DIGITAL ASSETS
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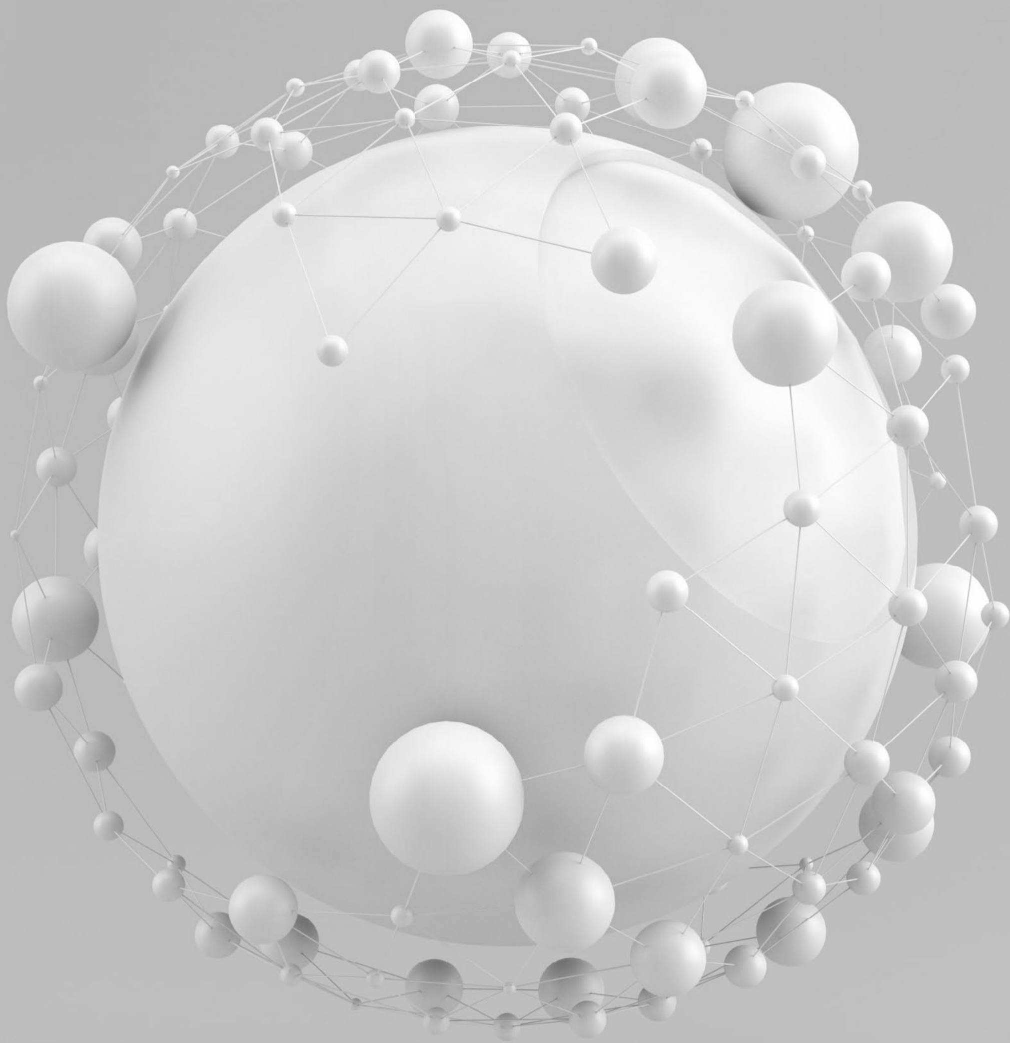
Will We Ever Have CEX Again?

Exploring the benefits and drawbacks of centralized crypto exchanges



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Introduction

Cryptocurrency has become a popular investment and trading option, with centralized crypto exchanges (CEXs) emerging as the go-to platform for individuals and institutions to buy, sell, and trade cryptocurrencies. These exchanges act as intermediaries, matching orders and facilitating transactions, but they are centrally controlled and maintained by a central authority or organization.

In this paper, we will explore the value proposition of CEXs, including their convenience, liquidity, and support, as well as the risks associated with using these platforms.

We will also discuss the emergence of exchange tokens and their potential impact on the industry. Initially, they were developed by crypto exchanges to raise funds from users and provide a more appealing "community ownership" model for investors. The most significant event impacting exchanges last year was without a doubt the collapse of FTX. This event has led to concerns about the safety of the industry and has dramatically influenced exchange outflows, volumes, and liquidity on almost all centralized exchanges (What Happened To Crypto Giant FTX? A Detailed Summary Of What We Actually Know So Far 2022).

