

SPECIAL REPORT

Proprietary Trading in Crypto Derivatives

The current state and future market
for professional trading of digital asset
futures and options

Commissioned by

AVELACOM



Deribit

Proprietary trading firms are key liquidity providers to global cryptocurrency derivatives markets. As digital assets continue to become more embedded in financial markets, the asset class is rapidly evolving with more players coming to the market in terms of trading firms, venues and infrastructure providers. In this report, commissioned by Avelacom and Deribit and based on an extensive survey of senior executives at proprietary trading groups across the globe, Acuiti explores how trading firms are approaching the crypto derivatives market and where the demand lies for future innovation. We ask what and how firms are trading crypto derivatives, what challenges they face in navigating the plethora of venues, the take up of innovations such as crypto custodians and DeFi trading platforms and where the demand is for future launches.

When in 2014 Chicago-based proprietary trading giant DRW set up Cumberland, a company launched to focus on mining and trading cryptocurrencies, few in the market took much notice. The price of Bitcoin had just fallen from over \$1000 to less than \$350 and many had written it off as an obscure fad or illicit currency for dubious dark-web activities.

Cumberland was among the first initiatives by a traditional proprietary trading firm to enter the crypto currency market. Seven years' later, hundreds of prop firms are active in the market trading both spot and derivatives across multiple digital assets.

The origins of firms trading crypto derivatives today are diverse. However, this report splits firms into two broad categories: firms that launched specifically to trade cryptocurrencies and traditional firms that have adopted trading of cryptocurrencies alongside traditional assets. In the same way, we draw a distinction between venues that have their roots in the traditional world and now offer trading in crypto derivatives and those launched to offer crypto derivatives.

This report seeks to understand how proprietary trading firms are currently trading the crypto derivatives market, where the demand is for growth and to analyse differences between how traditional firms are trading the market compared with specialist firms.

The survey collected the views of senior executives at 80 proprietary trading firms of which 84% are already trading crypto derivatives. Of these firms, around half were launched to trade digital assets (referred to hereon in as "specialist" firms), and half traded traditional assets before trading digital assets (referred to as "traditional" firms).

Of the firms surveyed that are not currently trading crypto derivatives, 30% plan to start doing so in the next six months, 7% in the next 6 to 12 months and 14% plan to do so but not within the next year. All those planning to start trading crypto derivatives in the next 12 months expected to trade spot crypto alongside.



The evolution of the crypto derivatives market

Crypto futures and options are a relatively new part of the overall ecosystem of digital assets. The first bitcoin futures on a regulated exchange launched in December 2017 when Chicago-based options market CBOE pipped rival CME by seven days with its launch.

Despite being first out of the gates, CBOE's bitcoin future failed to get traction and in March 2019, it stopped listing the product (although in March 2021 CBOE chairman Ed Tilly said that the firm was planning a return).

Prior to CBOE's launch, however, a nascent market was already developing. The first regulated bitcoin derivatives product was pioneered by TeraExchange which in September 2014, received CFTC approval for an OTC swap based on the price of bitcoin, marking the first time a US regulatory agency had approved a bitcoin financial product.

Further back, Russian trading venue ICBIT lays claim to offering the first bitcoin futures contract, launching the product in late 2011. However, ICBIT was an anonymous venue plagued with AML/KYC concerns and eventually closed. An unofficial OTC market had by then emerged with contracts being negotiated in chat rooms and across internet relay channels.

Following in ICBIT's wake, a host of specialist crypto exchanges launched futures contracts with Bitfinex, BitMEX and OKEx developing derivatives markets in 2014 and offering trading predominantly in bitcoin perpetual swaps. Deribit, the longest running bitcoin options exchange, launched in 2016 bringing listed options to the market. Today there are numerous venues offering trading in cryptocurrency futures and options to financial institutions and retail markets.



What are prop firms trading?

As in other asset classes across the global derivatives market, proprietary trading firms have been early adopters of crypto derivatives. Of the proprietary trading firms surveyed that are trading crypto derivatives, 81% traded derivatives alongside the spot market with the remainder only trading crypto derivatives. Of those trading both, 40% began trading spot before moving on to derivatives, 32% started with derivatives then moved to spot and 28% started trading both at the same time. Specialist crypto firms most commonly began trading both simultaneously while almost half of traditional firms traded spot prior to trading derivatives.



Over half of respondents that were trading crypto derivatives traded both crypto futures and options, 46% traded futures only while just 2% traded options only. Adoption of options is set for significant growth among those only trading futures as 90% of those not trading options said they were interested in doing so with just 14% of traditional firms and 7% of specialist firms saying that they would not trade crypto options. For firms that moved from trading spot to trading derivatives, the key driver was that it was required by their trading strategy. Other drivers were greater liquidity in derivatives markets, greater leverage and better exposure.



Where are prop firms trading?

Crypto derivatives markets differ from traditional derivatives markets in terms of the number of venues offering liquidity in the contracts. Whereas in the traditional world, liquidity is mostly centred on one or, in limited instances, two or three exchanges, in the crypto world a multitude of venues boast liquid crypto futures markets. In crypto options trading, the market is currently dominated by Deribit.

The survey found that proprietary trading firms traded an average of 5 markets for futures and 2.3 markets for options. Traditional firms tended to trade on a greater number of exchanges than specialist firms, with an average of 6 markets for futures and 2.6 for options compared with 4.9 and 1.9 for specialist firms.

