

Crypto Trading Report

2022

www.pwc.ch/crypto-trading

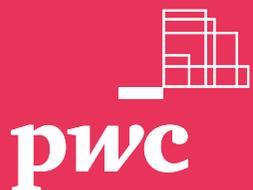


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Introduction

This report sheds light on the global landscape of trading execution venues for digital assets and aims to provide insights into the current trading rationales of institutional market participants in this space. It offers insights into where institutionals trade digital assets and explores the factors underlying their choices, including the advantages and drawbacks of each of the various digital asset trading venues and execution alternatives.

By sharing these insights with the broader digital asset industry, PwC's goal is to encourage the adoption of sound practices by market participants as the ecosystem matures. These practices could lead to improved credibility and could be a driver for adoption.

For the Crypto Trading Report 2022, PwC partnered with Finery Markets and the Alternative Investment Management Association (AIMA) to survey institutional players engaged in digital assets to identify their preferred platform for trading and executing orders for digital assets.

The report starts out by outlining some basic concepts and the current landscape of execution venues for digital assets. After that it provides a deeper dive into the prevalent execution venue options, such as centralised and decentralised exchanges or over-the-counter (OTC) alternatives.

Having explored the intrinsic advantages of the various venues, the report analyses how professional practitioners choose venues. By comparing the characteristics of the venue, the institutional actors and their choice, the report will highlight the actors' deliberations and priorities.

Eight key takeaways



1 Location

Jurisdictions promoting the digital asset landscape and refraining from restrictive regulation lead the way in terms of the number of licensed institutional investors in this survey. This could indicate the potential of these jurisdictions to become hubs for digital assets. Furthermore, it could secure these countries an important position as international regulation is developed. Among the leading countries within the scope of the survey are Switzerland and various common law jurisdictions.

3 Licensed/regulated

More than half of the respondents to this study held a licence from the supervisory organisation in their country of domicile. This not only points to regulatory supervision, but also shows that the authorities have prepared for the digital asset market to expand in the future.

5 Monthly trading volume

Similar to the number of investors entering the digital asset landscape, the highest number of respondents say the monthly volume of digital assets they trade is less than USD 10 million. However, the total monthly volume traded above USD 10 million is greater than the total volume traded below USD 10 million. Therefore, while most respondents trade less than USD 10 million each month, the respondents trading more than USD 10 million make up a larger total of the monthly volume traded.

7 Most popular centralised exchanges

According to the results of this survey, Binance was the most popular centralised exchange. To find out why centralised exchanges enjoy such popularity, please see Chapter 4 of this report.

2 Company type

Over 50% of the companies that have traditionally traded in financial instruments are now engaging in trade in the digital asset landscape. According to the findings of this study, the range of institutional financial actors entering the digital asset market is diverse and could indicate broad adoption in the finance sector.

4 Starting point

A similar number of respondents entered the digital asset market in 2021 compared to the total of the previous three years. This marks an increase in the number of institutional actors entering the digital asset market. Given that 2021 was a bullish year, a positive correlation between a bullish market and the number of actors entering the digital asset market could be established.

6 Number of trading venues

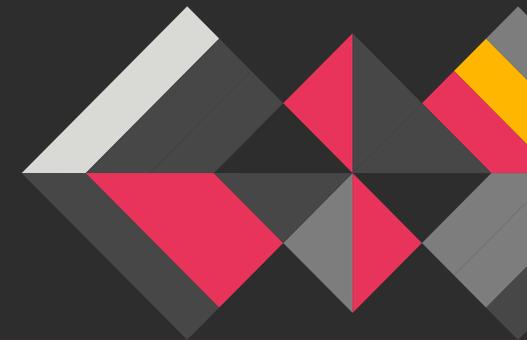
The number of digital asset execution venues used by the institutional investors featured in this study varies widely. Most investors use more than one venue, and about one quarter of respondents said they used more than 10 venues. Whether dominant market venues will emerge or the fragmentation will continue remains to be seen. A similarity can be drawn to the foreign exchange markets, where the market eventually moved towards consolidation.

8 Most popular OTC desks

According to this survey the most popular OTC desk was B2C2. However, the survey showed that there was only a small difference in popularity between the OTC desks below B2C2 in the rankings.



Overview of market structure



The public image of digital assets is polarised. To some, digital assets are a speculative tool without any underlying value that uses up a valuable commodity, energy. To others, digital assets have exciting opportunities; these people want to participate in building the next evolutionary advance. Whether it's market performance or ideological trust that prompts individuals and firms to invest, with current market caps exceeding USD 2 trillion, institutional adoption increasing and a rapidly growing digital asset labour market, we are seeing the first evidence of mainstream adoption.

As there are myriad different digital assets to choose from and several hundred exchange platforms to trade over, one of the key questions is how and where to buy and sell digital assets – in particular in light of the sophisti-

cated requirements institutional market participants have. This means that a very common second question is where to acquire digital assets. This Crypto Trading Report 2022 seeks to shed light on precisely this question by exploring the market landscape for execution venues for digital assets and analysing the advantages and potential drawbacks of each type of venue in the context of institutionals' practices. In the following section of the report we will first identify the execution venue types and then outline key factors which might influence institutionals' choice of trading or execution venues for digital assets.





Factors in a digital asset transaction

Scope of digital assets and instrument used

Before analysing the various execution venues, it's helpful to understand some underlying features of digital asset transactions. This section will briefly outline features that can impact the choice of execution venue, for example limitations on the scope of certain execution venues. In the stock exchange world, certain stocks can only be purchased at specified stock exchanges. It's a similar story when it comes to the execution venues for digital assets. For example, a centralised exchange may choose to accept only certain fiat currencies depending on partnerships with other financial institutions such as banks. In addition, exchanges can also choose which digital assets are supported on their platform. These limitations can narrow the scope of clients that choose a certain execution venue.

In addition to whether the execution venue accepts the institutional market participant's local fiat currency, the second factor in the decision is whether it also supports the desired digital assets. Usually this choice of digital assets is broad, although in a market containing

over 16,000 cryptocurrencies technical support can be a limiting factor.

Another factor in the scope of trading is the financial instrument used. Limiting the scope of financial instruments can have a significant impact on an institutional's strategy. Typically, an exchange venue will offer spot markets, futures and options. As will become clear from the study, limiting the choice of financial instruments offered can lead to institutionals' opting for different execution venues that allow a multitude of trading options.

Reputation and regulation

The second factor that can influence the choice of exchange is the regulation and reputation of the exchange. Depending on where the exchange is incorporated, different regulations may apply. The approach varies from government to government. Some such as China and Russia have chosen to prohibit the holding or trading of cryptocurrencies, others have chosen to loosely regulate the market, while others still have chosen to heavily regulate it. Depending on the regulation, clients may enjoy a higher degree of consumer protection or secu-



Some governments have chosen to prohibit the holding or trading of cryptocurrencies, others have chosen to regulate the market either loosely or heavily.”

ity in their transactions. Less regulation usually means more freedom but less legal certainty. This lack of legal certainty can lead to exploitation, which may result in reputational damage to the financial market. On the other hand, this extended freedom may also attract investors. Interestingly, this study indicates that common law jurisdictions might favour the adoption and development of digital assets. This means that the long-standing principle of caveat emptor might offer less investor protection but more freedom to create disruptive solutions. When selecting an exchange, it's crucial to consider regulatory and reputational questions.

Fee models

Another feature that may affect the selection of a digital asset execution venue is the fee model. Each exchange will have a transactional fee model in place, which will be discussed in the second section of this chapter. Such fees generally decrease with the volume traded. The fee is made up of a so-called taker fee and a so-called maker fee. This model aims to stimulate trading by rewarding the so-called market makers that lend liquidity to the system. On the other side, the market takers, who reduce liquidity, are charged for this service. Depending on the exchange, different rates will apply, similar to the

arrangements commonly in place at fiat currency exchanges. These rates play an important role in the exchange of digital assets, as they affect transaction costs. The study reveals that institutionals favour digital asset execution venues offering lower transaction fees.

Execution quality

Another important feature is the distinction between the types of execution mechanism: firm or indicative quote. On centralised exchange venues and other execution venues, the quotes are firm. This means that no last look, no additional holding times are given. While smart order routers and OTC desks don't guarantee the execution which make them indicative quotes.

The final point important to understand for the purposes of this report is execution quality. Quality execution means achieving the best market price in a transaction. Two relevant concepts are execution spreads and order books. Order books show the transactions of other market participants and thus improve the transparency of transactions and information asymmetry. Deep order books reflect a high volume of transaction traffic and can be an indication of liquidity. An unlawful practice called wash trading can distort this indicator. Wash trading artificially increases the number of transactions to mimic high volumes of traffic by trading between a close circle of market participants.

