

Exchange Benchmark

April 2023

Contents

1. Introduction & Mission Statement	3-9
2. Centralised Exchange Rankings:	11
a. CEX: Key Highlight & Methodology	12-16
b. CEX: Ranking Methodology Overview	17-23
c. CEX: Spot and Derivatives Results	24-28
d. CEX: Category Statistics	29-36
3. Decentralised Exchange Rankings:	37
a. DEX: Key Highlight & Methodology	38-42
b. DEX: Ranking Methodology Overview	43-48
c. DEX: Results	49-53
d. DEX: Category Statistics	54-59

Introduction & Mission Statement

Who is the Exchange Benchmark for?

CCData's Exchange Benchmark is backed by thousands of research hours and powered by CCData's leading data solutions to provide the industry with a robust framework for ranking and assessing the risk associated with digital asset exchanges. The rankings in this report underpin CCData's standard-setting aggregate index methodology, CCCAGG.



Exchanges looking to conduct thorough competitor analysis, understand industry trends and areas for competitive parity.



Regulators who are looking to develop policy, or better understand the global digital asset landscape.



Funds looking to assess counterparty risk and opportunities in digital asset markets.



Investors and Traders who want to identify the least risky venues for trading.



Exchange service providers such as insurers, custodians and compliance services who want to gain a better understanding of the industry and identify potential customers.

[Access the Benchmark scores using our API](#)

[Find out more about our data solutions](#)

Mission Statement

CCData's Exchange Benchmark brings clarity to the digital asset exchange sector, providing a robust framework for assessing risk and bringing transparency and accountability to a complex and rapidly evolving market.

Since launching in 2019, the Exchange Benchmark has become the **industry standard for evaluating exchanges**. The methodology has since expanded, encompassing several dimensions using a comprehensive data set, covering 150 exchanges across 8 categories of evaluation.

The Centralised Exchange Benchmark now assess the following sectors:

- Centralised Spot Exchanges
- Centralised Derivatives Exchanges

CCData's Exchange Benchmark is backed by thousands of hours of research and encompasses more than 200 **qualitative** and **quantitative** metrics. Utilising an innovative ranking methodology, it combines both qualitative and quantitative metrics to assign a grade to each exchange and **identify the lowest risk exchanges** in the industry.

What do the grades mean?

The Exchange Benchmark ranks exchanges from AA-F. We classify a Top-Tier exchange as any in the AA-BB bracket and Lower-Tier exchanges as those graded B-F. Exchanges in the Top-Tier meet our minimum threshold for acceptable risk.

What the grading is not

This grading does not connote overall superiority, instead it represents a means of ranking exchanges according to risk. The Exchange Benchmark does not serve as a guide to which platform is superior for trading, nor the reliability of reported volumes.

Introducing: Centralised Derivatives Benchmark

CCData is delighted to announce the expansion of its Exchange Benchmark to include centralised derivatives exchanges, providing broader market coverage and a more nuanced evaluation of the risk associated with derivative exchanges.

Derivatives markets play an essential role in the digital asset industry, accounting for 69% of all cryptocurrency trading volume in 2022. As such, it is important to assess both derivative exchanges, and markets, to determine both the safety and performance of an exchange.

The integration of derivatives exchanges into the Exchange Benchmark will take place via a separate derivatives exchange ranking. The methodology follows the same weight and structure as the spot benchmark.

The distinctions between the different rankings lies in the distinct metrics employed to evaluate derivatives exchanges across the following categories:

- Market Quality
- Data Provision
- Asset Quality and Diversity

The following categories have been used by CCData to develop the **Derivatives Benchmark**:

- Security
- Legal/Regulatory
- Transparency
- Team/Exchange
- Market Quality
- Asset Quality and Diversity
- Data Provision
- KYC and Transaction Risk

Mission Statement: DEX Benchmark

Over the last four years, we have witnessed the growth of decentralised finance (DeFi). During this time, numerous protocols have surfaced, allowing market participants to carry out transactions and other financial activities on-chain, such as borrowing and lending, yield strategies, employment of derivatives as hedging instruments, and more.

Decentralised Exchanges (DEXs) have been at the heart of this on-chain revolution and have cemented themselves as a core part of the digital asset sector. Since 2020, trading activity on DEXs has skyrocketed, in certain instances surpassing volumes of Centralised Exchanges (**CEXs**). Many market participants now view DEXs as a viable alternative to CEXs with differing characteristics and value propositions. These include:

- Decentralised transactions, thereby avoiding counterparty risk
- No KYC/AML requirements, powering the idea of privacy in global finance
- On-chain transactions, allowing for full transparency of trading ecosystems
- Community-driven decision-making via governance voting
- Availability of an extensive list of assets, instruments, and investment opportunities

CCData has developed a thorough **DEX Benchmark** which assesses decentralised exchanges from a risk perspective, covering over 60 different metrics under the following areas:

- Security
- Community
- Transparency
- Governance
- Market Quality
- User Experience
- Incentives

What do the grades mean?

The DEX Benchmark ranks exchanges from AA-F. We classify a **Top-Tier** exchange as any in the **AA-BB** bracket and **Lower-Tier** exchanges as those graded **B-F**. Exchanges in the Top-Tier meet our minimum threshold for acceptable risk.

Benchmark Scoring – Key Principles

Centralised and Decentralised exchanges are inherently different marketplaces, as such, each group has been evaluated using distinct metrics. However, the framework behind each Benchmark is the same. Some key principles of this framework are outlined below:

- A set of **categories** have been devised which represent key risk areas which are relevant for centralised and decentralised exchanges, relating to their specific value proposition. Categories have weightings based on their relative risk importance – these weightings are decided at CCData's discretion, and may change in future editions of the Benchmark.
- Each category includes a range of **metrics that can quantitatively or qualitatively measure the performance of an exchange**. Metrics are then given points based on their importance within that category – again decided at CCData's discretion. These are outlined in pages 19-22 and 45-46 for centralised exchanges and decentralised exchanges, respectively.
- Points are aggregated within each category and are then scaled to the category weighting. Each category score is summed up to reach a total score. **Given the relative advancement of centralised exchanges, these have additional thresholds, which if not met, will cap the maximum score of an exchange, regardless of the total score.** These are outlined on page 18. The capped score is the **final score** received by the exchange.
- Exchanges are granted a **grade** given their final score, ranging from AA-F. The scores required for each grade are outlined on pages 14 and 40 for centralised exchanges and decentralised exchanges, respectively. The scores and grades across all exchanges are comparable, and the weaker performance of decentralised exchanges exemplifies their relative immaturity as an industry. We define 'Top-Tier' exchanges as those attained a grade BB or higher, whereas those attaining a grade B or lower are considered 'Lower-Tier'.

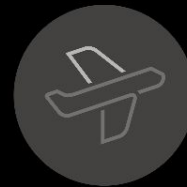
Thanks to Our Collaborators



Cryptocurrency compliance



Monitor risky
payments



Travel rule
compliance



Identify money
laundering



Investigate
financial crime

Centralised Exchanges

Centralised Exchanges: Key Highlights & Methodology

Key Highlights - Centralised Exchanges

Centralised exchanges receive updated scores and rankings.

Bitstamp continues to hold the only AA rating, followed by Coinbase with a grade A. Bitfinex climbed 11 ranks to secure third place, while Gemini fell 18 positions due to regulatory concerns and a data breach. Binance slipped three spots following recent regulatory compliance issues.

Exchange KYC practices on the rise. In April 2023, 15% of analysed exchanges were deemed to have inadequate KYC practices according to Ciphertrace. While this is in part due to the closure of poor, underperforming exchanges, it is an improvement from 21% in October 2022 and 35% in April 2022.

8 derivatives exchanges reach Top-Tier status. In this edition of the Benchmark, 8 derivatives exchanges out of 26 exchanges met the threshold for a BB+ rating, with only Kraken, Bybit and Binance receiving A ratings.

Transparency is increasing across the centralised exchange industry.

Following the collapse of FTX, a prominent trend in the digital asset exchange sector has been the implementation of Proof of Reserves in response to growing concerns from market participants. As a result, 20% of exchanges have adopted Proof of Reserves or an alternative, with 13% being audited or incorporating Proof of Liabilities.

Security standards improve, represented by the increasing use of security certificates and custodian services. The number of exchanges that possess an ISO 27001, SOC2 certificate, or similar, has increased from 24% in Oct 2022 to 30% in April 2023. This indicates enhanced security practices within the centralised exchanges sector. Furthermore, 34% now employ the service of a custody provider, increasing from 26% in October 2022.

Market quality data availability grows while data quality declines. Market quality scores averaged 40% in April 2023 versus 45% in October 2022. CCData continues to offer a wide range of exchange market data, including both OHLCV metrics for 120+ exchanges and Order Book snapshots for 100+ exchanges.

Introducing a New Transparency Category

Transparency has been a pressing issue within the digital asset sector in recent months, particularly after the collapse of FTX and recent failures within traditional finance, which have further insinuated the drawbacks surrounding the lack of transparency within financial institutions.

In light of mounting industry pressures, many exchanges have made drastic changes to increase transparency, including publishing proof of reserves, using the services of auditing firms or increasing their on-chain presence.