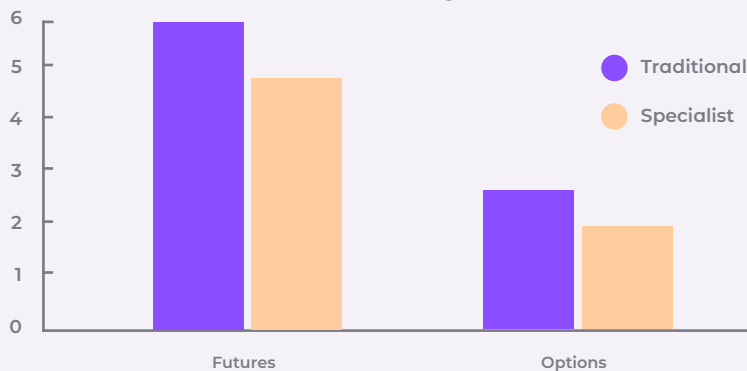
Unsurprisingly, proprietary trading firms that counted arbitrage among their strategies traded more markets, connecting to an average of 6.9 markets for futures trading with several trading across more than 10 venues.

BTC futures open interest

Exchange	OI (\$m)
Binance	3577
Bybit	2894
CME Group	2413
FTX	2256
OKEx	2142
Deribit	1765
Huobi	1472
BitMEX	1420
BTSE	854
Bitfinex	683
Bakkt	49
CoinFLEX	33
Duedex	2

Source: Bitcoinfuturesinfo.com

Number of exchanges traded



BTC options open interest

Exchange	OI (\$m)
Deribit	12000
bit.com	465
LedgerX	344
OKEx	341
CME	318
Huobi	2
Bakkt	0

Source: skew.com

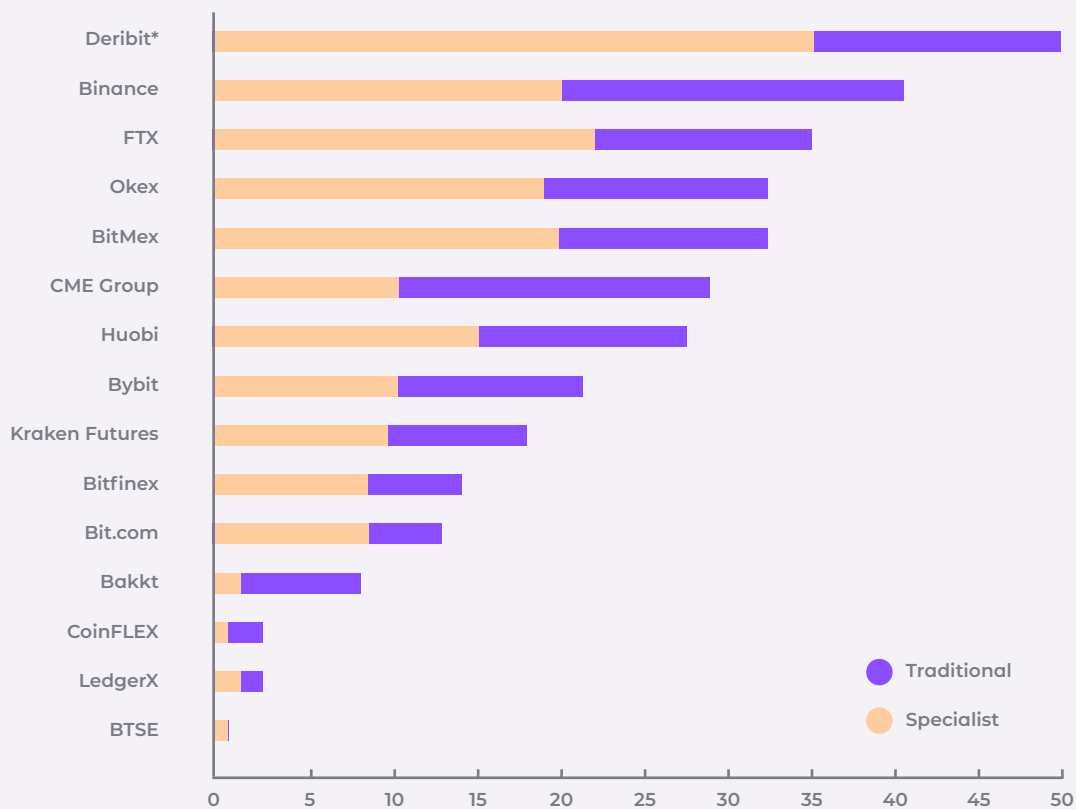
“As crypto trading becomes increasingly competitive there is a growing understanding of the importance of low latency, robust, reliable network solutions to ensure institutions can keep up with the latest trends and maintain profitable and effective trading. The many venues offer significant arbitrage opportunities, but there remain some challenges because the most popular exchanges have cloud-based infrastructure and push public cloud connectivity as the primary network solution. However, this is not designed for latency sensitive trading and needs to be optimized. Avelacom provides solutions designed to improve latency, using our own proprietary networks and also ensuring we have ascertained the best locations and routes within existing clouds to minimize delays.”

Aleksey Larichev
CEO
Avelacom

In terms of futures trading the most traded exchanges for proprietary trading firms were Binance, FTX, BitMex, Okex, Deribit, Huobi and CME Group. For options trading, Deribit, CME and Okex were the most popular markets.