Transaction spreads or so-called *slippage* refer to the divergence of the purchase price from the market price. Both these features affect the execution quality of a transaction. An institutional's goal of paying the lowest possible transaction fee and obtaining the best possible price for their selected digital asset will influence their choice of execution venue. Execution venues therefore go to great lengths to increase execution quality by, for example, ensuring thin spreads and deep order books to increase quality and attract institutional market participants.

To summarise, a client's choice of digital asset execution venue may be influenced by the offering and acceptance of fiat and cryptocurrency, the reputation of the exchange in an already polarised market, and the costs associated with the transaction and the market prices that are achieved. The significance of these factors will become evident in the survey analysis in Chapter 5.

In the course of preliminary due diligence, every institutional market participant is likely to stumble across abbreviations such as CEX, DEX and OTC. The next section provides an overview of the execution venues and transaction features before diving into a deeper analysis in Chapter 4.



A client's choice of digital asset execution venue may be influenced by the offering and acceptance of fiat and cryptocurrency."

Custody exchange model

1

Selling crypto currency

Buying crypto currency



Institutionals

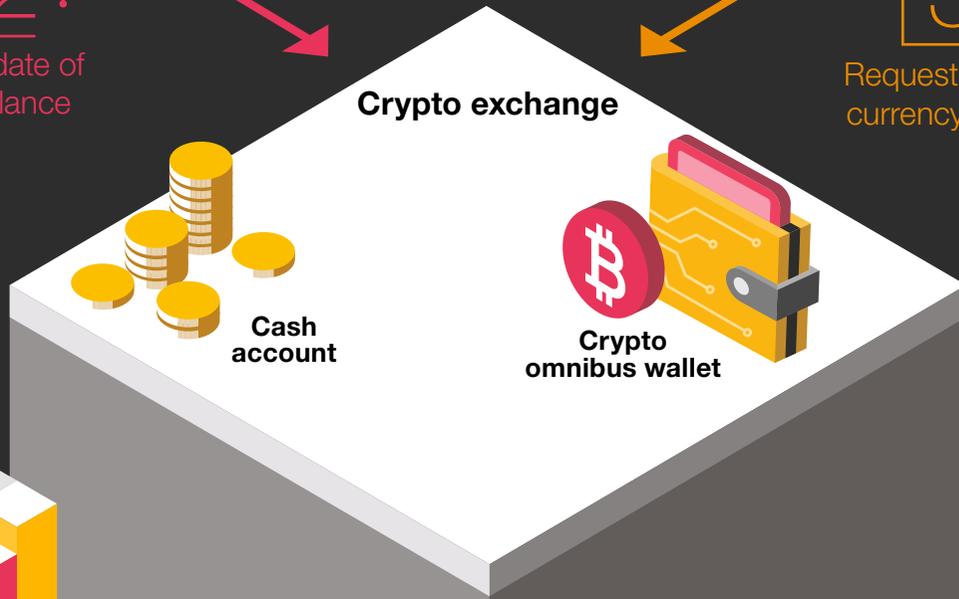
- Easy and straight-forward
- Unsuitable for larger transactions

2

Update of balance

3

Request of crypto currency to wallet



Crypto exchange

Cash account

Crypto omnibus wallet

5

Validation of transaction



Blockchain

4

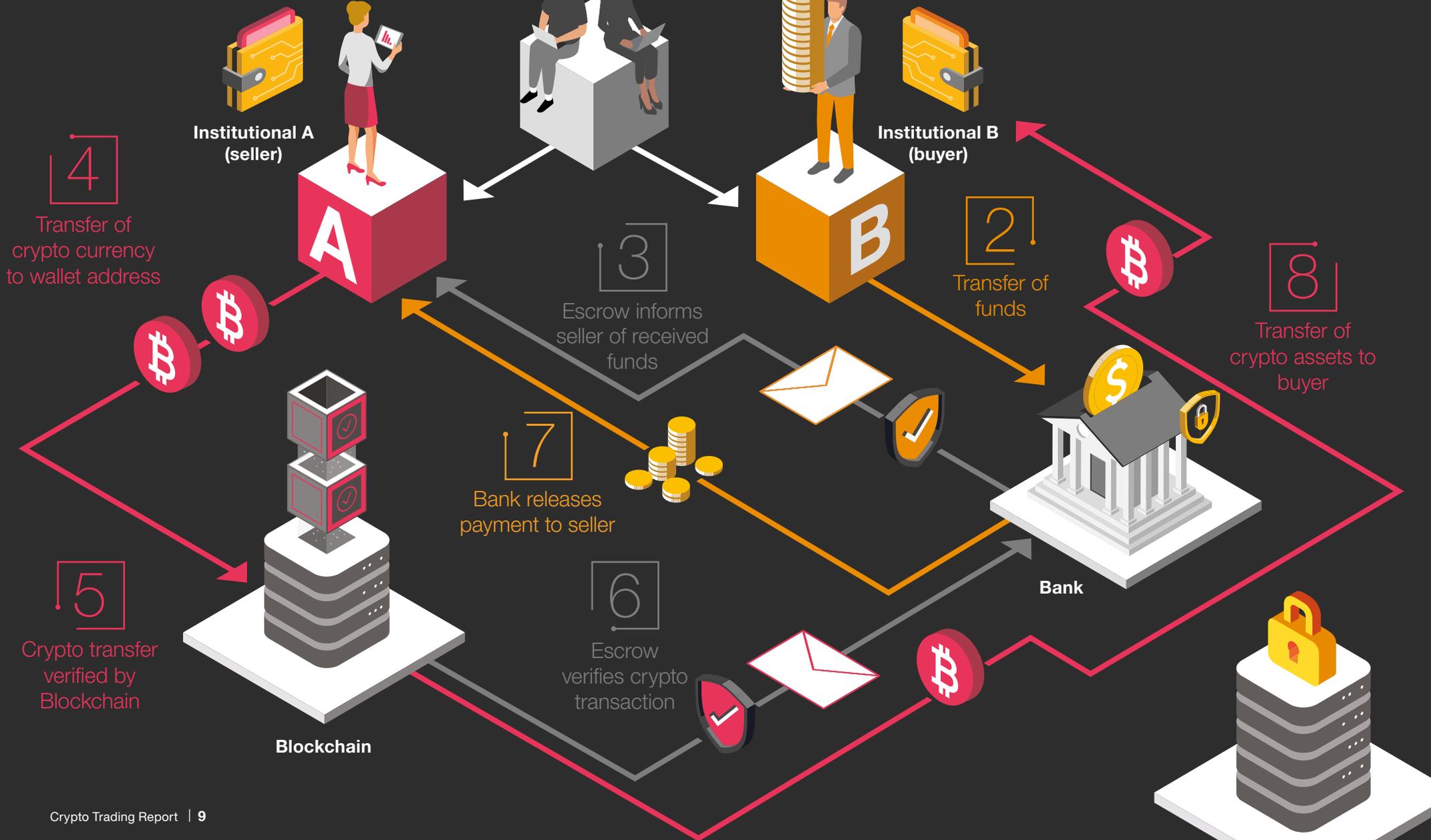
Transfer of crypto currency to wallet address



Non-custody exchange model

1 OTC facilitates exchange
Crypto broker desk (OTC)

- No central hacking target
- Tailored for large transactions



Digital exchange venues

Centralised exchange venues

Centralised exchanges are one of the most widespread methods of trading digital assets. In a centralised exchange venue, a platform acts as an intermediary between an undefined number of buyers and sellers. As visualised in the image above, the centralised exchange provides exchange services by acting as a custodian that guarantees the payment on delivery principle. In principle this means that a third party takes custody of the exchanged assets and ensures that the digital assets are only released when payment has been received from the counterparty.

Another important aspect of exchanges is the various fee models. The first fee that can be incurred is the wire fee that has to be paid to exchange a fiat currency for digital assets. The bank transferring the money to the exchange may charge the user a wire fee. Should the user decide to use their credit card, further provider fees may apply. Once the fiat currency is deposited at the centralised exchange, an account fee may be charged depending on the execution venue used. Next, when purchasing digital assets transaction fees may apply. As explained earlier in this report, these

transaction fees can be broken down into the taker fee and the maker fee. Usually these transaction fees are tiered and decrease as the volume of the transaction increases. Finally, mining fees are the costs incurred by the network to process a transaction. These fees can vary depending on the traffic on the network and can also affect the length of time a transaction takes.

Some describe centralised exchanges as the necessary first step in the adoption of digital assets. The reason for this will be analysed in Chapter 4.

