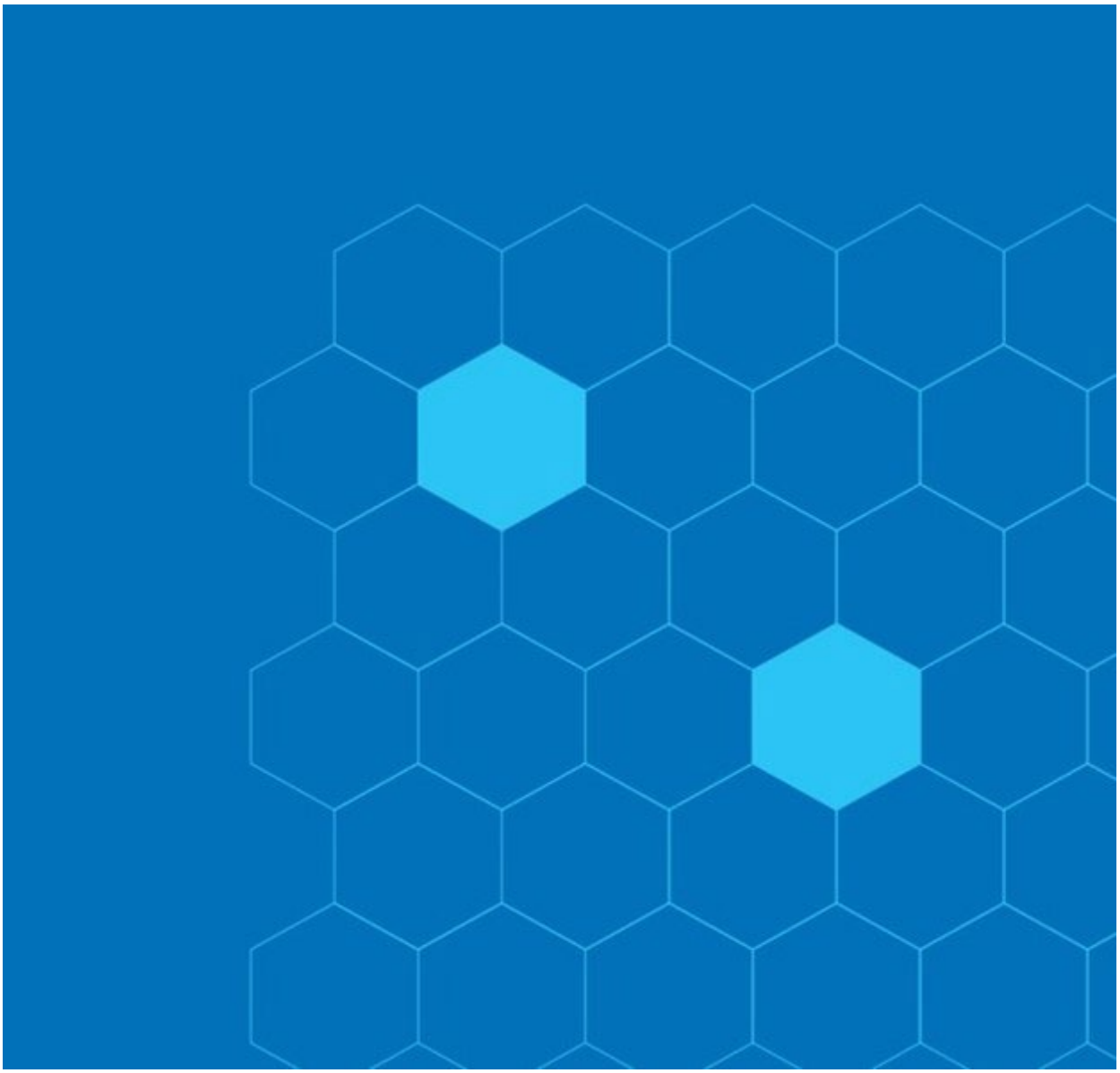
Policy on Input Data Integrity



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Type:	Policy
Reference number	202206-11
Subject:	Input Data Integrity
Scope:	STOXX Benchmarks
Approved by:	Management Board (**"MB")**
Approval Date:	27 November 2023
Responsible department:	Operations
Relevant documents:	Terms of Reference – Index Operations Committee ("**IOC**") Terms of Reference – Index Management Committe ("**IMC**") Terms of Reference – Index Governance Committee ("**IGC**") Terms of Reference – Oversight Committee ("**OC**")
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1. Background

The regulations of benchmarks in the various jurisdictions and for the various types of regulated entities vary in detail, but the general approach is equivalent in principle. In addition, the various rules and regulations use different language and terminology while content wise being very similar. As such, this Policy uses a harmonized language, which is to be read in conjunction with the specific (national) legal terminology. The most relevant parts of the legislative framework applicable can be summarized as follows:

- Global:
  Administrators of benchmarks need to comply with requirements of Principle 7 (Data Sufficiency) of the IOSCO Principles for Financial Benchmarks FR07/13

- European Union:
  Administrators of benchmarks used in the EU need to comply with the requirements of Regulation (EU) No. 2016/1011 "**EU Benchmark Regulation**" or "**EU BMR**").