The popularity of CME relative to its market share can be explained by the fact that traditional firms trading cryptocurrencies tended to include CME in their market coverage owing to their existing connectivity to the exchange. However, as we find later on in this report, CME's adoption among specialist firms is set for significant growth, while Deribit and Binance are a popular choice for traditional firms.

On which venues do you currently trade crypto derivatives?



*Please note that included in the survey outreach was a targeted distribution to Deribit clients, which positively skews this chart towards firms trading on Deribit

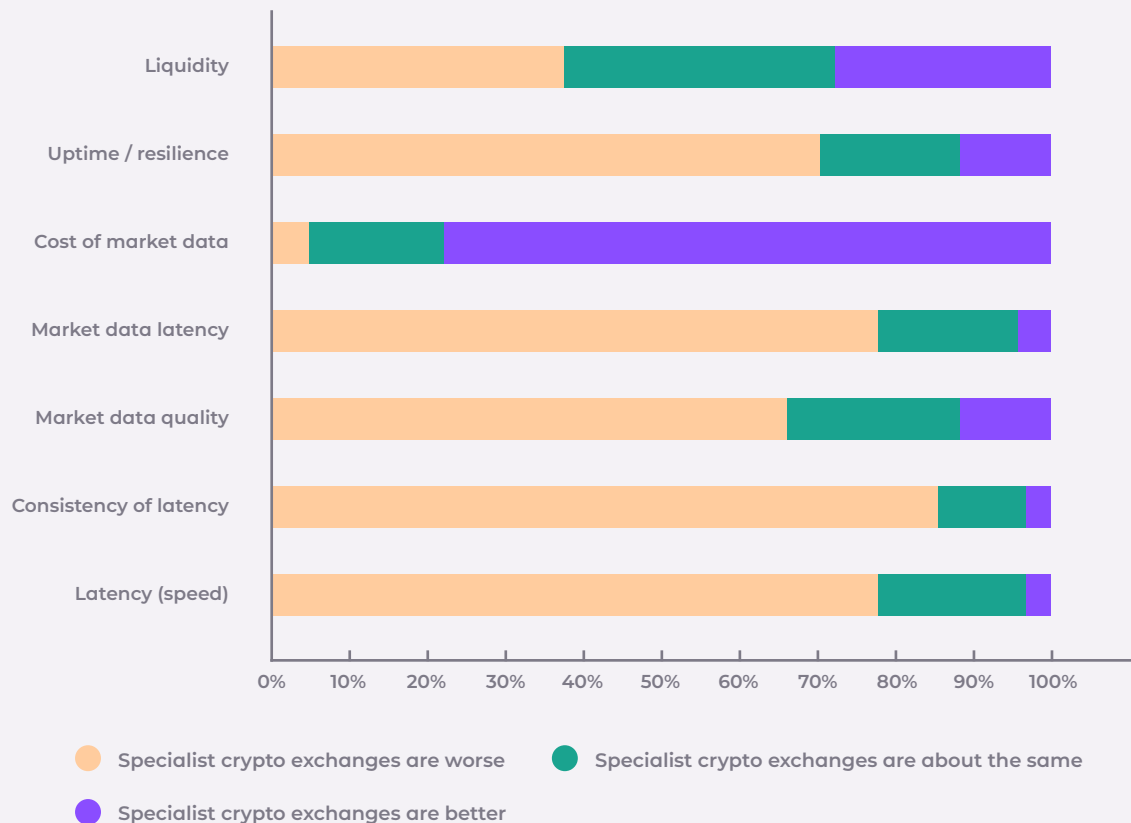
How are firms approaching crypto derivatives trading?

While the multitude of venues offers significant arbitrage opportunities, proprietary trading firms also raised challenges with complexities around connectivity, risk management and navigating different liquidation and margining regimes.

In addition, for trading firms used to trading exclusively on traditional markets, the relative infancy of specialist crypto venues means that some functionality is not offered and specialist crypto exchanges often do not have the resilience or performance of the traditional markets.

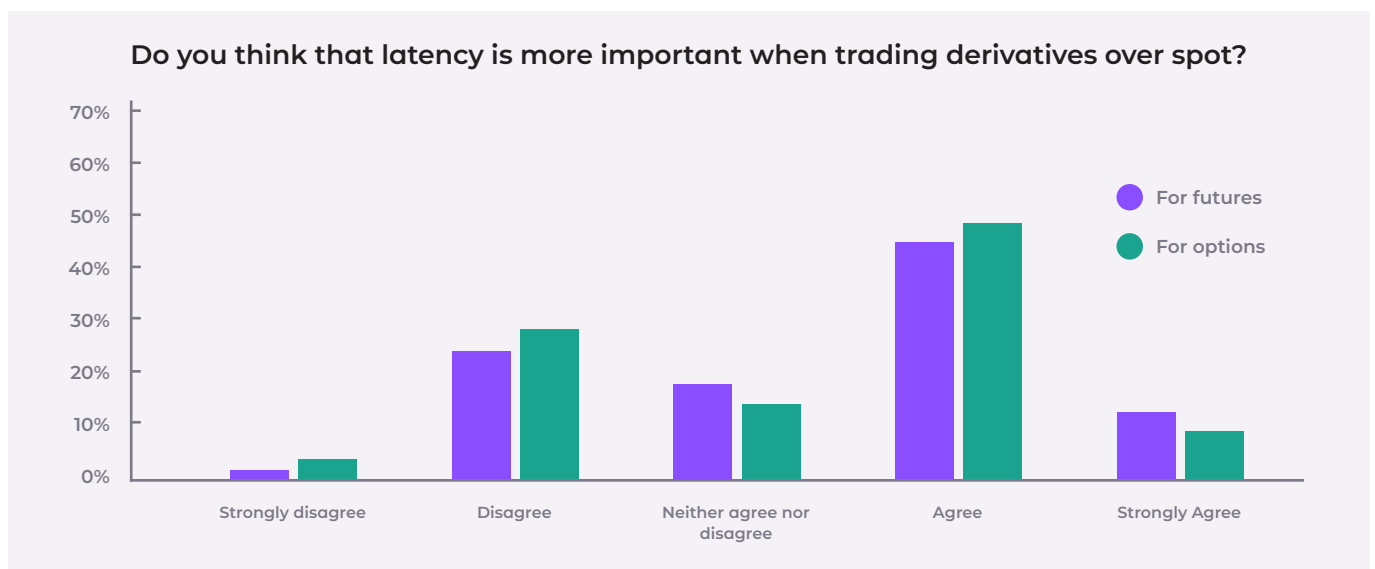
This is particularly evident in periods of volatility, during which many specialist markets experience slowdowns and lower performance. This fact is not limited to venues, firms also reported issues with charting platforms and other front office tools designed for crypto trading. As a result, many traditional proprietary trading firms have developed their own technology around connectivity and other trading processes to fulfill functions that they have traditionally outsourced.