Decentralised exchange venues

Decentralised execution venues have a similar concept to centralised exchanges with one significant difference: In decentralised exchange venues, no custodian takes possession of the funds during the exchange. Instead, smart contracts are used to execute transactions. Decentralised execution venues rely on a mechanism known as an automated market maker (AMM) which evaluates the price and aims to rebalance the liquidity pools after a withdrawal or insertion. Liquidity was a typical problem in the early iterations of decentralised execution venues. In the meantime, this issue has been

reduced. However, investors can still face high slippage fees that indicate a lack of liquidity which could lead to deviations from market prices. On the other hand, in terms of transaction fees the decentralised exchange venue omits the spot fee that centralised execution venues can charge. Decentralised exchanges usually offer a larger choice of digital assets and only exchange crypto for other cryptocurrencies. Unlike a centralised exchange, an investor merely connects their wallet to perform a transaction. This has consequences regarding the identification of the investor, as the creation of a wallet does not always require the verification of identification. The impacts on privacy are further elaborated on in Chapter 4.

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However, investors can still face high slippage fees that indicate a lack of liquidity, which could lead to deviations from market prices.”



OTC execution venues

The third type of execution venue discussed in this chapter is the over-the-counter venue (OTC). An OTC execution venue differs from decentralised exchange venues in that it features a transaction between two parties only, whereas an exchange venue acts as a platform between a multitude of parties. This is also a respect in which OTC execution venues differ from decentralised exchange venues, as the trade can only take place between two parties – unlike a decentralised venue where a trade can occur with all parties connected to the exchange. In particular, an OTC execution venue allows users to **negotiate** a price and decline the initial offering by the counterparty. This option is particularly interesting for larger volume transactions, as a fixed price for the assets can be agreed upon. At an exchange, the volume of the transaction may lead to market fluctuations and negatively affect the purchase price. At an OTC venue this effect can be avoided, as the parties agree on a set price and volume for the transaction in private. In the next chapter, we will highlight the advantages and drawbacks of each type of execution venue and illustrate the similarities and differences.

Alongside the different types of execution venue, there are different features of a transaction that play an important role in the choice of venue. To better understand the decision-making process, it is crucial to understand the combination of transaction-related and execution-related features of venues. The following section explores how these features might affect the decision to choose a certain type of execution venue.

Execution venues

Having explored the execution venues and the features of transactions, this section analyses the benefits and drawbacks of the above-mentioned types of exchange and notes certain preferences that can lead to the selection of a particular exchange.

According to Coin Market Cap there were over 300 digital asset exchanges at the end of January 2022. The popularity, size and applicable regulation vary greatly across these exchanges. As discussed above, there are many factors influencing the choice of a certain crypto exchange. This section will analyse the advantages and drawbacks of these choices before analysing the behaviours of institutional traders. Over the past ten years we have seen regulators increasingly focus on market conduct. Practices such as wash trading are designed to increase the traded volume by moving assets between the same or a few beneficial owners, and

distort the market and threaten its reputation and stability. In addition, security, privacy and anti-money laundering regulations have significantly grown in importance. These developments in regulation are considered by this report.

Particularly, this report evaluates simplicity of use, security, transaction fees, privacy, market manipulation risk (e.g. wash trading), supported assets and liquidity. What will become evident is that each of the execution venues has its advantages and disadvantages. The crucial point in the decision to use one or the other is the institutional market participant's aim and background.



Centralised exchange venues

Centralised exchange venues are aimed at retail investors and offer new investors straightforward entry into the digital asset market. The fact that in most cases a registration and due diligence identification check enables new investors to get started within a couple of days is one of the reasons why centralised exchanges enjoy such popularity. Most centralised execution venues are moving towards offering OTC execution venues to also attract professional and institutional investors.

Another reason for this popularity, besides simplicity of registering, could be the fact that a centralised exchange allows new investors to trade fiat currency for digital assets. This key feature makes centralised exchanges the first point to exchange fiat currency for digital assets, and therefore means they are a necessary step when investing in the digital asset landscape. Considering that decentralised exchanges are a rather new type of exchange venue, the historical component could also be a significant factor when assessing their popularity.

Another strong reason in favour of centralised exchanges is the liquidity offered. An overwhelming majority of trading occurs via centralised exchanges, which leads to lower liquidity risks and narrows the bid-ask spread for a more accessible

market.

The popularity of centralised exchanges is jeopardised by a few points that we will now examine. Of the top ten execution venues by volume traded, three have fallen victim to hacking. Recurring news about digital asset exchanges being hacked leads some to predict an increase in the frequency and volume of future hacks. The centralised characteristic of these execution venues makes them particularly vulnerable, as it enables a direct and central point of attack. This means that the security aspect of centralised exchanges could be put into question and deter investors. An argument could be made that a storage option could be used as a mitigating factor by moving the purchased assets away from the centralised exchange. However, even the use of a storage option cannot negate the risk of the assets being hacked while placed on the platform necessary to perform the trade. Security remains a regulatory and compliance issue for centralised execution venues.

Additionally, the transaction fees on centralised exchanges are usually higher than those at other exchange venues. Future trends could lead to a reduction of these costs through competition between centralised exchanges or regulatory changes determining the scope of trans-

action fees in the digital asset landscape. However, it should also be noted that given the dynamic development of technology, new execution venues could emerge by offering solutions to the initial challenges of prior technology.

As already mentioned, setting up an account at a centralised exchange is simple and completed in a few steps. One of the registration steps is the verification of identity. The identification step is in place to comply with anti-money laundering regulations. However, to individuals or companies valuing their privacy and controlling their data, this can be a hurdle and can further deter them from using this type of exchange venue.

Another regulatory focus is the market conduct of the various financial actors. The aim of such regulations is to prevent market manipulation and unjust enrichment. To highlight the importance of this issue, take the example of an investor wishing to submit a large volume order for a selected digital asset. When executing a large volume transaction, the market will react by adjusting the price. Although the effects seem to be minor for bitcoin, other digital assets could react more severely and affect market stability.¹

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¹ Ante, Lennart, and Ingo Fiedler. “Market Reaction to Large Transfers on the Bitcoin Blockchain – Do Size and Motive Matter?” Mar. 2020.

OTC desk execution venues

OTC venues allows parties to trade fiat and digital assets away from the market exchanges. As the assets are not traded on an exchange, institutionals can negotiate a fixed price. This is particularly important for individual trades involving larger amounts. Trading these at a regular exchange could lead to a spread that negatively affects the trading price. Therefore, slippage can be completely negated by choosing this type of execution venue. The first advantage of an OTC venue is that it enables investors to trade high volumes of digital asset and fiat assets at a price that has been agreed upon.

Secondly, owing to the higher volumes that are being traded, investors using OTC venues tend to be institutional or high-net-worth individuals. These investors have created a market for tailored services and extensive support. For this reason, OTC execution venues are usually user friendly and offer more support services.

Another advantage of an OTC desk is the security aspect. Because OTC desks do not make use of a third-party custodian, the security risk of a centralised hack occurring is lower than for a centralised exchange venue.

However, OTC desks usually require verification of the investor's identity. This, as is the case for centralised exchange venues, will deter potential investors who value their privacy. However, these requirements are derived from the regulations in place and will therefore depend on the jurisdiction of the OTC desk. Furthermore, identification of the counterparty may add trust in the transaction and reduce the risk of the counterparty defaulting.

Another variable in the OTC execution venue is the price of the services provided. As OTC desks are specialised teams, the service could result in transaction or commission fees. As will be seen in the section on decentralised exchanges, these fees could decrease with more competition in the market.

Although OTC desks can offer both digital asset and fiat currency exchanges, the limiting factor at OTC desks is the number of digital assets offered. As the service is specialised, most OTC desks will focus on providing services for selected digital assets and jurisdictions.

Another drawback of OTC desks stems from the exchange venue, which is based on two parties exchanging assets.



The first challenge of this is that when a party submits an order, it needs to wait for a counterparty to engage in negotiations. The time spent waiting for an interested counterparty is a drawback that may delay the execution of the transaction. Compared to the centralised and decentralised exchange venues, this delay prevents a party from completing a fast transaction. The second part of the issue is that untrusted parties might not hold to the agreement and fail to perform as they have promised. Owing to a lack of a delivery versus payment mechanism, there is a risk of a party defaulting.

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An OTC venue enables investors to trade high volumes at a price that has been agreed upon.”

Decentralised exchange venues

Decentralised exchanges saw extraordinary growth in 2020 and were the buzzword of the year in the digital asset realm. Decentralised exchange venue protocols aim to render peer-to-peer financial services, which allow digital asset trading, loans and interest accounts without the use of traditional banks or traditional financial intermediaries. In the summer of 2020, decentralised exchange venues started booming and, between April 2020 and April 2021, the trading volume on these platforms grew significantly.