The new transparency section added by CCData includes the following metrics:

- Available Proof of Reserves
- Audited Proof of Reserve
- Available Proof of Liability
- Frequency of Proof of Reserves/Liability
- Number of Assets in Proof of Reserves
- Public Wallet Addresses
- Proof of Reserve Alternatives
- Public Custody Provider
- Management & Ownership
- Active Board of Directors

CEX Benchmark - Aggregation and Grading

Scores from each category are aggregated to form a total cumulative score. The **maximum score is 100**.

Minimum Threshold for AA-A Status

To ensure that only the lowest risk exchanges achieve AA - A status, we have created minimum thresholds across certain categories. These include:

- 60% or above for KYC/Transaction Risk, Security, Asset Quality/Diversity, and Legal/Regulatory (each is one threshold).
- 50% or above for Market Quality
- No negative penalties
- Green KYC and Interaction Risk Scores, in line with Ciphertrace's transaction risk data

If an exchange breaches one threshold, then its score is capped at 75 (i.e. an A ranking). If an exchange breaches two thresholds, their score is capped at 70 (i.e. a BB ranking).

Category	Maximum Points	Minimum Threshold
Security	15	9 (60%)
Legal/Regulation	15	9 (60%)
KYC/Transaction Risk	15	9 (60%)
Data Provision	15	-
Asset Quality/Diversity	5	3 (60%)
Team/Company	5	-
Market Quality	20	10 (50%)
Transparency (NEW)	10	-
Negative Penalty	-7	-
Total Cumulative Points	100	

Score	Grade
>75	AA
70-75	A
65-70	BB
55-65	B
45-55	C
35-45	D
25-35	E
<25	F

CEX Benchmark: Methodology Update

It is necessary that the risk assessment of exchanges continues to develop as financial regulators increase their oversight of the industry and a more diverse range of stakeholders enter the market. As a result, the Exchange Benchmark methodology has been updated to reflect the latest developments in the industry. In addition to adding a Transparency section and integrating derivatives, other changes include:

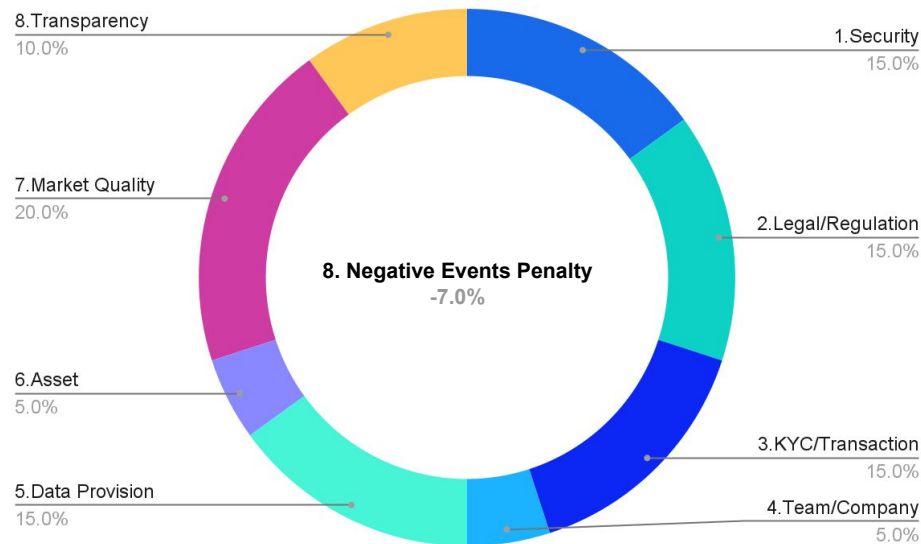
- Changing the definition of Top-Tier Exchange to include AA, A and BB graded exchanges as opposed to AA, A, BB and B in the previous benchmark iteration.
- The BB threshold has been adjusted to start at 65% instead of 60%, similarly the thresholds for B, C, D, E, and F have all been lowered by 5% each to address the growing risks faced by the industry.
- Reducing the Team/Exchange weight to 5 points and Security and Legal/Regulatory to 15 points, in response to adding a 10 point Transparency category.
- Negative Events have been modified to only include events that have taken place in the last six month. In addition, we have split Negative Events to Regulatory Negative Events, including any lawsuits or acquisitions, (Maximum -ve 5 points) and Suspension Negative Events which includes any halting of withdrawals or exchange downtime (Maximum -ve 2 points).
- Chief Compliance Officer experience has been given more weight as a result of heightened regulatory scrutiny as more failures in Centralised Exchanges proved to be the cause of poorly managed risk.

Centralised Exchanges: Ranking Methodology Overview

CEX Methodology Overview - Ranking Components

The overall ranking consists of the following components and subsequent weightings:

1. Security
2. Legal/Regulation
3. KYC/Transaction Risk
4. Team/Exchange
5. Data Provision
6. Asset Quality/Diversity
7. Market Quality
8. Transparency
9. Penalty Factor: Negative Events (-7%)



CEX Methodology Overview - Data Collection

Due Diligence

Time Period: 01 December 2022 - 31 March 2023

Sources: World Bank
Transparency International
LinkedIn Profiles
Crunchbase Profiles
Exchange Websites
Github/Other API Documentation
Companies House
Media websites
Various MSB Registries
Ciphertrace

Method: Manual Data Collection, Exchange Due Diligence Form, Collaborators

Market Quality (Trade)

Time Period: 1st of September to 28th February

Sources: CCData Exchange OHLCV Data

Market Quality: We evaluate the market quality of each exchange by combining volume figures and five metrics (derived from trade and order book data) to measure the cost to trade, liquidity, market stability, response to sentiment, and "natural" trading behavior.

Exchanges are rated based on their top five markets by trading volume. Points are assigned using a proprietary mathematical function that considers the aforementioned data. This process results in a comprehensive ranking that remains robust across various markets for each exchange

Market Quality (Order Book)

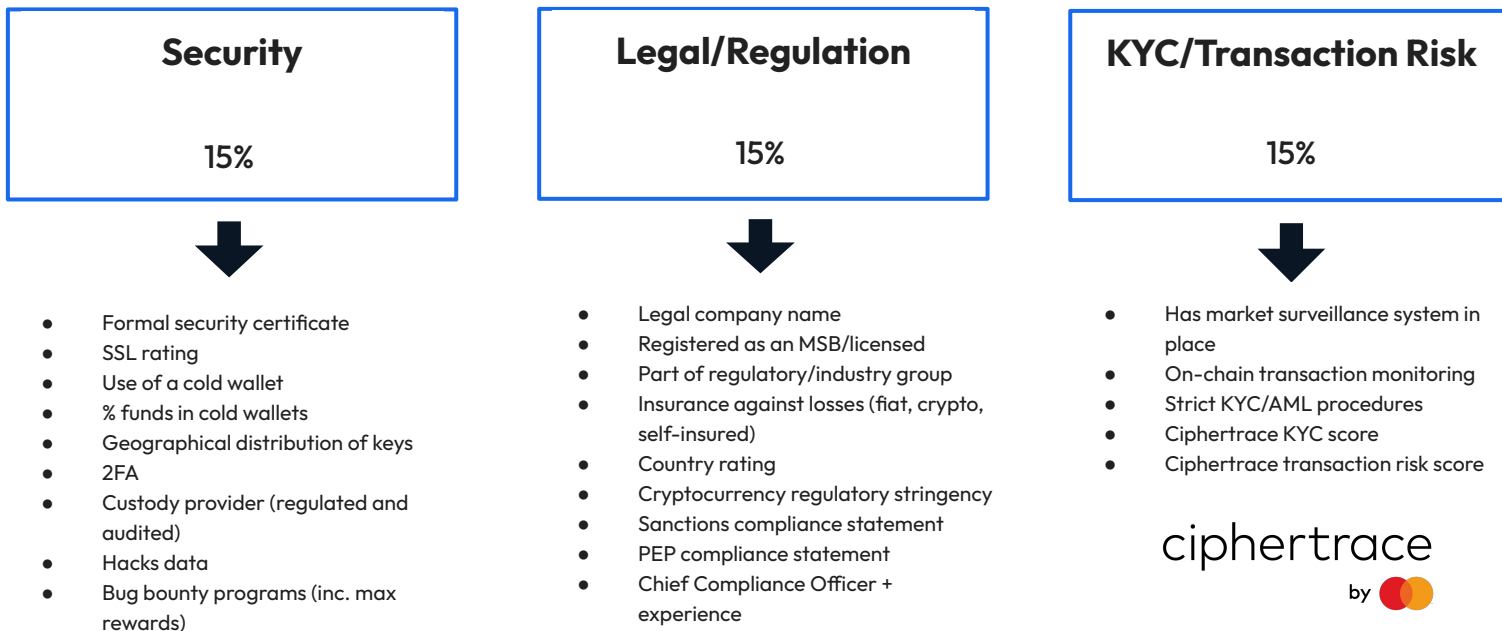
Time Period: 1st of September to 28th February

