

NSE Data & Analytics Limited ("NDAL") Management Statement of Adherence with International Organization of Securities Commissions ("IOSCO") Principles for Financial Benchmarks

Notice

This financial benchmark report dated 30th September 2022 ("Report") has been prepared for the sole use and benefit of NSE Data & Analytics Ltd. ("NDAL") pursuant to an engagement letter entered into between Deloitte Haskins & Sells LLP ("DHS") and NDAL.

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(vi) It was not prepared for providing any services to any third party. The description of the relevant activities on the control processes defined in relation to governance, quality and accountability activities as date 30th September 2022 and thus DHS's assurance report is based on historical information. Any projection of such information or DHS's opinion thereon to future periods is subject to the risk that changes may occur after the Report is issued and the description of controls may no longer accurately portray the control processes.

For these reasons, such projection of information to future periods would be inappropriate;

(vii) DHS will be entitled to the benefit of and to enforce these terms; and

(viii) These terms and any dispute with DHS arising from them, whether contractual or non-contractual, are subject to Indian laws and the exclusive jurisdiction of courts in Mumbai, India.

Contents

1. About NSE Data & Analytics Limited	3
2. Management’s Statement of Adherence to IOSCO Compliance	4
3. Independent Chartered Accountant’s Limited Assurance Report	7
4. Principles and Statements	9
Principle 1: Overall Responsibility of the Administrator	9
Principle 2: Oversight of Third Parties	11
Principle 3: Conflicts of Interest for Administrators	12
Principle 4: Control Framework for Administrators	14
Principle 5: Internal Oversight	17
Principle 6: Benchmark Design	20
Principle 7: Data Sufficiency	21
Principle 8: Hierarchy of Data Inputs	23
Principle 9: Transparency of Benchmark Determination	25
Principle 10: Periodic Review	27
Principle 11: Content of the Methodology	28
Principle 12: Changes to the Methodology	30
Principle 13: Transition	33
Principle 14: Submitter Code of Conduct	35
Principle 15: Internal Controls over Data Collection	37
Principle 16: Complaints Procedures	38
Principle 17: Audits	40
Principle 18: Audit Trail	41
Principle 19: Cooperation with Regulatory Authorities	43

1. About NSE Data & Analytics Limited

NSE Data & Analytics Limited ("NDAL") (formerly known as DotEX International Limited), a wholly owned subsidiary of National Stock Exchange of India Limited, provides data and information vending services and products for various market segments and is a professional set-up dedicated solely for this purpose. It also offers daily security level valuations for various fixed income securities.

NSE Fixed Income Valuations

NDAL offers daily security level valuations for over 10,000 fixed income securities. These include corporate bonds, commercial papers, certificate of deposits, government securities and state development loans. The valuation universe includes investment grade, sub-investment grade and default securities. The valuation approach is objective, well-defined and independent, incorporating all important security level features. It maintains rich database term sheets, bond cash flows and daily tracking of rating changes.

2. Management's Statement of Adherence to IOSCO Compliance

MANAGEMENT REPORT ON COMPLIANCE

January 11, 2023

We, as members of management of NSE Data and Analytics Limited, (the Company) are responsible for complying with the specified requirements of Principles for Financial Benchmarks issued by the International Organization of Securities Commission (IOSCO) (the “Criteria”) for Fixed Income Valuations, as of September 30, 2022.

We also are responsible for establishing and maintaining effective internal control over compliance with the requirements of the Criteria. We have performed an evaluation of the Company’s compliance with the specified requirements of the Criteria, including those described below, as of September 30, 2022. Based on this evaluation, we assert that as of September 30, 2022, the Company complied with the following specified requirements of the Criteria.

List of compliance requirements (Principles for Financial Benchmarks):

- Principle 1: Overall Responsibility of the Administrator
- Principle 2: Oversight of Third Parties
- Principle 3: Conflicts of Interest for Administrators
- Principle 4: Control Framework for Administrators
- Principle 5: Internal Oversight
- Principle 6: Benchmark Design
- Principle 7: Data Sufficiency
- Principle 8: Hierarchy of Data Inputs
- Principle 9: Transparency of Benchmark Determinations
- Principle 10: Periodic Review
- Principle 11: Content of the Methodology
- Principle 12: Changes in the Methodology
- Principle 13: Transition
- Principle 14: Submitter Code of Conduct
- Principle 15: Internal Controls over Data Collection
- Principle 16: Complaints Procedures
- Principle 17: Audits
- Principle 18: Audit Trail
- Principle 19: Co-operation with Regulatory Authorities

In this report, the Company sets out a description of how the underlying controls address each of the Principles for Financial Benchmarks (IOSCO Principles), operated as of September 30, 2022, and we confirm that:



- (a) The report fairly describes such underlying controls which were in place as of September 30, 2022; and
- (b) The procedures are suitably designed such that the intent of the applicable IOSCO Principles is complied with.



Mukesh Agarwal
Managing Director
NSE Data and Analytics Limited



3. Independent Chartered Accountant's Limited Assurance Report

TO THE BOARD OF DIRECTORS OF NSE DATA & ANALYTICS LIMITED

We have reviewed NSE Data & Analytics Ltd.'s ("NDAL") response to the principles for Financial Benchmarks published by the International Organization of Securities Commissions ("IOSCO Principles") described in the accompanying statement of NDAL's – Fixed Income Valuation assessment described under "Principles and Statements" in Section 4 of this report as at September 30th, 2022.

NDAL's Responsibilities

NDAL's management is responsible for ensuring that the Company designs, implements and monitors compliance with policies and procedures that adhere with the IOSCO Principles. NDAL has provided the accompanying statement of its assessment titled "Management's Statement of Adherence to IOSCO", set out in Section 2 and supported by detailed responses described under "Principles and Statements" in Section 4 of this report duly initialed by us for identification purpose only.

Independent Chartered Accountant's Responsibilities

Our responsibility is to undertake a limited assurance engagement and review the responses provided by NDAL – *Fixed Income Security Valuations* on its assessment described under "Principles and Statements" in Section 4 of this report as on September 30th, 2022, in accordance with the IOSCO Principles. We report to you whether, based on the results of our work (which is further described in Section 4 of this report) that NDAL's responses in Section 4 is free of material misstatement. We conducted our review in accordance with International Standard on Assurance Engagements (ISAE) 3000 "Assurance Engagements Other than Audits or Reviews of Historical Financial Information", issued by the International Auditing and Assurance Standards Board. The Standard requires such limited assurance engagements, to obtain appropriate evidence as we consider sufficient to enable us to obtain moderate assurance as to whether Principles and Statements is free of material misstatement, basis our adopted procedures, and the responses as provided under principles and Statements in relation to governance, quality and accountability activities placed in operation for NDAL's - *Fixed Income Security Valuations* as on September 30th, 2022, set out in Section 4 of this report. Our review is limited to inquiries of NDAL's personnel and review of procedures applied for IOSCO Principles and thus provides less assurance than an audit. We have not performed an audit and, accordingly, we do not express an audit opinion. Our procedures, described under Section 4, included examination of evidence, on a test basis to assess NDAL's Principles

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and Statements responses to the IOSCO principles. Our procedures were not sufficient to enable us to conclude on the design effectiveness or operation of policies or controls in place to address the Principles and, accordingly, we do not express an opinion thereon.

Inherent Limitations

Because of their nature and inherent limitations, controls and control procedure may not always operate effectively to meet the IOSCO Principles criteria. Also, the projection to the future of any evaluation of the fairness of the presentation of the Description, or conclusions about the suitability of the design or operating effectiveness of the controls and control procedure described therein to meet the IOSCO Principles criteria are subject to the risk that controls and control procedure may become ineffective or fail.

Restriction of Use

Our report has been prepared to enable NDAL to meet the requirements of adherence with the IOSCO Principles. Our report is intended solely for the information use of the Board of Directors and the Management of NDAL and is to be read in conjunction with the Notice issued at the beginning of this Report.

