



Nasdaq Crypto™ Index (NCI™)

Overview

What Are the Real-Time Nasdaq Crypto™ Indexes?¹

Nasdaq Crypto™ Index (NCI™):²

- Tracks multiple digital assets (Currently 10)
- Designed to evolve alongside international regulation

Nasdaq Bitcoin Reference Price™ Index (NQBTC™):

- Tracks Bitcoin (BTC)

Nasdaq Ether Reference Price™ Index (NQETH™):

- Tracks Ether (ETH)

Nasdaq Solana Reference Price™ Index (NQSOL™):

- Tracks Solana (SOL)

Nasdaq Chainlink Reference Price™ Index (NQLINK™):

- Tracks Chainlink (LINK)

Nasdaq Crypto US™ Index (NCIUS™):

- Tracks multiple digital assets (Currently 2)
- Designed to evolve alongside United States regulation

¹ In June 2021, Nasdaq launched additional digital asset indexes including the Nasdaq Bitcoin Reference Price™ Index (NQBTC™) and the Nasdaq Ether Reference Price™ Index (NQETH™). In April 2022, Nasdaq launched additional indexes including the Nasdaq Crypto Index Europe Reference Price™ Index (NCIE™) and the Nasdaq Bitcoin/Ethereum Index Reference Price™ Index (NQBEI™). The NQBEI™ became the Nasdaq Crypto US™ Index (NCIUS™) on June 3, 2024 with a standalone methodology that supports US regulation only.

² On June 3, 2024 the NCI™ methodology was updated to include asset eligibility criteria that supports multiple international, non-US jurisdictions

What is the Nasdaq Crypto™ Index (NCI™)?

Launched in February 2021, NCI™ is Nasdaq's first Digital Asset Index offering¹. The index measures the performance of a basket of the most actively traded digital assets and provides a benchmark for institutional investment in this new and emerging asset class. The Index is specifically designed to be dynamic in nature, broadly representative of the market, and readily trackable by investors.

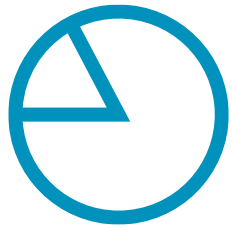
Index Overview:

- Tracks the performance of a diverse basket of USD-traded digital assets
- Applies liquidity, exchange and custody standards to asset eligibility²
- Rebalanced and reconstituted on a quarterly basis
- Free float market cap weighted
- Governed by a robust methodology and the Nasdaq Cryptocurrency Index Oversight Committee (CIOC)

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² On June 3, 2024 the NCI™ methodology was updated to include asset eligibility criteria that supports multiple international, non-US jurisdictions

Index Design Principles



Representative

Provides a representative benchmark for investment into the asset class



Investible

Utilizes exhaustive selection criteria to include digital assets available at vetted core exchanges and custodians



Adaptable

Adjusts index composition at each reconstitution to ensure that it remains a flexible representation of the asset class as it evolves

How does it work?



How does it work?

I. NCI™ Asset Eligibility Determination¹

I. Determining Eligibility

The universe of eligible assets is initially filtered on the basis of USD trading availability on approved “Core Exchanges” and with consideration of custody solution support by “Core Custodians”.

Specifically, NCI™ eligible assets must:

- Be traded on at least two core exchanges²
- Be supported by at least one core custodian²
- Meet minimum liquidity standards outlined in the methodology with USD trade pair³
- Be eligible for listing in an ETP on specific European exchanges as of a certain date each quarter⁴
- Have free-floating pricing

These filters allow the Index to remain neutral and passive while ensuring constituents possess sufficient liquidity and appropriate custody options required for institutional grade investment products.

¹This page provides an overview of the NCI™ asset eligibility criteria. For an exhaustive list and description, please review the NCI™ Methodology: https://indexes.nasdaqomx.com/docs/methodology_NCI.pdf.

²Revised requirements including two Core Exchanges and one Core Custodian become effective on June 1, 2022. Prior to this change, three Core Exchanges and two Core Custodians were required.

³Minimum liquidity standard requires eligible assets to have a median daily trading volume that is no less than 0.5% of the constituent crypto asset that has the highest median daily trading volume. Calculations are performed using the aggregate of the respective USD pair across all core exchanges, measured during the first 30 calendar days immediately following the previous reconstitution and rebalance day.