The Value Proposition of Centralized Exchanges

93% of the trade volumes for cryptocurrencies in 2021 were generated on centralized exchanges (Khatri, 2021). This is mainly due to the convenience they provide, user-friendly interface, lower fees, and a variety of other advantages.

Specifically, the following factors encourage investors to utilize these entities:

- Convenience: CEXs provide an easy-to-use platform for buying, selling, and trading cryptocurrencies. They also typically offer a wide range of trading pairs and advanced trading tools, such as margin trading and stop-loss orders. Binance, one of the largest centralized exchanges, offers over 100 trading pairs and a user-friendly interface that makes it easy for users to navigate and execute trades.

- Liquidity: CEXs are often some of the most liquid crypto markets, meaning that they have a high volume of trading activity and tight bid-ask spreads. This can make it easier for users to buy and sell cryptocurrencies at fair prices. For example, Coinbase Pro, a popular centralized exchange, has high trading volume and tight spreads, making it a liquid market for trading cryptocurrencies:

- Support: CEXs often have dedicated customer support teams that can assist users with technical and account-related issues. For example, Bitfinex, a centralized exchange, offers 24/7 customer support through live chat and email, making it easy for users to get help when they need it.

Exchanges have become a popular way for individuals to transact cryptocurrencies, but there are also several risks associated with using these platforms. The following are some of the most significant risks and potential solutions for mitigating them:

- Security: Centralized exchanges are a prime target for hackers and other malicious actors. These attacks can result in the loss of user funds, as well as disruption to the exchange's trading activities. Examples of high-profile security breaches include the Mt. Gox hack in 2014, where 850,000 bitcoins were stolen, and the Binance hack in 2019, where 7,000 bitcoins were stolen (Cacioppoli 2022). To mitigate this risk, users should only store their funds on an exchange when actively trading and should use a hardware wallet to store their funds offline. Additionally, exchanges should implement robust security measures such as multi-factor authentication and cold storage. The big and trustworthy ones have already taken steps to keep their clients' assets safe.

- Censorship: CEXs are subject to the laws and regulations of the countries in which they operate. This means that they can be forced to censor certain trading pairs or activities, or even shut down altogether. For example, in 2017, China's government banned all cryptocurrency exchanges, leading many exchanges to relocate to more crypto-friendly jurisdictions (What's behind China's cryptocurrency ban? 2022). To mitigate this risk, exchanges should choose to domicile in countries with sound laws and regulations, such as Europe and Japan. Additionally, users should be aware of the regulatory environment in their own country and consider using decentralized exchanges or peer-to-peer trading platforms if censorship is a concern.

- Counterparty Risk: They are a single point of failure. If the exchange were to become insolvent or go out of business, users' funds would be at risk. A risk, which was very. Examples of this include the Bitfinex hack in 2016, where 120,000 bitcoins were stolen and the QuadrigaCX exchange collapse in 2019, where users lost access to $190 million in funds. The latest debacle on the collapse of FTX shows, that outright fraud can lead to bankruptcy and huge loss of customer assets. To mitigate this risk, users should diversify their investments across multiple exchanges and consider using decentralized exchanges or peer-to-peer trading platforms. Additionally, exchanges should implement robust security measures, such as insurance and cold storage, to protect user funds in the event of a hack or insolvency.

What is an Exchange Token?