For Deloitte Haskins & Sells LLP

Partner

4. Principles and Statements

Principle 1: Overall Responsibility of the Administrator

IOSCO Principles, NSE Data & Analytics Responses, Test Performed by DELOITTE, and Results of Tests		
<p>IOSCO Principle #1: The Administrator should retain primary responsibility for all aspects of the Benchmark determination process. For example, this includes:</p> <ol style="list-style-type: none"> Development: The definition of the Benchmark and Benchmark Methodology; Determination and Dissemination: Accurate and timely compilation and publication and distribution of the Benchmark; Operation: Ensuring appropriate transparency over significant decisions affecting the compilation of the Benchmark and any related determination process, including contingency measures in the event of absence of or insufficient inputs, market stress or disruption, failure of critical infrastructure, or other relevant factors; and Governance: Establishing credible and transparent governance, oversight and accountability procedures for the Benchmark determination process, including an identifiable oversight function accountable for the development, issuance and operation of the Benchmark. 		
NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 1A: NSE Data & Analytics Ltd. (henceforth, called as "NSE Data") is accountable for all the primary facets of the fixed income valuation process, including development, determination, dissemination, operations, and governance. All the details of their methodology are transparently published on the NSE Data website (https://www.nseindia.com/nse-data-and-analytics).</p> <p>The pre-defined waterfall approach is outlined in depth in the valuation methodology document, along with the exception policy and scenarios of non-availability of any data required for the valuation. Additionally, NSE Data has instated business continuity plans to secure the smooth execution of valuations and the dissemination of the underlying data.</p>	<p>1) Inspected NSE Data's website and validated that the updated methodology document was publicly available. For a sample security, methodology document was reviewed and the following observations were noted:</p> <ul style="list-style-type: none"> The methodology document covered the framework for the valuation process and the related data sources. It also covered guidance for cases when data for valuations was unavailable. <p>We inspected the methodology document's approval notes for its version history and verified that NSE Data was in charge of the maintenance of the document.</p> <p>2) Verified that an oversight function has been established to review all facets of the benchmark determination process via NSE Data's governance structure. Further, confirmed the role and responsibilities of the following committees, which are a component of the oversight function:</p> <ul style="list-style-type: none"> BVAC - provides guidance on macro issues pertaining to fixed income valuations BVRC - oversees operational guidelines for bond valuation, approve changes to the valuation criteria and approve any exceptions. 	<p>No deviations noted.</p>

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 1B: The Bond Valuation Advisory Committee (BVAC) and the Bond Valuation Review Committee (BVRC) are oversight bodies that have been constituted by NSE Data. While the BVRC governs operational guidelines for valuations, examines modifications to the valuation criteria & exceptions, and approves necessary authorization, the BVAC provides guidance on macro challenges pertinent to fixed income valuations.</p> <p>The Internal Audit function furthermore executes an independent audit of NSE Data's business functions on a quarterly basis to make sure that established processes are followed.</p>	<p>For a sample security verified the methodology document, minutes of meeting, and approval notes, and noted the following:</p> <ul style="list-style-type: none"> • The approved methodology has been in use and the change was uploaded in NSE Data's system • Designated BVRC personnel reviewed the valuation methodology <p>For sample change in security valuation methodology, verified that the relevant notifications were communicated via email to internal and external stakeholders. Further, noted that the change in methodology is disclosed to the public.</p> <p>3) For a sample security, verified the methodology document, BVRC minutes of meeting, and the approval notes; Noted that the review and related approval for change in methodology was done by BVRC's authorized personnel.</p> <p>4) Inspected the "Business Continuity Plan document" and verified that the contingency measures for valuation computation and dissemination of underlying data were documented. Additionally, the internal communication around business continuity drills were examined, and noted that the same approach was followed.</p> <p>5) For a sampled quarter, inspected the internal audit report and noted the compliance checks for established processes.</p>	<p>No deviations noted.</p>

Principle 2: Oversight of Third Parties

IOSCO Principles, NSE Data & Analytics Responses, Test Performed by DELOITTE, and Results of Tests		
<p>IOSCO Principle #2: Where activities relating to the Benchmark determination process are undertaken by third parties - for example collection of inputs, publication or where a third-party acts as Calculation Agent - the Administrator should maintain appropriate oversight of such third parties. The Administrator (and its oversight function) should consider adopting policies and procedures that:</p> <ol style="list-style-type: none"> a. Clearly define and substantiate through appropriate written arrangements the roles and obligations of third parties who participate in the Benchmark determination process, as well as the standards the Administrator expects these third parties to comply with; b. Monitor third parties' compliance with the standards set out by the Administrator; c. Make Available to Stakeholders and any relevant Regulatory Authority the identity and roles of third parties who participate in the Benchmark determination process; and d. Take reasonable steps, including contingency plans, to avoid undue operational risk related to the participation of third parties in the Benchmark determination process. <p>This Principle does not apply in relation to a third-party from whom an Administrator sources data if that third-party is a Regulated Market or Exchange.</p>		
NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 2: At NSE Data, all valuation processes are independently calculated and maintained by full-time permanent personnel of NSE Data. Data on bond trades and primary issuances are sourced from NSE, which in itself is a licensed and & regulated stock exchange in India, and other regulated entities which are considered as third parties. In addition, NSE Data may receive quotes from market participants, which may be utilized as one of many inputs for certain valuations. NSE Data's designated personnel approve these agreements.</p> <p>NSE Data confirmed that it does not outsource any of its valuation operation-related activities.</p>	<ol style="list-style-type: none"> 1) Examined the Standard Operating Procedure (SOP) and verified the details related to the type of data, collected and used for valuation, were documented within the same. 2) For a sample security, investigated the maker checker process where the quotes received from market participants was augmented to the source data to address the deficiency. 	<p>No deviations noted.</p>

Principle 3: Conflicts of Interest for Administrators

IOSCO Principles, NSE Data & Analytics Responses, Test Performed by DELOITTE, and Results of Tests

IOSCO Principle #3:

To protect the integrity and independence of Benchmark determinations, Administrators should document, implement and enforce policies and procedures for the identification, disclosure, management, mitigation or avoidance of conflicts of interest.

Administrators should review and update their policies and procedures as appropriate.

Administrators should disclose any material conflicts of interest to their users and any relevant Regulatory Authority, if any.

The framework should be appropriately tailored to the level of existing or potential conflicts of interest identified and the risks that the Benchmark poses and should seek to ensure:

- a. Existing or potential conflicts of interest do not inappropriately influence Benchmark determinations;
- b. Personal interests and connections or business connections do not compromise the Administrator's performance of its functions;
- c. Segregation of reporting lines within the Administrator, where appropriate, to clearly define responsibilities and prevent unnecessary or undisclosed conflicts of interest or the perception of such conflicts;
- d. Adequate supervision and sign-off by authorized or qualified employees prior to releasing Benchmark determinations;
- e. The confidentiality of data, information and other inputs submitted to, received by or produced by the Administrator, subject to the disclosure obligations of the Administrator;
- f. Effective procedures to control the exchange of information between staff engaged in activities involving a risk of conflicts of interest or between staff and third parties, where that information may reasonably affect any Benchmark determinations; and
- g. Adequate remuneration policies that ensure all staff who participate in the Benchmark determination are not directly or indirectly rewarded or incentivized by the levels of the Benchmark.

An Administrator's conflict of interest framework should seek to mitigate existing or potential conflicts created by its ownership structure or control, or due to other interests the Administrator's staff or wider group may have in relation to Benchmark determinations. To this end, the framework should:

- a. Include measures to avoid, mitigate or disclose conflicts of interest that may exist between its Benchmark determination business (including all staff who perform or otherwise participate in Benchmark production responsibilities), and any other business of the Administrator or any of its affiliates; and
- b. Provide that an Administrator discloses conflicts of interest arising from the ownership structure or the control of the Administrator to its Stakeholders and any relevant Regulatory Authority in a timely manner.