Sources: CCData Exchange Order Book Data

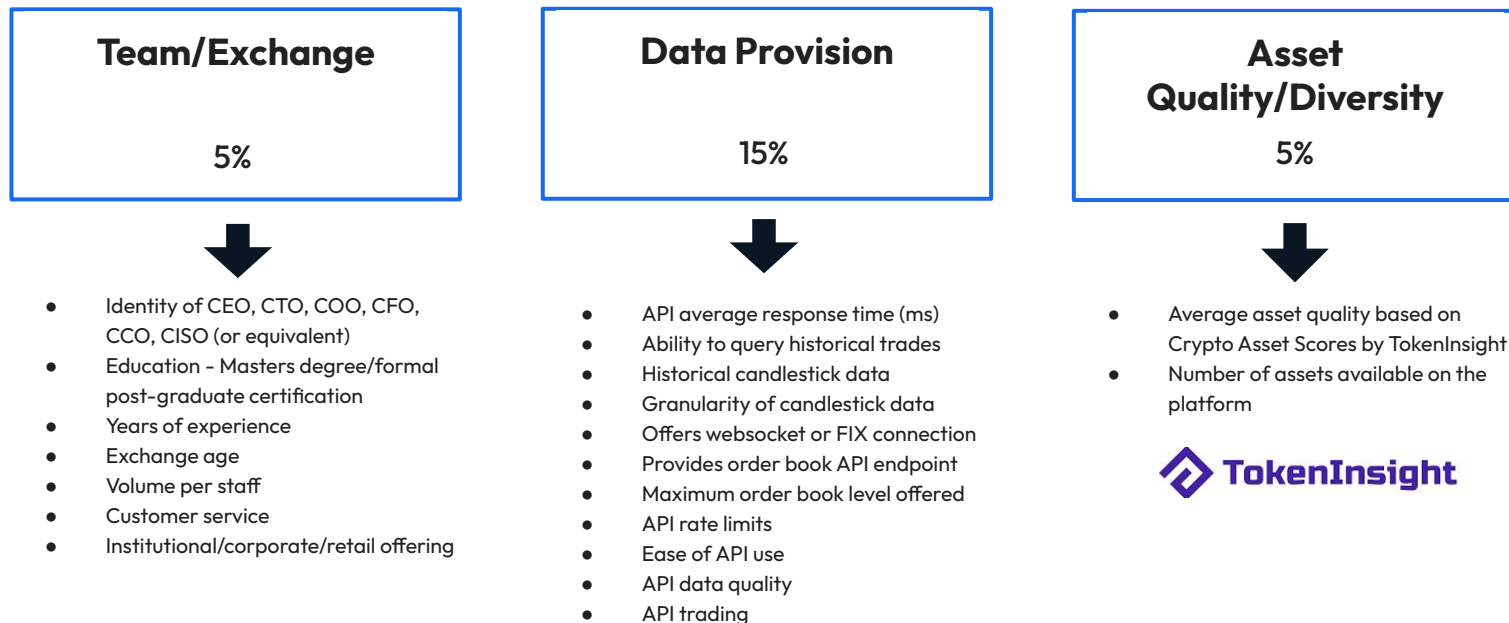
Markets: BTC-USD, BTC-USDT, BTC-ETH, BTC-KRW, BTC-JPY, ETH-USD, ETH-USDT, ETH-KRW, ETH-JPY + OTHER SIGNIFICANT FIAT MARKETS

Number of Exchanges: 100+

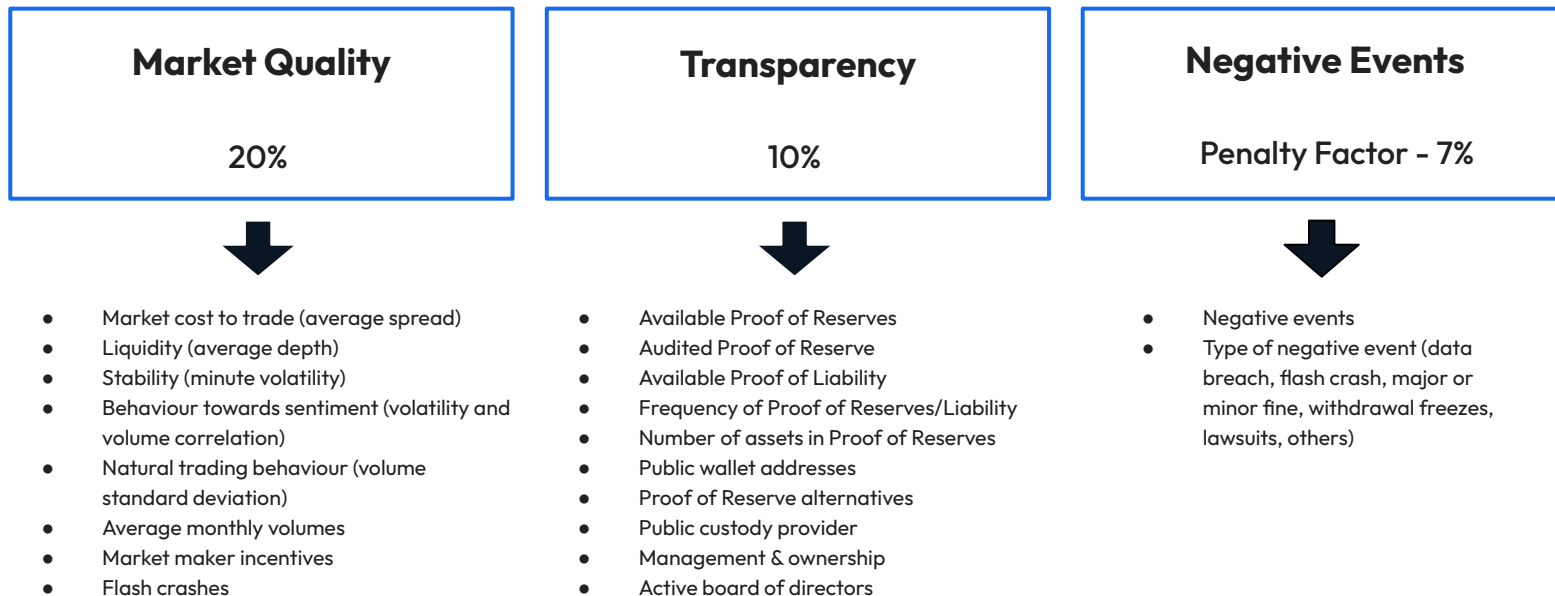
CEX Methodology Overview - Components I.



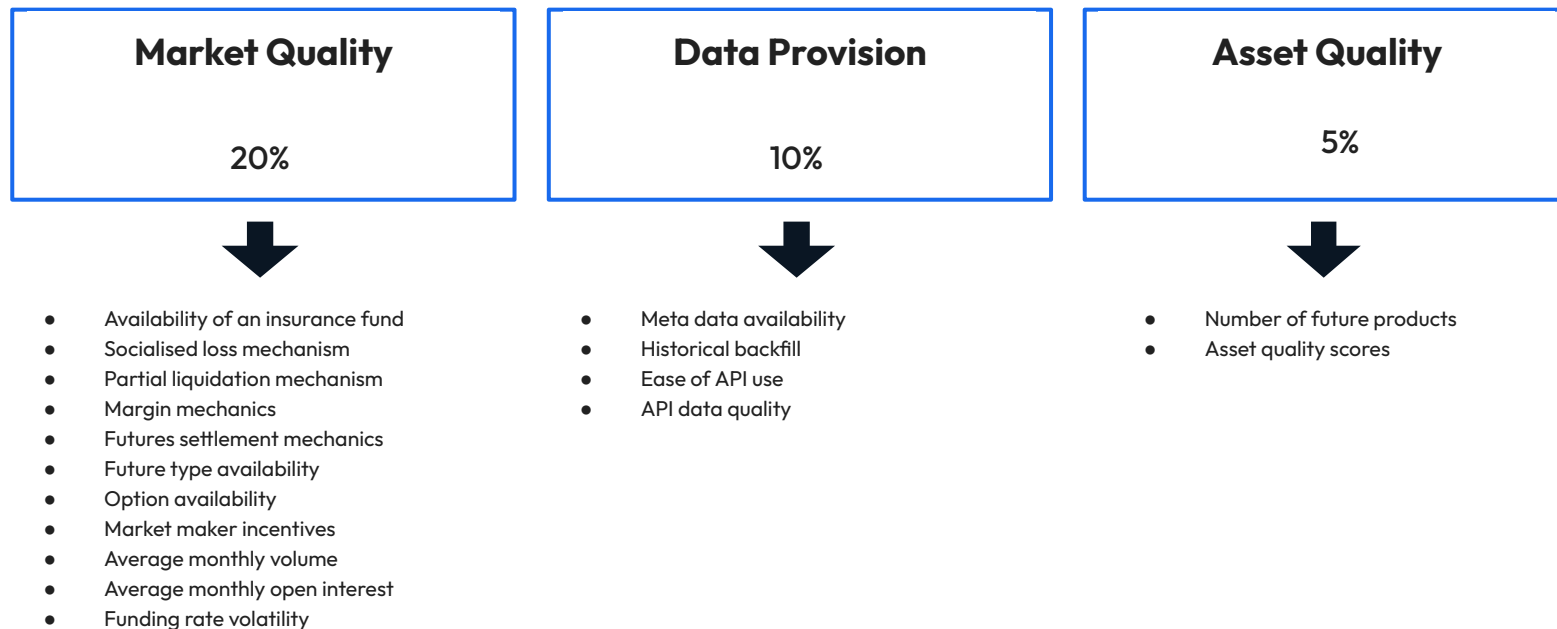
CEX Methodology Overview - Components II.



CEX Methodology Overview - Components III.



