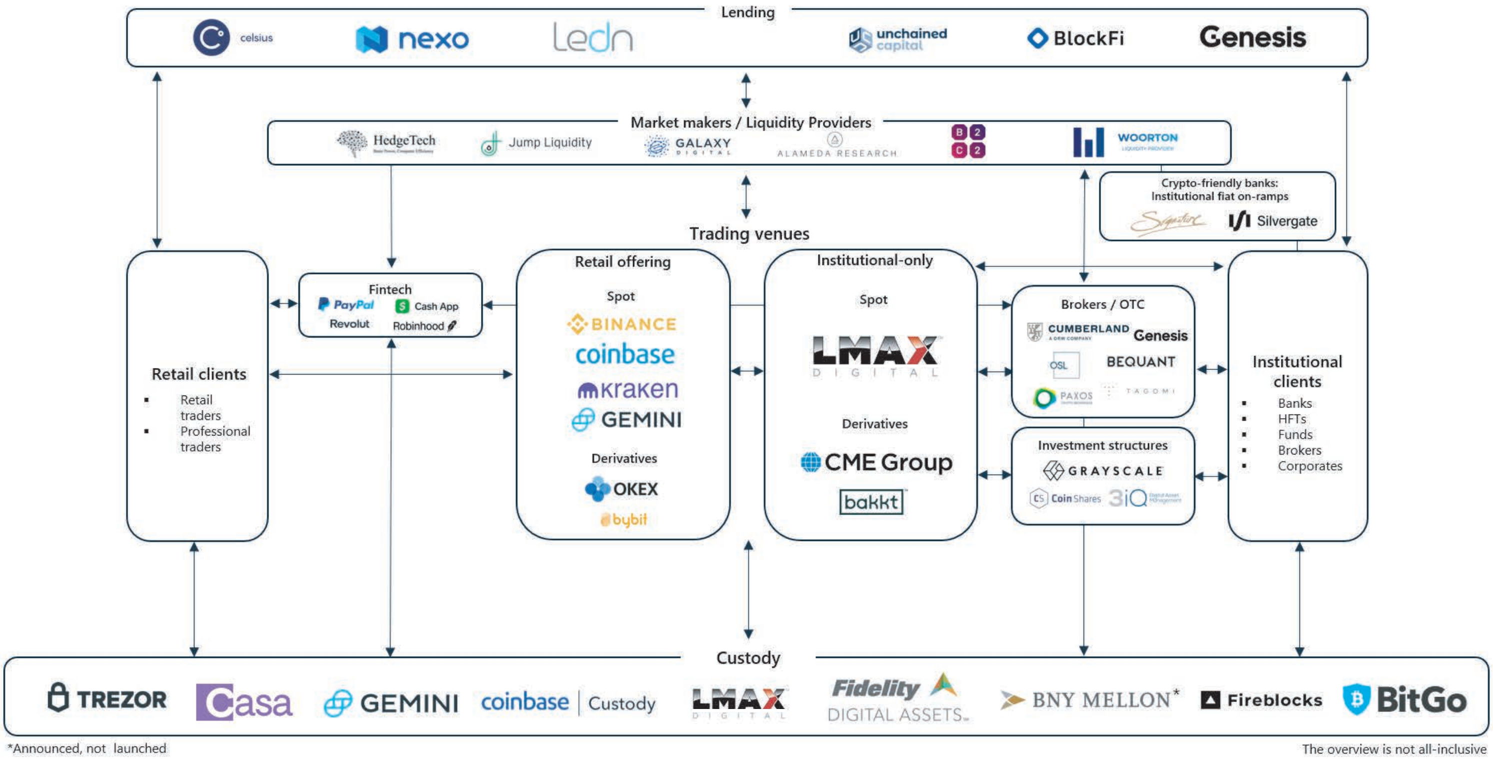
Therefore, we usually see these investors trading on fully regulated and liquid platforms, such as LMAX Digital, CME, or even Coinbase. OTC desks and brokerages are also used, so that the investors are confident that the regulatory requirements needed for their exposure will be prioritized.

4 A detailed walkthrough: The bitcoin trading ecosystem

This section will discuss and explain the different aspects of the bitcoin trading ecosystem and give an overview of how interconnected the current infrastructure is. Trading venues are the section of the ecosystem that most people are familiar with. Still, without the essential roles of other participants, the bitcoin trading ecosystem would not be working as seamlessly as it does today.

Market makers, brokerages and OTC desks, custody companies, crypto-friendly banks and fiat on-ramps are essential parts of the growing ecosystem around bitcoin. The map overview below shows how all parts are connected, exemplified by a few selected companies.

Figure 8: Ecosystem Overview – Bitcoin Trading (Only Selected Companies)



Source: Arcane Research

There is a lot of interconnectivity in this space, where companies fulfill several different roles in the trading ecosystem. Most parts of the bitcoin trading ecosystem interact with and rely on one another. This section will show you how some providers could be both competitors but also clients offering services to each other. For example, some retail exchanges may source liquidity from institutional platforms. Traditional payments apps offering crypto trading could source liquidity from brokerages, and banks who want to provide custody solutions are white-labeling from specific crypto custody providers. These are just a few examples to show how everything is interconnected.

This section will go into detail on the following:

- Market makers / liquidity providers
- Brokerages and OTC desks
- Crypto-friendly banks: Institutional fiat on-ramps
- Fintech solutions
- Trading venues
- Custody
- Lending

We will begin by describing the sections of the ecosystem that are essential for a well-functioning bitcoin market. Liquidity is the glue and what makes the market efficient, and hence where we will start this section.

4.1 Market makers / liquidity providers

Market makers / Liquidity Providers

The core building block of the bitcoin trading ecosystem is the market makers, allowing efficient prices across exchanges and other trading venues.

The crypto market is highly fragmented. There are numerous exchanges offerings users the ability to deposit fiat and buy and sell the same cryptocurrencies. Brokerages and OTC desks operate across these venues and serve institutional entities. Other financial services are also erupting, allowing users to gain crypto exposure.

The fragmented market, with its wide array of services, is a recipe for chaos and arbitrage. Market makers are the watchdogs of this market, creating order where disorder is inevitable. They are incentivized and rewarded through spreads, getting paid to fill up order books, and have bundles of capital ready to deploy on the tiniest arbitrage opportunities.

In its early days, the market making in crypto was poor and thin order books led to high slippage and poor infrastructure. Close-ended exchanges made it difficult for arbitrageurs to indulge in price dislocations.

Since 2016 this has drastically improved. Now, digital assets are priced more efficiently, and the slippage of large block trades has been reduced. Banking infrastructure has created synergies allowing market makers to deploy and move funds efficiently between exchanges, serving an important role in driving the bid/ask spreads closer.

The chart below illustrates how the market has improved. The Bid/Offer spread on a $10 million trade on Binance has been reduced drastically, as the overall liquidity in the market has improved.

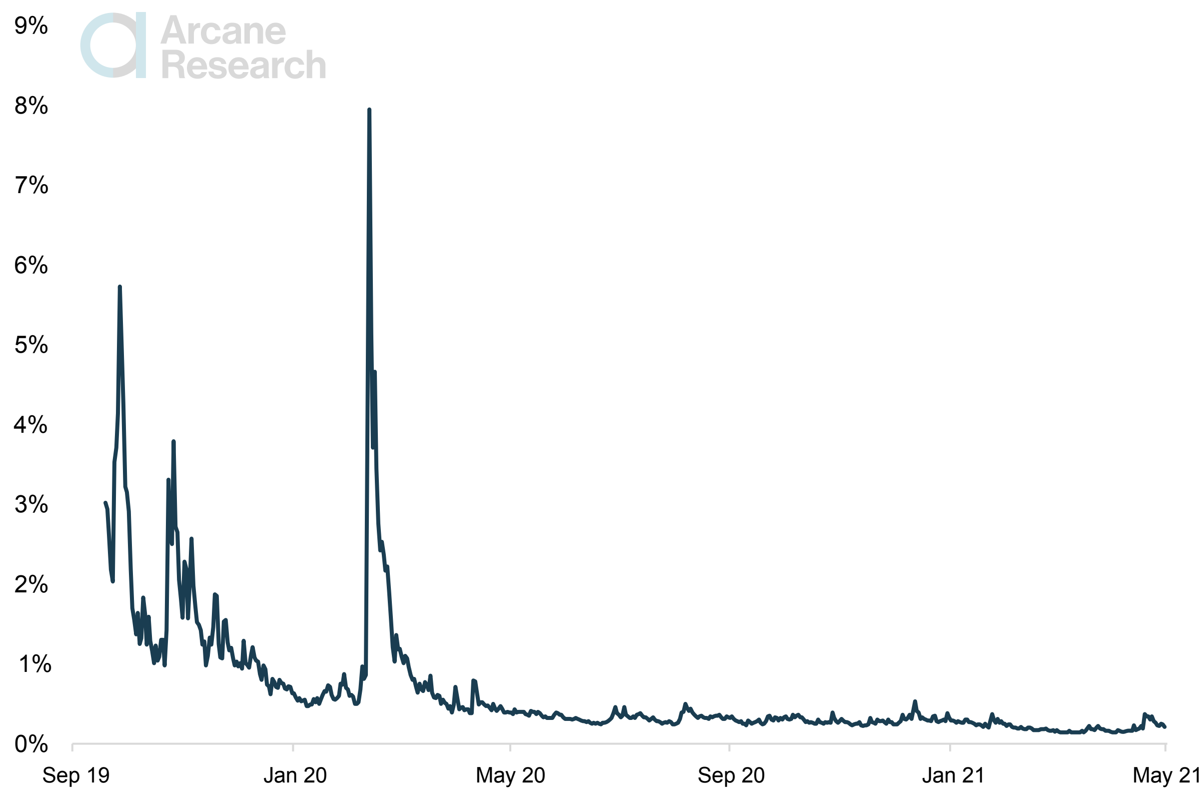
Especially after many exchanges got a wakeup call after the intense price action of March 12th, when the bitcoin market got drained for liquidity. The market turmoil in May 2021 looks almost insignificant compared to the crash of March 2020.