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 3: NSE Data (a subsidiary of NSE) is a distinct legal company engaged in the independent calculation of valuations for various Indian debt instruments. NSE Data steers clear of operations with the other NSE group entities. NSE Data has written agreements for each business transaction it conducts with NSE and its related entities.</p> <p>NSE Data conducts valuations utilizing a pre-defined waterfall process and appropriate documentation to ensure the valuation's integrity and independence. Additionally, all valuations are carried out based on an objective pre-defined selection criteria and a maker-checker process.</p> <p>NSE Data, for the purpose of identification, disclosure, management, mitigation, and avoidance of potential conflicts of interest and for the denomination of the potential risks they pose, have established a defined "Code of Ethics" policy.</p> <p>Business functions like valuation operations and business development teams are clearly demarcated from one another. To avoid any conflicts of interest, each team operates independently. To ensure that there are no direct or indirect influences in the valuation process, the roles and accountabilities of the various business functions of NSE Data have been segregated.</p> <p>The team at NSE Data comprises of highly skilled and experienced individuals as they possess a thorough understanding of the financial markets. Prior to the valuations' release, multiple levels of supervision and approvals are put in place to guarantee its integrity and quality of process. In addition, declarations of code of ethics policy are required from each employee, taking part in the benchmark determination process.</p> <p>Compensation of staff personnel is not dependent, either directly or indirectly, with the level of valuations.</p> <p>NSE Data conducts periodic initiatives at a group level to increase employee awareness on process related to Information Security, Business Continuity and Code of Ethics.</p>	<ul style="list-style-type: none"> • Obtained and inspected the Code of Ethics policy posted on the NSE portal and observed that a structural framework was present for identifying, disclosing, managing, mitigating, and avoiding any conflicts of interest as well as addressing the risks connected to them. • For sample workers, responsible for working on valuations, we verified on NSE's portal that the employee has provided a declaration on code of ethics. • In addition, the Key Result Areas (KRAs) were examined, and noted that the employees had been trained to participate in the valuation process. • From a management representation from the HR department, we verified the incentive program and noted that the employees participating in the valuation process, are not incentivized directly or indirectly via performance or number of valuations computed and its mechanism. • Inspected the Induction training deck for new service personnel and noted the covered topics covering Compliance trainings such as Information Security, Business Continuity Awareness, Code of Ethics Declarations. • Inspected the Conflicts of Interest Register, maintained by NSE Data which contains the potential situations of conflicts. This is approved by a designated authority. 	<p>No deviations noted.</p>

Principle 4: Control Framework for Administrators

IOSCO Principles, NSE Data & Analytics Responses, Test Performed by DELOITTE, and Results of Tests

IOSCO Principle #4:

An Administrator should implement an appropriate control framework for the process of determining and distributing the Benchmark. The control framework should be appropriately tailored to the materiality of the potential or existing conflicts of interest identified, the extent of the use of discretion in the Benchmark setting process and to the nature of Benchmark inputs and outputs. The control framework should be documented and available to relevant Regulatory Authorities, if any. A summary of its main features should be Published or Made Available to Stakeholders.

This control framework should be reviewed periodically and updated as appropriate. The framework should address the following areas:

- a. Conflicts of interest in line with Principle 3 on conflicts of interests;
- b. Integrity and quality of Benchmark determination:
 - i. Arrangements to ensure that the quality and integrity of Benchmarks is maintained, in line with principles 6 to 15 on the quality of the Benchmark and Methodology;
 - ii. Arrangements to promote the integrity of Benchmark inputs, including adequate due diligence on input sources;
 - iii. Arrangements to ensure accountability and complaints mechanisms are effective, in line with principles 16 to 19; and
 - iv. Providing robust infrastructure, policies and procedures for the management of risk, including operational risk.
- c. Whistleblowing mechanism:

Administrators should establish an effective whistleblowing mechanism to facilitate early awareness of any potential misconduct or irregularities that may arise. This mechanism should allow for external reporting of such cases where appropriate.
- d. Expertise:
 - i. Ensuring Benchmark determinations are made by personnel who possess the relevant levels of expertise, with a process for periodic review of their competence; and
 - ii. Staff training, including ethics and conflicts of interest training, and continuity and succession planning for personnel.

Where a Benchmark is based on Submissions: Administrators should promote the integrity of inputs by:

- a. Ensuring as far as possible that the Submitters comprise an appropriately representative group of participants taking into consideration the underlying Interest measured by the Benchmark;
- b. Employing a system of appropriate measures so that, to the extent possible, Submitters comply with the Submission guidelines, as defined in the Submitter Code of Conduct and the Administrators' applicable quality and integrity standards for Submission;
- c. Specifying how frequently Submissions should be made and specifying that inputs or Submissions should be made for every Benchmark determination; and
- d. Establishing and employing measures to effectively monitor and scrutinize inputs or Submissions. This should include pre-compilation or pre-publication monitoring to identify and avoid errors in inputs or Submissions, as well as ex-post analysis of trends and outliers.

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 4A: Please refer to Response - 3 section above - NSE Data has measures in place to safeguard the integrity of daily valuations and disseminations and to manage conflicts of interest.</p> <p>For response to item (a), please refer NSE Data Response for Principle 3.</p> <p>For response to item (b) (i) and (b) (ii), please refer NSE Data Response present for Principle 6 to 15.</p> <p>For response to item (b) (iii), please refer NSE Data Response present for Principle 16 to 19.</p> <p>Response 4B: For response to item (b) (iv), NSE Data maintains a "Cyber Security and Cyber Resilience policy" that includes information on data security, data classification, prevention of data leakages, etc. in order to manage operational risk associated with the valuation process. The information used for valuation is maintained in secure folders that are solely accessed by authorized personnel. NSE Data further maintains a data register, which is examined and approved by BVRC on an annual basis.</p> <p>Response 4C: For item (c), NSE data maintains "Whistle blowing policy".</p> <p>Response - 4D: For item (d) (i), NSE Data has skilled and competent employees with in-depth understanding of the financial markets. Prior to the valuations' release, many levels of supervision and approval are put in place to ensure integrity and quality of determination.</p> <p>Response - 4E: For item (d) (ii), Staff personnel at NSE Data who are in charge of the valuation process receive periodic product-based training for skill development. Additionally, organizational planning for personnel continuity and succession is done on a regular basis.</p> <p>Response - 4F: NSE Data does not receive valuations from submitters. It receives quotes from market participants, which are utilized as one of many inputs for certain valuations. Any data obtained from regulatory/government entities, exchanges, market participants, are not categorized as submissions. NSE Data performs quality checks on such quotes using a maker checker process.</p>	<p>For response to principle (a), please refer to the Tests performed for Principle 3.</p> <p>For response to principle (b) (i), please refer to the Tests performed for Principle 6 to 15.</p> <p>For response to principle (b) (iii), please refer to the Tests performed for Principle 16 to 19.</p> <p>For item (b) (iv), inspected the "Cyber Security and Cyber Resilience policy" and noted the details on data confidentiality, classification of data, prevention of data leaking, and other pertinent measures.</p> <p>For principle (c) inspected the "Whistle blowing policy" noted the following:</p> <ul style="list-style-type: none"> • Detailed procedure for whistle blowing procedures and mechanisms • External reporting mechanism can be found on the NSE Data website (https://www.nseindia.com/regulations/exchange-disclosures-details-of-vigil-mechanism) • External reporting is also available through email at fivaluations@nse.co.in <p>For a sample staff personnel responsible for the valuation process, inspected the KRAs on the NSE Data's internal portal, and noted the initial, mid-year and yearly performance reviews were conducted and signed off by respective reporting managers.</p> <p>For response to principle (d), noted the in-place succession plans for key personnel involved in the valuation process by speaking with the Managing Director, NSE Data and Analytics.</p>	<p>No deviations noted.</p>

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
	<p>Inspected the employee training plan and noted the following trainings content:</p> <ul style="list-style-type: none"> • Periodic trainings on topics covering benchmark determination process, statistics, econometrics & simulation, advanced excel and product training • Information Security • Business Continuity Awareness • Code of Ethics <p>Inspected the sample ticket raised to access the stored data linked to valuations, inspected the access to the folder and verified that it could only be accessible to authorized personnel working on the valuations process.</p> <p>Obtained a confirmation from NSE Data that it does not receive valuations from submitters.</p> <p>Further, please refer Tests Performed for Principle 2 and Principle 6.</p>	<p>No deviations noted.</p>

Principle 5: Internal Oversight

IOSCO Principles, NSE Data & Analytics Responses, Test Performed by DELOITTE, and Results of Tests

IOSCO Principle #5:

Administrators should establish an oversight function to review and provide challenge on all aspects of the Benchmark determination process. This should include consideration of the features and intended, expected or known usage of the Benchmark and the materiality of existing or potential conflicts of interest identified.

The oversight function should be carried out either by a separate committee, or other appropriate governance arrangements. The oversight function and its composition should be appropriate to provide effective scrutiny of the Administrator. Such oversight function could consider groups of Benchmarks by type or asset class, provided that it otherwise complies with this Principle.

An Administrator should develop and maintain robust procedures regarding its oversight function, which should be documented and available to relevant Regulatory Authorities, if any. The main features of the procedures should be Made Available to Stakeholders. These procedures should include:

- i. The terms of reference of the oversight function;
- ii. Criteria to select members of the oversight function;
- iii. The summary details of membership of any committee or arrangement charged with the oversight function, along with any declarations of conflicts of interest and processes for election, nomination or removal and replacement of committee members.