- United Kingdom[1]:

  Administrators of benchmarks used in the UK need to comply with the requirements of Section 3(1) European Union (Withdrawal) Act 2018 (UK) in conjunction with EU BMR ("**UK BMR**").

[1] After the Brexit with an effective date of 31 January 2020, STOXX needs to register for Recognition by FCA under UK BMR with a new filing by the end of 2025; until then, UK market access is ensured according to UK BMR transitional provisions

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2. Objective and Purpose[2]

The Policy describes the requirements with respect to the underlying data of benchmark components / constituents used for the benchmark provision purposes by STOXX Ltd., Zug, Switzerland ("**STOXX**").

The Policy defines guidelines regarding the hierarchy of data inputs and the exercise of expert judgement used in the process of the provision of a benchmark administered by STOXX Ltd., Zug, Switzerland.

This Policy replaces the following policies: Data Sufficiency Policy as of April 2021 and Hierarchy of Data Input Policy as of July 2019.

3. Scope

This Policy applies to all benchmarks STOXX administers within the meaning of Art. 3 (1), (5) and (6) EU BMR and any similar or equivalent regime ("**STOXX Benchmarks**").

4. Risk of benchmark manipulation

4.1 Risk assessment :

Given the input data concerned, STOXX indices are by nature of low complexity and hence the risk of manipulation can be described as low.

Input data are:

Equity prices

- STOXX uses readily available transaction data sourced from vendors or eligible exchanges.

Bond Prices

- STOXX uses readily available transaction data sourced from vendors or available data derived from transactions and binding quotes in combination with rules-based procedures and validation checks.

Foreign Exchange Rates

- Generally, STOXX uses readily available data sourced from vendors for foreign exchange rates. Exceptionally, for the STOXX Currency Index Family, STOXX uses transactions and binding quotes derived from a multilateral trading facility.

Futures Prices

- STOXX uses readily available transaction data sourced from vendors or eligible derivative exchanges.

Traded Option Prices

[2] Cases or situations not covered by this policy will be covered by processes in the respective STOXX or DAX Index Guides.

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- STOXX uses readily available transaction data sourced from vendors or eligible derivative exchanges.

  General Collateral Rates

- STOXX uses readily available data derived from transactions and binding quotes in combination with rules-based procedures and validation checks.

  Digital Assets

- STOXX uses readily available data derived from transactions sourced from vendors in combination with rules-based procedures and validation checks.

  STOXX will on a regular basis and at least annually, assess the risk of manipulation of the benchmark provided, taking into account the following elements:

a) the envisaged operations required to provide the benchmark;

b) the potential origin, nature, peculiarity and severity of the manipulation risk;

c) the measures envisaged to address the risk of manipulation, including safeguards, security measures and internal procedures

   The IGC is in charge of the annual assessment and related documents/evidence will be duly stored in accordance with the Record Keeping Policy.

4.2 Data sufficiency

The data used to construct and determine a bookmark must be sufficient to accurately and reliably represent the interest measured by the idea.

The nature of a benchmark determines the data that is used for the benchmark determination.

In general, STOXX uses traded prices from regulated exchanges/markets (representing observable bona fide, arms-length transactions) for all STOXX Benchmarks wherever possible and reasonable.

For any deviations from this rule, such as the use of non-transactional data, a detailed rationale must be provided as part of the published index methodology ("**Index Guides**") of the affected STOXX Benchmark.

In order to prove the accuracy and reliability of the data used in representing the interest measured for benchmark determination, STOXX must disclose the nature of the data in the Index Guide

4.3 Hierarchy of Data Inputs

Product Development is responsible for ensuring that the hierarchy of data inputs is clearly defined and disclosed in the published benchmark methodologies ("Index

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Guides"). Any deviations from the standard process shall be specifically set out in the relevant Index Guide.

4.3.1 Transaction Data, Quotes and Other Values

The input data shall be transaction data, if available and appropriate. If transaction data is not sufficient or is not appropriate to represent accurately and reliably the market or economic reality that the benchmark is intended to measure, input data, which is not transaction data, may be used, including estimated prices, quotes and committed quotes, or other values.