These market makers provide liquidity, reducing the impact of large market orders, which is a fundamentally important part of the crypto markets. They enable liquid trading, reducing the friction costs of transacting, benefiting all of the various entities in the market. Liquidity could lead to fewer flash crashes, benefiting exchanges. For instance, the flash crash in 2017 was extremely expensive for Coinbase, as they compensated those impacted through refunds and ended up paying out millions of dollars. Buyers and sellers see narrower spreads, reducing their cost when committing a trade.

Over the last years, some market makers have become cornerstones of the efficiency of the crypto market. They have accrued vast amounts of capital and have positioned themselves into core positions in the ecosystem. They are fundamentally important to the maturing dynamics of the market, and this will likely continue going forward.

Some of the most important entities within market making are Jump, HedgeTech, Alameda Research, Galaxy Digital, B2C2 and Woorton.

Figure 9: Binance: $10m Bid and Offer Spread (%, Daily Average)



Source: Skew

4.2 Brokerage and OTC desks

In recent years, more sophisticated infrastructure has also evolved, enabling large block trades of significant size. Tightly connected and sometimes incorporated with the most efficient market makers, we find the OTC desks helping clients conduct large trades at minimum slippage.

The OTC desks in crypto have become very important in providing sufficient spreads on large block trades. By using electronic channels with APIs, they allow dealers to stream prices. According to Citi, more than 90% of all OTC trades in crypto are conducted electronically, which is higher than in traditional markets.

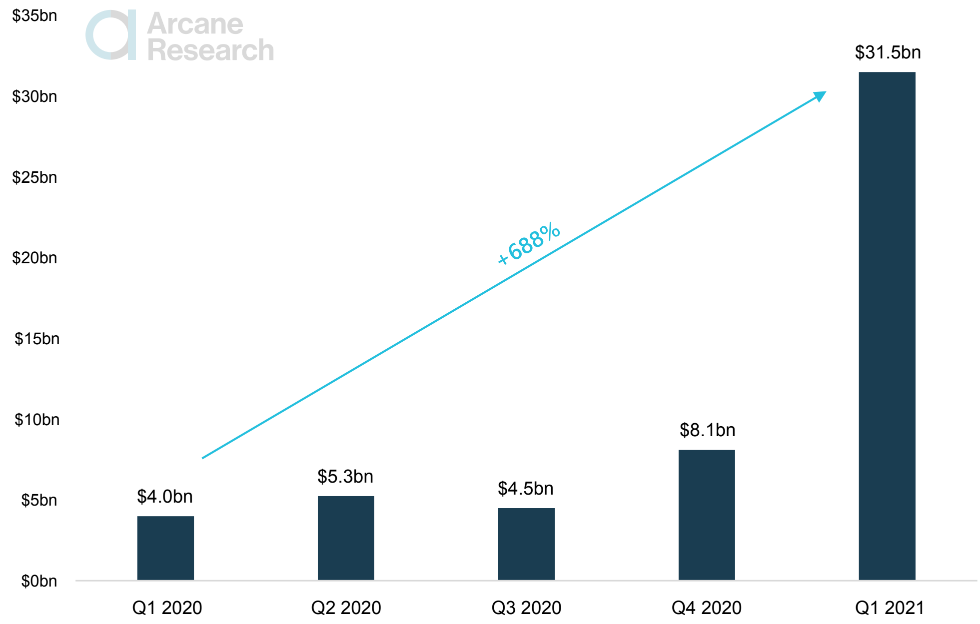
In its early days, the highly fragmented crypto market made efficient OTC trades difficult. Cross-border and cross-venue spreads often surpassed 1%. Since 2017, OTC spreads on 8-figure BTC trades fluctuated between 50-200 basis points, while it's now been compressed to 5-10 basis points.

Quantitative trading firms such as Jump, B2C2, and Alamada Research are among the dominating entities in the space, demonstrating the clear advantages of market making in combination with large OTC deals.

OTC trades are now run on platforms hosted by these market makers who execute trades over APIs, in contrast to the early days where OTC trading was primarily conducted over voice.

Genesis is another company that has seen tremendous growth and only serves institutional clients. The company launched the first U.S. OTC bitcoin trading desk in 2013. The chart on the next page shows Genesis growth in spot trading volume, and the company did $31.5 billion in spot in Q1, an increase of 287% from Q4 2020. Before Q1 2021, hedge funds and passive funds were the largest clients at Genesis by OTC volume.

Figure 10: Genesis Spot Trading Volumes



Source: Genesis

However, as corporate clients began buying bitcoin for their treasuries in Q1, this shifted. The entrance of companies like Tesla, MicroStrategy, and Square led to a wave of interest from corporates, and corporates accounted for 25% of the OTC volume in Q1 for Genesis. This is an increase from only 0.5% in Q4 2020.

In the same segment as OTC desks, we have designated crypto brokerages. Through their services, they help reduce the complexity associated with investing in crypto for institutional entities. A full-service broker aggregates execution, custody, clearing, and settlement through a single brokerage relationship on behalf of their clients.

Given the fragmented nature of bitcoin, crypto native brokers offer a service that is well sought after among institutions. They seek the best entries and exits for their allocations while also maintaining custody in-house.

These brokers also enable margin financing, where existing holding may be posted as collateral to lever the size of trading positions. This enables trading funds to add more strategies to their trading toolbox while also leveraging their risk capital.

Brokers in crypto are on a path towards delivering full-scale services, seeking to be a one-stop-shop for the activities listed below. Several services launched in 2020, trying to move all services under one roof.

As of now, full-service digital asset offerings are on their way, and some entities are rapidly approaching the target. As per The Block, several entities are now approaching a role resembling the prime brokers of traditional finance. The biggest challenges are affiliated with clearing and settlement and deeper capital market support, which is not as robust as within traditional markets.

While we see several entities in the digital asset space nearing a full-service brokerage solution, there is still no solution like the kind that exists in the traditional financial markets. A player that enables spot and derivatives trading aggregation, margin extension, custody services, capital introduction, and trade ideation is still lacking, as the current brokers specialize in various segments.

4.3 Crypto-friendly banks: Institutional fiat on-ramps

Crypto-friendly banks:
Institutional fiat on-ramps

Crypto-friendly banks have become an essential part of the bitcoin trading ecosystem, but are perhaps not talked about as much as other participants in the industry. However, these banks play a vital role for fiat on/off ramps from exchanges and investors. Most, if not all, of the leading crypto businesses are connected to these banks.

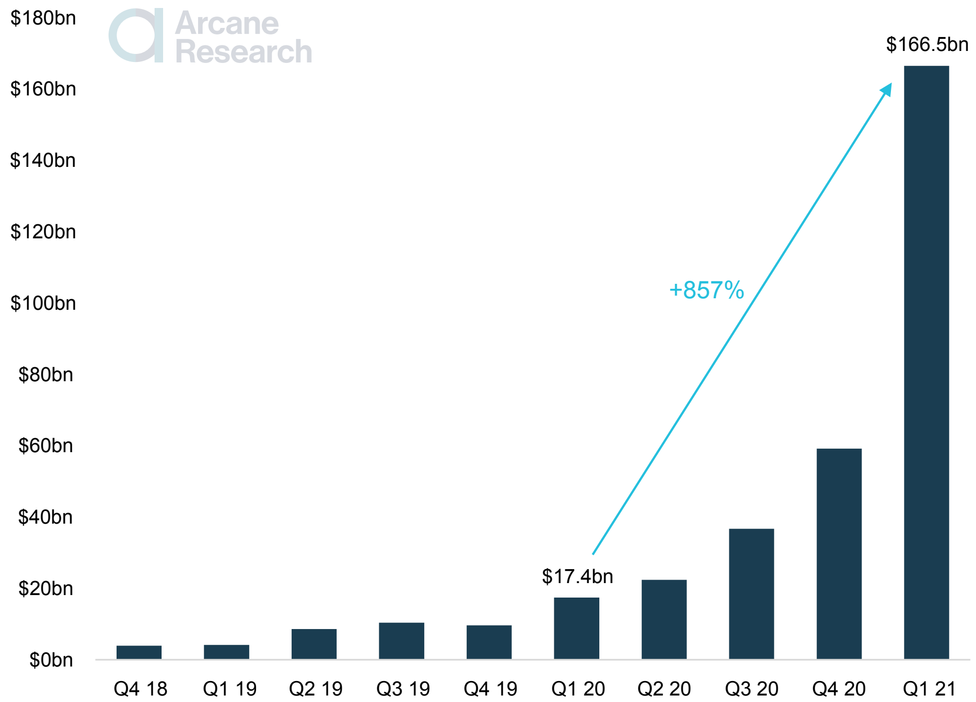
Silvergate Bank is one of the market leaders in the industry. The bank was founded in 1988 and started servicing crypto businesses in 2013. Silvergate quickly turned crypto-related clients into its primary focus. The company now has almost 900 crypto-related clients. By the end of 2020, Silvergate bank's crypto-related deposits climbed to $3.7 billion. More than 77 crypto exchanges accounted for approximately half of those deposits.