The responsibilities of the oversight function include:

a. Oversight of the Benchmark design:

- i) Periodic review of the definition of the Benchmark and its Methodology;
- ii) Taking measures to remain informed about issues and risks to the Benchmark, as well as commissioning external reviews of the Benchmark (as appropriate);
- iii) Overseeing any changes to the Benchmark Methodology, including assessing whether the Methodology continues to appropriately measure the underlying Interest, reviewing proposed and implemented changes to the Methodology, and authorizing or requesting the Administrator to undertake a consultation with Stakeholders were known or its Subscribers on such changes as per Principle 12; and
- iv) Reviewing and approving procedures for termination of the Benchmark, including guidelines that set out how the Administrator should consult with Stakeholders about such cessation.

b. Oversight of the integrity of Benchmark determination and control framework:

- i) Overseeing the management and operation of the Benchmark, including activities related to Benchmark determination undertaken by a third-party;
- ii) Considering the results of internal and external audits, and following up on the implementation of remedial actions highlighted in the results of these audits; and
- iii) Overseeing any exercise of Expert Judgment by the Administrator and ensuring Published Methodologies have been followed.

Where conflicts of interests may arise in the Administrator due to its ownership structures or controlling interests, or due to other activities conducted by any entity owning or controlling the Administrator or by the Administrator or any of its affiliates: the Administrator should establish an independent oversight function which includes a balanced representation of a range of Stakeholders where known, Subscribers and Submitters, which is chosen to counterbalance the relevant conflict of interest.

Where a Benchmark is based on Submissions: the oversight function should provide suitable oversight and challenge of the Submissions by:

- a. Overseeing and challenging the scrutiny and monitoring of inputs or Submissions by the Administrator. This could include regular discussions of inputs or Submission patterns, defining parameters against which inputs or Submissions can be analyzed, or querying the role of the Administrator in challenging or sampling unusual inputs or Submissions;

- b. Overseeing the Code of Conduct for Submitters;
- c. Establishing effective arrangements to address breaches of the Code of Conduct for Submitters; and
- d. Establishing measures to detect potential anomalous or suspicious Submissions and in case of suspicious activities, to report them, as well as any misconduct by Submitters of which it becomes aware to the relevant Regulatory Authorities, if any.

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 5: NSE Data has established two oversight committees, the Bond Valuation Advisory Committee (BVAC) and the Bond Valuation Review Committee (BVRC). The BVAC provides guidance on macro issues pertaining to fixed income valuations and is not involved in the routine operations of the valuation process, whilst the BVRC governs operational guidelines for valuations, reviews modifications to the valuation criteria & exceptions, and approves pertinent authorization. The BVRC is also responsible for periodically reviewing existing methodology documents for valuations.</p> <p>The subject matter specialists from the relevant industries are present on each of these committees; Members of the individual committees are independent of one another (with the exception of the exchange representative(s) who liaise between the BVAC and the BVRC) and do not represent more than one committee. Representatives from the financial markets, such as asset management firms and insurance companies, are included on the committees. The board defines and approves the terms of reference of each committee. The names of the committee members are publicly disclosed on the website in order to ensure transparency.</p> <p>NSE Data does not receive valuations from submitters. It may receive quotes from market participants, which may be utilized as one of the inputs for certain valuations. Any data obtained from regulatory/government entities, exchanges, market participants, are not categorized as submissions. NSE Data performs quality checks on such quotes using a maker checker process.</p>	<p>Verified that an oversight function has been established to review all facets of the benchmark determination process via NSE Data's governance structure. Additionally, confirmed the role and responsibilities of the following committees, which are a component of the oversight function:</p> <ul style="list-style-type: none"> • BVAC - provides guidance on macro issues pertaining to fixed income valuations • BVRC - oversees operational guidelines for bond valuation, approve changes to the valuation criteria and approve any exceptions. <p>Obtained a confirmation from NSE Data that the Chairman/Board authorized the constitution of each committee. Inspected NSE Data's website to verify that the details and information of the committee members were transparently available.</p> <p>For a sample security, investigated the methodology document, minutes of meetings, SOPs, and approval notes and noted the following:</p> <ul style="list-style-type: none"> • The valuation of the security was performed in accordance with the established valuation methodology and SOPs • Data inputs were reconciled to the source data as part of a maker-checker activity to 	<p>No deviations noted.</p>

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
	<p>review the data being used for valuation</p> <ul style="list-style-type: none"> Valuation methodology review (for a sample month) was performed by the BVRC <p>Obtained a confirmation from NSE Data that it does not receive valuations from submitters.</p> <p>Further, please refer Tests Performed for Principle 2 and Principle 6.</p>	

Principle 6: Benchmark Design

IOSCO Principles, NSE Data & Analytics Responses, Test Performed by DELOITTE, and Results of Tests		
<p>IOSCO Principle #6: The design of the Benchmark should seek to achieve, and result in an accurate and reliable representation of the economic realities of the Interest it seeks to measure and eliminate factors that might result in a distortion of the price, rate, index or value of the Benchmark. Benchmark design should take into account the following generic non-exclusive features, and other factors should be considered, as appropriate to the particular Interest:</p> <ol style="list-style-type: none"> a. Adequacy of the sample used to represent the Interest; b. Size and liquidity of the relevant market (for example whether there is sufficient trading to provide observable, transparent pricing); c. Relative size of the underlying market in relation to the volume of trading in the market that references the Benchmark; d. The distribution of trading among Market Participants (market concentration); e. Market dynamics (e.g., to ensure that the Benchmark reflects changes to the assets underpinning a Benchmark) 		
NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 6: NSE Data's fixed income valuation process is based on both an internal evaluation of the valuation inputs and market feedback obtained through communication with market participants. In accordance to the pre-established valuation approach, primary analysts independently perform valuations, that secondary analysts subsequently assess. Additionally, a maker-checker process is available for data inputs to verify the adequacy of valuation inputs and conduct an independent analysis of the same. The valuation methodologies are documented, reviewed and approved.</p>	<p>For a sample security, inspected the methodology document, minutes of meetings, SOPs, and approval notes and noted the following:</p> <ul style="list-style-type: none"> • The valuation of the security was performed in accordance with the pre-defined valuation methodology and SOPs • Data inputs were reconciled to the source data as part of a maker-checker activity to review the data being used for valuation. <p>The documents included key information as:</p> <ul style="list-style-type: none"> • Market sample taken into account • Computational methodology (including criteria and size and liquidity of target market) • Data sources used • Instructions for dissemination • Process followed for governance • Exceptions handling procedure • The frequency of internal evaluations • The instances under which NSE Data would approach stakeholders <p>Inspected that the methodology was reviewed by BVRC's authorized personnel.</p>	<p>No deviations noted.</p>

Principle 7: Data Sufficiency

IOSCO Principles, NSE Data & Analytics Responses, Test Performed by DELOITTE, and Results of Tests

IOSCO Principle #7:

The data used to construct a Benchmark determination should be sufficient to accurately and reliably represent the Interest measured by the Benchmark and should:

- a. Be based on prices, rates, indices or values that have been formed by the competitive forces of supply and demand in order to provide confidence that the price discovery system is reliable; and
- b. Be anchored by observable transactions entered into at arm's length between buyers and sellers in the market for the Interest the Benchmark measures in order for it to function as a credible indicator of prices, rates, indices or values.

This Principle requires that a Benchmark be based upon (i.e., anchored in) an active market having observable Bona Fide, Arms-Length Transactions. This does not mean that every individual Benchmark determination must be constructed solely of transaction data. Provided that an active market exists, conditions in the market on any given day might require the Administrator to rely on different forms of data tied to observable market data as an adjunct or supplement to transactions. Depending upon the Administrator's Methodology, this could result in an individual Benchmark determination being based predominantly, or exclusively, on bids and offers or extrapolations from prior transactions. This is further clarified in Principle 8.

Provided that subparagraphs (a) and (b) above are met, Principle 7 does not preclude Benchmark Administrators from using executable bids or offers as a means to construct Benchmarks where anchored in an observable market consisting of Bona Fide, Arms-Length transactions.

