


Document	Name	DIRECTIVE ON FINANCIAL BENCHMARKS COMPLIANT WITH IOSCO PRINCIPLES	
	Type	DIRECTIVE	
	Code	05.YÖN.01	
	Date of Approval	22/09/2022	
	Date of Revision	-	
	Revision Number	-	
	Prepared by	INDEX DIRECTORATE	
	Approved by	BOARD OF DIRECTORS	



BORSA İSTANBUL A.Ş.

DIRECTIVE ON FINANCIAL BENCHMARKS COMPLIANT WITH IOSCO PRINCIPLES

İSTANBUL – 2022

DISCLAIMER: This document is a translation from its Turkish original. In case of a discrepancy, the original document in Turkish shall prevail. Borsa İstanbul A.Ş. is not responsible for translation errors.

This document is owned by Borsa İstanbul A.Ş.. Current version of this document is published in corporate web site of Borsa İstanbul A.Ş. Before use, please check whether this file is the correct version of document or not.

LIST OF INDEX

FIRST PART Purpose, Scope, Grounds, Definitions and Abbreviations	3
Purpose	3
Scope	3
Grounds	3
Definitions and Abbreviations.....	3
SECOND PART Governance	4
Overall Responsibility	4
Oversight of Third Parties	5
Conflicts of Interest.....	5
Control Framework	7
Internal Oversight.....	8
THIRD PART Quality of the Financial Benchmarks.....	9
Financial Benchmark Design	9
Data Sufficiency	10
Hierarchy of Data Inputs	10
Transparency of Financial Benchmark Determination.....	11
Periodic Review	11
FOURTH PART Quality of the Methodology	12
Content of the Methodology.....	12
Changes to the Methodology.....	13
Transition	13
Submitter Code of Conduct.....	14
Internal Controls over Data Collection	16
FIFTH PART Accountability.....	16
Complaints Procedures.....	16
Audit.....	17
Audit Trail	17
Cooperation With Regulatory Authorities.....	18
SIXTH PART Additional Provisions on Interest Rate Financial Benchmarks	18
Accurate and Sufficient Data	18
Oversight Function and Auditing	19
SEVENTH PART Miscellaneous Provisions.....	19
Subjects on Which the Directive Remains Silent.....	19
Effective Date.....	19
Enforcement	19

FIRST PART

Purpose, Scope, Grounds, Definitions and Abbreviations

Purpose

ARTICLE 1- (1) The purpose of this Directive is to set down and regulate the procedures and principles regarding creation, calculation, dissemination, and conduct, audit and administration of operations in respect of Financial Benchmarks compliant with “Principles for Financial Benchmarks” of International Organisation of Securities Commissions in terms of legal framework and audit applications in relation therewith.

Scope

ARTICLE 2- (1) This Directive covers the procedures and principles regarding Financial Benchmarks compliant with “Principles for Financial Benchmarks” of International Organisation of Securities Commissions in terms of legal framework and audit applications in relation therewith, as calculated by Borsa İstanbul by using such factors as prices, returns, profit shares and interest rates of investment instruments.

Grounds

ARTICLE 3- (1) This Directive is issued in reliance upon Article 29/A of the Regulation on Principles of Foundation, Activities, Operations and Audit of Stock Exchanges and Market Operators promulgated in the Official Gazette edition 28712 on 19/07/2013, and Article 32/A of Borsa İstanbul A.Ş. Regulation on Principles Relating to Stock Exchange Activities promulgated in the Official Gazette edition 29150 on 14/10/2014.

Definitions and Abbreviations

ARTICLE 4- (1) For the purposes and in the context of this Directive:

“Administrator” refers to and stands for Borsa İstanbul A.Ş. as the legal entity which has control on the Financial Benchmarks compliant with IOSCO principles and which carries out the processes relating to preparation, calculation and publishing of the regulations in regard to the Financial Benchmarks; and

“Borsa İstanbul Group” stands for Borsa İstanbul A.Ş., İstanbul Settlement and Custody Bank and Central Securities Depository; and

“Borsa İstanbul” stands for Borsa İstanbul A.Ş.; and

“Chief Executive Officer” stands for Borsa İstanbul A.Ş. Chief Executive Officer; and

“Expert Judgment” refers to the exercise of discretion by Borsa İstanbul or Submitter with respect to the use of data in determining a Financial Benchmark. Expert Judgment includes extrapolating values from prior or related transactions, adjusting values for factors that might influence the quality of data such as market events or impairment of a buyer or seller’s credit quality, or weighting firm bids or offers greater than a particular concluded transaction; and