Silvergate has become a leader due to its unique payments network, called Silvergate Exchange Network (SEN). This network allows Silverbank's clients to exchange U.S. dollars with each other 24/7, 365 days a year.

This creates near-instant transferability in what has become a network of mostly crypto businesses. As seen in the chart below, $166.5 billion of transactions were processed in Q1 2021, an impressive growth of 857% YoY.

According to the CEO, Alan Lane, Silvergate will continue to monetize the SEN platform through multiple paths such as digital asset lending and custodial services.

Figure 11: Silvergate SEN Network Transfer Volume (Quarterly)



Source: Silvergate

Another important player in this ecosystem is Signature Bank, servicing many of the leading crypto exchanges. The bank has its own payments platform called Signet, allowing customers to make instant payments to each other, much in the same way as Silvergate's SEN.

The platform was introduced at the beginning of 2019, but integrated with Fireblocks in June 2020 to make it a blockchain-based payments platform.

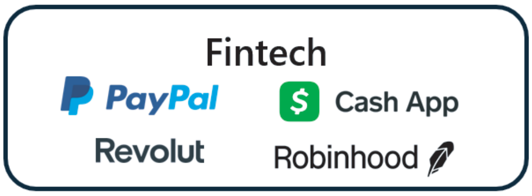
A tokenized representation of the U.S. dollar is used to facilitate these transactions and allows instant settlement through Signet's API integration with the client's own proprietary systems.

Signet has been the main driver of crypto-related deposits for the bank, which surpassed $10 billion in Q1 this year. However, Signature saw a lower number of deposits from crypto businesses in the last quarter of 2020 compared to Silvergate. Silvergate had $2.9 billion in new crypto-related deposits in Q4, while Signature ended at $2.5 billion.

While these two players are essential for seamless fiat on/off ramps in the crypto industry, other crypto-friendly, or even crypto-native, banking services are emerging. Kraken, one of the oldest crypto exchanges, got a U.S. banking license in Wyoming last year.

Through a Special Purpose Depository Institution (SPDI) banking charter, Kraken will now be able to move funds on and off the exchange much more efficiently, in addition to offering banking services and seamless customer deposits and withdrawals. Kraken Financial, as the new bank is called, was the first to receive this kind of banking license.

4.4 Fintech solutions



Fintech companies have also opened up for bitcoin and the cryptocurrency market. These consumer-focused services use the traditional payments sphere to offer crypto services.

Cash App has led the way and was followed by PayPal late last year. Other fintech companies like Revolut and Robinhood also offer cryptocurrency trading.

These companies are directly connected to the ecosystem, sourcing liquidity from other players. Cash App lets customers hold actual bitcoin and both deposit and withdraw to its payments app. PayPal is required under the N.Y. BitLicense to have a 1-to-1 relationship with their customers' cryptocurrency holdings and source this from Paxos.

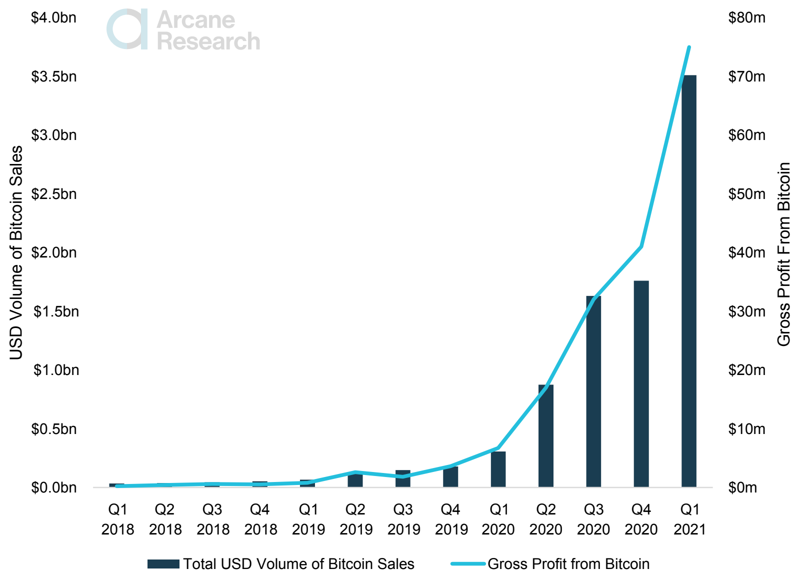
When customers buy or sell cryptocurrencies on Robinhood's platform, they send the order to various trading venues.

Revolut partnered with Fireblocks last year to streamline settlement and guarantee the best possible price for their users while reducing counterparty risk. Just recently, Revolut opened for bitcoin withdrawals and has now given beta access to its premium customers, a much-awaited feature among its customers.

Cash App launched under the name "Square Cash" in 2015. The app lets users send funds to each other, and expanded to bitcoin in January 2018. The app is one of the most popular finance apps in the U.S, with 36 million active users as of March 2021.

As seen from the chart below, its bitcoin service has exploded in popularity. Square Inc, the publicly traded owner of Cash App, reported over $5.5 billion in bitcoin sales in Q1 2021 through the app.

Figure 12: Square Bitcoin Sales



Source: Square Filings, The Block

The observant reader has probably already connected the dots on why Cash App embraced bitcoin.

Square Inc is one of few public companies that have invested in bitcoin and is led by the bitcoin prominent Jack Dorsey. He is also the CEO of Twitter and has talked positively about bitcoin and its potential for many years. Square owns 8,027 BTC, currently valued at ~$500 million, with an acquisition cost of $220 million.

Cash App lets customers buy, sell and send bitcoin. More than three million customers purchased or sold bitcoin on Cash App in 2020. In the first month of 2021, more than one million additional customers bought bitcoin for the first time through the app.

Square purchases bitcoin through brokers and customers to facilitate users' access to bitcoin, first disclosed in their Q2 report from 2018.

PayPal, another giant in the fintech and payments sphere, followed Cash App's footsteps in October 2020 when they made buying, selling, and holding bitcoin and other cryptocurrencies available in customers' online wallets. Just recently, PayPal expanded crypto trading to its Venmo payments app.

There is one significant difference between Cash App and other fintech solutions that offer bitcoin. Cash App lets you deposit and withdraw your coins, so you're able to move your holdings to your preferred custody solution.

As of now, neither PayPal nor Robinhood let you do this. There is no free float of cryptocurrency in or out of these platforms. However, PayPal's blockchain lead, Jose Fernandez da Ponte, recently said that the company will let users withdraw cryptocurrency to third-party wallets. Robinhood are supposedly working on the same, according to its website.

As already mentioned, Revolut just opened up for withdrawals of bitcoin for its premium customer base, and then joins Cash App in letting customers move funds to their preferred destination.

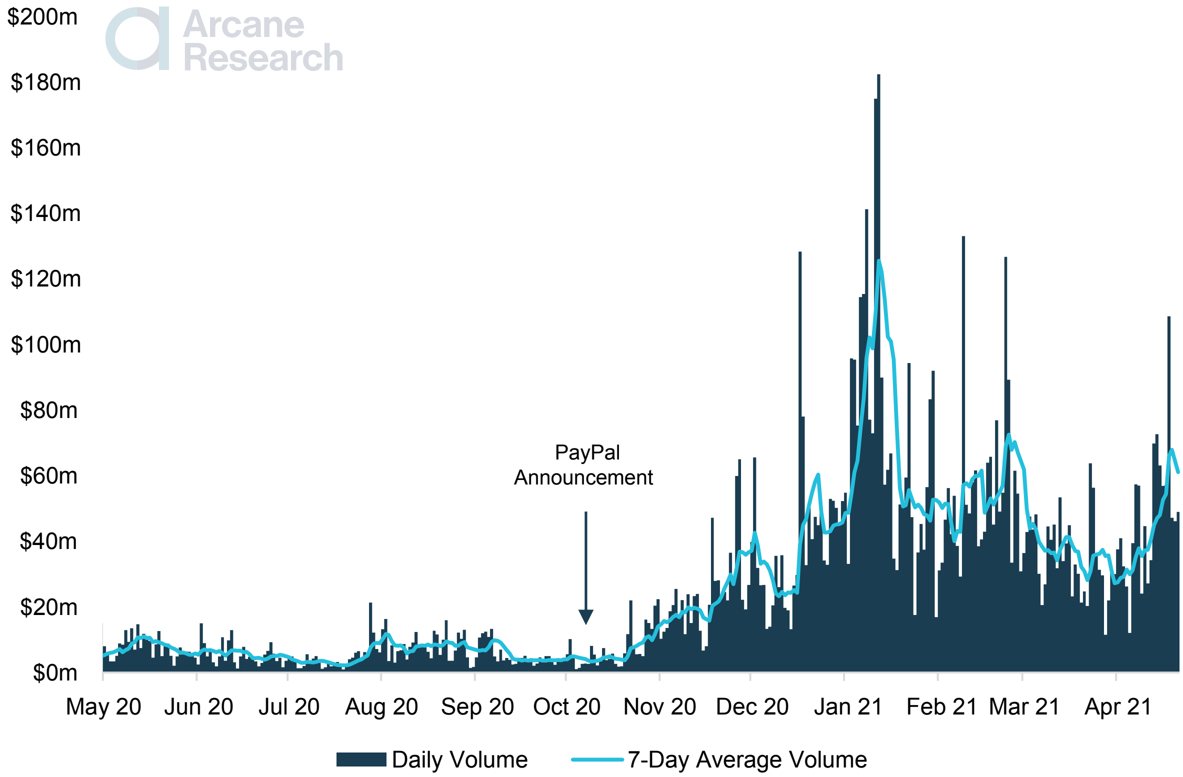
As already mentioned, PayPal is connected to Paxos as its broker. The BitLicense requires PayPal to hold 1:1 of all the cryptocurrencies that their customers buy.