This Principle also recognizes that various indices may be designed to measure or reflect the performance of a rule-based investment strategy, the volatility or behavior of an index or market or other aspects of an active market. Principle 7 does not preclude the use of non-transactional data for such indices that are not designed to represent transactions and where the nature of the index is such that non-transactional data is used to reflect what the index is designed to measure. For example, certain volatility indices, which are designed to measure the expected volatility of an index of securities transactions, rely on non-transactional data, but the data is derived from and thus "anchored" in an actual functioning securities or options market.

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 7: Data on bond trades and primary issuances are sourced from NSE, a licensed and regulated stock exchange in India, and other regulated third-party aggregator(s), via written arrangements. Additionally, NSE Data obtains primary and secondary market data (along with market quotes) from market participants who are not engaged in the valuation process. The information obtained is based on variables inside the active market, including current prices, rates, predictions, etc. NSE Data conducts an independent analysis of each data input for the valuation process, taking into consideration elements like integrity and materiality. The valuation methodology also specifies the data usage for the valuation process (including preference to observable trades). The valuation methodology document is available on the NSE Data website in a transparent manner.</p>	<p>For a sample security, inspected the methodology document and SOPs and noted:</p> <ul style="list-style-type: none"> • The valuation methodology and SOPs highlighted the type of data to be sourced and outlined how the data would be used for the valuation process • Data inputs were reconciled and cross-checked against the source data as part of a maker-checker process for data validation <p>Inspected NSE Data's website and noted that the valuation methodology document is publicly available.</p>	<p>No deviations noted.</p>

Principle 8: Hierarchy of Data Inputs

IOSCO Principles, NSE Data & Analytics Responses, Test Performed by DELOITTE, and Results of Tests		
<p>IOSCO Principle #8: An Administrator should establish and Publish or Make Available clear guidelines regarding the hierarchy of data inputs and exercise of Expert Judgment used for the determination of Benchmarks. In general, the hierarchy of data inputs should include:</p> <ol style="list-style-type: none"> a. Where a Benchmark is dependent upon Submissions, the Submitters' own concluded arms-length transactions in the underlying interest or related markets; b. Reported or observed concluded Arm's-length Transactions in the underlying interest; c. Reported or observed concluded Arm's-length Transactions in related markets; d. Firm (executable) bids and offers; and e. Other market information or Expert Judgments <p>Provided that the Data Sufficiency Principle is met (i.e., an active market exists), this Principle is not intended to restrict an Administrator's flexibility to use inputs consistent with the Administrator's approach to ensuring the quality, integrity, continuity and reliability of its Benchmark determinations, as set out in the Administrator's Methodology. The Administrator should retain flexibility to use the inputs it believes are appropriate under its Methodology to ensure the quality and integrity of its Benchmark. For example, certain Administrators may decide to rely upon Expert Judgment in an active albeit low liquidity market, when transactions may not be consistently available each day. IOSCO also recognizes that there might be circumstances (e.g., a low liquidity market) when a confirmed bid or offer might carry more meaning than an outlier transaction. Under these circumstances, non-transactional data such as bids and offers and extrapolations from prior transactions might predominate in a given Benchmark determination.</p>		
NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 8A: Data on bond trades and primary issuances are sourced from NSE, a licensed and regulated stock exchange in India, and other regulated third-party aggregator(s), via written arrangements. Additionally, NSE Data obtains primary and secondary market data (along with market quotes) from market participants who are not engaged in the valuation process. The information obtained is based on variables inside the active market, including current prices, rates, predictions, etc. NSE Data conducts an independent analysis of each data input for the valuation process, taking into consideration elements like integrity and materiality. The valuation methodology also specifies the data usage for the valuation process (including preference to observable trades). The valuation methodology document is available on the NSE Data website in a transparent manner.</p> <p>Response - 8B: NSE Data does not receive valuations from submitters. It may receive quotes from market participants, which may be utilized</p>	<p>Inspected NSE Data's website and noted that the valuation methodology document is publicly available.</p> <p>NSE, as an entity, has a broad agreement with third-party aggregator (s) (Regulated Entities/Exchanges) from whom it obtains its data. Additionally, the data used is openly accessible and verifiable. NSE Data also incorporates data from NSE, a regulated exchange, as well as two-way quotes from the market participants. The data obtained from market participants is verified in the maker-checker process.</p> <p>Obtained a confirmation from NSE Data that it does not receive valuations from submitters.</p>	<p>No deviations noted.</p>

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
as one of the inputs for certain valuations. Any data obtained from regulatory/government entities, exchanges, market participants, are not categorized as submissions. NSE Data performs quality checks on such quotes using a maker checker process.	Further, please refer Tests Performed for Principle 2 and Principle 6.	

Principle 9: Transparency of Benchmark Determination

IOSCO Principles, NSE Data & Analytics Responses, Test Performed by DELOITTE, and Results of Tests		
<p>IOSCO Principle #9: The Administrator should describe and publish with each Benchmark determination, to the extent reasonable without delaying an Administrator publication deadline:</p> <ol style="list-style-type: none"> a. A concise explanation, sufficient to facilitate a Stakeholder’s or Market Authority’s ability to understand how the determination was developed, including, at a minimum, the size and liquidity of the market being assessed (meaning the number and volume of transactions submitted), the range and average volume and range and average of price, and indicative percentages of each type of market data that have been considered in a Benchmark determination; terms referring to the pricing Methodology should be included (i.e., transaction-based, spread-based or interpolated/extrapolated); b. A concise explanation of the extent to which and the basis upon which Expert Judgment if any, was used in establishing a Benchmark determination 		
NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 9: The benchmark determination procedure (described in its valuation methodology documents) is publicly published on the NSE Data website. The materials describe the valuation process methodology, the waterfall method, governance and exceptions processes, etc. The materials provide details with regards to the waterfall approach, procedures for governance and exceptions, etc. The materials elaborate upon the type of data utilized and the data usage for the valuation process (including preference to observable trades).</p> <p>Changes to valuation methodology (and, when appropriate, the justification) are communicated to market participants via email before the effective date of proposed changes. Clients can access the valuations based on their subscriptions. The justification for each valuation, including the size and liquidity of the market, the data utilized for valuations, computation, etc., is documented and is available upon request to relevant stakeholders or regulatory bodies.</p>	<p>For a sample security, inspected the methodology paper and SOPs and noted the following:</p> <ul style="list-style-type: none"> • The methodology paper and SOPs detailed the procedure for valuations, governance, and exceptions, etc. • The valuation methodology and SOPs highlighted the type of data to be sourced and outlined how the data would be used for the valuation process • The methodology paper and SOPs contained the justification for adopting a specific methodology and how the valuation was determined <p>The documents included key information such as:</p> <ul style="list-style-type: none"> • Market sample taken into account • Computational methodology (including criteria and size and liquidity of target market) • Data sources used • Instructions for dissemination • Process followed for governance • Exceptions handling procedure • The frequency of internal evaluations • The instances under which NSE Data would approach stakeholders. 	<p>No deviations noted.</p>

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
	<p>For the sampled security, inspected the NSE Data website and noted that the valuation methodology was publicly available.</p> <p>Further, for the sampled security and the sampled change, inspected e-mail communication with market participants and noted that the change in the methodology document was communicated prior to its effective date.</p>	No deviations noted.

Principle 10: Periodic Review

IOSCO Principles, NSE Data Self-Assessment, Test Performed by DELOITTE, and Results of Tests		
<p>IOSCO Principle #10: The Administrator should periodically review the conditions in the underlying Interest that the Benchmark measures to determine whether the Interest has undergone structural changes that might require changes to the design of the Methodology. The Administrator also should periodically review whether the Interest has diminished or is non-functioning such that it can no longer function as the basis for a credible Benchmark.</p> <p>The Administrator should Publish or Make Available a summary of such reviews where material revisions have been made to a Benchmark, including the rationale for the revisions.</p>		
NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 10: NSE Data established the BVRC to oversee guidelines for valuations, examine modifications to the valuation criteria & exceptions, and provide necessary approvals.</p> <p>Market participants are notified via email of changes to the valuation methodology, if any. Approvals for revisions to valuation methodology are recorded, and the revised methodology is made accessible to market participants via the website.</p> <p>The valuation methodology review was conducted during the year, and no revisions were warranted.</p>	<p>For a sample security and a sample change, inspected the methodology document, BVRC minutes of meeting, and approval notes. Noted that the methodology was examined and approved by the BVRC's authorized personnel on a semi-annual basis.</p> <p>Further, for the sampled security and the sampled change, inspected e-mail communication with market participants and noted that the change in the methodology document was communicated prior to its effective date.</p> <p>For a sample security, inspected the NSE Data website and noted that the updated valuation methodology was publicly available.</p>	<p>No deviations noted.</p>

Principle 11: Content of the Methodology

IOSCO Principles, NSE Data Self-Assessment, Test Performed by DELOITTE, and Results of Tests

IOSCO Principle #11:

The Administrator should document and Publish or Make Available the Methodology used to make Benchmark determinations. The Administrator should provide the rationale for adopting a particular Methodology. The Published Methodology should provide sufficient detail to allow Stakeholders to understand how the Benchmark is derived and to assess its representativeness, its relevance to particular Stakeholders, and its appropriateness as a reference for financial instruments.