Derivatives Based Components



Centralised Exchanges: Results

The Global Standard for Digital Asset Data And Indices

Empowering financial institutions with
definitive, real-time digital asset data



Institutional Grade
Data Solutions



FCA Authorised
Since 2021



Leading Digital
Asset Index Suite



Robust and Trusted
Enterprise API

Find out more at ccdata.io



Centralised Spot Exchange Toplist

See the full rankings on our dashboard

Exchange	KYC/Transaction Risk	Quality/Diversity of Assets	Legal/Regulation	Data Provision	Security	Team/Exchange	Negative Events	Market Quality	Transparency	Total Score	Final Score	Final Grade
Bitstamp	15.0	3.5	11.8	12.7	13.2	4.2	0.0	11.9	8.9	81.1	81.1	AA
Coinbase	15.0	3.5	12.9	13.2	15.0	4.2	-5.0	14.5	8.9	82.1	75.0	A
Bitfinex	15.0	3.5	9.3	11.4	11.4	3.5	0.0	12.6	7.7	74.4	74.4	A
LMAX	15.0	3.5	11.8	10.0	11.4	3.6	0.0	12.1	5.3	72.7	72.7	A
itBit	13.5	3.5	11.8	11.1	13.6	2.8	0.0	12.1	3.5	71.9	71.9	A
Binance.US	15.0	3.5	12.0	11.6	11.4	2.9	-5.0	11.2	8.9	71.5	71.5	A
Kraken	13.5	3.5	12.3	8.0	12.4	4.2	-5.0	12.5	10.0	71.4	71.4	A
Binance	13.5	3.5	9.1	12.5	13.2	3.2	-7.0	15.7	7.7	71.4	71.4	A
Luno	11.3	3.3	13.9	11.1	11.4	3.7	0.0	8.6	7.7	71.0	71.0	A
Upbit	15.0	3.5	11.4	12.0	9.6	2.8	0.0	11.1	5.3	70.9	70.9	A
Cex.IO	15.0	3.5	12.1	10.7	14.2	3.9	-1.0	8.3	4.1	70.8	70.8	A
crypto.com	13.8	3.5	12.7	13.6	8.6	3.7	-2.0	12.3	8.9	75.1	70.0	BB
Bybit	12.0	3.5	12.7	12.0	5.7	3.1	0.0	12.2	7.7	68.9	68.9	BB
OKX	12.0	3.5	7.3	12.5	9.5	2.1	0.0	14.1	7.7	68.7	68.7	BB
NDAX	15.0	3.5	11.8	10.7	12.4	2.9	0.0	7.0	4.5	67.9	67.9	BB

Centralised Derivatives Exchange Toplist

See the full rankings on our dashboard

Exchange	KYC/Transaction Risk	Quality/Diversity of Assets	Legal/Regulation	Data Provision	Security	Team/Exchange	Negative Events	Market Quality	Transparency	Total Score	Final Score	Final Grade
Kraken	13.5	5.0	12.3	13.9	12.4	4.2	-5.0	12.0	10.0	78.3	75.0	A
Bybit	12.0	5.0	12.7	11.8	5.7	3.1	0.0	17.0	7.7	74.9	74.9	A
Binance	13.5	5.0	9.1	12.9	13.2	3.2	-7.0	16.7	7.7	74.2	74.2	A
crypto.com	13.8	5.0	12.7	11.8	8.6	3.7	-2.0	10.4	8.9	72.8	70.0	BB
OKX	12.0	5.0	7.3	11.8	9.5	2.1	0.0	16.5	7.7	71.9	70.0	BB
Deribit	13.5	5.0	7.5	12.9	6.8	2.7	0.0	15.4	6.5	70.2	70.0	BB
BitMex	15.0	5.0	5.7	15.0	10.7	2.9	-2.0	12.6	7.7	72.6	70.0	BB
Gate.io	8.3	5.0	6.4	12.9	10.0	1.9	0.0	15.6	7.7	67.8	67.8	BB
HuobiPro	13.5	5.0	5.4	8.6	7.8	2.0	0.0	15.6	7.7	65.5	65.5	B
Kucoin	9.8	5.0	6.1	7.5	10.6	2.0	-3.0	12.2	7.7	58.0	58.0	B

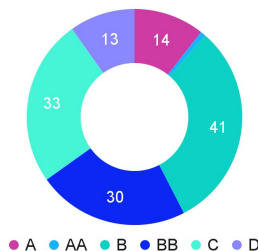
Top-Tier CEX Volumes - Grades BB and Above

CCData has established the notion of **Top-Tier volume** whereby investors can segment the market into higher and lower risk volumes.

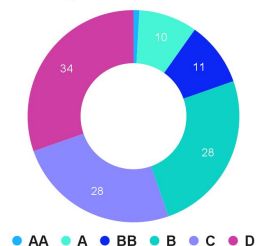
We currently define Top-Tier volume as volume derived from exchanges scoring a BB and above.

This equates to a total of **23 exchanges** (vs 86 in Oct 2022, 78 in Apr 2022 and 87 in Aug 2021) that we have rated **Top-Tier** for the current review.

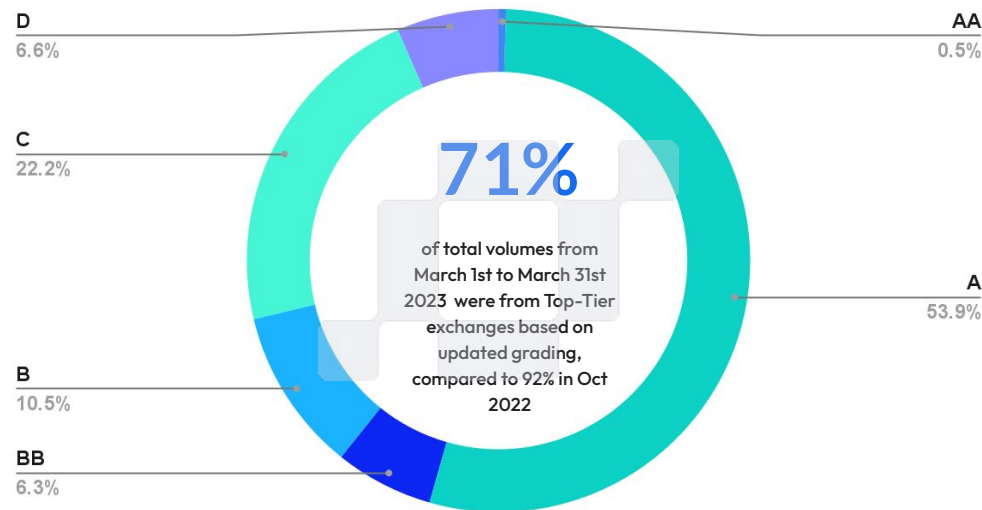
Exchange Count per Grade 2022



Exchange Count Per Grade 2023



Monthly Volume Per Grade, March 2023



Although there has been a decline in the number of Top-Tier exchanges since October 2022, the monthly volume market share of these exchanges has increased, indicating a consolidation among the highest-graded centralised exchanges.

Centralised Exchanges: Category Statistics

Security

6%

of exchanges have been hacked in the last year (vs 6% in Oct 2022, 4% in Apr 2022 and 2% in Aug 2021)

30%

of exchanges possess an ISO 27001, SOC2 certificate or similar (vs 24% in Oct 2022, 15% in Apr 2022 and 13% in Aug 2021)

32%

of exchanges utilise the services of a custody provider to store user assets (vs 26% in Oct 2022, 24% in Apr 2022 and 23% in Aug 2021)

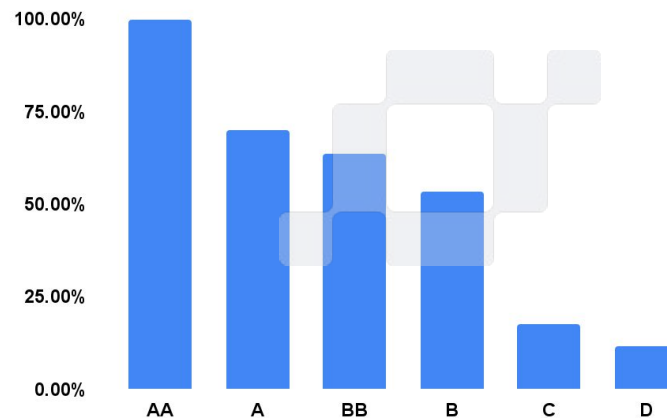
34%

of exchanges state they **hold more than 95%** of crypto holdings in cold wallets (vs 23% in Oct 2022, 27% in Aug 2021 and 20% in Feb 2021)

59%

of exchanges implemented a Bug Bounty program (vs 50% in Oct 2022)

Percentage of exchanges that use Cold Storage



Transparency

20%

of exchanges offer Proof of Reserves (PoR) or alternatives such as regular audited financial statements

13%

of exchanges offer Proof of Liabilities or audited Proof of Reserves

17%

of exchanges are transparent regarding their on-chain wallet addresses.