Decentralised exchange venues solve some of the issues of the centralised exchange venue. However this model has its own drawbacks and shares some with other exchange venues.

Firstly, decentralised exchanges mitigate the hacking issue by omitting the use of a platform used for exchange, as has previously been described. This means that from a security point of view, the exchange of digital assets is inherently less prone to an attack on the platform.

The second advantage stemming from not using a central exchange is that users do not always need to identify themselves in order to trade their digital

assets. This, of course, is highly dependent on the jurisdiction. However, as storage options can be transferred or co-owned between individuals, the identity of the controlling person may not always be clear. In a time where data protection standards are on the rise and the importance of controlling one's own data is increasingly valued, this can be a significant benefit for some investors. Decentralised exchanges function by users connecting their respective wallets and executing trades via the decentralised exchange.

Another advantage of decentralised exchanges is the greater availability of digital assets. Not only does this allow users to purchase digital assets that are not offered on centralised exchanges, but it also promotes market diversification, as investors are not limited to acquiring only a certain predetermined class of digital assets. In the future it may be that competition between decentralised exchanges will affect transaction pricing at execution venues.

Although competition may lead to a downward spiral in costs, it can be questioned whether decentralised exchanges compete with centralised exchanges at all, considering that decentralised

exchanges lack one crucial element: exchange with fiat currency. Because decentralised exchanges do not offer this possibility, investors must first interact with centralised exchanges, meaning that institutionals would have to switch to subsequently use the decentralised venue.

This switch of venues can be daunting for investors and requires a certain amount of knowledge before engaging in exchanges on decentralised exchanges. This might be one reason for the sluggish adoption of decentralised exchanges. This can be seen most clearly from the lower liquidity on decentralised exchanges.

Another notable drawback of decentralised exchanges is their lower liquidity and the risk of market manipulation. Owing to the lack of liquidity compared with centralised exchange venues, decentralised exchange venues are more prone to market manipulations. The keywords here are miners extracting value, front runners and automated market-makers. In a nutshell, fluctuations in prices and execution times in the digital asset landscape allow the validators of blockchains to interfere with the orders that are made public. Furthermore, there is a risk that large volume



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orders will face similar efforts to distort them as in centralised exchange venues. Lastly, the privacy afforded to investors may render due diligence impossible, and institutional investors may want to know their counterparty in order to verify the origin of the digital asset. The privacy benefit could therefore hinder transparency.

Smart order routing

Smart order routing (SOR) is a type of trading where an algorithm determines the best price for the requested transaction. Through a pre-determined scope of trading venues, the SOR is able to achieve the most favourable trading condition within the given scope. The advantages are that best execution is ensured by accessing several trading venues simultaneously. Because SOR uses various venues, the range of digital assets traded is broader in comparison and liquidity is aggregated in what is a rather fragmented liquidity landscape.

The drawback of this method is the evident complexity of using the algorithm and the technical risk of an outage. Given this complexity, the clientele is likely to be professional and institutional traders, thereby limiting the potential scope of clients. Finally, SOR does not control execution quality, so it is dependent on the terms of execution set by the venues where the order is routed. This means that depending on the terms of the execution venue, execution quality might be limited.

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This means that no last look, i.e. no rejection of the transaction, is risked, and the transaction is executed without additional holding times.”



Other execution venues

Other execution venues (OEV) are trading systems that enable multiple parties to trade financial instruments. This system of trading performs transactions outside an exchange, with the benefit of having more than one party to trade with. Other execution venues are seen as an alternative to the exchange venues, as they share the benefits of an OTC desk with lower counterparty risks. A strong benefit for institutional traders is the fact

that execution can be guaranteed when no optionality is included. This means that no last look, i.e. no rejection of the transaction, is risked, and the transaction is executed without additional holding times. These factors can benefit the quality of the trading time and purchase price.

Summary

To sum up the analysis of the benefits and drawbacks, this table gives an overview of the key factors. Having outlined the different trading venues and their benefits and drawbacks, the report will now focus on the data collected.



	CEX	SOR	OTC	OEV	DEX
Blockchain agnostic	●	●	○	●	N/A
Low settlement fees	○	○	●	●	○
Lower/dispersed counterparty risk	N/A	●	N/A	●	N/A
Execution and centralised custody	●	○	N/A	N/A	N/A
Disclosed counterparties	N/A	○	●	●	N/A

Insights and findings

In this chapter of the report, the market behaviour of various institutions is analysed on the basis of the results of the survey. The aim is to identify trends and shed light on the process by which institutional financial actors choose where they will trade. The survey is particularly interested in the company structure, the financial instruments traded, the volume of instruments traded and the company's position regarding the adoption of digital assets.



Survey methodology and limitations

This report shares the results of survey-based research conducted in Q4 2021 by Finery Markets, combined with qualitative input on sound practices and insights derived from PwC’s financial market and digital asset teams.

This survey excludes:

- Retail and professional investors
- Other derivative financial instruments besides spot, futures, ETFs, CFDs and options

All data analysed in this report is based on information provided by most of the actors that Finery Markets surveyed.

Owing to the limitations of this report, the scope remains highly focused on the selected execution venue for digital assets and an analysis of the underlying considerations.

Finally, all participants were asked to give consent to Finery Markets and PwC for their name to be shared in the report. Some firms requested privacy regarding their participation in this survey. Those that have given their consent are listed in alphabetical order in the appendix.

Survey data

Company info

To understand the data, it is important to understand the details of the survey respondents. We collected data on their geographic location, the time they entered the market, whether they hold a licence, and the type of business.



Location

The first question asks about participants' location to determine the geographic impact of this survey. As the chart of countries of domicile indicates, respondents from Switzerland and the US share the top country of domicile submissions, with the other common law jurisdictions and Russia rounding off the top three. If this knowledge is paired with the fact that about 65% of the respondents hold licences and the licences are evenly distributed, the common law jurisdictions, Russia and Switzerland would be the leading jurisdictions in terms of having institutional investors that invest in digital assets and hold licences in their country of domicile.

Figure 1
Count by domicile country

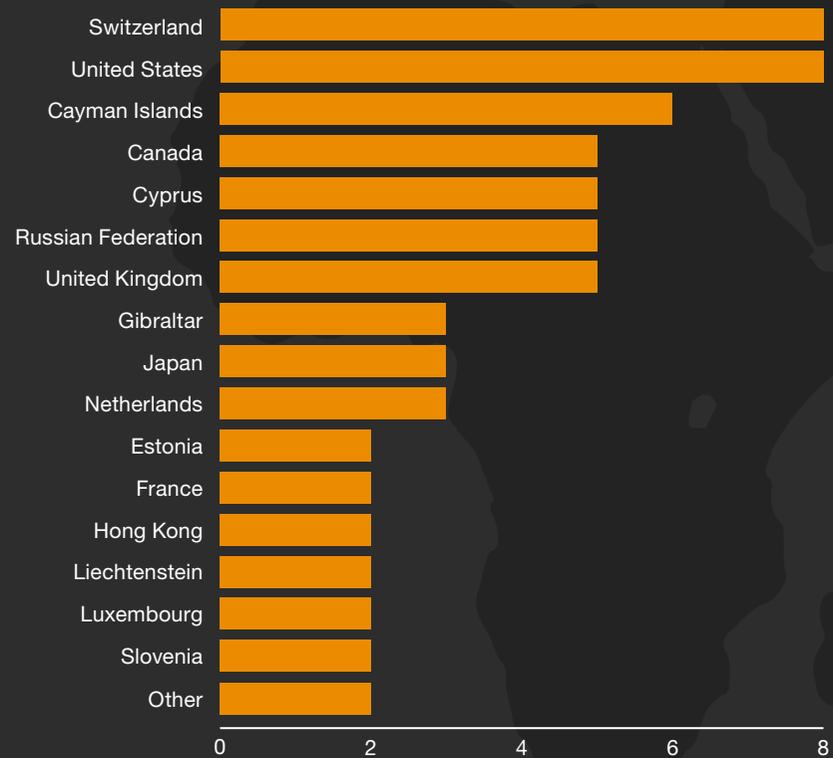
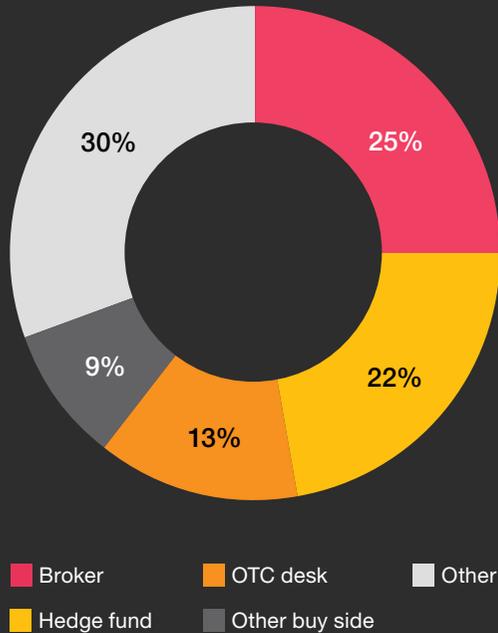