At a minimum, the Methodology should contain:

- a. Definitions of key terms;
- b. All criteria and procedures used to develop the Benchmark, including input selection, the mix of inputs used to derive the Benchmark, the guidelines that control the exercise of Expert Judgment by the Administrator, priority given to certain data types, minimum data needed to determine a Benchmark, and any models or extrapolation methods;
- c. Procedures and practices designed to promote consistency in the exercise of Expert Judgment between Benchmark determinations;
- d. The procedures which govern Benchmark determination in periods of market stress or disruption, or periods where data sources may be absent (e.g., theoretical estimation models);
- e. The procedures for dealing with error reports, including when a revision of a Benchmark would be applicable;
- f. Information regarding the frequency for internal reviews and approvals of the Methodology. Where applicable, the Published Methodologies should also include information regarding the procedures and frequency for external review of the Methodology;
- g. The circumstances and procedures under which the Administrator will consult with Stakeholders, as appropriate; and
- h. The identification of potential limitations of a Benchmark, including its operation in illiquid or fragmented markets and the possible concentration of inputs

Where a Benchmark is based on Submissions, the additional Principle also applies:

The Administrator should clearly establish criteria for including and excluding Submitters. The criteria should consider any issues arising from the location of the Submitter, if in a different jurisdiction to the Administrator. These criteria should be available to any relevant Regulatory Authorities, if any, and Published or Made Available to Stakeholders. Any provisions related to changes in composition, including notice periods should be made clear.

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 11: The benchmark determination process (documented within its valuation methodology documents) is transparently published on the website by NSE Data. The document sets forth the valuation methodology process in detail, the waterfall method, governance processes and exemptions, etc. The document also provides information about the data used for valuations.</p> <p>NSE Data does not receive valuations from submitters. It may receive quotes from market participants, which may be utilized as one of the inputs for certain valuations. Any data obtained from regulatory/government entities, exchanges, market participants are not categorized as submissions. NSE Data performs quality checks on such quotes using a maker checker process.</p>	<p>For a sample security, investigated the methodology document, minutes of meetings, SOPs, and approval notes and noted the following:</p> <ul style="list-style-type: none"> • The methodology was reviewed and approved by the BVRC at NSE Data • The methodology document detailed the justification regarding the adoption of a specified methodology in relevance to the suitability of the underlying market's theme target and overall applicability to market stakeholders • The documents included key information such as: • Market sample taken into account • Computational methodology (including criteria and size and liquidity of target market) • Data sources utilized • Guidelines for dissemination • Process followed for governance • Exceptions handling procedure • The frequency of internal evaluations • The instances under which NSE Data would approach stakeholders <p>Furthermore, for a sample security, examined and obtained the evidence that the methodology document was publicly made available on the NSE Data website.</p> <p>Obtained a confirmation from NSE Data that they do not receive valuations from submitters. They may receive quotes from market participants which may be utilized as one of the inputs for certain valuations. NSE Data runs quality checks on such quotes by following a maker-checker process.</p> <p>Further, kindly refer to the Tests Performed for Principle 2 and Principle 6.</p>	<p>No deviations noted.</p>

Principle 12: Changes to the Methodology

IOSCO Principles, NSE Data Self-Assessment, Test Performed by DELOITTE, and Results of Tests

IOSCO Principle #12:

An Administrator should Publish or Make Available the rationale of any proposed material change in its Methodology, and procedures for making such changes. These procedures should clearly define what constitutes a material change, and the method and timing for consulting or notifying Subscribers (and other Stakeholders where appropriate, taking into account the breadth and depth of the Benchmark's use) of changes.

Those procedures should be consistent with the overriding objective that an Administrator must ensure the continued integrity of its Benchmark determinations. When changes are proposed, the Administrator should specify exactly what these changes entail and when they are intended to apply.

The Administrator should specify how changes to the Methodology will be scrutinized, by the oversight function.

The Administrator should develop Stakeholder consultation procedures in relation to changes to the Methodology that are deemed material by the oversight function, and that are appropriate and proportionate to the breadth and depth of the Benchmark's use and the nature of the Stakeholders. Procedures should:

- a. Provide advance notice and a clear timeframe that gives Stakeholders sufficient opportunity to analyze and comment on the impact of such proposed material changes, having regard to the Administrator's assessment of the overall circumstances; and
- b. Provide for Stakeholders' summary comments, and the Administrator's summary response to those comments, to be made accessible to all Stakeholders after any given consultation period, except where the commenter has requested confidentiality

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 12: The valuation methodology is reviewed, on an ongoing basis, in accordance with the current market trends and/or any regulatory changes. Any proposed alterations within the valuation technique is examined and deliberated upon before making a final decision.</p> <p>The BVRC has been established to regulate operational procedures, examine modifications (if any) to the valuation criteria and exclusions, and provide necessary approvals. Prior to the proposed modifications taking effect, market participants and relevant stakeholders are notified by email of changes to the valuation methodology (along with the justification, when necessary). The revised valuation technique is made available to the market participants through the website, and approvals for modifications to the methodology are documented.</p> <p>During the year, valuation methodologies were reviewed, and no adjustments were required.</p>	<p>NSE Data regularly examines the valuation methodology in order to keep it in line with the dynamics of the current market and/or regulatory changes.</p> <p>For a sample change in methodology, inspected the notifications to the relevant internal and external stakeholder, via email communication. Noted that the changes are communicated to the public.</p> <p>For sample securities, investigated the approval note and noted that the methodology had not been modified in the previous year.</p> <p>For a sample security, investigated the methodology document, minutes of meetings, SOPs, and approval notes and noted the following:</p> <ul style="list-style-type: none"> • The methodology was reviewed and approved by the BVRC at NSE Data • The documents included key information such as: <ul style="list-style-type: none"> a. Definition of key terms b. Market sample considered c. Computational methodology (including criteria and size and liquidity of target market) d. Data sources utilized e. Guidelines for dissemination f. Process followed for governance g. Exceptions handling procedure h. The frequency of internal evaluations i. The instances under which NSE Data would 	<p>No deviations noted.</p>

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
	approach stakeholders For a sample security, investigated and noted that the methodology document was available on the NSE Data website.	

Principle 13: Transition

IOSCO Principles, NSE Data Self-Assessment, Test Performed by DELOITTE, and Results of Tests

IOSCO Principle #13:

Administrators should have clear written policies and procedures, to address the need for possible cessation of a Benchmark, due to market structure change, product definition change, or any other condition which makes the Benchmark no longer representative of its intended Interest. These policies and procedures should be proportionate to the estimated breadth and depth of contracts and financial instruments that reference a Benchmark and the economic and financial stability impact that might result from the cessation of the Benchmark. The Administrator should take into account the views of Stakeholders and any relevant Regulatory and National Authorities in determining what policies and procedures are appropriate for a particular Benchmark.

These written policies and procedures should be Published or Made Available to all Stakeholders.

Administrators should encourage Subscribers and other Stakeholders who have financial instruments that reference a Benchmark to take steps to make sure that:

- a) Contracts or other financial instruments that reference a Benchmark, have robust fallback provisions in the event of material changes to, or cessation of, the referenced Benchmark; and
- b) Stakeholders are aware of the possibility that various factors, including external factors beyond the control of the Administrator, might necessitate material changes to a Benchmark.