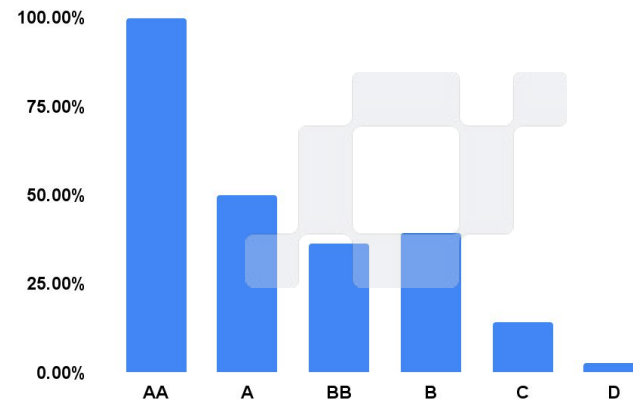
73%

of exchanges publicly disclose their ownership by individuals or institutions.

34%

of exchanges have an active external board of directors in place

Percentage of exchanges that offers Proof of Reserves (PoR)



CEX News: Regulatory Pressure Increases

In response to the regulatory pressure governments are imposing on centralised exchanges, and growing concerns from market participants, numerous exchanges have enhanced their security and transparency processes in regards to customer funds. Below, we have included a selection of notable regulatory events that have occurred since the release of CCData's latest Exchange Benchmark:

Exchange	News	Date
Bittrex	Crypto exchange Bittrex to pay \$29-mln penalty to U.S. Treasury Department	11 October 2022
Deribit	Crypto Exchange Deribit Loses \$28M in Hot Wallet Hack, Pauses Withdrawals	2 November 2022
Crypto.com	Crypto.com sent \$400 million to the wrong recipient, but got it back this time	13 November 2022
Bequant	Crypto firm fined over €460,000 by FIAU over anti-money laundering breaches	8 February 2023
Bithumb	Crypto Exchange Operator Bithumb Investigated by South Korean Tax Authorities	10 January 2023
Gemini	SEC Charges Genesis and Gemini for the Unregistered Offer and Sale of Crypto Asset Securities through the Gemini Earn Program	12 January 2023
Coinbase	New York State Department of Financial Services and Coinbase reach \$100 Million Settlement	13 January 2023
Kraken	Kraken to Discontinue Unregistered Offer and Sale of Crypto Asset Staking-As-A-Service Program	9 February 2023
Binance.US	Crypto Giant Binance Expects to Pay Penalties to Resolve U.S. Investigations	15 February 2023
CEX.io	FDIC warns CEX.IO and its reviewers to remove potentially false claims about insurance	15 February 2023
CoinEx	CoinEx crypto exchange sued by New York for failing to register with state	23 February 2023
TheRockTrading	Italian Crypto Exchange The Rock Trading (TRT) Halts Withdrawals	27 February 2023
Kucoin	New York Attorney General Sues KuCoin	9 March 2023
Binance	Binance and Its CEO Sued by CFTC Over US Regulatory Violations	27th March 2023

Regulation/Legal

3%

of exchanges do not openly reveal the **legal entities** associated with their exchange (vs 3% in Oct 2022 and 3% in April 22)

23%

of exchanges formally offer some form of **cryptocurrency insurance** (vs 21% in Oct 2022, 11% in Apr 2022 and 10% in Aug 2021)

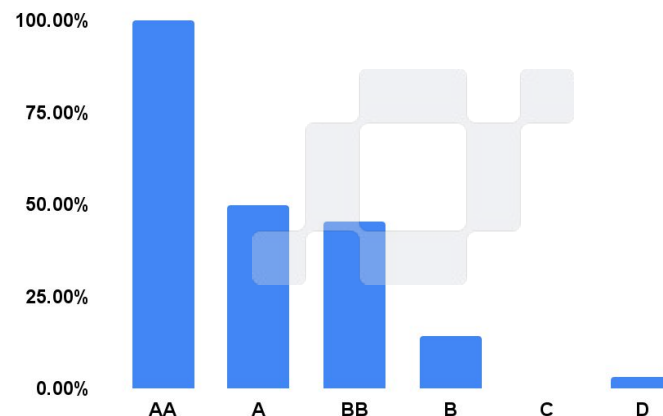
45%

of exchanges are registered as an **MSB** or **possess a crypto exchange license** (vs 45% in October 2022, 41% in Apr 2022 and 36% in Aug 2021)

9%

of exchanges claim to **informally insure** users in the case of breach (insurance fund) - (vs 9% in Oct 2022, 7% in Apr 2022 and 9% in Aug 2021)

Percentages of exchanges that offer some form of fiat funds insurance



Data Provision

66%

of exchanges **provide historical candlestick data** (vs 72% in Oct 2022, 71% in Apr 2022 and 68% in Aug 2021)

73%

of exchanges offer the ability to **query full historical trade data** via an API endpoint (vs 59% in Oct 2022, 52% in Apr 2022 and 47% in Aug 2021)

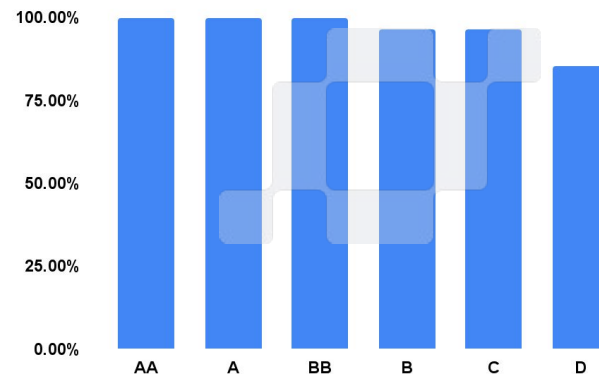
90%

of exchanges offer **at least a level 2 order book** via REST or Websocket connection (vs 91% in Oct 2022, 87% in Apr 2022 and 80% in Aug 2021)

79%

of exchanges **offer a websocket data feed** that users can subscribe to (vs 72% in Oct 2022, 66% in Apr 2022 and 64% in Aug 2021)

Percentage of exchanges that offer at least level 2 order book data



KYC/Transaction Risk

63%

of exchanges formally engage with an external **trade monitoring provider** (vs 11% in Oct 2022, 7% in Apr 2022 and 6% in Aug 2021)

68%

of exchanges impose **strict ID verification** requirements on users (vs 65% in Oct 2022, 60% in Apr 2022 and 64% in Aug 2021)

9%

of exchanges were found to send funds to **higher risk entities** for more than 4% (High Risk Range) of transactions according to **Ciphertrace** (vs 10% in Oct 2022, 27% in Apr 2022 and 25% in Aug 2021)

15%

of exchanges were rated as having **poor or inadequate KYC** programs according to **Ciphertrace** (vs 21% in October, 35% in Apr 2022 and 34% in Aug 2021)

2.8

is the average Ciphertrace KYC Grade vs. 2.4 in Oct 2022. The average Ciphertrace Transaction Risk Score was 3.5 in Apr 2023 vs 3.1 Oct 2022

Market Quality - Derivatives

96%

of derivatives exchanges have insurance funds in case of unexpected losses due to exceeding initial margins

50%

of exchanges offer both perpetual and calendar futures

27%

Of the analysed derivatives exchanges offer options trading

73%

of exchanges incentivise market makers to enhance market quality

62%

of exchanges offer futures settlement in USD and cryptocurrency

Decentralised Exchanges

Decentralised Exchanges: Key Highlights & Methodology

Key Highlights - DEXs

Decentralised Exchanges receive updated scores and rankings. Uniswap received the highest score in the second iteration of our DEX Benchmark, and remains the only DEX eligible for an A rating. Curve and dYdX also scored highly, achieving BB ratings.

10 new exchanges ranked. In this edition of the Benchmark, 3 exchanges met the threshold for Top-Tier status (vs 16 in October 2022). Meanwhile, 3 exchanges have received A-BB ratings, as compared to 4 in October 2022.

dYdX leads derivatives exchange rankings. Among the derivatives exchanges ranked in the benchmark, dYdX leads the group, closely followed by GMX, which secured a grade B.

Security vulnerabilities remain prevalent in DEXs. 43.2% of the DEXs covered in the Exchange Benchmark have been hacked previously, of these, 68.4% have been exploited in the last 12 months. 12 of the 19 DEXs that were hacked lost more than \$1,000,000.

Governance participation is declining. User participation in governance proposals has diminished, with nine of the exchanges covered in the DEX benchmark experiencing a decline in average voter turnout (vs October 2022). Only four of the decentralized exchanges included in both iterations have witnessed an increase in voter turnout.

Audits Cover Majority of DEX Market. Of all assessed decentralised exchanges, 81.6% have been audited, with 93.5% of these being conducted by external auditors. 32.5% have been audited in the last 12 months.

DEXs are going multichain. The era of relying on separate DEXs for different blockchain networks is over. Among the 44 decentralized exchanges evaluated, 18 support multiple blockchains. Furthermore, 9 of these exchanges operate on 5 or more blockchains.

The methodology and rankings themselves are free and transparent and serve as a tool for market participants to choose the lowest risk platforms. The underlying data and custom research is also available to those looking to gain deeper insights. For a deeper understanding of the methodology or underlying data requests, please get in touch by contacting us at research@ccdata.io

DEX Benchmark: Introducing a User Experience Category

User Experience (UX) is crucial to the success of decentralised exchanges and the onboarding of new users, helping users navigate the complexities of decentralised exchanges.

As decentralised exchanges are a relatively novel concept for a large portion of users and differ substantially from centralised exchanges, UX becomes a vital element in the DeFi landscape.