How do specialist crypto exchanges differ from traditional exchanges?



However, respondents said that uptime and performance at specialist exchanges is improving significantly as venues invest in capacity, resilience and technology. Also, specialist crypto venues offer 24/7 trading rather than the set trading hours of traditional exchanges. In addition, the current infrastructure limitations do create opportunities for traders arbitraging between venues.

Respondents to the survey reported relative weakness in specialist crypto venues across most functions. However, specialist venues were praised for the lower cost of market data, an issue that currently attracts consternation from firms trading on traditional venues. The consistency and extent of latency was said by respondents to be a more important factor for them when trading derivatives over spot.



“While crypto markets have attracted professional algorithmic traders before, more investment funds have diversified by entering the cryptocurrency derivatives space specifically in the past six months. Annualised futures premiums, sometimes in excess of 35% return, have been very tempting for typically traditional market funds, which has led to rapid institutional adoption. This is evident by the latest derivatives trading statistics - more than four-fold increase in futures OI on Deribit alone, and nearly two times higher block trade volume share versus October 2020. Deribit also offers more BTC and ETH futures than competitors, giving more possibilities when trading the futures curve.”

John Jansen
CEO
Deribit



The Avelacom view: Cloud-based exchanges: overcoming the challenges to low latency access

With the global move to cryptocurrency markets Avelacom has adapted its solutions portfolio to service the growing number of institutions entering into digital asset trading.

These often face performance challenges because many cloud-based exchanges were originally set up for retail traders. As a result, the infrastructure was not designed to serve latency-sensitive market makers and professional tech-savvy traders.

Avelacom has facilitated this growing market by being one of the few tech companies who have offered low latency access to cloud-based exchanges.

Our standout features are:

- 80+ points of presence (PoPs) located in data centers that are home to the exchanges' infrastructure,
- direct links with public clouds (AWS, Alibaba, Microsoft Azure, Cloudflare...) to minimize latency to access clouds,
- a free trial to test our network latencies using clients' actual applications,
- network performance is SLA guaranteed with microsecond accuracy.

Margining and custody

For proprietary trading firms entering the crypto derivatives market, specialist risk management protocols need to be developed. Owing to the volatility and liquidation policies in the crypto markets, liquidations are more common than when trading traditional assets. High leverage makes this an even bigger challenge and risk management systems need to be adjusted to reflect the different market dynamics and to navigate the inconsistency in performance across the various venues.

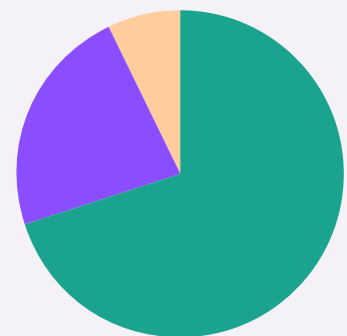
Another key difference when trading specialist crypto exchanges is the margining regimes. On traditional markets, margin must be paid in cash or, in some instances, securities. However, many specialist crypto exchanges accept the underlying asset as margin while others require margining to be posted using a stablecoin like Tether.

While stablecoin margining offers some benefits in terms of stability of collateralisation, it means that trading firms are holding less of the underlying cryptocurrency so miss out on any appreciation in value that they would have received had they margined their position in the coin.

For this reason, respondents to the survey had a strong preference for coin margining over stablecoin margining. Overall acceptance of digital asset or stablecoin margining was high with just 7% of respondents insisting on fiat margining for their trading.

In terms of which stable coin users preferred, USDT (Tether) and USDC (USD Coin) were the top choices. Stasis EUR was third followed by Binance USD and Paxos Standard.

When trading crypto options, would you prefer coin margined or stable coin margined?