PayPal states that the company may buy and sell cryptocurrencies through an affiliate of Paxos acting as a market maker to provide liquidity, referred to as a "Paxos Affiliate".

These affiliates use Paxos' cryptocurrency exchange, ItBit, which saw a notable increase in trading volume in the weeks after the crypto offering went live. Itbit's trading volume has been growing faster than the market average since partnering with PayPal.

The daily trading volume is presented in the chart below. This is a good example of how a traditional payments company activates several parts of the bitcoin trading ecosystem through its bitcoin offering.

Figure 13: Itbit Exchange - Daily Trading Volume



Source: CoinGecko

4.5 Trading Venues

The bitcoin market is filled with trading venues for different customer needs. As mentioned earlier in the report, these venues have different characteristics and focus. Some venues have a retail offering, some are providing a dual service for both retail and professionals, and a few venues are only available for institutions.

This section will elaborate on some of the most important spot exchanges and derivatives platforms and dig into their importance in the bitcoin trading ecosystem. Before that, we will look at the main characteristics of different trading venues and the difference between retail offerings and institutional-focused offerings.

4.5.1 Positioning: Retail vs. Institutional

With their different types of needs, the various kinds of traders force exchanges to be constructed differently. The table below shows an overview of some of the characteristics, unique selling points (USPs), typical userbase, and considerations for retail-grade offerings and institutional-grade offerings.

Table 1: Retail vs. Institutional Offering

	Retail Grade Offering	Institutional Grade Offering
Characteristics	• Large customer base (millions) • Higher fees (10-50 bps) • More tradable assets • Many exchange venues- Competitive • Simple trading interface	• Fewer, but large customers • Lower fees (0-6 bps) • Ultra high throughput with powerful matching engines • Few exchange venues, with specialized players • Access to credit lines
USP	• Easy on-boarding process • Simple trading interface • Marketing and sales	• Institutional connectivity – FIX API • No downtime • Compliance and AML • Depth of liquidity • Venue controls to ensure orderly market during times of high volatility
Userbase	• Low sophistication • Small trade size • High churn • Less sensitive to fees	• Institutional, professional clients • Large trade size • Loyal clients • Access to broader set of financial instruments
Considerations	• Many competitors. Large marketing budgets. • Exposed for downtime during high volatility events. • Frequent listings of new coins to avoid losing customers and edge.	• Fewer competitors • Up-time and throughput more important • Robust regulatory framework • Secure custodian set-up

Source: Arcane Research

Retail grade offering

Exchanges involved in the retail markets must position themselves to attract and onboard new clients easily. The turnaround of customers might be high, so R&D such as new offerings and frequent coin listings are top priorities in this space.

As retail traders are generally less sensitive to fees than their institutional peers, the maker and taker fees might be higher than what's expected for an institutional platform.

In the retail exchange space, the unique selling points of the platforms are structured around easy onboarding, a simple trading interface, extensive marketing, and new coin listings.

Some considerations for these platforms revolve around a high churn of customers, high marketing budget, server downtime during volatility spikes (due to increased exchange visitors), and frequent listings to avoid losing customers and edge. Platforms such as Coinbase focus on sales, marketing, and customer acquisition but offer a dual offering. This dual offering enables the everyday participant to gain crypto exposure, but also prominent institutional players.

Institutional grade offering

On the institutional side, other elements are more critical. A familiar trading interface with high throughput, no downtime, credit lines, and a robust regulatory framework are prerequisites for institutional investors for participating on the exchange.

These platforms have venue controls to ensure orderly market. This enables the exchange to handle high volumes during times of extreme volatility and ensure 100% uptime. Also, given the size traded, deep liquidity is of utmost importance. It's more difficult to establish an institutional-grade platform than a retail-grade due to customers' technical and regulatory demands.

Therefore, the institutional market is less fragmented. For example, LMAX Digital focuses strictly on institutional clients for their offering and provides institutional grade trading technology.

4.5.2 Spot exchanges

On spot exchanges, bitcoin is exchanged between customers. Buying and selling are done directly in the underlying asset, which differs from derivatives exchanges. Also, settlement of a trade happens instantly when a buyer and a seller are matched. In contrast, derivatives exchanges offer contracts and products based on the underlying asset, where these contracts have expiry dates without immediate settlement.

All exchanges are dependent on liquidity from market makers, as discussed earlier in the report.

They help fill up the order book on the exchanges, so customers enjoy low spreads and liquid markets. Healthy order books minimize volatility and increase stability. Some exchanges also provide rebates to market makers, in order to incentivize market making.

If order books are thin and some large orders are executed, so-called flash crashes can occur. This has happened occasionally on most leading spot exchanges and shows the importance of liquid order books.

Spot exchanges are the main fiat on-ramp to the crypto market for retail investors. Several highly popular and regulated marketplaces have emerged over the past decade, where customers can use bank transfers to send their fiat holdings to exchanges and start buying cryptocurrencies.

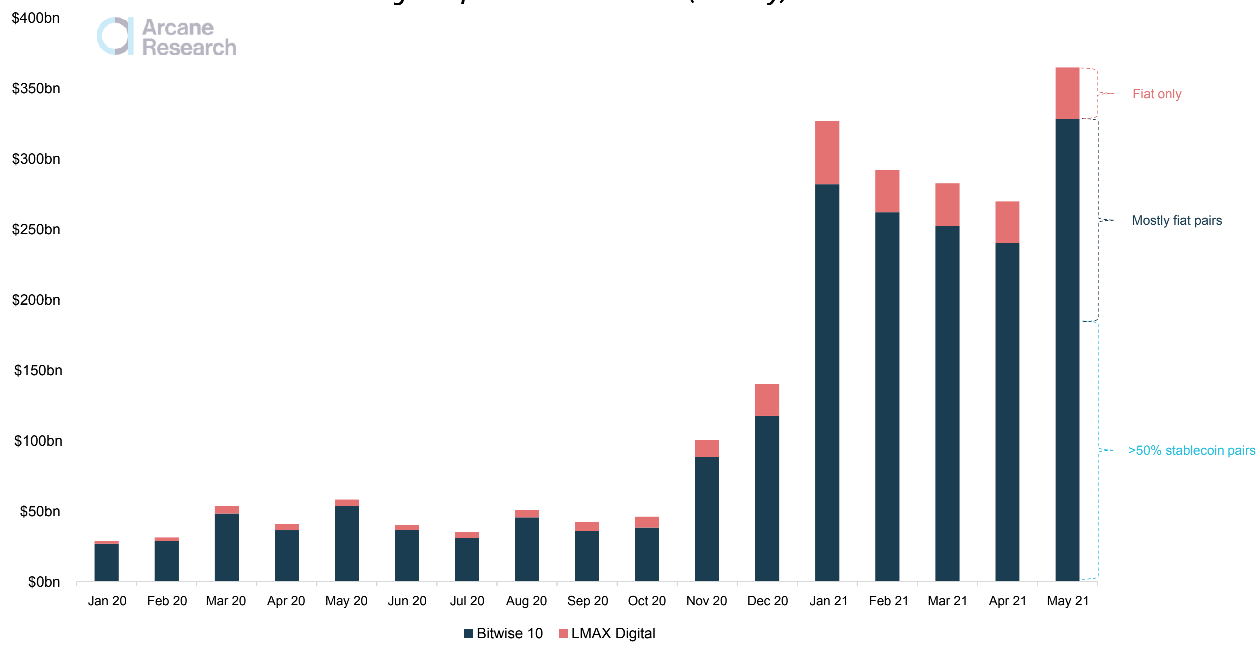
However, a large portion of the trading on spot exchanges is through stablecoins, where customers transfer crypto directly through the platform.

Exploding activity on the leading spot exchanges

The past year has seen the activity on most trading venues explode. The chart below shows the monthly bitcoin volume based on "Bitwise 10" spot exchanges and LMAX Digital, divided by stablecoin pairs and fiat pairs.

As seen, more than 50% of the "Bitwise 10" volume was through stablecoin pairs, primarily on Binance.

Figure 14: Real Bitcoin Volume (Monthly)



Source: Messari, LMAX Digital

Bitwise Asset Management's 2019 report highlights how a large portion of exchanges falsified their reported trading volumes, which resulted in a list of exchanges with "real trading volume", called "Bitwise 10" in the chart above.