Administrators' written policies and procedures to address the possibility of Benchmark cessation could include the following factors, if determined to be reasonable and appropriate by the Administrator:

- a) Criteria to guide the selection of a credible, alternative Benchmark such as, but not limited to, criteria that seek to match to the extent practicable the existing Benchmark's characteristics (e.g., credit quality, maturities and liquidity of the alternative market), differentials between Benchmarks, the extent to which an alternative Benchmark meets the asset/liability needs of Stakeholders, whether the revised Benchmark is investable, the availability of transparent transaction data, the impact on Stakeholders and impact of existing legislation;
- b) The practicality of maintaining parallel Benchmarks (e.g., where feasible, maintain the existing Benchmark for a defined period of time to permit existing contracts and financial instruments to mature and publish a new Benchmark) in order to accommodate an orderly transition to a new Benchmark;
- c) The procedures that the Administrator would follow in the event that a suitable alternative cannot be identified;
- d) In the case of a Benchmark or a tenor of a Benchmark that will be discontinued completely, the policy defining the period of time in which the Benchmark will continue to be produced in order to permit existing contracts to migrate to an alternative Benchmark if necessary; and
- e) The process by which the Administrator will engage Stakeholders and relevant Market and National Authorities, as appropriate, in the process for selecting and moving towards an alternative Benchmark, including the timeframe for any such action commensurate with the tenors of the financial instruments referencing the Benchmarks and the adequacy of notice that will be provided to Stakeholders.

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 13: Valuations cease only when financial instruments are redeemed by the respective issuers. This does not arise with reference to the valuations provided by NSE Data to its market participants as the bonds that reach their maturity date cease to exist following that date.</p>	<p>Obtained a confirmation from NSE Data indicating that values only cease when the corresponding issuers redeem the corresponding financial instruments; this does not apply to valuations supplied by NSE Data to its market participants since bonds that achieve their maturity date cease to exist after that date.</p>	<p>No deviations noted.</p>

Principle 14: Submitter Code of Conduct

IOSCO Principles, NSE Data Self-Assessment, Test Performed by DELOITTE, and Results of Tests

IOSCO Principle #14:

Where a Benchmark is based on Submissions, the following additional Principle also applies:

The Administrator should develop guidelines for Submitters ("Submitter Code of Conduct"), which should be available to any relevant Regulatory Authorities, if any and Published or Made Available to Stakeholders.

The Administrator should only use inputs or Submissions from entities which adhere to the Submitter Code of Conduct and the Administrator should appropriately monitor and record adherence from Submitters. The Administrator should require Submitters to confirm adherence to the Submitter Code of Conduct annually and whenever a change to the Submitter Code of Conduct has occurred.

The Administrator's oversight function should be responsible for the continuing review and oversight of the Submitter Code of Conduct.

The Submitter Code of Conduct should address:

- a. The selection of inputs;
- b. Who may submit data and information to the Administrator;
- c. Quality control procedures to verify the identity of a Submitter and any employee(s) of a Submitter who report(s) data or information and the authorization of such person(s) to report market data on behalf of a Submitter;
- d. Criteria applied to employees of a Submitter who are permitted to submit data or information to an Administrator on behalf of a Submitter;
- e. Policies to discourage the interim withdrawal of Submitters from surveys or Panels;
- f. Policies to encourage Submitters to submit all relevant data; and
- g. The Submitters' internal systems and controls, which should include:
 - i. Procedures for submitting inputs, including Methodologies to determine the type of eligible inputs, in line with the Administrator's Methodologies;
 - ii. Procedures to detect and evaluate suspicious inputs or transactions, including inter-group transactions, and to ensure the Bona Fide nature of such inputs, where appropriate;
 - iii. Policies guiding and detailing the use of Expert Judgment, including documentation requirements;
 - iv. Record keeping policies;
 - v. Pre-Submission validation of inputs, and procedures for multiple reviews by senior staff to check inputs;
 - vi. Training, including training with respect to any relevant regulation (covering Benchmark regulation or any market abuse regime);
 - vii. Suspicious Submission reporting;
 - viii. Roles and responsibilities of key personnel and accountability lines;
 - ix. Internal sign off procedures by management for submitting inputs;
 - x. Whistle blowing policies (in line with Principle 4); and
 - xi. Conflicts of interest procedures and policies, including prohibitions on the Submission of data from Front Office Functions unless the Administrator is satisfied that there are adequate internal oversight and verification procedures for Front Office Function Submissions of data to an Administrator (including safeguards and supervision to address possible conflicts of interests as per paragraphs (v) and (ix) above), the physical separation of employees and reporting lines where appropriate, the consideration of how to identify, disclose, manage, mitigate and avoid existing or potential incentives to manipulate or otherwise influence data inputs (whether or not in order to influence the Benchmark levels), including, without limitation, through appropriate remuneration policies and by effectively addressing conflicts of interest which may exist between the Submitter's Submission activities (including all staff who perform or otherwise participate in Benchmark Submission responsibilities), and any other business of the Submitter or of any of its affiliates or any of their respective clients or customers

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 14: The benchmark determination process (documented within its valuation methodology documents) is transparently published on the website by NSE Data. The document sets forth the valuation methodology, the waterfall method, governance processes and exemptions etc. The document also provides information about the data used for valuations.</p> <p>NSE Data does not receive valuations from submitters. It may receive quotes from market participants, which may be utilized as one of the inputs for certain valuations. Any data obtained from regulatory/government entities, exchanges, market participants, are not categorized as submissions. NSE Data performs quality checks on such quotes using a maker checker process.</p>	<p>Obtained a confirmation from NSE Data that it does not receive valuations from submitters.</p> <p>NSE Data may receive quotes from market participants which may be utilized as one of the inputs for certain valuations. NSE Data runs quality checks on such quotes by following a maker-checker process.</p> <p>Further, kindly refer to the Tests Performed for Principle 2 and Principle 6.</p>	<p>No deviations noted.</p>

Principle 15: Internal Controls over Data Collection

IOSCO Principles, NSE Data Self-Assessment, Test Performed by DELOITTE, and Results of Tests		
<p>IOSCO Principle #15:</p> <p>When an Administrator collects data from any external source the Administrator should ensure that there are appropriate internal controls over its data collection and transmission processes. These controls should address the process for selecting the source, collecting the data and protecting the integrity and confidentiality of the data. Where Administrators receive data from employees of the Front Office Function, the Administrator should seek corroborating data from other sources.</p>		
NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 15: Data on bond trades and primary issuances are sourced from NSE, a licensed and & regulated stock exchange in India, and other regulated third-party aggregator(s), via written arrangements. Additionally, NSE Data obtains primary and secondary market data (along with market quotes) from market participants who are not engaged in the valuation process.</p> <p>For the cross validation of data sourced from third-party data providers, NSE Data has various controls in place (wherever applicable). Furthermore, a maker-checker process exists for data received to validate the adequacy of valuation inputs and conduct an independent analysis of the same. Additionally, all information required for valuation is kept in secured folders that are only accessible to the authorized personnel.</p>	<p>NSE Data sources data from NSE, a regulated exchange, from the market participants. The data sourced from market participants is validated by the maker-checker process.</p> <p>For a sample security, investigated the methodology document, minutes of meetings, SOPs, and approval notes and noted the following:</p> <ul style="list-style-type: none"> • The methodology document and SOPs contained details related to the type of data received and how the data would be used for the valuations process • Data inputs were reconciled to the source data as part of a maker-checker activity to review the data being used for valuation <p>Investigated the access to a sample folder, used for storing data relevant to valuations, and noted that only those engaged in the valuation process were permitted access.</p>	<p>No deviations noted.</p>