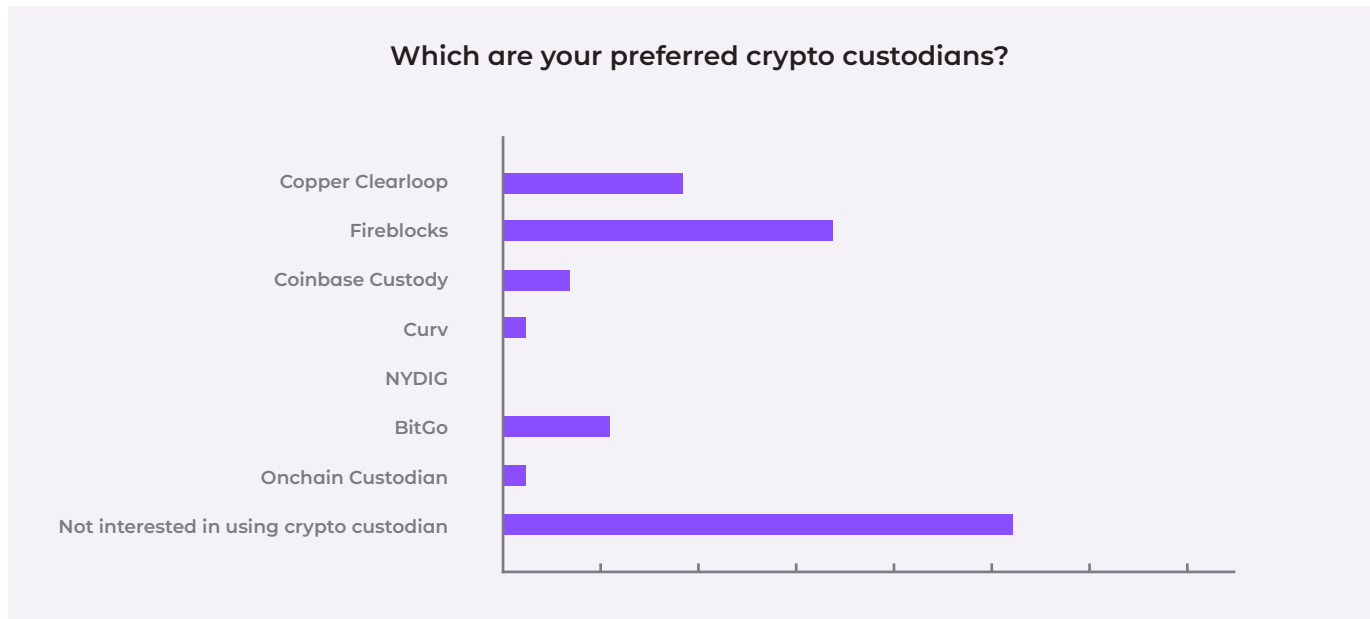


- Coin Margined
- Stablecoin Margined
- Only Fiat Margined

“As more traditional funds are entering the crypto derivatives space, the need for efficient custody is increasing. Unlike quant trading funds with relatively low trading balance and high turnaround, most investment funds have higher balance and more prolonged market exposure. This strategy requires a custody solution that provides complete control over the assets, instant transactions or preferably movement of assets only after the settlement, and a solution that could ensure off-exchange transactions eliminating the increasing transaction costs. Therefore, it is expected that the role of custody and settlement networks will become more prominent in the upcoming years.”

Luuk Strijers
Chief Commercial Officer
Deribit

Alongside the proliferation of venues to trade digital assets and derivatives, a host of specialist crypto custodians have emerged to store assets on behalf of institutional investors. When it came to crypto custodians, almost half of respondents were not interested in using one, perhaps not surprising as custody services tend to be focused on institutions with large holdings of assets rather than those that trade large volumes in and out of assets. However, of those that did use a crypto custodian, Fireblocks was the top choice for proprietary trading firms surveyed.



Adoption of decentralised trading venues

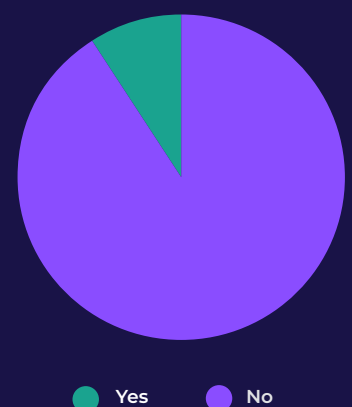
An emerging segment of the crypto derivatives markets is decentralised finance trading venues (DeFi), part of the decentralised finance movement. DeFi platforms offer trading in a fully-decentralised, blockchain-settled environment. They enable trades to be made via the use of smart contracts without the intermediation of a centralised exchange. Several DeFi marketplaces have emerged to offer trading in derivatives.

One of the earliest DeFi exchanges was Uniswap, which launched in 2018 and operates on an open source basis allowing developers to build their own exchanges based on the Uniswap code and protocol. Uniswap works by pooling all users' funds into a single pool that all trades coming into the platform are executed against, a model it calls the 'automated liquidity protocol'. Users whose funds are in the pool are then rewarded with tokens for trades executed in it according to the size of their contribution to the fund.

For price discovery, Uniswap uses the 'automated market maker protocol', which adjusts the price of a coin in a specific pool based on the number of coins of that denomination in that pool. This balances supply and demand and the involvement of arbitrage traders eliminates fluctuations outside the price on centralised exchanges. Other DeFi markets employ different protocols. However, they all seek to decentralise trading and disintermediate exchanges', custodians' and brokers' involvement in the trade cycle.

Just 9% of respondents were trading derivatives on a DeFi platform, this consisted of 12% of specialist trading firms and 5% of traditional firms. Of those firms that traded on a DeFi platform, dYdX was the most commonly used.