As mentioned, Binance is by far the most dominant spot exchange among these "Bitwise 10" exchanges. However, most trading on Binance is through stablecoins and USD Tether. In 2019, Binance opened for fiat deposits, and the exchange has gained its position in the market solely as a crypto and stablecoin on-ramp before that.

In terms of spot crypto to fiat trading, Coinbase sees the highest bitcoin volume. LMAX Digital, which only offers crypto to fiat pairs, comes second, with Bitfinex, Bitstamp, and Kraken following closely thereafter.

While several other exchanges see real volume and are a part of the bitcoin trading ecosystem, the chart above indicates the massive growth we have seen over the past year. Since January 2020, this "real volume" has increased by 1100%, with May 2021 setting new records.

Retail offering

A range of companies service the retail section of the bitcoin market. Among the best-known exchanges are the likes of Binance and Coinbase. While Binance has grown to become the most popular crypto exchange, with a variety of tokens and highly liquid trading pairs, Coinbase is perhaps the most well-known. The U.S based spot exchange just became the first crypto exchange to go public and is valued at close to $50 billion. These exchanges are usually the first experience newcomers have to the crypto market. An easy onboarding process and a simple trading interface are top priorities for these venues.

The competition is fierce, and high marketing budgets are essential to growing the customer base, which is tens of millions on the leading exchanges. In addition, these customers are normally less sensitive to fees and have lower trade sizes.

Binance is crushing its competitors in terms of bitcoin trading volume, but the whole market has seen remarkable growth in trading activity over the past year.

Binance was a "crypto-only" exchange for many years, with no fiat on-ramp, but has opened up for this over the past years. Still, almost all bitcoin trading is done through stablecoins and other cryptocurrencies today.

Many trading venues have explored new services for the increasing group of professional and institutional investors in the bitcoin market.

Coinbase has gotten the attention of many of these, with services like Coinbase Prime. This is a turnkey solution for their institutional clients, fully compliant, with custody and execution options both through the Coinbase exchange and OTC desks. This makes it possible to facilitate large trades through algorithms to limit the market impact.

LMAX Digital

While several venues in the spot market are exploring more professional offerings, there is currently only one spot exchange that only serves institutional clients, LMAX Digital. Judging by its trading volume, LMAX Digital is among the largest regulated spot bitcoin exchanges.

LMAX Digital is a part of the LMAX Group, a leading independent operator of institutional execution venues for FX and cryptocurrency trading. LMAX Group builds and runs its own high-performance, ultra-low latency exchange infrastructure, serving funds, banks, brokerages, asset managers, and proprietary trading firms.

Leveraging its proven technology and liquidity relationships, LMAX Group launched LMAX Digital in the spring of 2018. Through LMAX Digital, institutional investors get access to spot crypto trading on an exchange infrastructure they know and trust.

LMAX Group benefits from running both FX and cryptocurrency trading under the same roof. According to the company, more than 40% of LMAX Digital clients trade FX with LMAX Group. Access to FX products enables LMAX Group to provide fiat on-ramp solutions to LMAX Digital customers. LMAX Digital offers spot trading for the most liquid cryptocurrencies – such as BTC, ETH, LTC, BCH, XRP; all against USD, EUR, and JPY.

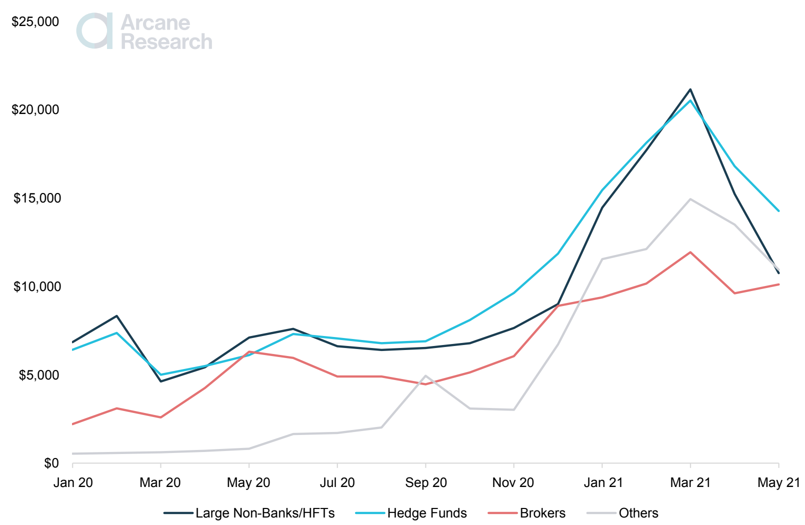
LMAX Digital operates a Central Limit Order Book (CLOB) model. They take the counterparty role to every trade to extend credit to clients, who prefer not to deal bilaterally. Traders post limit orders and get matched just as on any other exchange.

The clients of LMAX Digital differ from retail-focused spot exchanges. Last month, the average trade size for bitcoin on LMAX Digital was ~$11,000, as seen in the chart below.

By February 2021, the exchange had approximately 500 institutional clients in total. In comparison, Coinbase reported 6.1 million active users in Q1 2021 and 56 million verified users. The chart below shows that hedge funds had the largest trade size on LMAX Digital last quarter, with strong growth in trade size over the past year.

Even though the exchange has fewer customers than other crypto exchanges, it has seen significant growth in its trading volume. LMAX Digital has over $275 billion in total traded volume in 2021 and an all-time high daily volume of $6.6 billion on May 19, 2021.

Figure 15: LMAX Digital: Average Bitcoin Trade Size by Client Segment



Source: LMAX Digital

4.5.3 Derivatives platforms

The bitcoin derivatives market has become a hugely important arena in bitcoin's price discovery. The wide array of derivatives instruments enables traders to post either bitcoin, dollars, or stablecoins as collateral in order to commit to leveraged long or short trades.

These markets are fast-paced and absorb information quickly, illustrated by the huge trading volumes in derivatives. Through arbitrage dynamics and market makers, market shocks on the derivatives platforms influence the spot market and vice versa. The bitcoin derivatives market is unique in that it consists of two widely different markets.

On one side of the spectrum, we have the offshore unregulated derivatives exchanges enabling everyone from the average joe to the multi-millionaire crypto whale to trade with a margin as low as 1%.

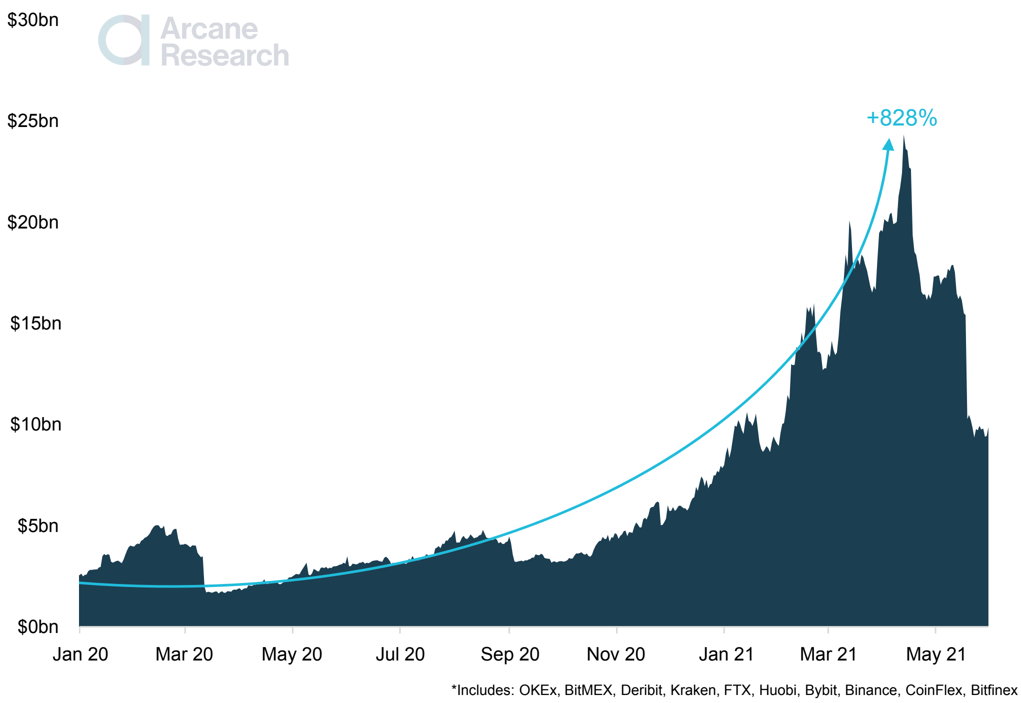
On the other side of the spectrum, we have the tightly regulated U.S. futures market for accredited investors, with a minimum trade size of 5 BTC per contract and margin requirements of around 40%.

These two markets have seen significant growth over the last few years and are monumentally important venues for bitcoin's price discovery.

The offshore unregulated derivatives exchanges

The offshore unregulated derivatives exchanges are the most influential markets in bitcoin's price discovery, according to extensive research in the field. These platforms see trading volumes far above the spot volumes and have accumulated more than $10 billion worth of open interest over the last year, as seen in the chart below. The open interest increased more than 600% from the beginning of 2020 to the top in April 2021.

Figure 16: BTC Unregulated Futures Market*: Total Open Interest



Source: Skew

These exchanges enable a straightforward onboarding solution for new users, high leverage, and correspondingly small contract sizes. This enables even small traders to participate on the platform.