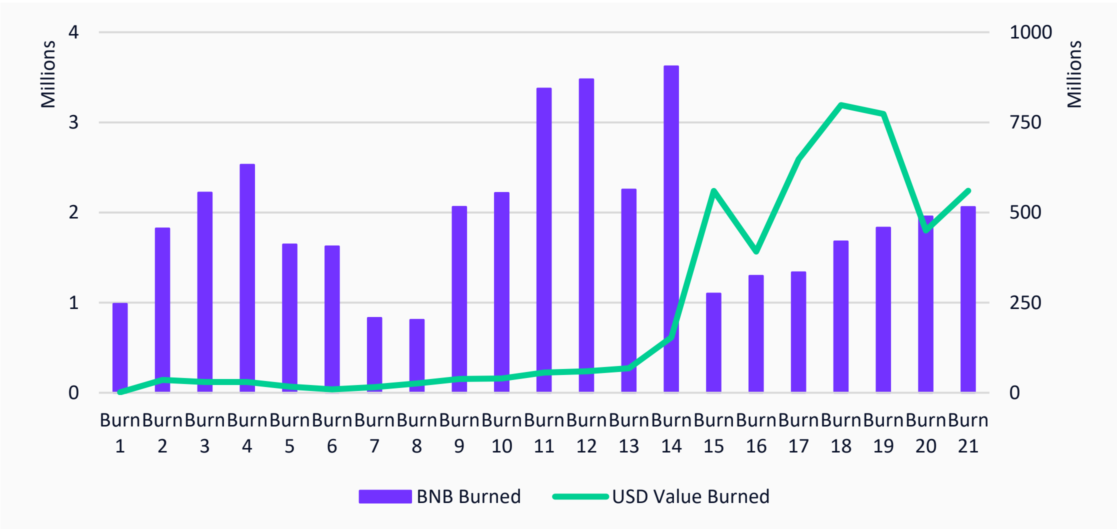
The cryptocurrency exchange industry is a competitive one. Crypto exchanges realized they needed to stand out from the crowd, so they turned to what they knew best - cryptocurrencies - and began to create their own. These are referred to as exchange tokens.

Exchange tokens, such as those issued by Binance and OKX, entitle holders to benefits on centralized exchanges (Goel und Dunleavy 2022).

Economic benefit: Buyback and Burn

Some Exchanges promise to buy back their native tokens using revenue or profits generated from the exchange's operations. This is the primary way for exchanges to tie the value of their native token to the performance of the exchange.

Exhibit 1: BNB Burns: Quarterly amount of BNB burned



Source: The Block. Data as of January 15, 2023.

For example, Binance, one of the world's largest crypto exchanges, has pledged to use 20% of its profits each quarter to buy back and burn its native token, the Binance Coin (BNB) (Exhibit 1). This creates a direct positive relationship between the exchange's performance and the value of BNB[1]. While the token does not grant holders ownership or voting rights, the buyback and burn mechanism creates a direct positive relationship between the exchange's performance and the value of the token. Binance recently modified their burn process. The number of blocks generated on the BNB chain and the price of BNB are now used to determine the burn. This demonstrates how quickly these token rules can change. The rights of token holders are unprotected, and despite the fact that they are frequently equated to stocks, they have no entitlement to any of the underlying exchange's residual cash flows.

[1] Token burning means removing coins from the overall supply of a cryptocurrency. This typically involves sending the coins or tokens to a wallet with no known private keys. This wallet can only receive assets, thus effectively making them inaccessible.

Utility Benefits

Holding or staking exchange tokens can give discounts on trading and other fees. For example, holding BNB on Binance exchange can give you a 25% discount on trading fees. It may also give priority access to token sales on the platform. For example, holders of BNB are given priority access to exclusive token sales on Binance Launchpad.

Some exchange tokens are used for staking and governance on their associated smart contract chains (i.e., CRO). Additionally, crypto exchanges have also been closely associated with blockchains that use their native tokens as blockchain gas. An example of this is Binance chain, which uses BNB as gas. This approach creates an inherent demand for the token it otherwise would not have and could allow it to accrue some sort of monetary premium.

Table 1: Exchange Token have multiple applications

Exchange	Ticker	Buyback and Burn	Native Token for Blockchain	Fee Discounts	Access to IEO/ Launchpad
Binance	BNB	✓	✓	✓	✓
Cryoto.com	CRO	✕	✓	✓	✓
Kucoin	KCS	✓	✓	✓	✓
Huobi	HAT	✓	✕	✓	✓
OKX	OKB	✓	✕	✓	✓
Bitfinex	LEO	✓	✕	✓	✕

Source: Messari, Exchange Tokens: To FTT and Beyond.

Valuing a centralized cryptocurrency exchange can be a complex task, but market capitalization and trading volume are two key metrics that can be used to gain insight into the value of an exchange. Additionally, price to trading volume can be an important factor to consider when evaluating the liquidity of an exchange[2]. By understanding these metrics and how to use them, investors can make more informed decisions about buying and selling on a cryptocurrency exchange. A high price to trading volume ratio may indicate that a cryptocurrency exchange is overvalued, while a low ratio may indicate that it is undervalued.

2 Trading volume is a measure of how many times a stock or other financial instrument has been bought and sold in a given period of time. In the case of a cryptocurrency exchange, it represents the total number of trades that have taken place on the exchange over a certain period of time. This can include both buying and selling trades, and can also include trades of multiple different cryptocurrencies.