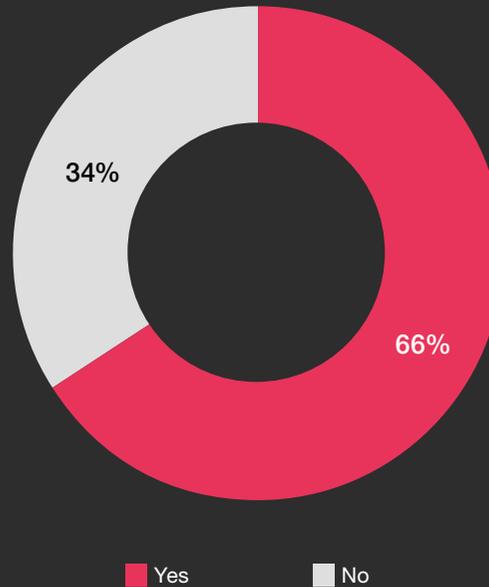
Figure 2
Business activity type



Company type

Of the 77 participants, about 25% are brokers, 22% hedge funds and 12% OTC desks. If we add other buy-side categories, we can see that about 70% of participants are traditional financial actors that are active in the digital asset space. This shift of traditional finance companies making the transition into digital assets could be the start of mainstream adoption of digital asset by financial institutions.

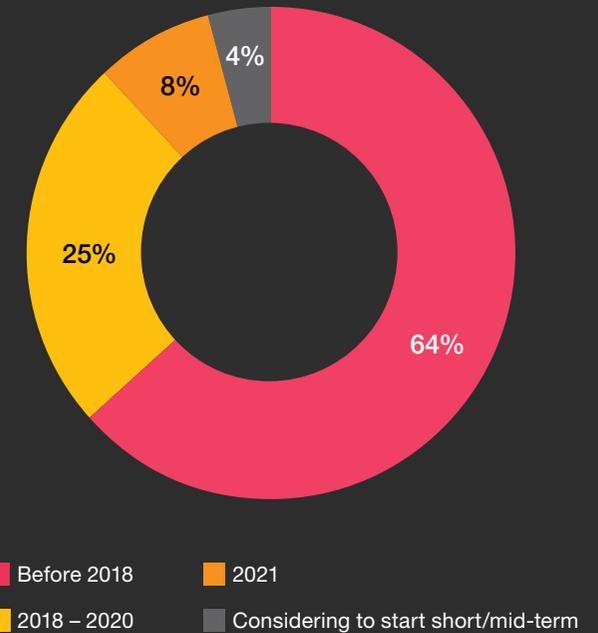
Figure 3
Do you have a license/registration at regulatory body in your domicile country?



Licensed/regulated

As previously mentioned, two thirds of participants are already under the supervision of the regulators, which could indicate the general direction in which this industry is moving. Additionally, if we look at some of the most recent regulatory developments initiated by governments, we can see that compliance with newly developed regulation is becoming a high-priority task for companies trading digital assets.

Figure 4
When did you start trading digital assets?



Starting point

Almost 63% of participants started trading digital assets prior to 2018, while 24% started in the period of the so-called crypto-winter, between 2018 and 2020. Interestingly, we can see that almost 8% of companies started trading in 2021, which correlates with price movements in 2021. Bullish market conditions could lead to an increase in the speed of adoption of digital currency assets.

Trading setup

Having outlined the respondent's details, the survey continued by collecting data on trading patterns.

The following observations were made.

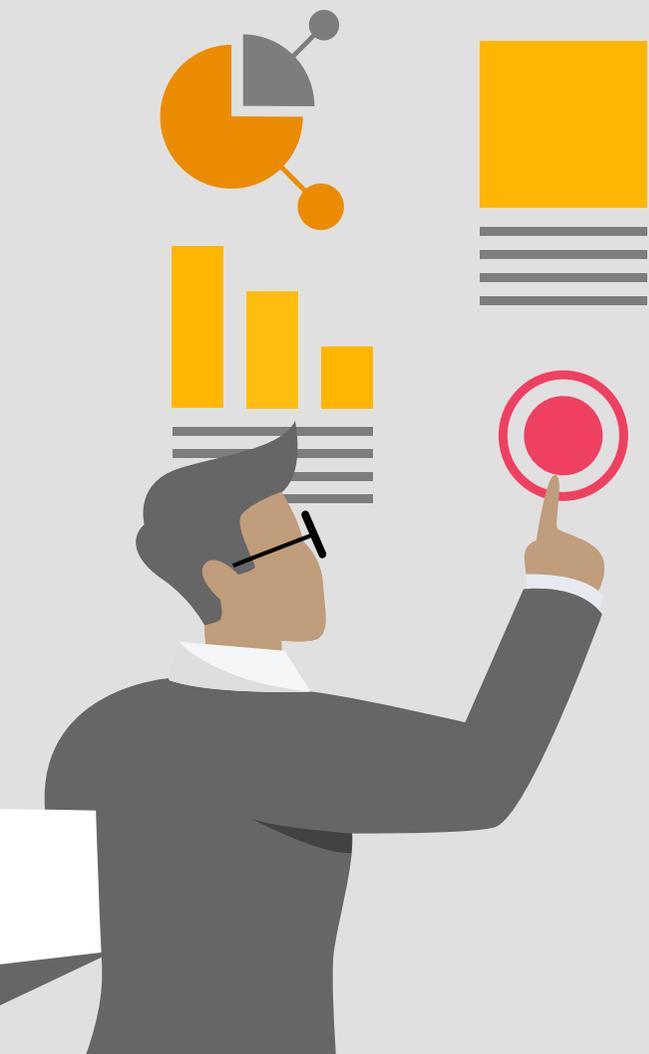
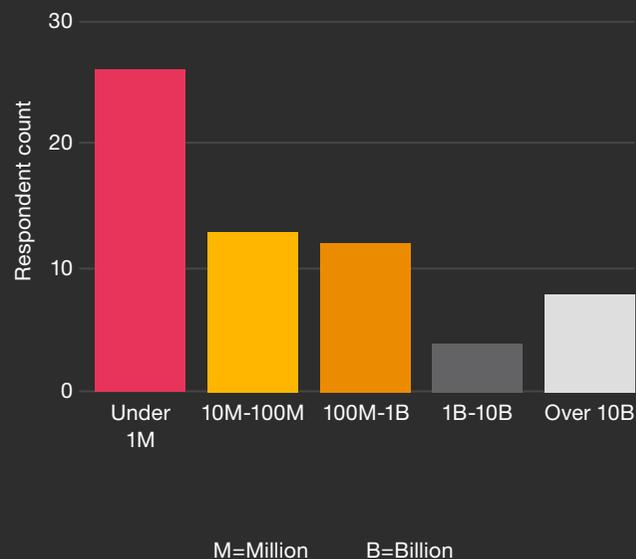


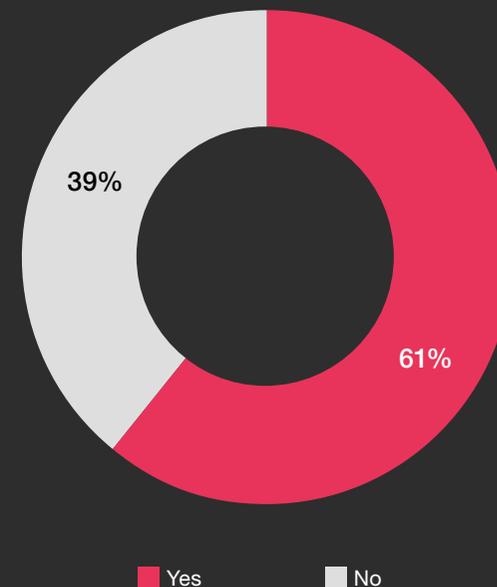
Figure 5
Monthly trading volume, USD



Monthly trading volume

As the graph above shows, it appears that the highest number of respondents trade less than USD 10 million in digital assets a month. Even though there are a greater number of companies that trade less volume, the volumes of institutionals that trade more than USD 10 million are much greater in total. As discussed above, a bullish market may lead to more institutional entries to the market and may increase the volumes traded in the future.

Figure 6
Do you want to improve your current trading setup?