Up until 2020, many of these platforms allowed users to register without any KYC procedures in place. This has since changed, following CFTC and DOJ's charges on BitMEX for illegally operating a derivatives platform (allowing U.S. residents to trade).

The easy onboarding, small contract sizes, and high leverage are a perfect melting pot for adoption as retail traders and more sophisticated traders with larger trade sizes join forces on the same platform.

Over time, this has led the offshore derivatives instruments to become the most significant contributor to the trading volume in the bitcoin trading market, and thus the key driver in bitcoin's price discovery.

The availability of large degrees of leverage tempts many traders to take enormous risks, frequently causing large liquidations.

Depending on your perspective on how the market should operate, these platforms might hit a nerve with you. Opening pandora's box of 100x leverage to novice traders is a recipe for disaster.

Still, bitcoin and crypto, in general, is an industry that has evolved based on the principle that everyone is free to commit whatever transactions and take whatever risks they'd like. Freedom involves personal responsibility; leveraging a trade using 1% as the margin is a choice, the consequences are for the traders to carry.

By now, Binance and Bybit have become the largest offshore derivative exchanges in terms of open interest. Binance is the dominating platform in terms of trading volumes, accounting for near 35% of the trading volume in bitcoin futures over the last month.

The regulated derivatives market

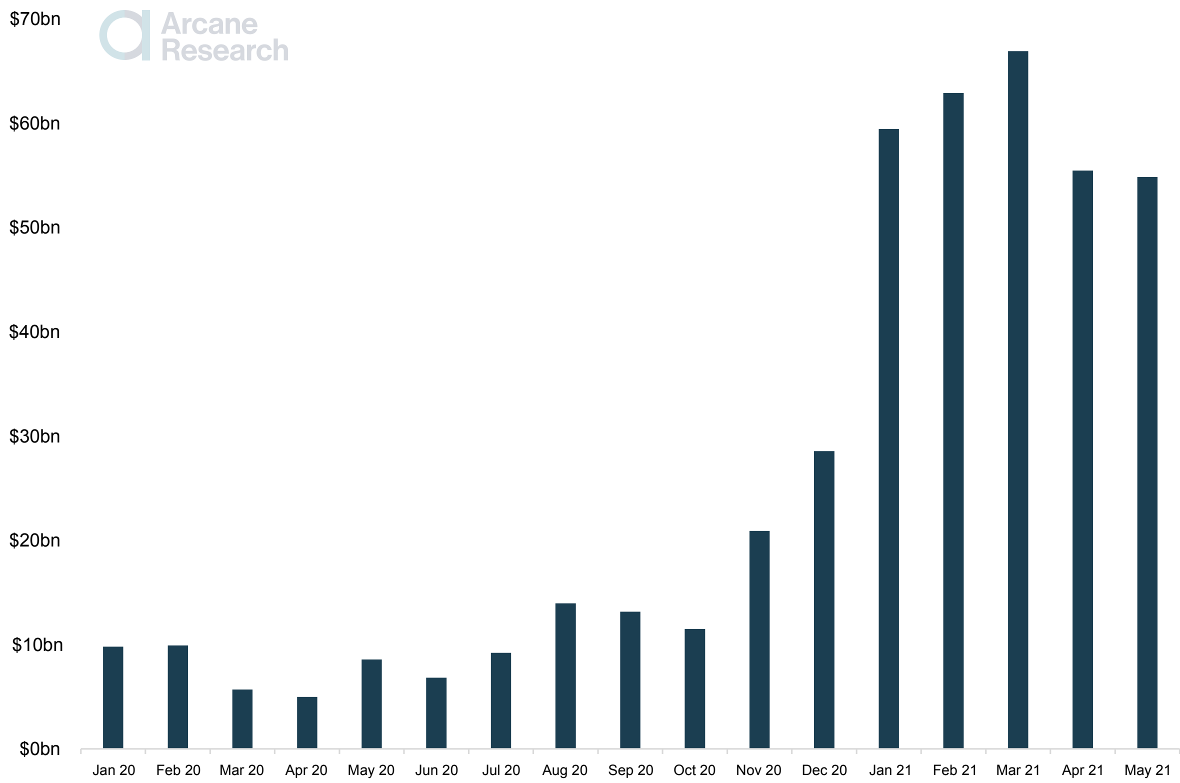
The regulated derivatives market is far less accessible than the unregulated market. CME is the major player in the space and provides cash-settled bitcoin futures.

Unlike the unregulated exchanges, CME does not trade around the clock. The contracts on CME trade Sunday to Friday 5 PM to 4 PM CT, with a 60-minute break each day beginning at 4 PM. The contracts are not tradeable on Saturday, but the underlying asset (bitcoin) trades in other liquid markets, which is a disadvantage to the CME contracts.

CME's futures are priced based on the CME CF Bitcoin Reference Rate (BRR). Akuna Capital, B2C2, BlockFi, Cumberland, Galaxy Digital, Genesis, NYDIG, among others, act as liquidity providers on CME.

In December 2017, CME and CBOE launched bitcoin futures. CBOE announced in March 2019 that they would stop offering bitcoin futures by June 2019, while CME maintained its offering. Ever since launching, CME has seen gradually increasing trading volumes, and the open interest has grown accordingly as institutional interest has flourished.

*Figure 17: Monthly Volume of Institutional Bitcoin Futures**



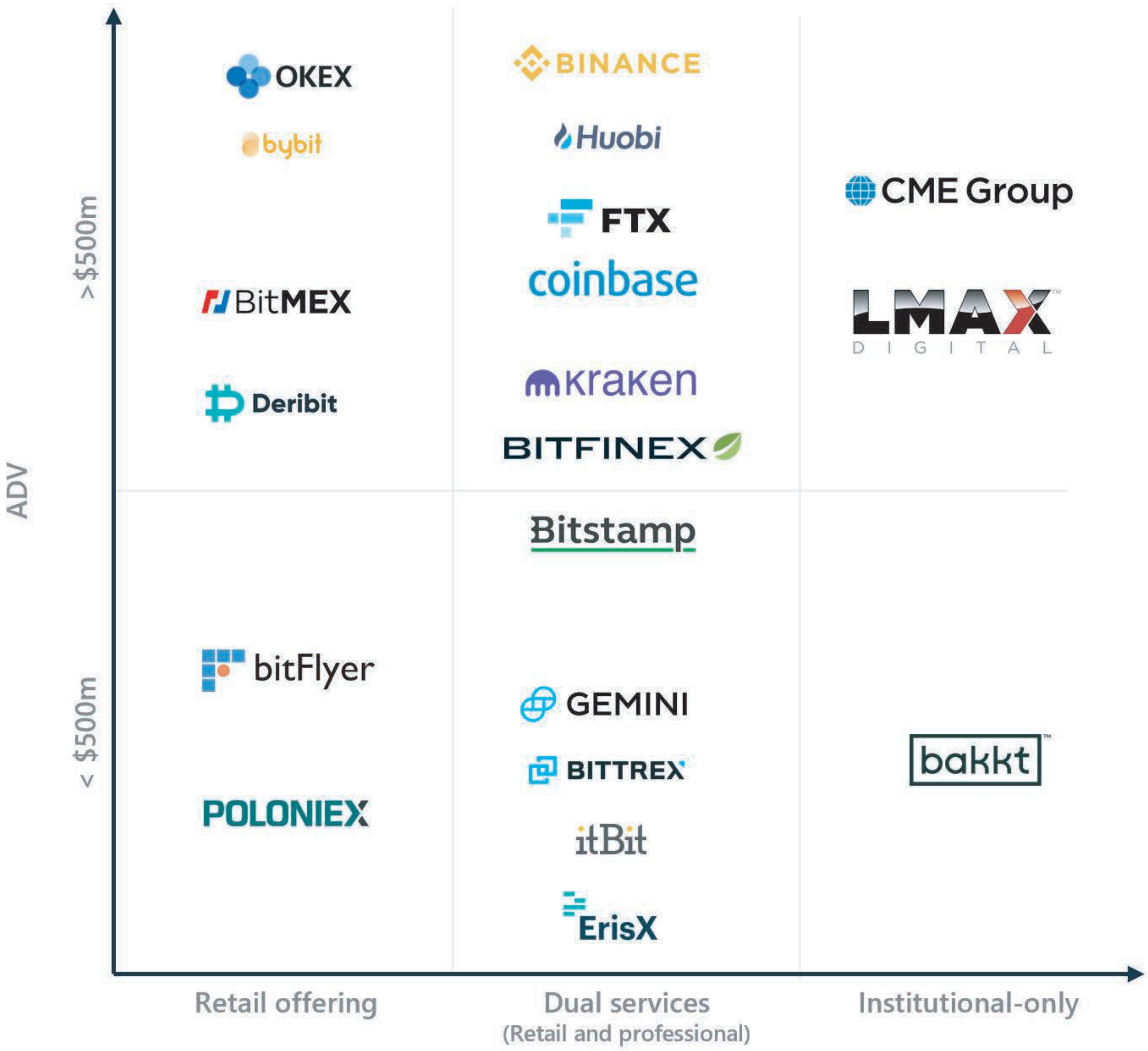
Source: Skew

*CME & Bakkt (Only CME in Apr/May 21)

4.5.4 Mapping out the leading trading venues

We can map out the leading trading venues based on their daily bitcoin trading volume and their offering to summarize this section on trading venues.