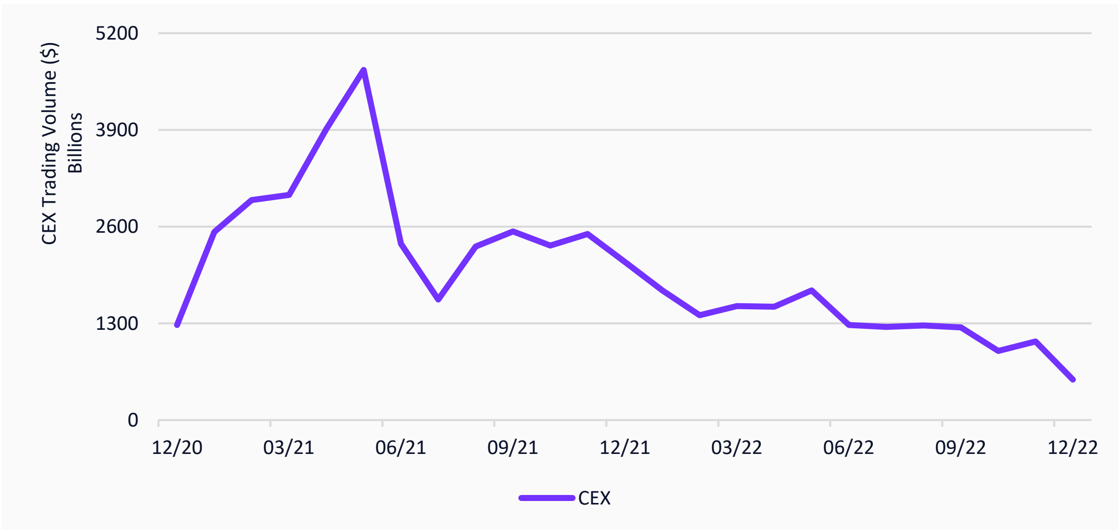
The Fight for Exchange Volume

Exchange volume is a key metric for evaluating the health and liquidity of a centralized crypto exchange. High trading volume typically indicates a liquid market, while low trading volume may indicate a lack of interest or liquidity. While there is no way to predict when the next crypto bull market will happen, it is reasonable to assume that, as crypto becomes more mainstream, overall crypto volumes will grow over time. This would be positive for CEXs as it would increase the potential number of users and transactions. Centralized exchanges rely also on their liquidity providers to maintain a sufficient volume of trading activity. If these liquidity providers were to withdraw, the exchange's liquidity could dry up, making it difficult for users to buy and sell cryptocurrencies.

Periods of high volatility and the launch of new products can also drive volume to exchanges. For example, Bitmex became the dominant exchange for a period after pioneering perpetual futures (Five Years Ago, the Perpetual Swap Was Born. Everything Changed. 2021).

The recent years have shown how much the perception of the market can influence trading behavior. In 2021, the distribution of stimulus payments created a market with plenty of liquidity, where investors capitalized on different trends and this led to an increase in trading activity. However, in 2022, the combination of a poor economic environment, characterized by rising inflation and interest rates, and specific events within the crypto industry, made investors move towards more secure assets and away from trading (Exhibit 2). Consequently, the trading volume on centralized exchanges dropped 46.2% during this year (Centralized Exchange Retrospective. 2022 Review & 2023 Outlook 2022).