⁴On June 3, 2024, the NCI™ methodology was updated to include asset eligibility criteria that supports multiple international, non-US jurisdictions



How does it work?

II. NCI™ Constituent Selection from Eligible Assets¹

II. Constituent Selection

When all eligible assets are identified, the market capitalization of each asset is calculated.

Market capitalization of assets is calculated by multiplying the price of the asset across Core Exchanges by the supply of the asset as defined in the methodology and calculated by Nasdaq's calculation agent, CF Benchmarks.

Assets that meet or exceed 0.5% of the full market capitalization of all eligible assets are considered for inclusion.



¹This page provides an overview of the NCI™ asset eligibility criteria. For an exhaustive list and description, please review the NCI™ Methodology: https://indexes.nasdaqomx.com/docs/methodology_NCI.pdf

How does it work?

III. NCI™ Index Weights Applied¹

III. Weighting Constituents

Constituent assets selected for entry into the Index will be weighted according to their relative free float market capitalizations.

This is calculated by dividing the free float market cap of a digital asset by the total free float market cap of all constituent assets included in the Index.

Weighting according to Circulating Supply of an asset without the application of capping is important to maintain an investable and accurate representation of the asset class.



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Overview of NCI™ Asset Selection Process¹



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NCI™ Core Exchanges

With hundreds of crypto exchanges globally and varying degrees of user protection, it is important to source pricing only from vetted exchanges in order to form a trusted and accurate index price.

Nasdaq's pricing methodology requires a minimum of 2 Core Exchange¹ pricing inputs as part of mechanisms to reduce the impact of potential manipulation in the index price.

Limiting inclusion to assets supported by at least 2 Core Exchanges¹ ensures inclusion only of those assets that have been on-boarded by a critical mass of “institutional-ready” infrastructure.



¹ Revised requirements including two Core Exchanges and one Core Custodian become effective on June 1, 2022. Prior to this change, three Core Exchanges and two Core Custodians were required.

NCI™ Core Exchanges

Key Selection Criteria¹

1. Effective AML/KYC controls in place
2. Licensed by independent public governing body
3. Effective trade monitoring, surveillance
4. Demonstrate robust IT infrastructure
5. Commitment to cooperate with regulators and law enforcement

Approved Core Exchanges

1. Coinbase
2. BitStamp
3. Gemini
4. itBit
5. Kraken
6. LMAX Digital



¹ This is an overview of the selection criteria. For an exhaustive list and description, please review the NCI Methodology: https://indexes.nasdaqomx.com/docs/methodology_NCI.pdf.

NCI™ Core Custodians

Custodians hold digital assets for safekeeping against theft and loss.

Limiting inclusion to assets supported by at least 1 Core Custodian¹ ensures an asset pool with sufficient market maturity as custodians evaluate security and legal risks as well as market demand when deciding to provide custody services to an asset.



¹ Revised requirements including two Core Exchanges and one Core Custodian become effective on June 1, 2022. Prior to this change, three Core Exchanges and two Core Custodians were required.

NCI™ Core Custodians

Key Selection Criteria¹

1. Licensed by an independent governing body
2. Provide independent segregated client accounts
3. Utilize advanced security infrastructure to include private key segmentation, multi-signature capabilities & geographic distribution
4. Insurance policy that covers, at least partially, theft or loss of private keys
5. Offers timely and secure redemption process
6. Demonstrate comprehensive risk management and risk mitigation processes
7. Evidence of third-party security audits

Approved Core Custodians

1. Coinbase
2. BitGo
3. Fidelity
4. Gemini
5. Zodia

**The implementation of Zodia's consideration as part of the index eligibility criteria will go effective on December 2, 2024.*

6. Komainu

**The implementation of Komainu's consideration as part of the index eligibility criteria will go effective on December 2, 2024.*



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Nasdaq Crypto Index Oversight Committee (CIOC)¹

Comprised of senior members across Nasdaq's Legal, Risk, Compliance, Trading, Surveillance, IT, and Index teams to ensure varying viewpoints and expertise.

Responsible for the implementation, administration, and general oversight of the Index, including the selection of Core Exchanges and Core Custodians, adjustments to account for regulatory changes, and periodic methodology reviews.

Committee conducts a final review of all eligible assets prior to entry at the quarterly reconstitution wherein it reserves the right to exclude any assets based on one or more factors, including, but not limited to, its review of general reputational, legal, regulatory, or security concerns connected to any asset.