The new user experience section added by CCData includes the following metrics:

- Swap Fees and Dynamic Fee Setting
- Network Fess
- Omnichain Experience
- Number of Chains
- Average Trade Execution Time
- Hosted API
- Display of Price Charts
- Number of Assets
- Extent of Leverage
- Minimum Size Requirement

DEX Benchmark: Methodology Update

We continuously strive to enhance our Exchange Benchmark by incorporating new metrics for ranking exchanges. As such, the following changes have been made to our decentralised exchange methodology since the previous report:

- Changing the definition of Top-Tier Exchange to include AA, A and BB graded exchanges as opposed to AA, A, BB and B in the October 2022 report.
- Reducing the Security weight to 20 points, Transparency to 10 points, and Token Incentives to 5 points, respectively, in response to adding a 15 point User Experience (UX) section.
- The BB threshold has been adjusted to start at 65% instead of 60%, similarly the thresholds for B, C, D, E, and F have all been lowered by 5% each to address the growing risks faced by the industry.
- Added a new metric on the usage of price oracles under the Security section, disclosure of public wallet address for the Transparency section, and measuring the decentralisation of the base layer using Nakamoto Coefficient for the Governance/Decentralisation category.

DEX Benchmark - Aggregation and Grading

Scores from each category are aggregated to form a total cumulative score. The **maximum score is 100**.

Category	Maximum Points
Security	20
Community	10
Transparency	10
Governance	15
Market Quality	25
Incentives	5
User Experience	15
Total Cumulative Points Available	100

Score	Grade
>75	AA
70 - 75	A
65-70	BB
55-65	B
45-55	C
35-45	D
25-35	E
<25	F

Decentralised Exchanges: Ranking Methodology Overview

DEX Methodology Overview - Scope

Scope and Objectives

We combine over **90 qualitative and quantitative metrics** to assign a grade to **44 active decentralised exchanges**. These quantitative metrics are categorised into 7 categories, scoring each decentralised exchange on their security, transparency, community, market quality, user experience, and token incentives.

Each metric is converted into a series of points based on clearly defined criteria. Metrics are grouped into several categories, where category weighting is based on relative importance to the risk of an exchange. 'Risk' includes but is not limited to security risks, execution risks, management risks, and more.

Grading

A grading system was implemented to assign each exchange a final grade (AA, A, BB, B, C, D, E) based on its total cumulative score out of 100. **Top-Tier** exchanges refer to those that have scored at least 65 points (BB and above).

Market Quality

We measure the market quality of each decentralised exchange by focusing on three distinct metric types, outlined below:

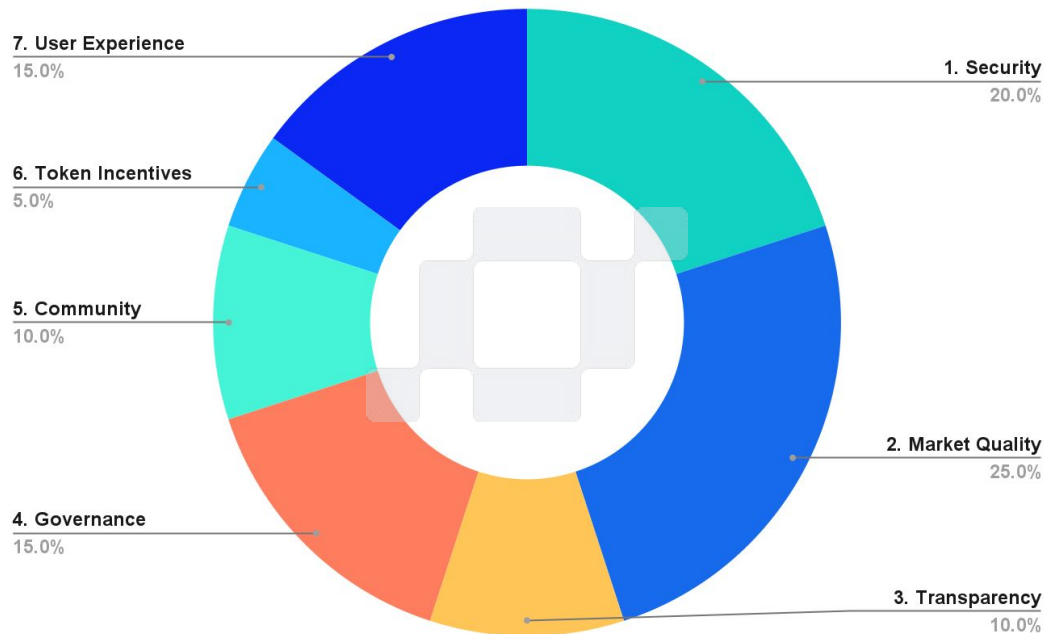
1. **Pricing:** Includes metrics that assess the relationship between liquidity and price formation. These metrics include the innovative nature of a DEXs pricing function, the price impact of theoretical trades and the equivalent of the quoted spread.
2. **Liquidity:** Includes metrics that relate to the size and distribution of the availability liquidity on a DEX. These metrics focus on the total value locked (TVL) including the distribution of the top pools on a DEX. Other metrics focus on the number of large pools and the stickiness of liquidity.
3. **Activity:** Includes metrics that relate to the activity of users on a DEX. These metrics assess the total volume, liquidity utilisation and number of users on a DEX.

**For further information on our methodologies, please contact research@ccdata.io*

Methodology Overview - Ranking Components

The overall ranking consists of the following components and subsequent weightings:

1. Security
2. Market Quality
3. Transparency
4. Governance
5. Community
6. Token Incentives
7. User Experience



DEX Methodology Overview - Data Collection

Due Diligence

Time Period: 01 October 2022 - 31 March 2023

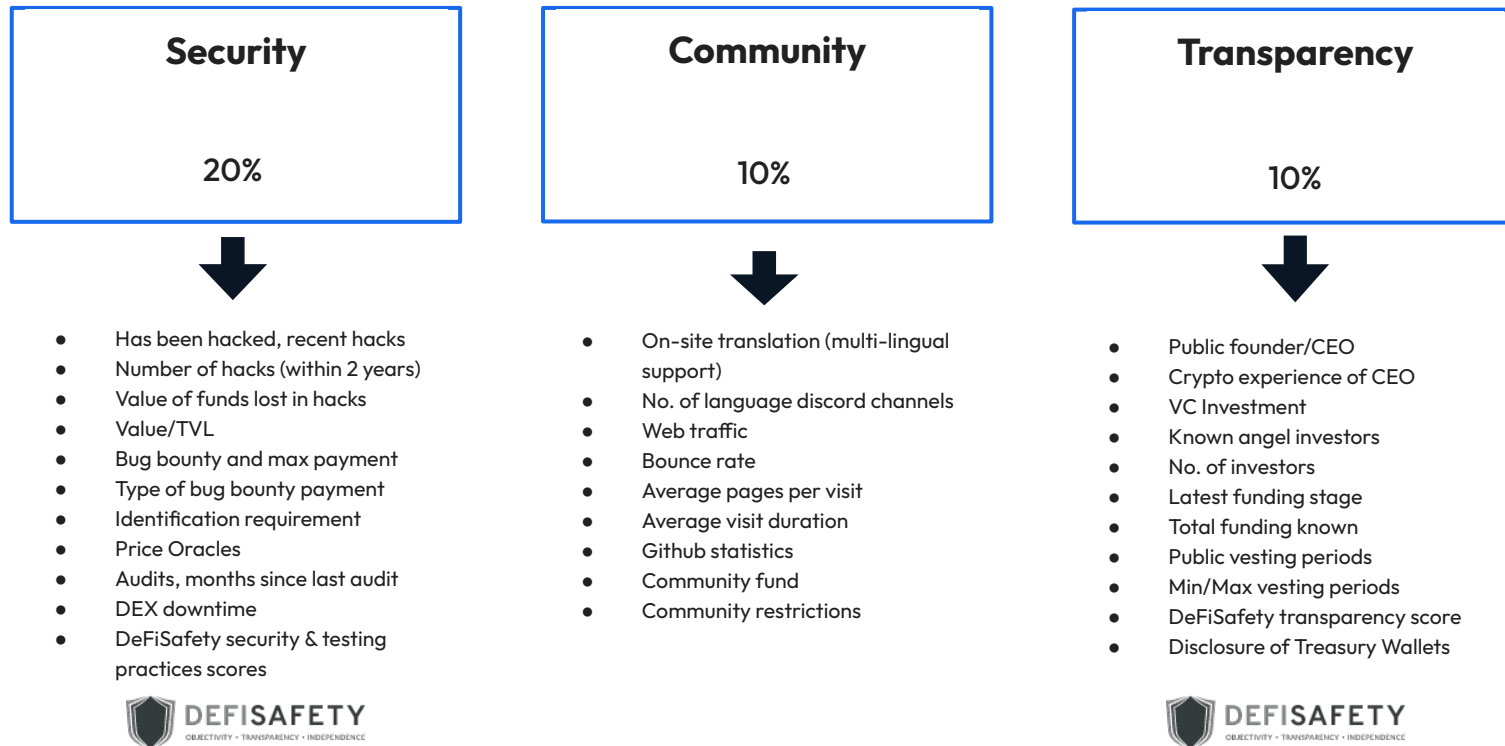
Sources: DEX Documentation
Public News Articles
Web3 Bug Bounty Platforms
Web3 Audits
Github
SimilarWeb Traffic Analytics
Discord
LinkedIn
PitchBook
Product Whitepapers
CCData

Market Quality Metrics

Time Period: March 2023

Sources: Blockchain Nodes
Hosted Subgraphs
Exchange APIs

Methodology Overview - Components I.