Exhibit 2: CEX vs. DEX Volume, 2021 – 2022

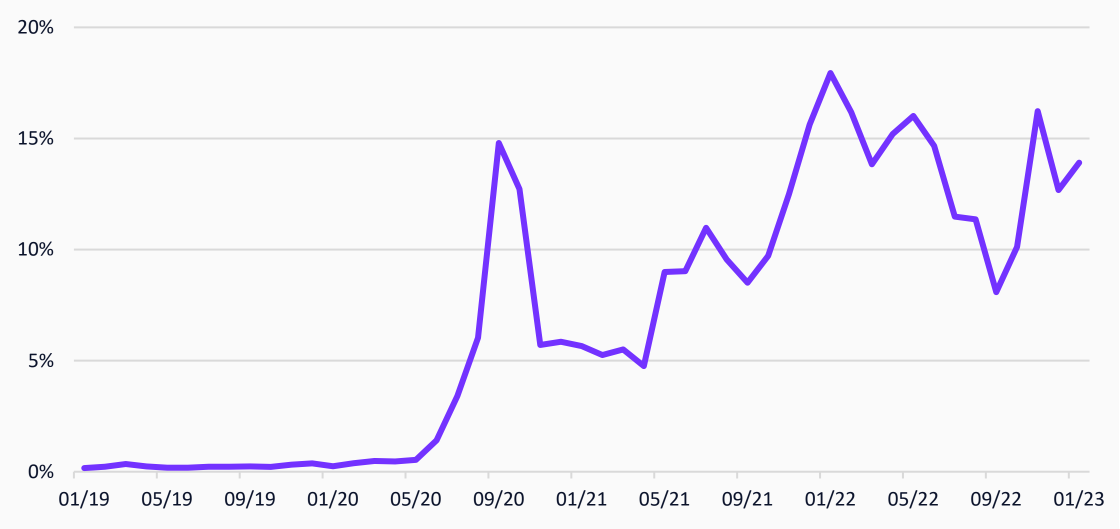


Source: CryptoCompare Q4 2022 Outlook.

Will Decentralized Exchanges be the New Winner?

The rise of decentralized exchanges (DEXs) has led to increased competition for centralized exchanges. DEXs offer a more decentralized, trustless platform for trading, which can be more appealing to users. Additionally, the user experience on DEXs is improving, with strides being made in more efficient DEX design as well as scaling to a lower gas fee. This is leading to centralized exchanges losing market share to DEXs (Exhibit 3).

Exhibit 3: DEX to CEX Spot Trade Volume



Source: The Block, Monthly decentralized exchange volume divided by centralized exchange volume (as a percentage). Includes largest exchanges with trustworthy reporting of exchange volume metrics.

Additionally, trust is an issue for CEXs, with the recent collapse of FTX leading to a greater push for self-custody of crypto assets and the use of crypto tools. CEXs are attempting to regain this trust through greater transparency and Proof-of-Reserves (PoR), but it is far from perfect for most[3]. The research provider "The Block" provides a valuable overview about Proof-of-Reserves. According to this article, PoR is only half of the picture when it comes to an exchange's financial health, as it does not consider the exchange's liabilities. Therefore, reliable external audits are still needed (Toh 2022).

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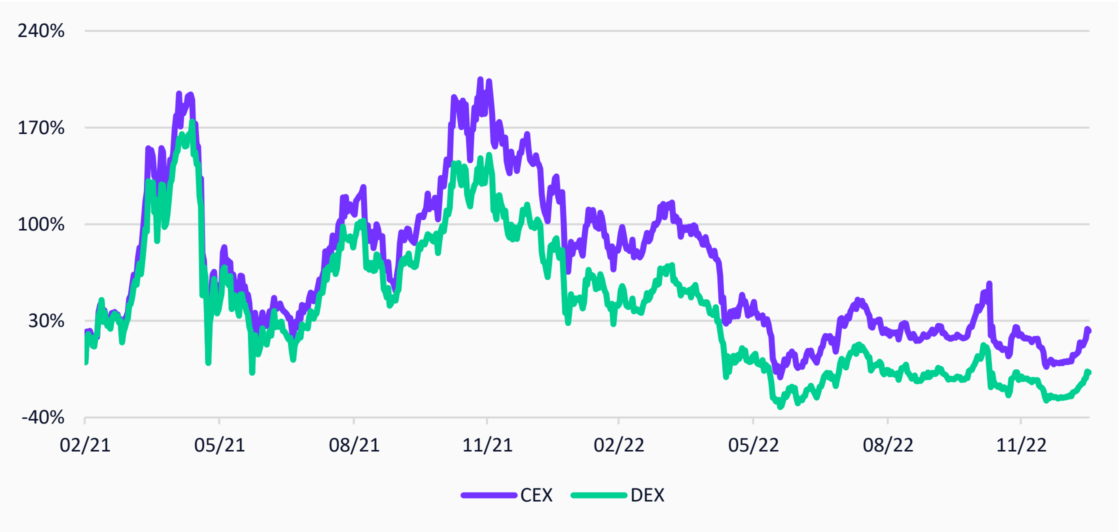
3 Proof of Reserves (PoR) is a method for cryptocurrency exchanges to publicly account for their digital assets, ensuring that user deposits are secure and withdrawable. PoR is a technique for cryptographically auditing a cryptocurrency exchange.

Binance has already begun to modify its business model and plans to let institutional investors continue using their collateralized digital assets outside of its platform. Investors will be able to store collateral with Binance Custody, which will retain the money in cold storage, through the exchange. Assets held by institutions would again be available when trades have been settled (Mishra, Crawley und Godbole 2023).