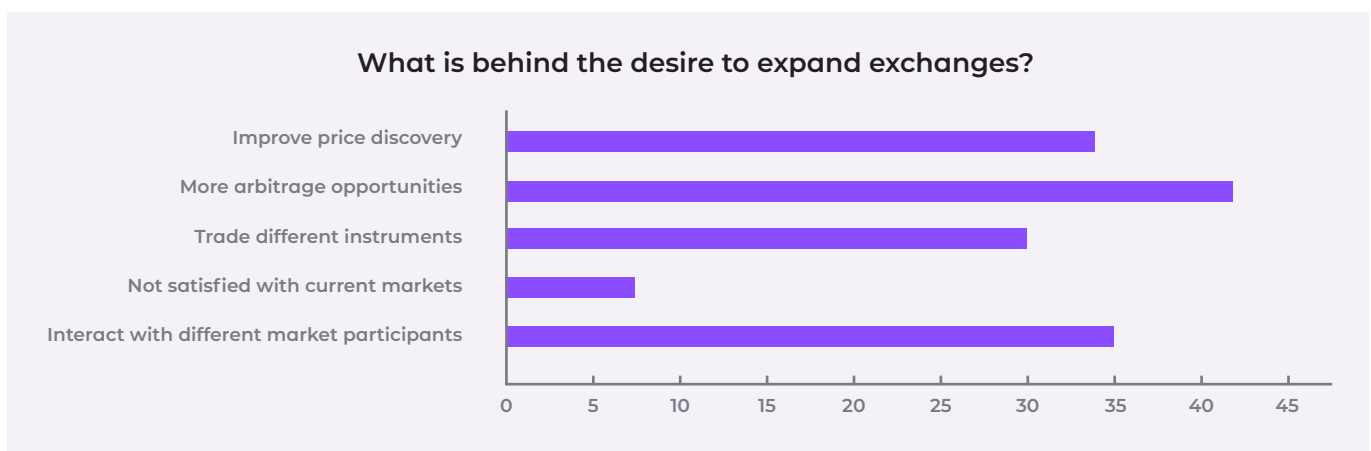
Do you trade derivatives on any of the DeFi platforms?



Future intentions: venues

The survey found a strong appetite for expansion among respondents with 97% of firms planning to connect to more exchanges to trade crypto derivatives. All specialist trading firms were planning to increase the number of exchanges they traded on suggesting that they will soon narrow the gap between the number of exchanges they trade vs their traditional peers identified in this report.

The key drivers of connecting to new markets were to realise greater arbitrage opportunities, to interact with different market participants and to improve price discovery.



The Deribit View: trade efficiently and securely

Nine out of 10 Bitcoin options traded worldwide are traded on Deribit. With a good balance of market makers, buy-side, sell-side and retail on the platform, flow is not toxic, and barriers to entry are low - the minimal cost of market data and connectivity, including colocation, makes it an attractive market to trade. Deribit provides dedicated support from our risk and performance department. And security is our main priority, with 99% of funds secured in cold storage. Depending on your trading requirements, we can provide different collateral solutions. Our system was built to meet the standards of institutional and high frequency traders, therefore our main priorities have always been scalability, performance of the system and advanced risk management. Due to this, Deribit stands out among its competitors by offering features that most traders are familiar with in traditional markets:

- Lowest Latency - sub millisecond order RTTs
- Dedicated Hardware - state of the art system architecture
- Colocation services in LD4 - hosting in Deribit rack, X connects, virtual connectivity etc.
- Block Trade & RFQ Solutions
- Portfolio Margin Model
- Market Maker Protection Model
- Fully Verified Client Base
- Growing Custody Network
- Proven Risk Management System with No Hacks or Socialised Loss

CME Group and Binance were the most common venues that respondents were looking to onboard with Kraken Futures, OKEx and Bitfinex also primed for growth from proprietary trading flows.