Methodology Overview - Components II.

Governance

15%



- Governance token (GT)/GT in roadmap
- Closed voting proposals
- Proposal approval rate
- Theoretical top 10 wallet voting power
- Top 10 wallet voting power (ex-team)
- Average voter turnout
- Clarity of voter rights
- Minimum required voter turnout
- Decentralisation of base layer

Market Quality*

25%



- Pricing function
- 6-month average daily volume
- 6-month average TVL
- Largest liquidity pool concentration
- Top 10 liquidity pool concentration
- Liquidity pool size
- Market cap: TVL ratio
- Daily active users
- Market cost to trade (Spread)
- Liquidity (Price impact)

User Experience

15%



- Protocol and network Fees
- Average trade execution time
- Disclosed or hosted public API
- Display of price charts
- Availability of analytics page
- Omnichain experience
- Number of assets
- Extent of leverage
- Minimum size requirement

**Given the necessity of node connectivity to obtain Market Quality data, some metrics were not available for a limited number of DEXs in the Benchmark*

Decentralised Exchanges: Results

Institutional Grade Digital Asset Data Solutions

Indices & Benchmarks

Institutional-grade access to the largest and most liquid digital asset indices.

Digital Asset Derivatives

Industry-first standardised real-time and historical futures data, covering all major cryptocurrency exchanges.

CCCAGG

CCData's digital assets reference price, officially authorised by the Financial Conduct Authority (FCA) in the UK.

Enterprise API

Real-Time, historical and aggregated datasets available 24/7 via REST and Websocket APIs supporting 40bn calls per month.

Granular Historical Data

Historical data since 2013 for more than 6000+ digital assets and 120,000+ currency pairs at Trade level and aggregated minute, hourly, daily OHLCV data.

Real-Time Order Book and Trade Data

Real-Time Spot Trade, L1 and L2 Order Book data available at the smallest granularity via CCData's Enterprise API.

DEX Ranking Toplist

[See the full ranking list on our dashboard](#)

Exchange Name	Security	Community	Transparency	Governance	Liquidity	Incentives	UX	Final Score	Rank	Grade
Uniswap	11.2	19.6	17.6	7.6	16.8	13.0	7.5	71.7	1	A
Curve	11.2	20	12.2	9.6	15.9	8.6	8.8	69.4	2	BB
dYdX	14.4	14.6	18.6	8.6	13.3	12.0	6.1	67.8	3	BB
Balancer	13.6	13.6	17.4	9.6	13.5	7.8	4.9	64.5	4	B
GMX	15.4	16.6	5.8	6.4	10.4	7.2	11.8	60.4	5	B
Ref Finance	14.2	16.4	14.8	6.2	7.5	8.8	9.0	57.9	6	B
Osmosis	8.8	22.6	9.6	9.4	9.4	5.8	9.2	57.1	7	B
SushiSwap	9.4	20.2	10.8	7.6	10.9	8.6	7.3	56.9	8	B
Fraxswap	13.2	16.6	13.4	10.6	8.5	8.8	3.5	56.6	9	B
Wombat Exchange	16	9	16	3.2	9.8	9.8	7.6	56.3	10	B
Velodrome	13	11.4	10.2	8.4	10.1	6.6	8.7	55.9	11	B
KyberSwap	6.4	18.2	4.4	7.4	10.9	9.6	12.7	53.6	12	C
Trader Joe	7.6	16	4.4	7.6	11.7	6.6	11.9	53.5	13	C
Spookyswap	10.8	12.8	6.2	9.6	9.8	4.6	9.0	52.3	14	C
Dodo	6.8	14.6	8.2	5.4	11.9	6.8	10.2	51.0	15	C

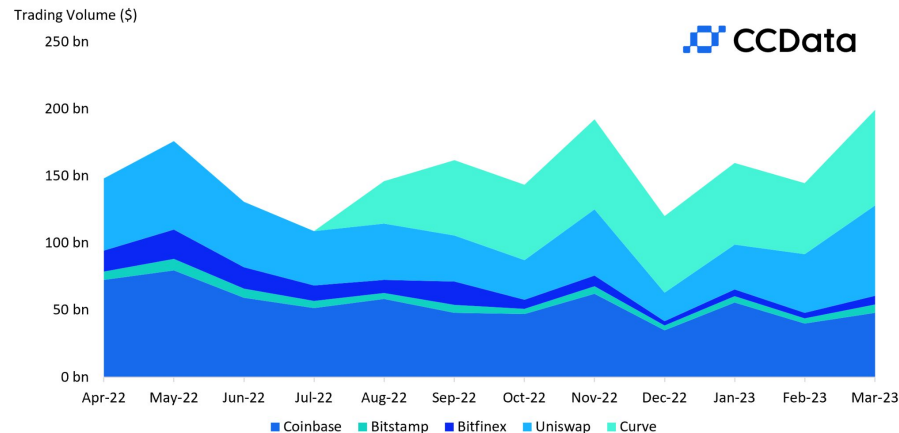
DEXs - Liquidity

Despite the inclusion of **10** new exchanges, we found that **Total Value Locked (TVL)** has dropped to \$16.9 billion across assessed DEXs, down from \$21.7 billion compared to the October 2022 benchmark. .

However, **Average Daily Volume (ADV)** on DEXs has remained relatively stable across both benchmark periods. Analysis shows that the ADV on leading DEXs, Uniswap and Curve, have surpassed the volumes on some of the top centralised exchanges, such as Coinbase and Bitstamp, following the fall of FTX.

The ADVs on these centralised exchanges have slowed with the general market conditions. Users appear to be drawn to DEXs for their security benefits over centralised exchanges with the ADVs remaining unchanged in both periods. The combination of decreasing TVL and steady volumes shows how DEXs are maturing as markets for trading digital assets. Capital is being used more efficiently, as more trading is facilitated with less locked capital.

Monthly trading volume on selected exchanges: April 2022 - March 2023



DEXs - Security/Hacks

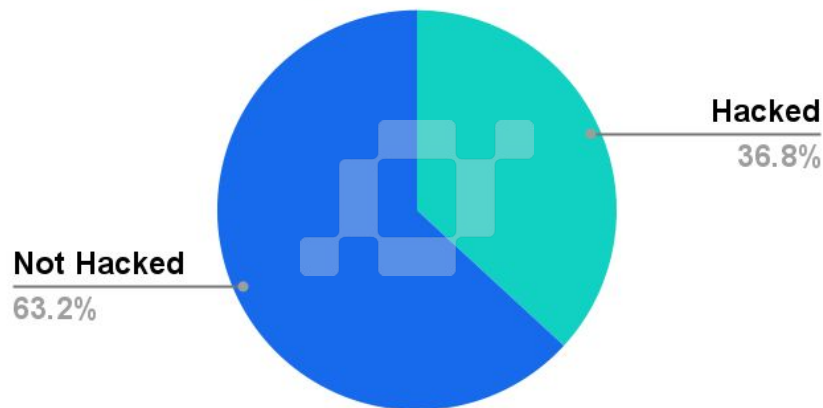
19 of the 44 Decentralised Exchanges under consideration have been hacked previously. 13 of these exchanges were exploited in the last year, up from the 8 DEXs mentioned in the last benchmark. 12 of the 19 hacked exchanges lost more than \$1,000,000 in the exploit.

DEXs tend to be more prone to security breaches than centralised exchanges due to the infancy of the industry. While a major benefit of decentralised exchanges is the transparency of transactions, such transparency comes with inherent risks - deployed smart contracts are publicly available for anyone to see, and errors or vulnerabilities in the code can be exploited by hackers.

It is encouraging that 90.9% of the decentralised exchanges have performed an external audit to minimize the risks of smart contract exploits. However, only 56.8% of the DEXs have a bug bounty program to attract white-hat hackers and bounty hunters.

Security as a whole should be at the forefront of priorities for DEXs and the rest of DeFi if the onboarding of millions of users is to continue in the coming years.

Percentage of DEXs that have been hacked



Decentralised Exchanges: Category Statistics

Security

43%

of decentralised exchanges have been hacked. 13 of the 19 hacked DEXs were exploited in the last year

12

of the exchanges that were hacked lost more than \$1,000,000

57%

of decentralised exchanges run a bug bounty program. Only 10 of the 25 exchanges pay in either fiat or stablecoins

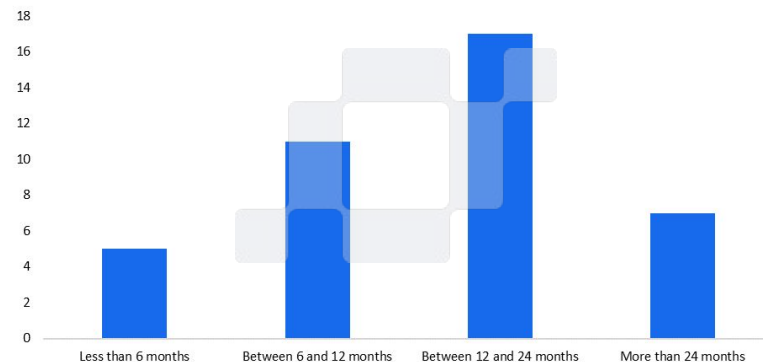
40

of the 44 decentralized exchanges have performed an audit.