Regulation is another factor to consider when analyzing trading volume for crypto currency exchanges. Post the FTX fiasco, there is likely going to be more regulation. Depending on the direction regulators take (anti-DeFi or anti-CeFi), this can play out differently. However, greater regulatory clarity should overall be positive. In a research paper, JP Morgan stated that the likelihood of new regulatory initiatives aimed at increasing transparency in the crypto space, such as mandates for regular reporting and auditing of reserves, assets, and liabilities will lead to a convergence of the crypto ecosystem with the traditional financial system (Panigirtzoglou 2022).

Exhibit 4: Total Return comparison CEX vs. DEX



	Annualized Return	Sharpe Ratio	Annualized Vola	Max Drawdown	# Constituents
DEX	-2.79%	-0.084	79%	75%	6
CEX	7.80%	0.0475	75%	71%	5

Source: MarketVector Indexes™ ("MarketVector"). Data as of January 15, 2023. CEX data based on the MarketVector™ Centralized Exchange Index, DEX data based on a market cap weighted basket of 6 DEX token.

When it comes to price performance, DEXs have lagged behind their centralized counterparts over the last two years (Exhibit 4). DEXs had their own issues. The code is straightforward to replicate because it is open source. As we remember, Sushiswap simply drained Uniswap's liquidity in order to mine it for higher payouts (whiteboardcrypto.com 2021). In terms of trading fees, there is also a race to the bottom. The most recent FTX fiasco can support the decentralized narrative, but nothing is set in stone.

Exchange Vetting is Key for Investors

The importance of carefully screening cryptocurrency exchanges has been made clear by the FTX disaster. Investors must be aware of whether platforms are secure and suitable for trading and investment-related activity. Investors can assess a number of variables, including the exchange's regulatory compliance, governance rules, institutional and financial strength, technical skills, and data science analyses, by performing due diligence on cryptocurrency exchanges. This enables investors to choose the exchanges that will best serve their needs and reduce unwanted risk. Additionally, it encourages transparency and allays fears of participants joining the area by providing a clear picture of the objective procedure used to evaluate the exchanges by reported volume.

For instance, the data provider Digital Asset Research (DAR) regularly assesses 450+ cryptocurrency exchanges to identify those that comply with institutional criteria (Exchange Vetting Methodology 2022). Most recently, 19 exchanges were certified as complying with these standards, while 9 more were placed on a watchlist. This demonstrates that only a very small fraction of the universe satisfies the highest standards. Another data provider that distinguishes between higher and lower tier exchanges is CryptoCompare (Exchange Benchmark Report 2022).

Since smaller cryptocurrencies are only traded on smaller exchanges, investors should be aware that there is always a tradeoff between eliminating exchanges and preserving a sufficient number of tokens in the available universe.

Centralized Exchange Methodology

MarketVector filters exchange tokens according to size and liquidity criteria. The index will capture the performance of coins with $250mn market cap and $10mn average daily transaction volume (ADTV).

MarketVector places a strong emphasis on investability. The market capitalization and liquidity requirements ensure that our clients can replicate the index.

The categorization is split into 3 layers: Category, Industry Group and Industry. MarketVector differentiates platforms by their use case. For example, Centralized Finance is the category, Exchange an industry group and Access Token is the industry.

Conclusion

The centralized exchange industry has played a significant role in the development and growth of the cryptocurrency market, with an average daily trading volume of $110bn in 2022. However, the sector has suffered a number of difficulties over the past year, including bankruptcy or closures, large capitalization losses, and serious liquidity problems. User confidence has been significantly affected by the demise of FTX, which has also resulted in a pattern of declining volumes and increased outflows from centralized exchanges.

Decentralized exchanges are starting to attract traders, and in the long run, it is anticipated that they will gradually supplant centralized exchanges in terms of market share. This will speed up the adoption of decentralized markets as a whole and highlight other decentralized applications like borrowing and lending, derivatives, and yield providers. To regain user confidence and reduce outflows, centralized exchanges must deploy strong security measures and be open and honest about how they operate.

The major way for users to enter and exit the decentralized finance ecosystem is through centralized exchanges, therefore despite the difficulties, they will always have a position in the crypto economy. Due to slower transaction speeds or the ability to track their trading tactics and order amounts on the blockchain, larger institutions typically cannot use DEXs for their larger orders. Centralized exchanges might position themselves for success in the continuously changing bitcoin industry by concentrating on professional investors.

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