Figure 18: Leading Trading Venues



The overview is not all-inclusive

Source: Arcane Research, Skew

4.6 Other investment structures

Another popular tool for gaining crypto exposure is through investment vehicles such as Grayscale or ETFs. These vehicles enable investors to gain crypto exposure through tax benefited savings accounts and have seen massive adoption over the last 16 months.

These bitcoin investment vehicles are accumulating vast amounts of bitcoin. These funds have accumulated more than 800,000 bitcoin, as seen in the chart below.

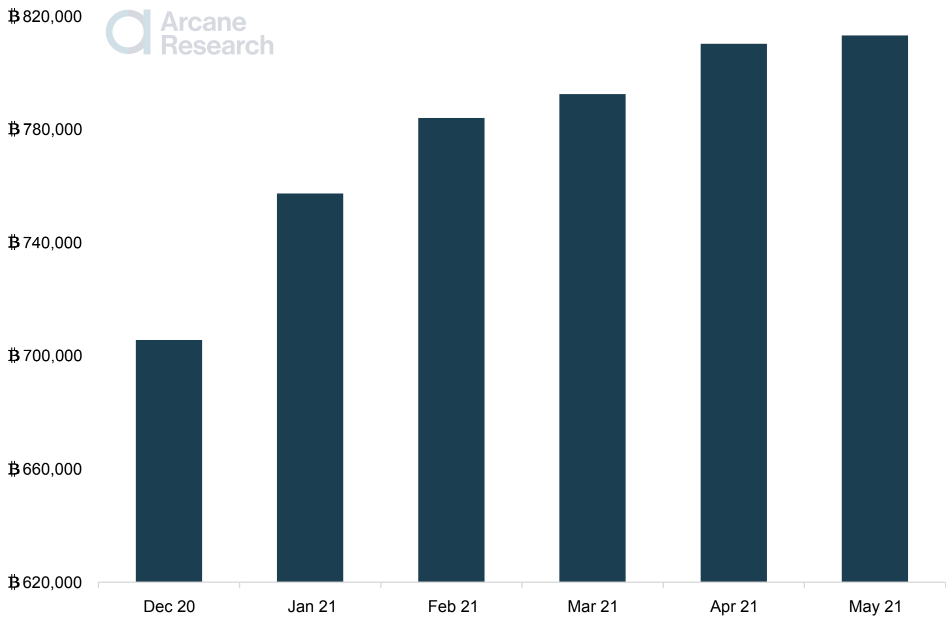
The funds are structured differently. The primary bitcoin investment vehicle is the Grayscale Bitcoin Trust. It is listed in the OTCQX market, and accredited investors are eligible to invest in the primary market, either in-kind with bitcoin or through cash (with Grayscale then converting cash to bitcoin).

Shares of the trust are traded in the secondary market. The shares frequently trade at either a substantial premium or discount to the net asset value of the fund. This is caused by lock-up periods and the lack of a proper redemption program.

This year, Canada has approved several ETFs. These funds have an active daily redemption program, leading the price to follow the fund's net asset value far closer.

A consequence of the active redemption program of the Canadian ETFs is the need for proper liquidity channels to balance the bitcoin holdings regularly. This means that the funds must have tight connections to brokers and OTC desks to convert cash for bitcoin or bitcoin for cash.

Figure 19: Bitcoin Funds: BTC under Management



Source: Bytetree, Ultumus

The largest bitcoin ETF, the Purpose Bitcoin ETF, uses Cidel Trust Company as their custodian and the Gemini Trust Company as a sub-custodian.

The U.S. has yet to approve any ETFs, but several ETF applications have been submitted, and we could see ETF approvals in the near future. The current ETF applicants are Fidelity, NYDIG, Galaxy Digital, SkyBridge Capital, VanEck, Valkyrie, Wisdom Trust. In addition, Grayscale has publicly announced its intentions of turning the Grayscale Bitcoin Trust into an ETF.

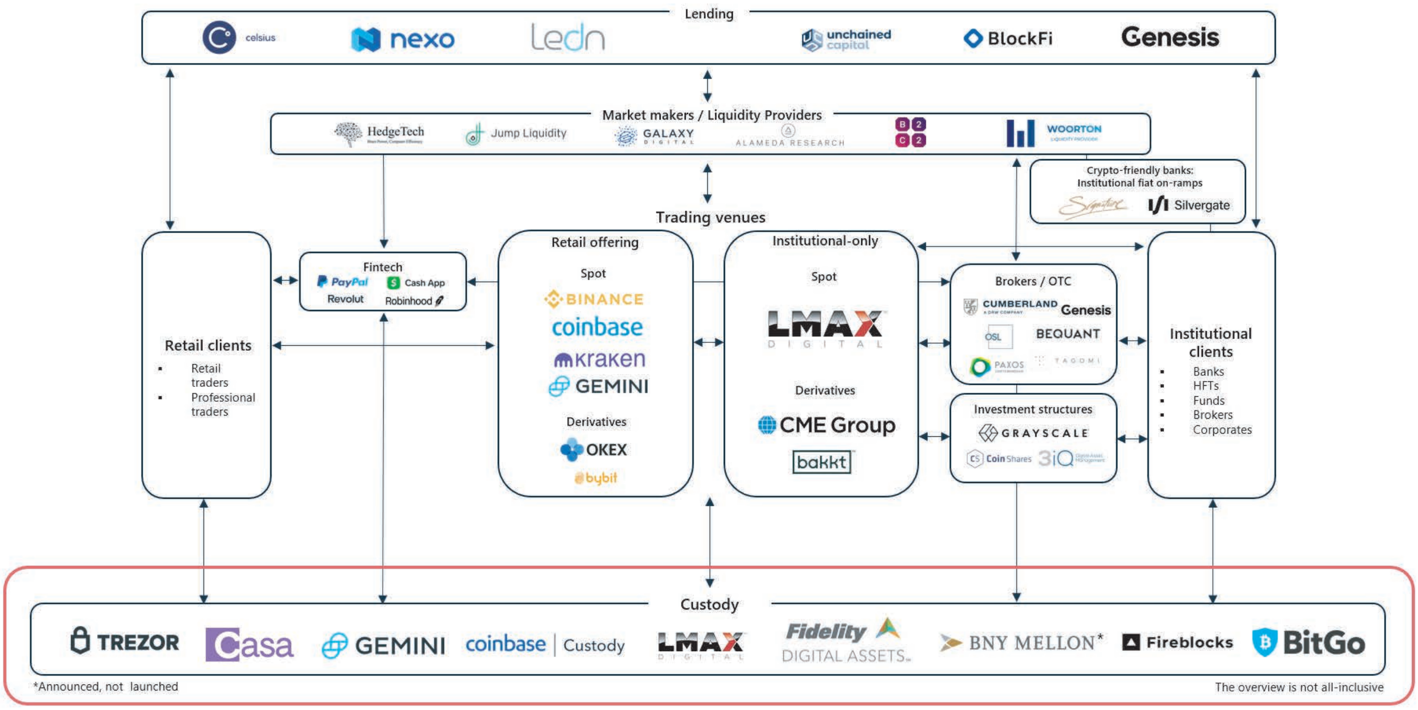
5 Emerging solutions

As the bitcoin trading ecosystem developments and the emerging group of institutional investors move into the crypto market, traditional services have followed. Custody of bitcoin has been important from its inception. Still, it is just recently that we have seen large traditional institutions making moves to facilitate bitcoin custody. While traditional institutions haven't started offering bitcoin lending services yet, institutional investors are already deep into this section of the industry, with billions of dollars in play.

5.1 Custody

If we circle back to the ecosystem overview presented at the beginning of this report, we see how custody is vital to the crypto market. The need to store funds is essential for all sorts of investors in the crypto space.

Figure 20: Bitcoin Ecosystem Overview (Custody highlighted)



Source: Arcane Research

Starting with companies like Trezor and Ledger, customers can buy small USB devices operating as wallets for self-storage. Next, you find the likes of Casa, offering premium memberships with a multi-location security model for key management that removes the single point of failure.

Several crypto exchanges have also started offering custody services to their most significant clients, making the switch from trading to storing more efficient. Coinbase Custody provides custody for its institutional clients. A separate and independent business to Coinbase, where assets are segregated and held in trust for the clients. These solutions are regulated, offline storage services, which follow the same requirements as traditional financial custodians. Gemini is another prominent exchange with its own custody offering. This also targets institutional clients and claims to have "the largest limit of insurance coverage purchased by any crypto custodian in the world" with a $200 million insurance. As a regulated DLT provider for execution and custody services, LMAX Digital also offers proprietary institutional grade custody solution to its trading clients. Recently, LMAX Digital started offering custody as a standalone service as well.

As another example of the emerging institutional bitcoin trading infrastructure, we find several well-known traditional players who have entered the custody scene. Fidelity is already established in the bitcoin ecosystem and was early in embracing the new asset class. As one of the world's largest financial services providers with over $7 billion in assets under management, it started initial crypto research and development already in 2014. Its new company, Fidelity Digital Assets, was set up in late 2018 and now aims to become a full-service enterprise-grade platform for storing, trading, and supporting digital assets. Its custody solution was launched in March 2019, and while bitcoin custodians are very private on their actual numbers, the Fidelity CEO, Abigail Johnsen, said in an interview that the firm's bitcoin custody business has been "incredibly successful".