4.3.2 Expert Judgement

If the data complying with Section 4.2 is not sufficient or is not appropriate to represent accurately and reliably the market or economic reality that the benchmark is intended to measure, STOXX may exercise discretion regarding the data insufficiency limitation.

5. The adequate systems and effective controls

5.1 Input data monitoring

The adequate system and effective controls put in place by STOXX and described below are appropriate for and proportionate to the nature, complexity and risk of manipulation of the benchmark administered by STOXX.

The accuracy and reliability of a benchmark depends, to a large extent, on the quality and quantity of input data which is used in its calculation.

Article 11 (Input Data) and Article 14 (Reporting of Infringements) of the EU BMR requires STOXX to have robust controls in place over the quality and quantity of input data, and also to ensure that the data used is verifiable so that the benchmark represents the market or economic reality that it is intended to measure.

STOXX has effective technical and operational processes in place to ensure continuous quality and integrity of the input data used in the index calculation and detect suspicious data or attempted manipulation.

These controls are designed accordingly to the asset class, source and complexity of data.

Typically STOXX uses readily available transaction data sourced from vendors or eligible stock or derivative exchanges, which is highly transparent and less susceptible to manipulations of any kind.

There is automated monitoring and outlier detection implemented in the calculation systems to alert the responsible team members of potential data issues. The adequate systems and effective controls includes, in accordance to the level of the nature, complexity and risk of manipulation of the benchmark provided, the following elements:

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a) software capable of deferred automated reading, replaying and analysis of input data;

b) human analysis in the detection and identification of behaviour that may involve manipulation or attempted manipulation of a benchmark.

The monitoring can be implemented either at the level of individual Input Data points (e.g. equity prices) or on the resultant index levels and generally entails comparison against previous day closing prices or last traded prices.

Any issues raised by the systems are subject to the plausibility check performed by the Index Surveillance and Monitoring team by validating data on alternative sources, verifying if movements are driven by market conditions or other factors.

Once the investigation is complete and input data is deemed correct, the publication of values will resume.

Any case of suspicious data or conduct that may involve attempted manipulation of benchmarks is recorded as an incident and reviewed by the governance committees as per STOXX Governance matrix and reported to the relevant authorities by the OC.

The controls are formally documented in the STOXX BMR Control Framework and its effectiveness is regularly reviewed in line with the DBAG ICS policy and changes are approved by the STOXX Governance bodies.

6. Training of STOXX employees involved in the operation of the adequate systems and effective controls

Each member of the Index Surveillance and Monitoring team receives annually training for input data monitoring and associated controls and is able to

a) detect and identify any suspicious input data that could be the result of benchmark manipulation or attempted manipulation;
b) promptly report any such findings to their internal reporting line.

7. Governance

Index Operations is responsible for ensuring the application of the published hierarchy of data inputs for each index, as well as the quality of the input data.

Index Operation Committee ("IOC") oversees and approves measures to monitor input data and measures to detect potential anomalous or suspicious input data or attempted manipulation of STOXX benchmarks.

The IOC shall monitor the input data, contributors (when available) and the actions of the administrator in challenging or validating contributions of input data (including expert judgement).

If Index Operations determines that transactional data to determine a benchmark is not available or the application of the hierarchy of data inputs would not result in an accurate and reliable representation of the interest measured by the benchmark, Operations

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must file a report and escalate the issue to the IOC.

IOC notifies IGC of any changes relating to monitoring of input data implemented in this respect in the control framework. Any breach of the code of conduct, suspicious or anomalous data or attempted manipulation of STOXX Benchmarks is escalated to the Index Governance Committee ("IGC"). IGC proposes measures to be taken to the Oversight Committee ("OC"); if necessary, OC makes decision to report to the relevant authorities.

Any case of suspicious data or conduct that may involve attempted manipulation of benchmarks is recorded as an incident and reviewed by the governance committees as per STOXX Governance and reported to the relevant authorities by the OC.

8. Name and contact details of the persons responsible for the adequate systems and effective controls.

Contact point with this regard for any queries or questions is Head of Surveillance and Monitoring.

9. Policy Revision

This Policy will be reviewed in accordance with the Policy Management Policy and updated as necessary. The responsibility for the updates is assumed by the Head of Operations.

10. Version Record

Version	Date	Remarks (including main changes to previous policy version)
1.0	June 2022	Initial version
1.1	November 2023	Addition of Digital Assets to Section 4.1

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