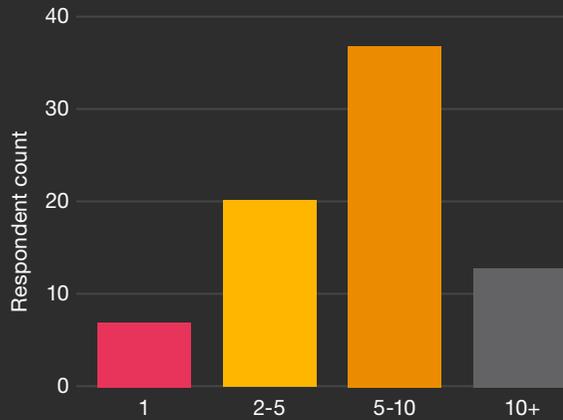


Improving the current setup

The fact that over 60% of participants are looking to improve their current trading setup could indicate that the market is not mature yet – which it is not. Although it might take time for the market to mature, efforts such as this report facilitate the creation of sound practices and regulation fit for the future. On the other hand, it is possible that every trading desk is looking for ways to improve its trading setup.

Figure 7

What is the total number of execution venues that you currently use?

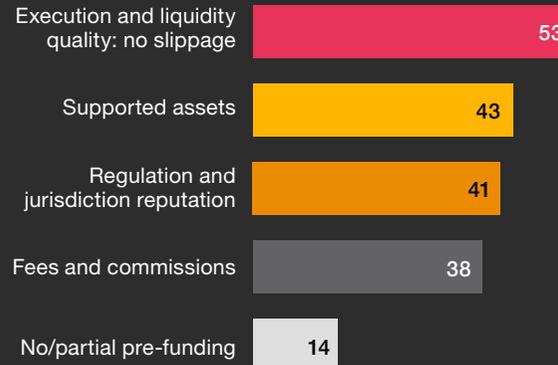


Total number of trading partners

As for the number of trading partners, we can see that only 9% of institutionals use only a single venue for execution. This is probably due to the fact that trading desks tend to eliminate the risk of a single point of failure. Furthermore, over 25% of participants have more than ten trading partners, which indicates a highly fragmented market and a need for consolidation.

Figure 8

What criteria did you consider when choosing an execution venue?

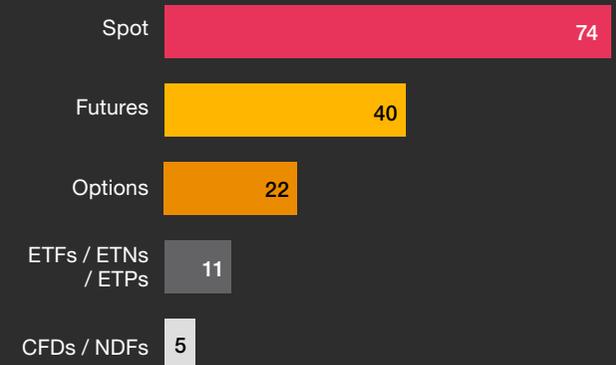


Criteria when choosing execution venue

When choosing an exchange, the respondents seem to place importance on execution and liquidity quality. More than two thirds of the respondents chose this option when given the chance to select the three most important factors. The second most important factor is the assets an exchange supports. Rounding off the top three, regulation and jurisdiction reputation is the final factor in the choice of exchange. Interestingly, fees and commissions come in fourth place, suggesting that actors are willing to potentially pay more in transaction fees when the exchange trades the requested asset, ensures “best execution” and is located in a jurisdiction that promotes legal certainty.

Figure 9

What crypto instruments do you trade?



Crypto instruments

Of the participants surveyed, 96% trade on spot markets, while only a third trade exclusively on spot markets. On the other hand, two thirds of participants trade other instruments, with futures being the second most “popular”. Despite the recent developments around CFDs and NDFs, only around 6% of participants trade these instruments.

Execution venues used

More than 90% of participants trade on CEXs, while around half trade with OTC desks. The most interesting fact is that over a third of respondents trade on DEXs, which is surprising given the regulatory uncertainty. That being said, of that third, two thirds are regulated/licensed, which shows that there are ways to be both compliant and trade on DEXs. A possible reason for this could be the number of digital assets offered. This would also tally with the fact that supported assets are the second most important factor when choosing an exchange.

Figure 10

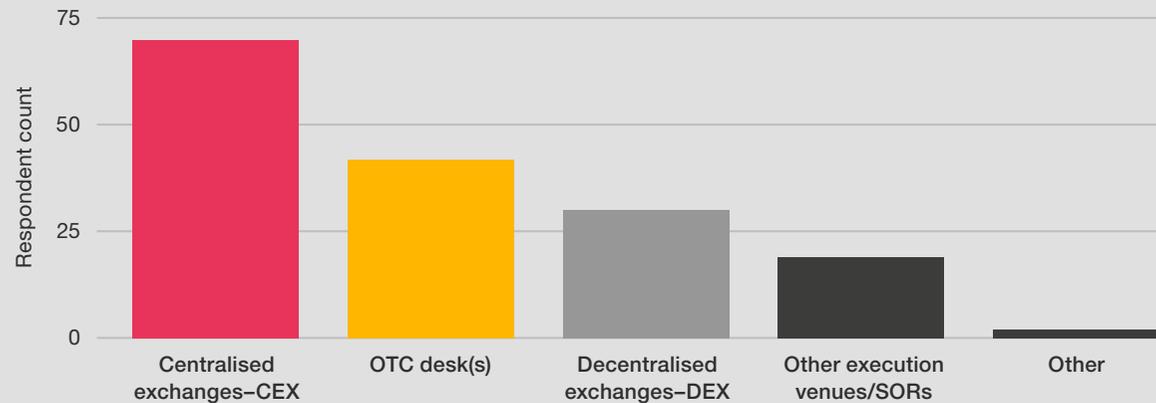
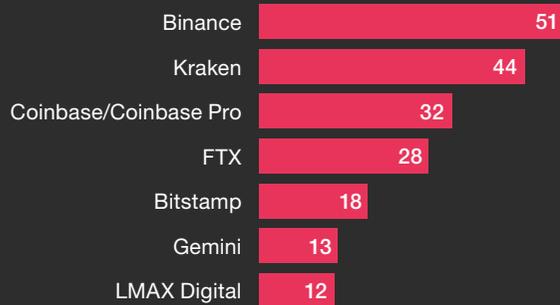


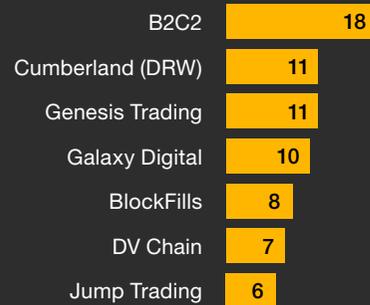
Figure 11



CEXs

In this survey, Binance is the most popular choice of centralised execution venue among institutionals. Next in line is Kraken, with over 50% of participants executing trades at this venue. More than a third of participants use Coinbase and FTX, while the other picks for trading are Bitstamp, Gemini and LMAX.

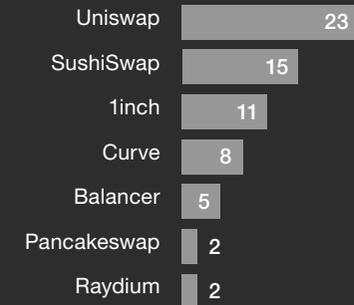
Figure 12



OTC desks

Among the institutionals that trade with OTC desks, the most “popular” counterparty is B2C2, followed by Cumberland, Genesis Trading, Galaxy digital, BlockFills and DV Chain, which all have a similar number of counterparties.

Figure 13



DEXs

Among the limited number of participants trading on DEXs, we can see that the most frequently used platforms are Uniswap, SushiSwap and 1inch. This is in line with the results of the third edition of PwC’s Crypto Hedge Fund report.

Conclusion



To conclude, this report has identified several factors in a transaction that can impact the choice of exchange venue. The first factor is the assets supported and the acceptance of fiat currency, which can limit an institutional's trading strategy. The second factor is the reputation of the regulatory landscape the exchange is based in. This can be important, as investors may choose to avoid jurisdictions that plan to clamp down on the crypto landscape. Likewise, this factor might favour jurisdictions where crypto is openly promoted and regulation is less restrictive. Finally, transaction costs and the execution quality of a transaction were identified as factors affecting the choice of exchange venue. Here the report noted that lower transaction fees and higher execution quality may attract institutional market participants.

Next, the report identified three types of digital asset execution venue and outlined the second set of factors that can impact institutional actors' choice of exchange. The report noted that centralised exchanges are a popular platform for

purchasing crypto with fiat currency. OTC execution venues were found to facilitate the negotiation of prices in a bilateral setting. Decentralised exchange venues allow investors to purchase a great variety of cryptocurrencies.

