Ground Rules

November 2022

Network Events Guide for FTSE Digital Assets Indices

v1.0

This document applies to any index series where the guide is specifically referenced in the index methodology document.



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Section 1 Purpose of the guide

1. Purpose of the guide

1.1.1 This document sets out guidance for the treatment of network events and assumes the reader is already familiar with the basic concept of index calculation and treatment of digital price adjustments caused by such developments. Because of the complexities involved in some cases, these guidelines should not be construed as definitive rules that will determine FTSE Russell's actions in all circumstances. FTSE Russell reserves the right to determine the most appropriate method of implementation for any corporate event which is not covered here or which is of a complex nature.

FTSE Russell defines a network event as an action on digital asset holders with a prescribed ex date. The digital asset price may be subject to an adjustment on the ex date.

FTSE Russell defines a network event as a reaction to an event that might impact the index depending on the index rules. For example, a proof of stake digital asset announces gas fees will be burned during an upgrade rather than returned to miners – this could result in a circulating weighting change in the index. FTSE Russell will decide whether there is an index adjustment or not and the timing of the change.

FTSE Russell will determine the appropriate treatment by reference to the Statement of Principles which summarise the ethos underlying FTSE Russell's approach to index construction. The Statement of Principles is reviewed annually and any changes proposed by FTSE Russell are presented to the FTSE Russell Digital Assets Advisory Board for discussion before approval by the FTSE Russell Index Governance Board.

The Statement of Principles can be accessed through the following link:

Statement_of_Principles.pdf

- 1.2 This document should be read in conjunction with the Ground Rules or the methodology of those FTSE digital asset indices to which this guide applies.
- 1.3 This document will be subject to regular review (at least once a year) by FTSE Russell.
- 1.4 FTSE Russell Indices are recalculated whenever inaccuracies occur that are deemed to be significant. Users of the indices are notified through appropriate media.

For further information please refer to the FTSE Russell Recalculation policy and guidelines document which can be accessed using the following link:

FTSE_Russell_Index_Recalculation_Policy_and_Guidelines.pdf

Section 2 Digital Asset Research

2. Digital Asset Research

- 2.1.1 Digital Asset Research (DAR) supplies FTSE Russell with data on digital asset network events.
- 2.1.2 DAR is an independent, privately-owned research firm and data provider which partners with FTSE Russell in research into and providing data on digital assets.
- 2.1.3 DAR collects and provides FTSE Russell with digital asset events on a weekly basis for information purposes only. DAR uses a variety of public sources to determine when an event is final, including:
 - Project core software repositories;
 - Client implementation software repositories;
 - Application and ecosystem repositories;
 - Core developer and governance calls;
 - Blog posts and roadmap updates;
 - Chat groups and messaging channels;
 - Mailing lists;
 - Social media outlets;
 - Message boards;
 - New organizations and independent bloggers.
- 2.1.4 DAR incorporates digital asset events in the quarterly rebalances. Please see the FTSE Digital Asset Timetable for more information on when digital asset events are reflected in a Digital Asset's Classification and Economic Data.

Section 3 Timing of network events

3. Timing of network events

- 3.1.1 FTSE Russell applies network events to its indices on a quarterly basis, both to reflect the evolution of digital assets and to ensure that the indices remain representative of the global market for digital assets. A digital asset's index membership and its weight in the index can be impacted by these network events.
- 3.1.2 If FTSE Russell has confirmed the completion of a network event on T-7 business days of the month prior to a rebalance or index review, the event may be implemented in conjunction with the rebalance to limit turnover, providing appropriate notice can be given. For example, Digital Asset ABC has changed Consensus Mechanism and DAR has confirmed this classification status as of T-7 business days of the month prior to a rebalance or index review. FTSE Russell will provide appropriate notice of this classification change and subsequent index membership changes per our normal procedures and will reclassify Digital Asset ABC at the rebalance effective date.
- 3.1.3 The FTSE Russell Indices recognize a minimum two-day notice requirement for "actionable" network event implementation. This provides an appropriate window for investors to receive a notification of intended index treatment and consequently act upon it. Because FTSE Russell ensures all tradeable actions are provided with appropriate notice as detailed above, late announced changes to previously communicated corporate events may not be applied. As a point of clarification, if FTSE Russell can confirm changes, those changes will be applied if appropriate notice can be provided. If a tradeable network event is applied to the index and the action is subsequently delayed (and not implemented), previously communicated index changes will proceed and will not be reversed unless appropriate notice can be provided. When a tradeable network event is cancelled or terms are updated, the previously communicated index changes will proceed unless appropriate notice can be provided. FTSE Russell will subsequently provide details on corrective update providing appropriate notice in line with index rules.
- 3.1.4 For the timing of corporate actions and events in the event of a trading halt please refer to the FTSE Russell Index Policy for trading halts and market closures document which can be accessed through the following link:

FTSE_Russell_Index_Policy_for_Trading_Halts_and_Market_Closures.pdf

Section 4 Network events

4. Network events

- 4.1.1 Digital assets undergo network events, which are conceptually similar to corporate actions.
- 4.1.2 A network events is an action on digital asset holders with a prescribed ex date. The digital asset price may be subject to an adjustment on the ex date. Network events include the following:
 - i. Token issues/token burns;
 - ii. Investability weightings;
 - iii. Client updates, forks, chain splits and application updates
 - iv. Airdrops;
 - v. Emissions;
 - vi. Token conversion;

4.2 Token issuance/token burns

- 4.2.1 A digital asset may issue new tokens continuously without bound, issue new tokens until a predefined number is reached or issue all tokens in a single issue (pre-mined), possibly restricting circulation to only a percentage of the total.
- 4.2.2 Digital asset tokens can be burned (destroyed) reducing the number of tokens in circulation.
- 4.2.3 Changes to the number of tokens in issue for digital assets updated by DAR on a quarterly basis and changes are implemented, where necessary, as part of the periodic review schedule of FTSE digital asset indices.

4.3 Investability weightings

- 4.3.1 The investability weighting is a number between 0 and 1, where 1 represents 100% (of the tokens in issue). The investability weighting is an adjustment made to the tokens in issue to account for:
 - a. All pre-mined tokens (tokens that are allocated prior to the public release) which remain in the control of developers, principals, foundations, or business entities affiliated with the creation of the digital asset;
 - b. Block grants of the digital asset that are formulaically given to the principals, foundations, or business entities affiliated with the creation of the digital asset;
 - c. Return issuance to the investible circulation if since the last periodic review an event (preceded by a public announcement) that tokens have been sold into the public market.
- 4.3.2 The investable tokens in issue represents the total issued number of tokens of a digital asset adjusted by the investability weighting.
- 4.3.3 Changes to circulation for constituent securities are implemented as part of the quarterly periodic review schedule of the FTSE digital asset indices.

4.4 Client updates, forks, chain splits and application updates

- 4.4.1 Digital asset networks consist of users that run versions of a digital asset protocol software. Different programming language versions of the same protocol are called Clients, which can be individually updated. Forks occur when all Clients in the underlying network adopt new policies. Chainsplits occur where there are two or more competing versions of the same blockchain that can result in a new asset.
 - A. Client update When one implementation of a digital asset protocol is individually updated. Some digital assets only have one Client or reference implementation;
 - B. Soft Fork A Soft Fork is a simultaneous update of all Clients of a digital asset protocol. Typically, these are coordinated to occur at a specific block height (block number). These software updates do not affect the consensus rules of the protocol meaning blocks that were valid prior to the Soft Fork continue to be valid after the update. Hard forks Like a Soft Fork, a Hard Fork is a simultaneous update of all Clients of a digital asset protocol. Hard Forks differ from Soft Forks in that they affect the consensus rules of the protocol. This means that blocks and client versions that were valid prior to the Hard Fork are no longer valid for inclusion in a blockchain unless a Client is updated;
 - C. Chain Split A Chain Split occurs when there are two or more competing versions of an original blockchain that result in a Hard Fork, the creation of a new digital asset. This typically occurs at a specific block and is created intentionally to change key features or rules of an original blockchain. Because an entirely new digital asset is created, new ways to store, transmit, and trade the digital asset need to be created;
 - D. Application Update Digital Assets can be used in Decentralised Applications, which can be implemented as smart contracts, or as supporting software, such as layer 2 solutions. Applications implemented via smart contracts reside in platforms like Ethereum. As such, they do not have their own consensus rules and rely on key functionality from the platform itself. These programs are often updated to improve functionality and patch bugs.
- 4.4.2 In the event of a Chain Split results in a new asset, holders of an existing digital asset have ownership of both the original digital asset and the new, hard-forked digital asset. Eligibility of Chain Splits will be considered for inclusion in the eligible universe (Section 4) by FTSE Russell, using information provided by DAR.

4.5 Airdrops

- 4.5.1 An airdrop is the distribution of a new or existing digital asset token to holders of an existing digital asset on a one-off or occasional basis, often in return for a service rendered.
- 4.5.2 Airdrops are not included in indices which comprise FTSE digital asset indices.

4.6 Emissions

- 4.6.1 Emissions are an award to digital asset token holders in the form of a digital asset grant. These rewards are typically provided in a form which facilitates transactions on the network.
- 4.6.2 Emissions are not considered in indices which comprise FTSE digital asset indices.

4.7 Token conversion

4.7.1 A digital asset may undergo a hard fork whereby the new protocol and token replace the old. Holders of the old token convert their old token holdings into the new token on the new blockchain and the old tokens are destroyed (burned).

The new token is considered a continuation of the old token and remains in FTSE digital asset indices.

Appendix A Further information

A glossary of terms used in FTSE Russell's Ground Rule documents can be found using the following link:

Glossary_-_Digital_Assets.pdf (ftserussell.com)

Further information on FTSE digital asset indices is available from FTSE Russell.

For contact details please visit the FTSE Russell website or contact FTSE Russell client services at info@ftserussell.com.

Website: www.lseg.com/en/ftse-russell/

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