Nasdaq will review new Core Exchange and Core Custodian candidates throughout the year and announce any new additions when approved. The list of existing Core Exchanges and Core Custodians will be recertified by the CIOC at minimum on an annual basis.



¹ This is an overview of the governance committee. For an exhaustive description, please review the NCI Methodology: https://indexes.nasdaqomx.com/docs/methodology_NCI.pdf.

NCI™ Weights and Components as of 9/30/2024¹

Component	Weight
Bitcoin (XBT)	73.21%
Ethereum (ETH)	16.53%
Solana (SOL)	5.32%
Ripple (XRP)	2.18%
Cardano (ADA)	1.04%
Chainlink (LINK)	0.44%
Avalanche (AVAX)	0.44%
Litecoin (LTC)	0.35%
Polygon (MATIC)	0.26%
Uniswap (UNI)	0.22%

 ¹ Source: <https://indexes.nasdaqomx.com/Index/Weighting/NCI> using end of day data on 9/30/2024

Historical Performance¹

Nasdaq Crypto Settlement Price Index™ (NCIS™)

NCIS™ Performance: 6/1/2020 - 9/30/24



	NCIS™	S&P 500
Q3 2024 ²	-1.66%	5.5%
LTM ³	110.51%	34.4%
Total Common History ⁴	582.83% ⁵	88.6%

¹ Past performance may not be indicative of future returns

² Data included is from 6/28/2024 to 9/30/2024 using end of day data for NCIS. Data included is from 6/28/2024 to 9/30/2024 using close/last for S&P 500

³ Data included is from 9/29/2023 to 9/30/2024 using end of day data

⁴ Data included is from 6/1/2020 to 9/30/2024

⁵ Data included is from 6/1/2020 to 9/30/2024 using end of day data and includes backtested performance for NCIS prior to 2/2/2021



Portfolio Performance with NCIS Allocation¹

The impact of small allocations to NCIS on a typical investor portfolio consisting of a standard basket of equities

	S&P 500	Portfolio with 1% NCIS	Portfolio with 2% NCIS	Portfolio with 5% NCIS
Q3 2024	5.5%	5.5%	5.4%	5.2%
LTM	34.4%	35.1%	35.9%	38.2%
Total Common History ²	88.6%	93.5%	98.5%	113.3%



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² Total Common History includes NCIS data from 6/1/2020 to 9/30/2024 using end of day data and includes backtested performance for NCIS prior to 2/2/2021. Total Common History includes S&P 500 data from 6/1/2020 to 9/30/2024 using close/last

How does NCI™ asset eligibility work?



How does NCI asset eligibility criteria work?

1. Be traded on at least two core exchanges¹

Nasdaq's pricing methodology requires a minimum of 2 Core Exchange¹ pricing inputs as part of mechanisms to reduce the impact of potential manipulation in the index price.

Limiting inclusion to assets supported by at least 2 Core Exchanges¹ ensures inclusion only of those assets that have been on-boarded by a critical mass of "institutional-ready" infrastructure.²

Core Exchanges

- Coinbase
- Kraken
- BitStamp
- Gemini
- ItBit
- LMAX

¹ Revised requirements including two Core Exchanges and one Core Custodian become effective on June 1, 2022. Prior to this change, three Core Exchanges and two Core Custodians were required.

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How does NCI asset eligibility criteria work?

2. Be supported by at least one core custodian¹

Custodians hold digital assets for safekeeping against theft and loss.

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Core Custodians

- Coinbase
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How does NCI asset eligibility criteria work?

3. Meet minimum liquidity standards outlined in the methodology with USD trade pair

An asset must have a median daily trading volume in the USD pair conducted across all Core Exchanges that is no less than 0.5% of the cryptocurrency asset that has the highest median daily trading volume.

Digital assets that are existing Index constituents will be removed from the Index when their respective median daily trading volume in the USD pair conducted across all Core Exchanges falls below 0.25% of the cryptocurrency asset that has the highest median daily trading volume.¹



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How does NCI asset eligibility criteria work?

4. Be eligible for listing in an ETP on specific European exchanges¹

An asset must be eligible for listing in an ETP on all of the following Exchanges as of the Reconstitution Determination Date:

- SIX Swiss Exchange
- Xetra



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How does NCI asset eligibility criteria work?