While Fidelity was early in bitcoin custody, large, traditional players now plan to follow. BNY Mellon is the largest custodian bank in the world with its $41 trillion in assets under custody and is now moving into bitcoin. News broke in February that the bank will roll out a new digital custody unit later this year. Mike Demissie, Head of Advanced Solutions at BNY Mellon, said in an interview that they will offer different types of custody. This will include air-gapped cold storage sometimes associated with bunkers buried inside Swiss mountains, a math-powered multi-party computation (MPC), and a hardware security module (HSM) component. Standard Chartered's fintech investment unit, S.C. Ventures, and Northern Trust are to launch a U.K.-based cryptocurrency custodian for institutional clients. The new company, called Zodia Custody, is currently pending approval by the U.K.'s Financial Conduct Authority under local money laundering regulations.

Many are expected to follow Fidelity, BNY Mellon, Standard Chartered, and Northern Trust from the traditional finance space. Both JPMorgan and Goldman Sachs have supposedly issued a request for information (RFI) to explore digital asset custody, and the same rumors apply for Citi. These news stories are clear indications of the emerging institutional infrastructure around bitcoin.

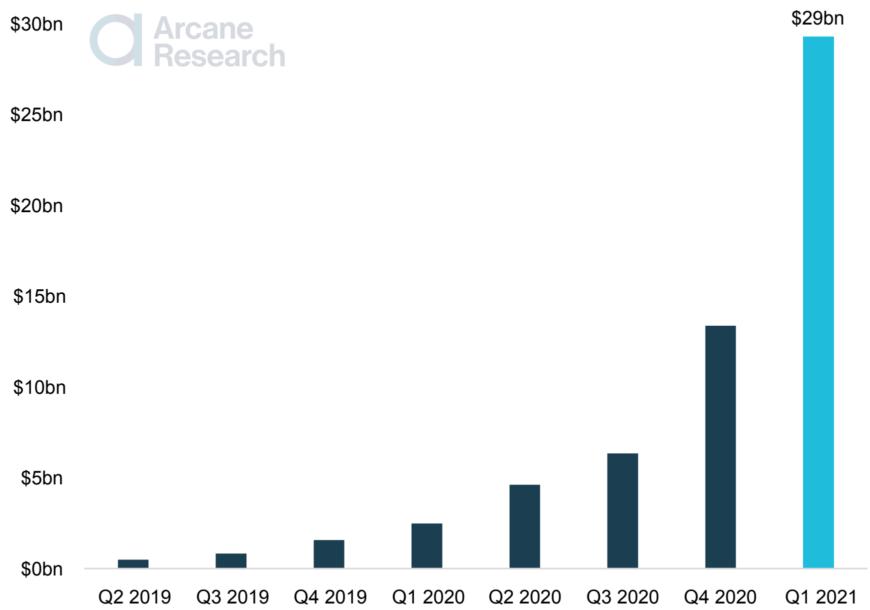
Other companies worth mentioning are the likes of Fireblocks and Copper, which have an important custody role in today's crypto market. Fireblocks is participating in custody and acting as an infrastructure player that offers custody to institutional investors. The company has a network of liquidity providers and is connected to most of the largest exchanges. Some members in Fireblocks' network include Binance, Coinbase Pro, Gemini, FTX, B2C2, Galaxy Digital, and Genesis. In addition, OTC desks, market makers, lending companies, and payments companies like Revolut are some of the users of Fireblocks services. Fireblocks has secured the storage and transfer of $637 billion in digital assets since its launch in 2019, according to a press release from May 2020. This shows how

Fireblocks connects all parts in the ecosystem overview presented above and is key to a well-functioning bitcoin market.

5.2 Lending

As already mentioned, institutional investors have already embraced bitcoin lending services. The growth over the past year has been remarkable, with billions of dollars being deployed from institutions in the bitcoin lending market. As seen in the chart below, data from Credmark shows that the lending market had a total of $29 billion of outstanding loans in Q1 2021.

Figure 21: Lending Market: Active Outstanding Loans



Source: Credmark

Lending services have an important role in the bitcoin trading ecosystem, providing essential access to liquidity for many participants. A common reason for participating in the lending markets among institutional traders is the desire to increase their exposure through existing funds. Locking up bitcoin as collateral and receiving cash loans lets traders buy even more bitcoin.

Leveraged trading through lending companies is preferable for many institutions compared to the likes of derivatives exchanges, where automated liquidations are normal, even locking in profits through liquidation fees. Lending companies do not have an interest in their customers getting liquidated, as their business is to provide loans.

It is of great importance that exchanges and platforms in the bitcoin trading ecosystem stay liquid, and lending companies have a crucial function in making this happen. The majority of the companies participating in the bitcoin lending market are market makers. They borrow different cryptocurrencies and stablecoins for liquidity provision elsewhere.

The two giants in the bitcoin lending market are Genesis and BlockFi. Genesis saw incredible growth in 2020, and the growth continued in the first quarter of 2021. Their outstanding loans surged to $9 billion in Q1, up 136.4% from $3.8B in Q4 2020. Genesis, which is solely focused on institutional clients, processed almost $20 billion in loans last year. In the first three months of 2021 alone, the company processed $20 billion, crushing all previous records.

Their biggest competitor, BlockFi, is seeing the same numbers. As published in our report, "The State of Bitcoin as Collateral", internal BlockFi numbers show that the company processed $18.6 billion to its institutional and private clients in 2020. The company had $4.4 billion in outstanding institutional loans by the end of the fourth quarter.

These numbers show how institutional investors are embracing lending services in the bitcoin market. We estimate that about half a million bitcoin could already be locked up as collateral in the crypto lending market.

However, we are yet to see many traditional financial institutions entering the market, but this is probably just around the corner. One way this will be facilitated is via Fidelity Digital Assets who have partnered with BlockFi to offer lending services to its clients, once they have opened an account with BlockFi.

Silvergate, which was discussed earlier as one of the few crypto-friendly banks, is also in the lending business. Silvergate recently expanded its service, partnering with the above-mentioned Fidelity. Clients receive USD financing through a loan agreement with Silvergate Bank, and Silvergate uses its payment network SEN to fund the loans. Then, the bitcoin collateral is held by Fidelity Digital Assets in a separate cold storage account.

As exemplified above, these industry players fill several roles in the bitcoin trading ecosystem, and synergies are found between many leading players. Who will be the next traditional financial institution to offer bitcoin lending services?

We don't have the answer to that, but we can with confidence say that the institutionalization of the bitcoin trading ecosystem has just started and that many will follow in the years to come.

6 Concluding remarks

As bitcoin recently reached a trillion-dollar market cap, the asset class is evolving from its nascency. The last year marked a transition for the market with an increasing institutional presence in a market previously dominated by retail traders and venues. However, there still exists arbitrage opportunities between venues, most notably within the derivatives market, and there is a lack of regulation and regulatory consistency globally around KYC and AML.

We believe the recent developments in the ecosystem will lead the asset class to mature. Regulators will increase their pressures and venue requirements to protect retail consumers. These regulations will also contribute to making bitcoin an asset well suited for institutional investors. Over time, we believe that the increased institutional presence will lead to a more substantial part of the price discovery in bitcoin to occur on regulated institutional trading venues.

Disclaimer

- The Bitcoin Trading Ecosystem (the "Report") by Arcane Research is a report focusing on cryptocurrencies. Information published in the Report aims to spread knowledge and summarise developments in the cryptocurrency market.
- The information contained in this Report, and any information linked through the items contained herein, is for informational purposes only and is not intended to provide sufficient information to form the basis for an investment decision nor the formation of an investment strategy.
- This Report shall not constitute and should not be construed as financial advice, a recommendation for entering into financial transactions/investments, or investment advice, or as a recommendation to engage in investment transactions. You should seek additional information regarding the merits and risks of investing in any stock, commodity, cryptocurrency or digital asset before deciding to purchase or sell any such instruments.
- Cryptocurrencies and digital assets are speculative and highly volatile, can become illiquid at any time, and are for investors with a high risk tolerance. Investors in digital assets could lose the entire value of their investment.
- Information contained within the Report is based on sources considered to be reliable, but is not guaranteed to be accurate or complete. Any opinions or estimates expressed herein reflect a judgment made as of the date of publication and are subject to change without notice.
- The information contained in this Report may include or incorporate by reference forward-looking statements, which would include any statements that are not statements of historical fact. No representations or warranties are made as to the accuracy of these forward-looking statements. Any data, charts or analysis herein should not be taken as an indication or guarantee of any future performance.
- Neither Arcane Research nor Arcane Crypto AS provides tax, legal, investment, or accounting advice and this report should not be considered as such. This Report is not intended to provide, and should not be relied on for, tax, legal, investment or accounting advice. Tax laws and regulations are complex and subject to change. To understand the risks you are exposed to, we recommend that you perform your own analysis and seek advice from an independent and approved financial advisor, accountant and lawyer before deciding to take action.
- Neither Arcane Research nor Arcane Crypto AS will have any liability whatsoever for any expenses, losses (both direct and indirect) or damages arising from, or in connection with, the use of information in this Report.
-

By accessing this Report you confirm you understand and are bound by the terms above.

Arcane Research

LMAX™ | Digital