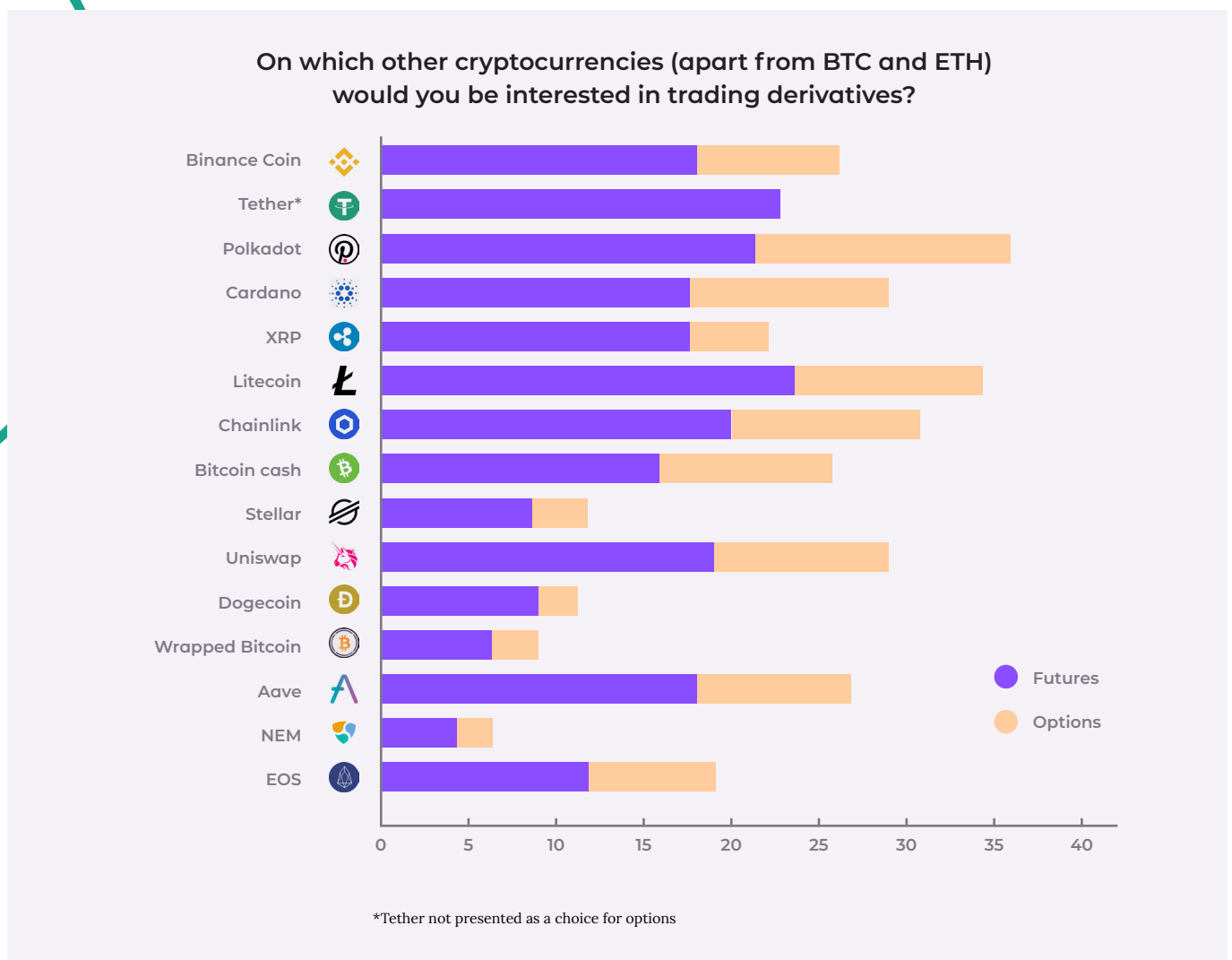
Significantly CME was the most popular market for specialist firms. As noted above, traditional firms tended to trade on the CME already, and the growing interest among specialist firms suggests a further blurring of the distinctions seen in this report. The same is true for Deribit, which already has a strong representation from specialist firms and the survey found interest from traditional firms in trading on Deribit.



Future intentions: coins and assets

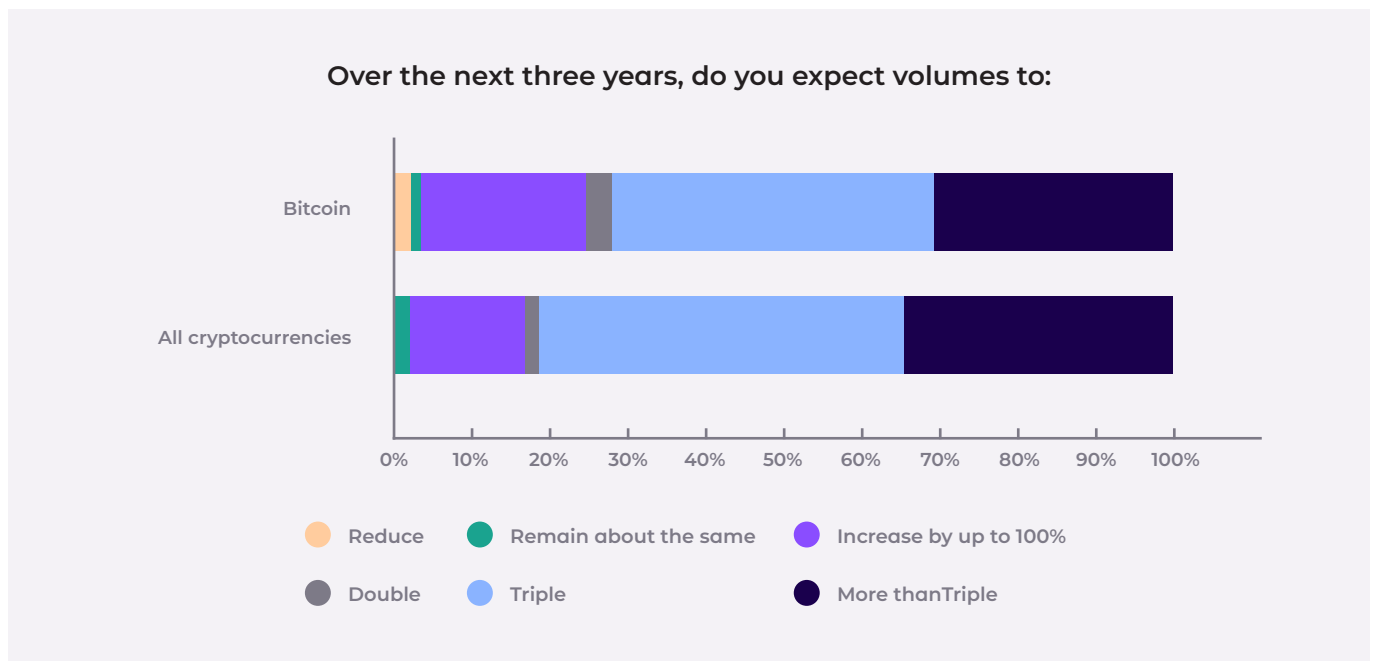
In February, CME launched Ether futures joining a host of specialist exchanges such as Deribit and Binance (who both also offer options). Over three-quarters of respondents were already trading Ether derivatives with just 8% not planning on doing so.