Principle 16: Complaints Procedures

IOSCO Principles, NSE Data Self-Assessment, Test Performed by DELOITTE, and Results of Tests		
<p>IOSCO Principle #16: The Administrator should establish and Publish or Make Available a written complaints procedures policy, by which Stakeholders may submit complaints including concerning whether a specific Benchmark determination is representative of the underlying Interest it seeks to measure, applications of the Methodology in relation to a specific Benchmark determination(s) and other Administrator decisions in relation to a Benchmark determination. The complaints procedures policy should:</p> <ol style="list-style-type: none"> Permit complaints to be submitted through a user-friendly complaints process such as an electronic Submission process; Contain procedures for receiving and investigating a complaint made about the Administrator's Benchmark determination process on a timely and fair basis by personnel who are independent of any personnel who may be or may have been involved in the subject of the complaint, advising the complainant and other relevant parties of the outcome of its investigation within a reasonable period and retaining all records concerning complaints; Contain a process for escalating complaints, as appropriate, to the Administrator's governance body; and Require all documents relating to a complaint, including those submitted by the complainant as well as the Administrator's own record, to be retained for a minimum of five years, subject to applicable national legal or regulatory requirements <p>Disputes about a Benchmarking determination, which are not formal complaints, should be resolved by the Administrator by reference to its standard appropriate procedures. If a complaint results in a change in a Benchmark determination, that should be Published or Made Available to Subscribers and Published or Made Available to Stakeholders as soon as possible as set out in the Methodology.</p>		
NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 16: NSE Data have incorporated "Grievance Redressal policy - NSE Data & Analytics" to resolve complaints made by market participants regarding any valuations. In accordance with the policy, NSE Data has also deployed a designated email ID on the website that invites inquiries, complaints, remarks and feedback. The relevant business teams of NSE Data oversee the addressal of feedback and queries responses. Complaints of redressal entailing inaccurate computations, data usage, bribery, unethical conduct by staff personnel, insider trading etc., are escalated to the Managing Director of NSE Data.</p> <p>NSE Data is required to maintain complaint-related paperwork and records of approval notes for at least five years.</p> <p>As on September 30th, 2022, there have been no complaints in the last one year.</p>	<p>For item (a), inspected the NSE Data website and noted the official email address (fivaluations@nse.co.in) where inquiries, feedback, and complaints could be submitted.</p> <p>Inspected NSE Data's "Guidelines on Grievance Redressal" and noted the following:</p> <ul style="list-style-type: none"> For item (b), policy detailed procedure for receiving, inquiring, and advising the complainant and other pertinent parties of the complaint's outcome, along with the timelines of the resolution. The policy also contained details of the staff personnel at NSE Data who would be assigned complaints (primarily based on the categorization) for investigation and assessment 	<p>No deviations noted.</p>

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
	<ul style="list-style-type: none"> • For item (c), policy included a categorization of complaints based on severity, along with points of contacts in case of escalations. • For item (d), the policy detailed that documentation related to complaints and records of approval notes were to be maintained for a period of at least five years. <p>Obtained a confirmation from NSE Data that as on September 30th, 2022, there were no complaints in the last one year.</p>	No deviations noted.

Principle 17: Audits

IOSCO Principles, NSE Data Self-Assessment, Test Performed by DELOITTE, and Results of Tests		
<p>IOSCO Principle #17: The Administrator should appoint an independent internal or external auditor with appropriate experience and capability to periodically review and report on the Administrator’s adherence to its stated criteria and with the Principles. The frequency of audits should be proportionate to the size and complexity of the Administrator’s operations.</p> <p>Where appropriate to the level of existing or potential conflicts of interest identified by the Administrator (except for Benchmarks that are otherwise regulated or supervised by a National Authority other than a relevant Regulatory Authority), an Administrator should appoint an independent external auditor with appropriate experience and capability to periodically review and report on the Administrator’s adherence to its stated Methodology. The frequency of audits should be proportionate to the size and complexity of the Administrator’s Benchmark operations and the breadth and depth of Benchmark use by Stakeholders.</p>		
NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 17: The NSE Data board currently mandates that such an evaluation be conducted once every two years. In addition, NSE Data voluntarily performs recurrent internal audits to examine the methodology used to determine the benchmarks and the operational procedures related to valuation methodology adopted by its business functions. The audit reports are presented to the Board.</p> <p>As on September 30th, 2022, there were no conflicts of interest raised during the last one year.</p>	<p>For a sample month, inspected internal audit report and noted that it covered compliance checks related to the operational activities carried out by various functions in valuations process.</p> <p>Further, inspected the internal audit report and noted that there were no instances of noncompliance within the report.</p>	<p>No deviations noted.</p>

Principle 18: Audit Trail

IOSCO Principles, NSE Data Self-Assessment, Test Performed by DELOITTE, and Results of Tests

IOSCO Principle #18:

Written records should be retained by the Administrator for five years, subject to applicable national legal or regulatory requirements on:

- a. All market data, Submissions and any other data and information sources relied upon for Benchmark determination;
- b. The exercise of Expert Judgment made by the Administrator in reaching a Benchmark determination;
- c. Other changes in or deviations from standard procedures and Methodologies, including those made during periods of market stress or disruption;
- d. The identity of each person involved in producing a Benchmark determination; and
- e. Any queries and responses relating to data inputs

If these records are held by a Regulated Market or Exchange the Administrator may rely on these records for compliance with this Principle, subject to appropriate written record sharing agreements.

When a Benchmark is based on Submissions, the following additional Principle also applies:

Submitters should retain records for five years subject to applicable national legal or regulatory requirements on:

- a. The procedures and Methodologies governing the Submission of inputs;
- b. The identity of any other person who submitted or otherwise generated any of the data or information provided to the Administrator;
- c. Names and roles of individuals responsible for Submission and Submission oversight;
- d. Relevant communications between submitting parties;
- e. Any interaction with the Administrator;
- f. Any queries received regarding data or information provided to the Administrator;
- g. Declaration of any conflicts of interests and aggregate exposures to Benchmark related instruments;
- h. Exposures of individual traders/desks to Benchmark related instruments in order to facilitate audits and investigations; and
- i. Findings of external/internal audits, when available, related to Benchmark Submission remedial actions and progress in implementing them

NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 18: NSE Data archives written records of approval notes, board and BVRC's minutes of the meeting related to the review of valuation methodologies (which is as per the requirements set out by the regulatory authorities) for at least 5 years.</p> <p>NSE Data began rendering valuation services to its clients in the year 2018 and has retained data since then. The sourcing of market data by NSE Data is leveraged through third party data aggregators with which it has written arrangements and controls in place.</p> <p>This data is maintained by the respective third parties and is publicly available on their websites. NSE Data does not receive valuations from submitters. It receives quotes from market participants, when needed, which may be utilized as one of the inputs for certain valuations. Any data obtained from regulatory/government entities, exchanges, market participants, are not categorized as submissions. NSE Data performs quality checks on such quotes using a maker checker process.</p>	<p>Inspected the "NSE Data & Analytics Retention Policy" and noted that the policy mandates NSE Data to retain written records of approval notes, minutes of board and BVRC meetings, modifications to valuation methodology, queries concerning data inputs, etc. for at least five years.</p> <p>Inspected a ServiceNow ticket raised by an authorized employee to obtain access to a shared drive/portal containing Current data (such as minutes of meeting of the board and committees, approval notes, valuation methodology documents, etc.); Erstwhile data (such as minutes of meeting of the board and committees, approval notes, valuation methodology documents, etc.) was maintained since the year 2018.</p> <p>NSE Data also incorporates data from NSE, a regulated exchange, as well as two-way quotes from the market participants. The data obtained from market participants is verified in the maker-checker process. NSE, as an entity, has a broad agreement with third-party aggregator(s) (Regulated Entities/Exchanges) from whom it obtains its data. Additionally, the sourced data can be accessed and verified by anyone as it is publicly available.</p> <p>Obtained confirmation from NSE Data that it does not receive valuations from submitters.</p> <p>Further, kindly refer to the Tests Performed for Principle 2 and Principle 6.</p>	<p>No deviations noted.</p>

Principle 19: Cooperation with Regulatory Authorities

IOSCO Principles, NSE Data Self-Assessment, Test Performed by DELOITTE, and Results of Tests		
<p>IOSCO Principle #19: Relevant documents, Audit Trails and other documents subject to these Principles shall be made readily available by the relevant parties to the relevant Regulatory Authorities in carrying out their regulatory or supervisory duties and handed over promptly upon request.</p>		
NSE Data & Analytics Response	Test Performed by DELOITTE	Results of Tests
<p>Response - 19: NSE Data fully co-operates with all regulatory authorities and provides all relevant information upon request (including but not limited to documents and audit trails) in order for the regulator to carry out their duties within the legal framework. Documents and audit trails are readily available within the shared drive/portal and/or the website.</p> <p>As on September 30th, 2022, there were no such information requests from the relevant regulatory authorities in the last one year.</p>	<p>Obtained a confirmation from NSE Data stating that it co-operates with the regulatory authorities and provides relevant information (such as documents and audit trails) upon request, so that they can carry out their regulatory and/or supervisory duties within the legal framework, as applicable.</p> <p>Inspected a ServiceNow ticket raised by an authorized employee to obtain access to a shared drive/portal and noted the presence of data (such as minutes of meeting of the board and committees and approval notes).</p> <p>Obtained confirmation from NSE Data that, as September 30th, 2022, there was no information requests had been made by the relevant regulatory authorities in the past one year.</p>	<p>No deviations noted.</p>