The report then analysed the advantages and drawbacks investors face when selecting each of the three execution venues. Centralised exchange venues excel in terms of user-friendliness and the fact that they are mostly used by retail investors and receive a greater amount of media attention. OTC execution venues excel in terms of investor support and the fact that large volume trades can be executed. Furthermore, both parties agree on a price, which has benefits in terms of the predictability of the purchase price and eliminates slippage. Finally, decentralised exchanges allow institutionals to exchange a vast variety of cryptocurrency not tradeable on centralised exchanges.

The report also identified two mechanisms that enhance the utility of the analysed execution venues by combin-

ing certain features to overcome their drawbacks. SOR was identified as an intelligent method for ensuring execution quality across various exchanges using an algorithm. Other execution venues were identified as able to overcome the delay in waiting time and improve the execution quality of OTC markets.

Finally, the survey data on the investing behaviour of institutional actors was analysed and trends were established that could merit closer attention in the future. The first trend discovered was that common law jurisdictions and Switzerland seem to lead in terms of actors being licensed and active in the crypto landscape. This could be because the regulatory requirements in common law jurisdictions allow institutionals a greater degree of freedom.

Next, several indicators hint at an increase in the adoption of cryptocurrencies. For example, this study has shown that brokers, hedge funds and OTC desks do not exclusively trade in traditional financial instruments, but are also trading in digital assets. Secondly,

we saw that the monthly volumes traded cover a wide spectrum, with most investments falling into category of below USD 10 million. A pickup in trade could see a shift to a situation where more investors trade above USD 10 million in crypto assets. The fact that among the respondents a similar number of investors started trading in 2021 as in the previous three years in total indicates a relative increase in the number of investors.

Another interesting trend that was observed was that execution quality, supported assets and regulation were among the top three factors influencing institutional market participants in their choice of execution venue. The fee model came in only fourth on their list of priorities. The data suggests that while the fee model of execution venues could be relevant, it is not the most crucial at this stage of the market. It is likely that when the standards of the top three choices are harmonised, the fee models will play a more important role, similar to the fee models of present-day bank accounts.

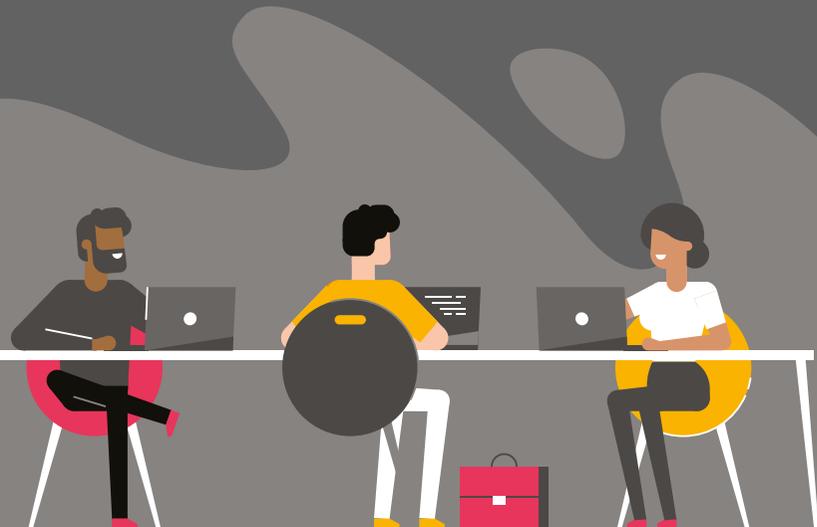
Contributors



About PwC

At PwC, our purpose is to build trust in society and solve important problems. We are a network of firms in 156 countries with more than 295,000 people who are committed to delivering quality in assurance, advisory and tax services.

The PwC Global Crypto team is composed of over 200 professionals active in over 25 countries who offer a “one-stop shop” solutions for our crypto clients across our multiple lines of service. Our clients range from crypto exchanges, crypto funds, custodians and token issuers to traditional financial institutions moving into the crypto space, as well as national regulators and central banks with regard to their crypto policies.



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About Finery Markets

Finery Markets is the first global crypto-native multi-dealer execution venue. Since 2019 we have been serving institutional crypto clients as a “one-stop solution” between firm liquidity providers such as OTC desks. Our priority is to deliver the best execution, improve trading standards and create a transparent environment for participants in the digital assets market.

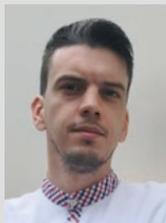
Our team unites 20 professionals in seven countries who are committed to bringing the crypto market infrastructure to maturity by integrating the latest trading technologies, communication practices and market insights.

Finery Markets provides financial institutions and crypto-related businesses with:

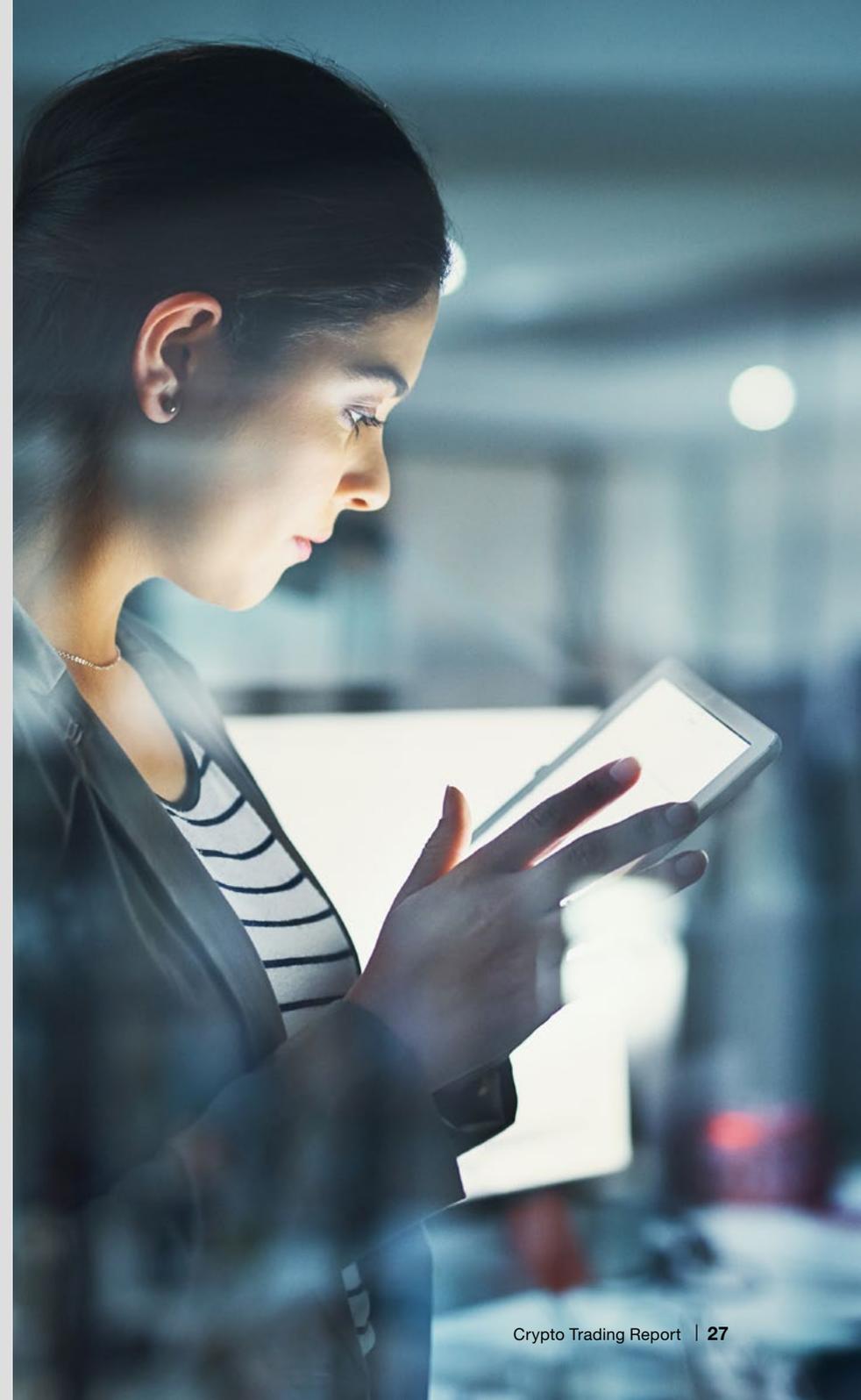
- A proprietary matching engine for best liquidity and execution quality
- Access to global liquidity providers/OTC desks via a single API and GUI
- Robust infrastructure: full automation and 99.99+% uptime
- Flexible settlement and cash management thanks to non-custodial model



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About AIMA

The Alternative Investment Management Association (AIMA) is the global representative of the alternative investment industry, with around 2,100 corporate members in over 60 countries. AIMA's fund manager members collectively manage more than US\$2.5 trillion in hedge fund and private credit assets.