5. Have free-floating pricing¹

The Index excludes digital assets that are pegged to the value of other assets, through fiat or crypto collateralization, algorithmic strategy, or any other means.



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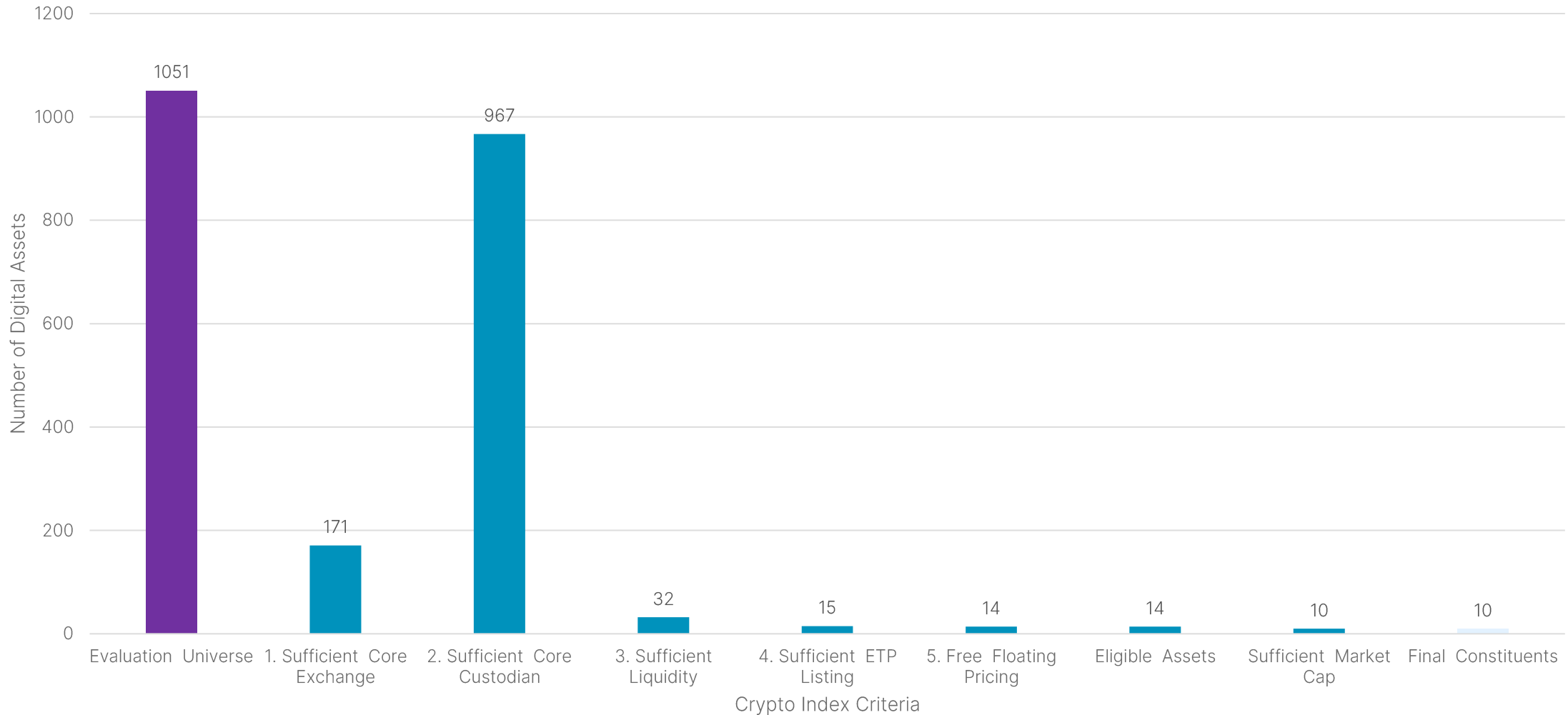
Assets that meet or exceed 0.5% of the full market capitalization of all eligible assets are considered for inclusion.

The Nasdaq Cryptocurrency Index Oversight Committee ("CIOOC") reserves the right to further exclude any additional assets based on one or more factors.