33%

of audited decentralised exchanges were audited within the past twelve months

Decentralised Exchanges: Months Since Last Audit



Governance

34

Of the 44 assesses DEXs have a governance token in place

21%

Of DEXs had over 50 voting proposals in the last 6 months

97%

Of all voting proposals submitted were approved by DEX token holders

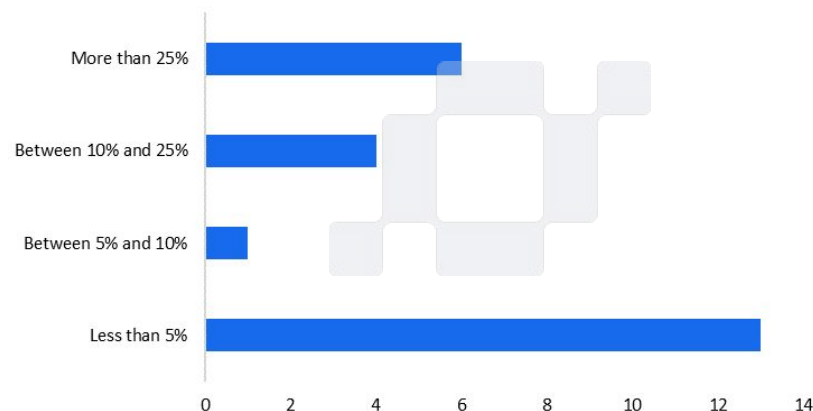
30

Of the 34 DEXs with a governance token in place, or in their roadmap, have appropriate voter right documentation

15

Of DEXs with a governance token in place have a minimum voter turnout for votes to go through

Decentralised Exchanges: Average Voter Turnout



Transparency

52%

Of DEXs have a CEO or founder that has made their identity public

6

Of the 23 DEXs with a public founder, 6 have more than 5 years of experience

21

Of the 44 DEXs have disclosed that they have received funding from VCs.

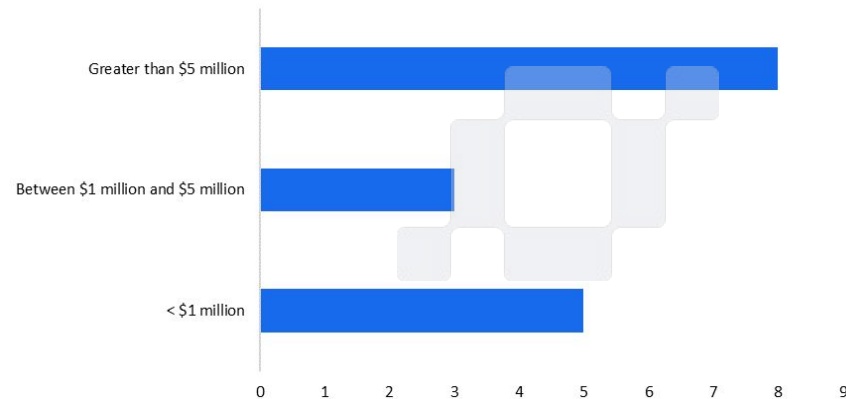
16

Of the 44 DEXs have disclosed their treasury wallet address in their docs

69%

Of DEXs with disclosed treasury addresses have more than \$1 mn in their treasury wallet

Decentralised Exchanges: Treasury Holdings



Market Quality

3

DEXs had an average TVL of \$1 billion over the last 6 months

6

DEXs had an average daily trading volume of over \$100 million in the last 6 months

18

DEXs had over 10 pools with over \$1 million in TVL

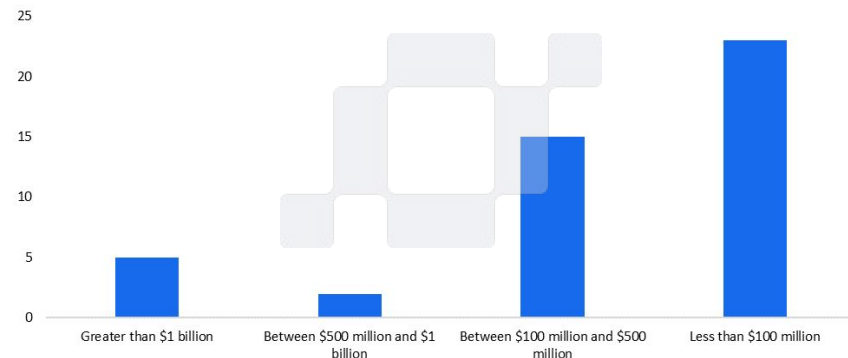
16

DEXs have over 90% of their TVL in 10 or less pools

55%

Of DEXs have liquidity pools based on Uniswaps constant product pricing function ($xy=k$)

Decentralised Exchanges: 6-Month Average TVL



User Experience

20

Of the 44 DEXs have maximum swap fees of less than 0.30% per trade

6

DEXs have a dynamic fee setting that adjusts itself based on volatility of the pairs.

75%

Of the DEXs have a disclosed or hosted API for users to get trade and pool data

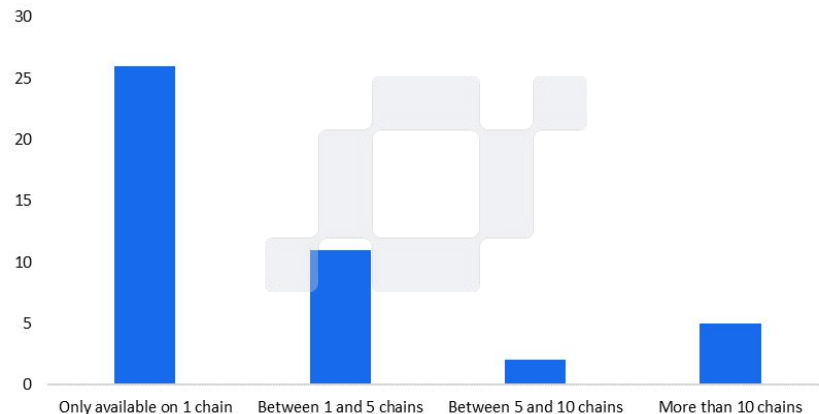
41%

Of DEXs offer an omnichain experience. 9 of the 18 exchanges are available on more than 5 networks

21

Of the 44 decentralised exchanges have an average trade execution time of less than 5 seconds

Decentralised Exchanges: Number of Chains



Conclusion

The downfall of FTX, alongside recent traditional banking failures, have emphasised the need for heightened transparency and accountability within the digital asset sector. In light of these events, we have seen regulators intensify their efforts to enforce more rigorous governance and disclosure standards with the aim to create a more robust and resilient regulatory landscape.

We have seen a notable improvement in both transparency and security standards among centralised exchanges. Many of these exchanges have also now adopted proof of reserve or liability reports to bolster trust and confidence. Additionally, KYC standards and the increased use of custodian services have significantly improved within the centralised exchange landscape.

Examining decentralised exchanges (DEXs), the Average Daily Volume (ADV) has exhibited relative stability across both benchmark periods. Our analysis reveals that the ADV on leading DEXs, such as Uniswap and Curve, has exceeded the volumes on some top centralised exchanges like Coinbase and Bitstamp, in the aftermath of FTX's collapse. Regrettably, governance participation, as indicated by Average Voter Turnout, has experienced a decline since the previous benchmark. Furthermore, 13 DEXs have been impacted by exploits in the past year, an increase from 8 DEXs in October.

In this report, we have examined numerous qualitative and quantitative metrics to provide users with a comprehensive understanding of the performance, security, and reliability of centralised and decentralised exchanges. This not only serves as a guide for market participants but also highlights how exchanges can improve their standards.

Contact

The Exchange Benchmarks are backed by thousands of research hours and cover over 200 qualitative and quantitative metrics across both Benchmark methodologies.

Updated twice annually to reflect the fast-changing digital asset landscape, we work hard to ensure the accuracy of all the data comprising this report. If there is any part of the Benchmarks that you would like to discuss, please reach out to us.

Speak to us if you are interested in any of the following:

- Custom Reporting
- Detailed Benchmark Scores
- Underlying Data

Reach out to:

CCData Sales sales@ccdata.io

CCData Research research@ccdata.io

Access the Benchmark scores using our API

Find out more about our data solutions

Disclaimer

The content found in this Report is for informational purposes only, you should not construe any such information or other material as legal, tax, investment, financial, or other advice.

This Report contains the proprietary information of CCData and its partners, including but not limited to Ciphertrace, DeFi Safety, TokenInsight, and others. It is intended to be used internally within your organization and by receiving this information, you agree that except with the prior written permission of CCData and its partners, such information shall not be used for any unauthorized purpose and shall not be published or disclosed by you to third parties, in whole or part.

The information contained in this Report, including all forecasts and projections, are provided to you on an “AS IS” basis for use at your own risk. CCData and its partners will not be responsible for any action you take as a result of this Report or any inaccuracies, inconsistencies, formatting errors, or omissions in this Report. CCData and its partners make no representations or warranties, express or implied, as to the accuracy or completeness of the information contained herein, and will not have any liability to you or any other person resulting from the use of such information by you or any of your representatives.