AIMA draws upon the expertise and diversity of its membership to provide leadership in industry initiatives such as advocacy, policy and regulatory engagement, educational programmes and sound practice guides. AIMA works to raise media and public awareness of the value of the industry.

AIMA has also set up the Alternative Credit Council (ACC), a global body that represents asset management firms in the private credit and direct lending space. The ACC currently represents over 250 members that manage US\$600 billion of private credit assets.

AIMA is committed to developing skills and education standards and is a co-founder of the Chartered Alternative Investment Analyst designation (CAIA) – the first and only specialised educational standard for alternative investment specialists. AIMA is governed by its Council (Board of Directors).

For further information, please see www.aima.org.



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Want to participate in the next edition?



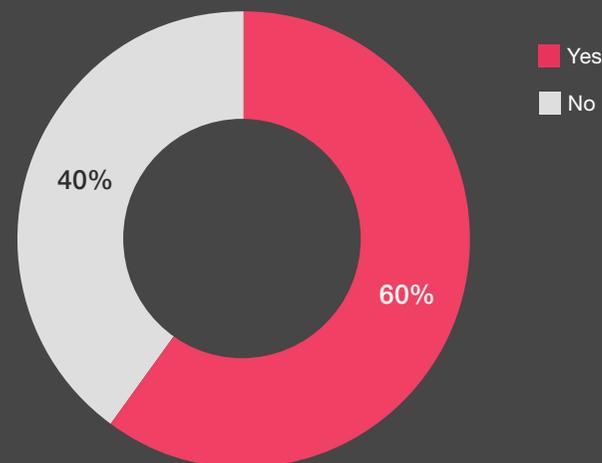
In our endeavour to represent the market as accurately as possible and draw accurate conclusions and take-aways, we rely on our respondents' submissions. If you would like to be asked to submit a questionnaire for our next report, feel free to get in touch with us. We welcome all new participants.



Did you know?

It's possible to submit a questionnaire without being mentioned as a participant if you so wish. In no circumstance will your answer be linked to you or will a specific comment be made about an answer relating to a specific respondent. Below you will find a percentage overview of participants and their choice. We thank all participants and look forward to future opportunities to share knowledge and insights about the market landscape.

Figure 14
Consent to use company name



Questionnaire

Curious and want to know our methodology?
Here are the questions we asked in the survey.



1. Please provide your email address.
2. When did you start trading digital assets?
3. Type of business activity
4. Country of domicile
5. Do you have a licence/registration with the regulatory body in your country of domicile?
6. If you do have a licence/registration what is the name (category) of your licence/registration?
7. What crypto instruments do you trade?
8. What is your monthly trading volume?
9. What are your three most important criteria for choosing an execution venue?
10. Do you want to improve your current trading setup?
11. If the previous question is affirmed, what can be improved in your current trading setup?
12. What is the total number of execution venues that you currently use?
13. Which of the following trading venue types do you use?
14. From the previous question's answer, what is the percentage/ratio of the trading volume for each type of trading venue?
 - a. If you have selected central exchange, which venue do you use?
 - b. If you have selected decentral exchange, which venue do you use?
 - c. If you have selected over-the-counter desks, which do you use?
 - d. If you have selected aggregators or smart order routing software, which do you use?
15. Please provide your company's name.
16. Do you give us your consent to use the name of your company in the list of respondents?

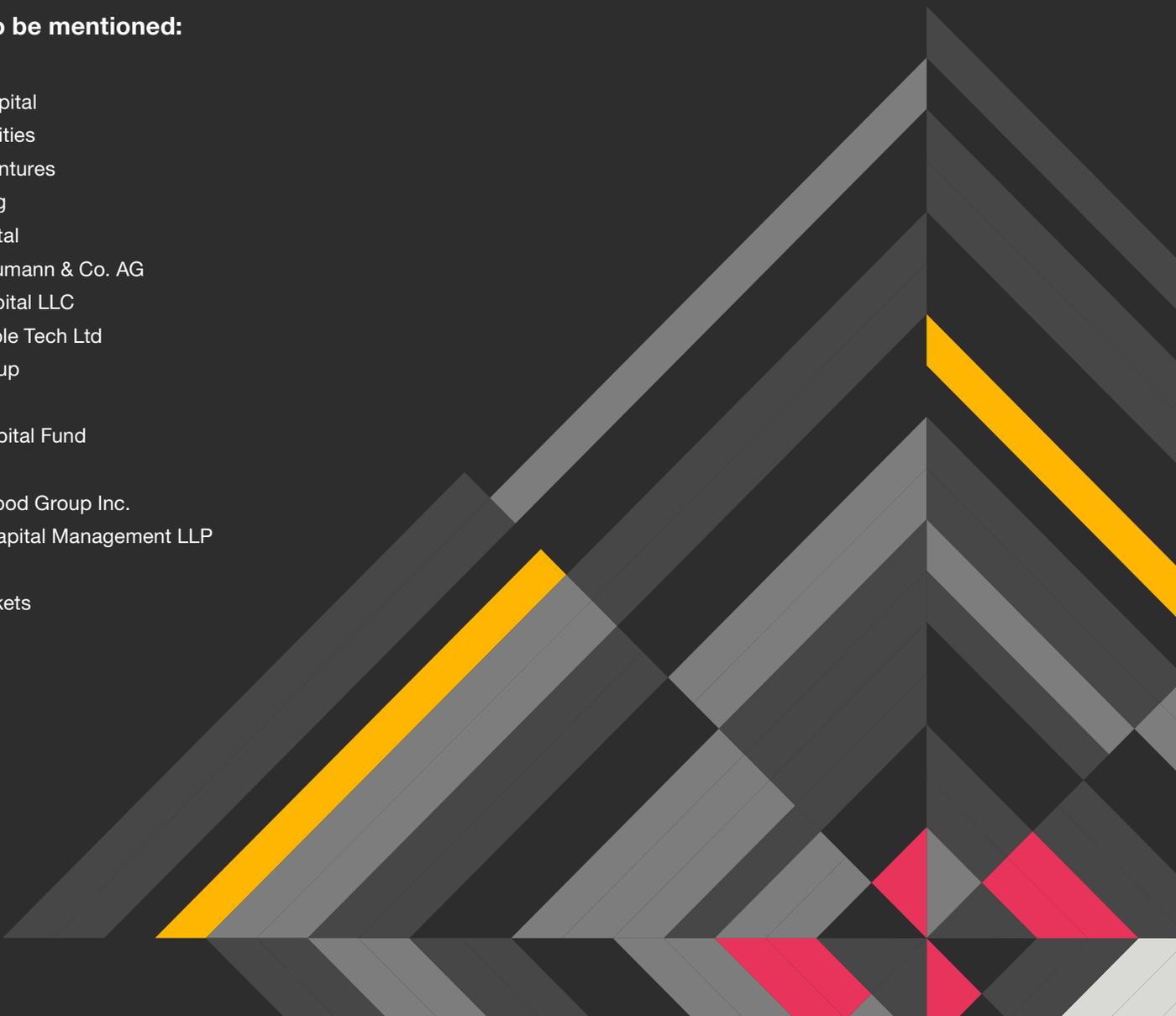
[Link to the questionnaire](#)

Participants in the Crypto Trading Report

Out of the 77 participants the following chose to be mentioned:

AAO Holdings Ltd
Alphaplate Ltd
Antikythera Capital
ARK36, Blockchains-Expert - Red Pill
BMO Capital Markets
Byelex Data Solutions B.V.
C100 Inc.
Campsor Ltd
Checkerboard Ventures Limited
Coincheck, Inc.
Coinsquare
Covario AG
Criptoloja
Currency.com
Dfi labs
Dunamis Trading
ECD
EstChange OU
Evolve ETFs
Fumbi Network
Future Wealth & Technologies GmbH
Globitex
HeroFinTechs Ltd
Inanomo
INVAO Group

Jigeum Capital
JNK Securities
Lantern Ventures
Life Trading
LMAX Digital
Maerki Baumann & Co. AG
Marvel Capital LLC
MoneyMaple Tech Ltd
Odum Group
oneAlpha
Protein Capital Fund
Skilling
Summerwood Group Inc.
Tellurian Capital Management LLP
Veliona
Zodia Markets





www.pwc.ch/crypto-trading

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