



BITA Index Correction and Recalculation Policy

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Log of Amendments

15.05.2019 - v.1.0. First publication of BITA Index Correction and Recalculation Policy

25.11.2019 - v.1.1. Additional information regarding EU Benchmark Regulation (BMR) added.

01.05.2023 - v.1.2. Business address and website have been updated.



Document and Company Background

ABOUT BITA

BITA is a Germany-based Fintech that provides enterprise-grade indexes, data and infrastructure to institutions operating in the passive and quantitative investment spaces. Thanks to its innovative index management infrastructure, designed to outperform other existing solutions in terms of flexibility and speed, BITA can provide independent, methodologically sound indexes that are both investable and replicable by customers and stakeholders. BITA's methodologies and processes are completely transparent and available publicly.

ABOUT THIS DOCUMENT

The present document serves to describe and summarize our policy and procedures (the "Index Correction and Recalculation Policy") to be applied for handling errors and respective corrections in the index determination and calculation process. Proper correction and recalculation processes are important in the provision of indexes that accurately reflect economic realities.

Our policy has been drafted in accordance with the IOSCO Principles and the EU Benchmark Regulation directives.



Policy Content

1. SCOPE AND OVERSIGHT

1.1. Scope

This policy applies to all indexes calculated and administered by BITA.

1.2. Oversight

The design, control and enforcement of the policy and processes documented hereby falls into the responsibility and discretion of the BITA Index Management Board (“BIMB”).

Errors are duly communicated to the BITA Oversight Function. Audit trails and reports are always made available at the request of the BITA Oversight Function.

BITA is committed to provide its best efforts to calculate indexes that meet the highest industry standards in terms of quality and accuracy. However, given the nature and complexity of the business, errors while designing or calculating indexes may occur from time to time for a variety of reasons, both internal and external to BITA.

BITA does not accept any responsibility to investors, index constituents, licensees or other stakeholders for the accuracy of the indexes or their constituent data and accepts no liability for any losses, damages, claims or expenses suffered by any person as a result of any errors or inaccuracies in the compilation or calculation of the index or any constituent data, whether arising as result of negligence or otherwise.

2. TYPES OF ERRORS

2.1. Data Errors

These are errors normally generated due to incorrect, missing, or ill-timed data inputs coming from the different data vendors providing the necessary input data for the calculation of indexes.

Some examples of these errors are:

- Problems with security identifiers.
- Misclassification of corporate actions.
- Incorrect data formats from origin.
- Restatements from origin.
- Outlying pricing data points.
- Wrongly interpreted fundamental data.

2.2. Technology Driven Errors

These are errors occurring due to technological failures impacting external vendors’ and BITA’s infrastructure. Technology driven errors are more likely to occur in cases of real-time calculation products, where latency and data volumes can have an impact in system uptimes.



Some examples of these failures are:

- Server failures.
- Downtime on exchange and vendor APIs.
- Downtime on data queuing components.

In these cases, BITA would fail to receive timely data, potentially creating issues in calculation of real-time values.

2.3. Application Errors

Application errors generally lead to output data that would have had a different value if the error had not occurred, therefore failing to correctly reflect the market or economic reality represented by the index. Application errors are most likely to occur during the index design process, or during the index rebalancing/review process.

Examples of application errors occurring during the index design or setup:

- A constituent that is unintentionally added/excluded incorrectly.
- A constituent that is unintentionally incorrectly classified.
- Back-testing issues (for example inconsistencies in the application of the back-testing logic, or failure to consider point-in-time market snapshots).

Examples of application errors occurring during the index rebalancing/review process:

- Incorrect/missing application of a corporate action.
- A constituent that is unintentionally added/excluded incorrectly.
- Incorrect calculation of constituent weights.

3. PROCESSES AND MEASURES TO IDENTIFY AND MITIGATE ERRORS

3.1. Error Identification

Across the index lifecycle, from reception of data, to index setup, calculation and dissemination BITA has implemented a series of processes and automated control mechanisms to ensure that errors are identified promptly.

Whenever possible, BITA will utilize several data vendors and implement “golden copy” mechanism to validate input data utilized in the construction of indexes.

Internal quality assurance mechanisms have been put in place by BITA both on a continuous and random basis. BITA puts a very strong emphasis in standardization of processes and establishment of repetitive product development mechanisms to avoid human errors.

After an error has been identified, and before the error can be flagged for correction, an error validation process takes place, where BITA first prioritizes the primary source, whether this is a security issuer (in the case of data errors) or internal methodology guides (in case of application errors). Only in those cases where validation cannot be completed against primary sources, will BITA perform validation against secondary or derivative market participants.



3.2. Error Audit Trail

For every error type and at every occurrence, a detailed error report is issued, documented and archived. Error reports are structured to provide specific details on the causes of the errors, the employees or teams involved, correction decisions (including any decisions from the BIMB) as well as proposals for future mitigation and avoidance. These reports are duly archived and made available for internal and external audits.

4. ERROR CORRECTION AND RECALCULATION

When assessing the measures taken to correct different errors BITA takes into consideration the timeliness of the identification of the error, the impact (magnitude) of the error, as well as the efforts necessary both from a BITA and a client perspective to implement the corrective measures. Except for extraordinary errors, and in order to avoid subjective or personal decisions regarding errors, a clear and objective methodology for the handling of errors has been put into place.

4.1. Data Errors

In case of data errors:

- If the error has been discovered within 2 trading days since its occurrence, the correction is announced, the index is corrected as soon as possible, and its values are restated backwards until error occurrence. Subsequent calculations are performed following corrected index levels.
- If the error has been discovered after at least 2 days since its occurrence, the correction is announced, the index is corrected as soon as possible, but unless the impact of the error is of at least 100bp on an annualized basis, the index values are not restated.

4.2. Technology Driven Errors

In case of technology driven errors:

- If the error has been discovered within 2 trading days since its occurrence, the correction is announced, the index is corrected as soon as possible, and its values are restated backwards until error occurrence. Subsequent calculations are performed following corrected index levels.
- If the error has been discovered after at least 2 days since its occurrence, the correction is announced, the index is corrected as soon as possible, but unless the impact of the error is of at least 100bp on an annualized basis, the index values are not restated.

4.3. Application Errors (Setup and Back-Testing)

In case of application errors (setup and back-testing):

- Back-tested value are restated only if the error has been discovered within 60 days of the launch of the respective index.

4.4. Application Errors (Rebalancing)



In case of application errors (rebalancing):

- If the error has been discovered within 12 months after its occurrence, the correction is announced, the index is corrected as soon as possible (selection is performed using data from the last index review, and weights are calculated using data from the moment of correction), and its values are restated backwards until error occurrence. Subsequent calculations are performed following corrected index levels.
- In some cases, the BIMB might decide to wait until the next review period to perform the correction at that point in time.

Any errors discovered 12 months or later after its occurrence are generally not corrected.

4.5. Extraordinary Errors

Given the nature of the index administration business, unforeseeable error types may occur. As no pre-defined methodology is applicable for these errors, they are assessed individually. These errors are notified without any delay to the BITA Index Management Board, whom will evaluate the situation and recommend the proper rectification measure.

5. ERROR AND CORRECTION ANNOUNCEMENT

Any Correction or Restatement made to an Index will be normally communicated to clients via email channels. The communication is done in a standardized format including an explanation of the error, the proposed rectification and the effective date of implementation.

BITA's customer service and product development teams stand always available for any additional clarification if necessary. Upon request, error reports are made available to clients.



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