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An Example of the Quarterly Criteria in Action¹



¹This page provides an overview of the NCI™ asset eligibility criteria. For an exhaustive list and description, please review the NCI™ Methodology: https://indexes.nasdaqomx.com/docs/methodology_NCI.pdf. This chart is indicative of the September 3rd, 2024 NCI reconstitution and rebalance and is intended to show eligible digital assets at different points in the selection process



Appendix



NCI Constituent Price Real Time Methodology¹

NCI is based on the summation of weighted digital asset prices from Core Exchanges

*The NCI is calculated every second throughout a 24-hour trading day, seven days per week, using published, real-time bid and ask quotes for Index constituents observed on Core Exchanges through the publicly available API.

1. Calculate the Weighting for Each Contributor Crypto Exchange
2. Calculate the Digital Asset Price
3. Calculate NCI Constituent Prices



¹ This is an overview of the NCI pricing methodology. For an exhaustive description, please review the NCI Methodology: https://indexes.nasdaqomx.com/docs/methodology_NCI.pdf.

NCIS Constituent Settlement Price Methodology¹

The NCI final settlement price (Index symbol NCIS) is calculated once every trading day. The settlement time is 4:00 P.M. New York Time

*The NCIS Index constituent settlement values will be the Time Weighted Average Price (TWAP) calculated across Volume Weighted Average Prices (VWAP) for each minute in the settlement price window

1. Calculate Contributor Crypto Exchange Volume
2. Calculate Abnormal Price Penalty Factor for Exchange Weighting
3. Calculate Abnormal Volatility Penalty Factor for Exchange Weighting
4. Calculate Abnormal Volume Penalty Factor for Exchange Weighting
5. Calculate Final Exchange Weightings
6. Calculate NCIS Constituent Prices



¹ This is an overview of the NCI pricing methodology. For an exhaustive description, please review the NCI Methodology: https://indexes.nasdaqomx.com/docs/methodology_NCI.pdf. The closing level of the Index is calculated once a day on business days at 4:05:00 P.M. New York Time.

Core Exchange Penalty Factors¹

Abnormal Price

For contributing Core Exchange digital asset prices outside one standard deviation, a penalty factor is calculated proportional to its absolute distance to the median point.

Abnormal Volatility

For exchange digital asset price volatility outside one standard deviation, a penalty factor is calculated proportionate to its absolute distance to the median point.

Abnormal Volume

For exchange digital asset volume outside one standard deviation, a penalty factor is calculated proportionate to its absolute distance to the median point.



¹ This is an overview of the NCI Core Exchange penalty factors. For an exhaustive description, please review the NCI Methodology: https://indexes.nasdaqomx.com/docs/methodology_NCI.pdf.

Quarterly Milestones¹

Reconstitution & Rebalance

Conducted quarterly in March, June, September and December

1. Universe Snapshot

Thirty calendar days immediately following the previous Reconstitution Effective Date, median daily market capitalization and median daily trading volume is collected from the universe of assets.

2. Reconstitution Determination Date

Index constituents are selected thirty (30) calendar days prior to the Reconstitution Effective Date. Assets must be eligible for listing in an ETP on SIX and Xetra as of the Reconstitution Determination Date.

3. Reconstitution Announcement Date

Index Reconstitutions are announced fifteen (15) calendar days prior to the Reconstitution Effective Date.

4. Rebalance Announcement Date

Index Rebalances are announced four (4) business days prior to the Rebalance Effective Date.

5. Reconstitution & Rebalance Effective Date

Index Rebalances become effective at market open on the first business day of March, June, September and December.



¹ This is an overview of the NCI quarterly milestones. For an exhaustive description, please review the NCI Methodology: https://indexes.nasdaqomx.com/docs/methodology_NCI.pdf.

Additional Information

Ticker Symbol	NCI (Real-Time) and NCIS (Daily Settlement)
Calculation Agent	The Index is calculated by CF Benchmarks Limited
Reconstitution and Rebalancing Frequency	Reconstitution and rebalances occur quarterly (First business day of March, June, September and December)
Index Back-test Start Date	June 1, 2020
Index Launch Date	February 2, 2021
Daily Index Publication (NCIS)	The closing level of the Index is calculated once a day on business days at 4:05:00 P.M. New York Time and is published on the Nasdaq Global Index Data Service (GIDS)
Real-Time Index Level (NCI)	Real-time calculation of the Index is available on the CF Benchmarks website at https://www.cfbenchmarks.com/indices/NCI
Currency	USD

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