In addition, the survey found strong demand from respondents for expanding the universe of tradeable assets in both futures and options beyond Ether and Bitcoin. In terms of futures, there is strong demand for Litecoin, Tether Polkadot and Chainlink. For options, Polkadot, Cardano and Litecoin were the most in demand.



Respondents were highly bullish on the future of cryptocurrency derivatives. 74% of respondents expected bitcoin derivatives volumes to triple or more than triple over the next three years and 82% thought the same of the whole cryptocurrency derivatives market.

Specialist trading firms were more bullish than traditional firms with 88% of respondents from these firms expecting the overall market to triple over the next three years compared with 71% of respondents from traditional firms.



“Currently, the average daily notional turnover of BTC options is ~ USD 1 billion, of which 90% are traded on Deribit. That is a 266% increase versus April 2020. However, it is still a small fraction of the average daily notional turnover of BTC futures ~USD 68 billion. In traditional markets, futures and options contracts are traded at a similar ratio. Therefore, it is expected that in the upcoming two to three years, the growth of the crypto options market will be the primary catalyst for the expansion of the total crypto derivatives market.”

Ulla Rone
Business Development Manager
Deribit

Conclusion: a world of opportunity

The bullish sentiment from proprietary trading firms with regards to future volumes in crypto derivatives is indicative of the huge potential for the market. As more institutional firms incorporate digital assets into their portfolios, they will have greater requirements for hedging and leveraging exposures. The addition of new assets into the institutional ecosystem will only add to the potential growth.

There remain, however, challenges ahead. The bull market in cryptos will not last forever and many think the market is overdue a correction. While crypto derivatives enable investors to be directionally neutral so they can benefit from a decline in prices and proprietary trading firms acting as market makers focus on volumes rather than directional movements, a sharp correction is likely to remove some of the froth from the market and significantly reduce both retail and institutional participation in the short to medium term.

Longer term, for the institutional market to thrive, the ecosystem will need to continue to develop. Proprietary trading firms that Acuiti spoke with for this report, called for traditional clearing firms to do more to ease access to crypto derivatives.

While several specialist firms have launched to offer clearing services for crypto derivatives, the take-up from traditional FCMs with the balance sheets required to service the institutional market effectively has been muted and many that do offer bitcoin and ether derivatives clearing do so only on CME.

Clearing fees from FCMs and margin requirements for crypto derivatives in traditional markets are also currently high, understandable because of the volatility, but a situation that penalises certain trading strategies and high volume traders such as proprietary trading firms. In addition, the potential for margin offsets between venues by a third party clearing broker remains untapped.

This represents an opportunity for an FCM to come into the market and capitalise on the growing demand from proprietary trading firms but until then, the lack of full support from FCMs remains a barrier for many prop firms to fully realise the potential of their strategies.

Another factor holding back growth is the patchwork of regulation that surrounds trading in cryptocurrencies, in particular with regards to restrictions on trading from certain markets - most notably the prohibition of US citizens trading crypto derivatives on anything other than a US regulated exchange (effectively currently CME or Bakkt).

The regulatory and institutional infrastructure around cryptocurrencies and derivatives is rapidly evolving, however, and has come a very long way already over the past five years.

Fundamentally, no other asset class offers the potential for growth in the derivatives market like crypto derivatives. While the road ahead is likely to be bumpy, crypto derivatives appear to be on an unstoppable course in terms of volume growth and the development of the institutional market.



AVELACOM

About Avelacom

Avelacom's low latency connectivity & IT infrastructure solutions are designed to improve market making, arbitrage and liquidity aggregation strategies, all of which are highly sensitive to latency. The company's strength comes from its global network that connects to 80+ liquidity sources offering best-in-market latencies and 99.9% uptime. Avelacom's points-of-presence are located in all major data centers and connected to AWS, Alibaba and Azure clouds. Avelacom helps to achieve sub-millisecond speed of market data and order execution across multiple geographies:

- + America (CME, ICE's Bakkt, Coinbase, Kraken, Bittrex, Gemini),
- + UK & EU (BitMEX, Deribit, LMAX, Bequant, Bitstamp, Bitfinex),
- + Asia (Binance, Huobi, FTX, OKEx, Bybit).

Try our network for free:

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About Deribit

Deribit remains the dominant market leader in crypto options and continues to set the standard for the rest of the industry. Founded in Amsterdam, Netherlands, it was created as an answer to those in search of a professional fully dedicated cryptocurrencies futures and options trading platform. The Deribit matching engine is developed in Erlang, a protocol that is known to be robust, reliable and able to manage many concurrent messages and modules. All of its technology is proprietary, which includes the matching engine, risk management, portfolio margining, market data dissemination etc. Deribit was the first to launch European style cash-settled options on BTC and ETH and pioneered functionalities like multi-instrument block trade for crypto derivatives.

To arrange a call with Deribit's Chief Commercial Officer, Luuk Strijers, email Luuk+S@deribit.com