

Error Policy

1 Introduction

The Benchmark Regulation seeks to ensure the reliability and continued accuracy of the various benchmarks. There are circumstances, however, in which the integrity and accuracy of the benchmarks could be compromised by errors or inaccuracies in the index calculation process.

This policy should be read in conjunction with the Commerzbank Policy for Independent Calculation and Publication and the Commerzbank Benchmark Statement. This policy describes the procedure for identification, escalation and treatment of any index calculation errors.

2 Scope

Commerzbank makes every effort to maintain its indices to high standards. Nevertheless, errors may arise in the index and constituent data from time to time. Such errors may arise because of several events, such as pricing errors, external disruptions or market distortions, incorrect, incomplete or late input data, and incorrect application of index criteria.

Where error is identified, Commerzbank will follow the procedure and the guidelines set out below. The error may be identified by Commerzbank itself or by an external user.

3 Procedure

During the process of administration of Commerzbank's indices, several types of errors may occur, including, but not limited to:

- Values, such as prices, interest rates, and number of shares, may be incorrectly interpreted and used;
- The Index methodology can be applied wrongly, due to various reasons, such as the use of an inaccurate formula or missing values;
- Data grab errors;
- A data vendor publishing incorrect data;
- Data sources revising previously published values;
- Incorrect calendars.

When an error or a potential error is identified, the event should be appropriately escalated and investigated. An investigation may result in either of the below treatments:

- historical restatement of index levels, or,
- only a correction of index levels going forward, or,
- no restatement or correction

Commerzbank aims to follow a rules-based procedure to determine the treatment. This is detailed further in the next section; the treatment depends on the nature and age of the error.

From time to time, Commerzbank may deviate from the standard treatment of errors. This may only be done with prior authorization and upon the exercise of expert judgement by the Index Committee. The Index Committee is a group of Commerzbank employees, which represents legal, compliance, and front office functions.

4 List of Errors and Treatments

Error Type	Restatement	Correction	Timing	Implementation
Temporal Scope	retroactive	going forward		
Corporate Actions				
noticed on effective date	Yes, if error occurred within the last 5 index business days	Yes, if error occurred after the last rebalancing and no longer than 20 index business days ago	The index business day following the Announcement	Error is corrected and/or restated using current input data.
noticed after effective date				
Dividends				



wrong amount	Yes, if error occurred within the last 5 index business days	Yes, if error occurred after the last rebalancing and no longer than 20 index business days ago	The index business day following the Announcement	Error is corrected and/or restated using current input data.
wrong currency				
dividend missed				
Selections				
Wrong constituent	Yes, if error occurred within the last 5 index business days	Yes, if error occurred after the last rebalancing.	The index business day following the Announcement	Selection is corrected and/or restated based on the input data of the time when the error occurred. Weighting is implemented using current input data.
wrong weighting method				
wrong treatment				
missed delisting				
Calculation Parameter				
Prices / NAVs	Yes, if error occurred within the last 5 index business days	Yes, if error occurred after the last rebalancing and no longer than 20 index business days ago	Immediately	Error is corrected and/or restated using current input data.
Accrued interests				
Fx rates				
Holiday Calendar				
Tax Rates				
wrong tax rates	Yes, if error occurred within the last 5 index business days	Yes, if error occurred after the last rebalancing and no longer than 20 index business days ago	Immediately	Error is corrected and/or restated using current input data.
Fees				
wrong management fees / synthetic dividend yields	Yes, if error occurred within the last 5 index business days.	Yes, always.	Immediately	Error is corrected using current input data.
wrong rebalancing fees	Yes, if error occurred within the last 5 index business days	Yes, if error occurred after the last rebalancing and no longer than 20 index business days ago	Immediately	Error is corrected and/or restated using current input data.
Model Error				
Wrong calculation formula in the Index definitions	Yes, if error occurred within the last 5 index business days.	Yes, always.	Immediately	N/A

5 Unexpected Error Types

During the process of calculating indices, unexpected or unpredicted error types may occur. If such an error type is materially like another type identified in the previous section, then the treatment shall be the same. Otherwise, such an error type shall be escalated to the Index Committee and any mitigating action may only be taken with prior authorization and upon the exercise of expert judgement by the Index Committee.

6 Documentation and Audit Trail

Any error and its individual correction are reviewed on several levels. The investigation of any error can be carried out by the team responsible for index calculation (IT team) or any other relevant employee from the front office functions. The results of the investigation are then double-checked and approved by a completely independent team (Market Risk: Model Validation team), which sits outside of the front office functions and has broad oversight responsibilities. Upon agreement between different teams, the error and any corrective action is documented and stored for future reference by the Index Committee.

7 Accountability

The policy shall be reviewed regularly and updated accordingly.