“Financial Benchmark(s)” refers to indices, prices, rates and similar other items which are regularly calculated by using a specific formula or another calculation method, and are presented to users against remuneration or free of charge, and are used in determination of value of a certain capital market instrument, financial contract or product, or in tracking of its rates of return, or in

determination of the amount of payment to be made in reliance thereupon, or in determination of asset distribution or portfolio, or in calculation of performance premiums; and

“Front Office” refers to any department, division, group, or personnel of Submitter or any of its affiliates, whether or not identified as such, that performs, or personnel exercising direct supervisory authority over the performance of, any pricing (excluding price verification for risk management purposes), trading, sales, marketing, advertising, solicitation, structuring, or brokerage activities on behalf of a third party or for proprietary purposes;

“Index” refers to indicators which are regularly determined and published or made available by application of a specific formula or another calculation method or by assessment through use of certain assets, prices, returns or rates included therein (also including estimated prices or interest rates, standing orders or other values or observations); and

“IOSCO” stands for the International Organisation of Securities Commissions; and

“Market Authority” refers to such institutions as Regulatory Authorities, self-regulatory organisations, organised markets, exchanges or clearing houses; and

“Methodology” refers to the written rules and procedures according to which information is collected and the Financial Benchmark is determined by Borsa İstanbul A.Ş.; and

“National Authority” refers to and stands for the related public authorities in Türkiye which have public liability or interest in determination of policies for Financial Benchmarks, except for CMB; and

“Regulatory Authority” or “CMB” stands for Capital Markets Board; and

“Stakeholder(s)” refers to Subscribers and other persons or entities who own contracts or financial instruments that reference a Financial Benchmark; and

“Submission(s)” refers to prices, estimates, values, rates or other information that is provided by a Submitter to Borsa İstanbul for the purposes of determining a Financial Benchmark. This excludes data sourced from regulated markets or exchanges with mandatory post-trade transparency requirements; and

“Submitter(s)” refers to legal entities providing information to Borsa İstanbul A.Ş. required in connection with the determination of a Financial Benchmarks; and

“Subscriber(s)” refers to a person or entity that purchases Financial Benchmark determination services from Borsa İstanbul Financial Benchmarks; and

“Unit” refers to deputy directorate generals, directorates and services founded by Borsa İstanbul A.Ş. Directive on Organisation.

SECOND PART

Governance

Overall Responsibility

ARTICLE 5- (1) Borsa İstanbul, as the Administrator of Financial Benchmarks calculated by itself, has control on and is in the position of primary responsible for and Administrator of all processes relating to the Financial Benchmarks. This liability encompasses:

This document is owned by Borsa İstanbul A.Ş.. Current version of this document is published in corporate web site of Borsa İstanbul A.Ş. Before use, please check whether this file is the correct version of document or not.

- a) the creation and formulation of Financial Benchmarks in accordance with the purposes of use of them, and the determination of Methodologies; and
- b) the accurate and timely calculation, dissemination and circulation of Financial Benchmarks; and
- c) the conduct of operations of Financial Benchmarks in such manner to cover also the measures and actions required to be taken in such cases as lack or insufficiency of data, market stress or closing of market, or failure of financial infrastructure organisations in provision of their critical services, and to make it possible to transparently monitor or track the decisions affecting the processes of calculation of Financial Benchmarks; and
- d) the administration of Financial Benchmarks in such manner to include also reliable and transparent administration, oversight and accountability methods for the process of calculation of Financial Benchmarks, also including a oversight function responsible for creation, dissemination, circulation and operations of Financial Benchmarks and having the required equipment and specialisation.

Oversight of Third Parties

ARTICLE 6- (1) Borsa İstanbul may outsource services in the course of creation of Financial Benchmarks, and may outsource the submission of data needed to be used in calculation of Financial Benchmarks, including, but not limited to, prices, returns or rates of investment instruments.

(2) Borsa İstanbul monitors and controls the service outsourcing and data submission processes. Accordingly, Borsa İstanbul:

- a) documents in writing the roles and responsibilities assumed, and the standards required to be complied with, by the outsourced service providers, in such manner to cover also the power of access to information, documents and resources regarding the outsourced services; and
- b) monitors and tracks the compliance of the outsourced service provider with the standards and rules determined as above; and
- c) publishes and announces in Borsa İstanbul's corporate web site the identity and role of outsourced service provider; and
- d) takes the required measures and actions, also including emergency plans, in order to avoid or eliminate operational risks arising out of outsourced service providers.

(3) Where the party who provides services in creation of Financial Benchmarks or provides data in calculation of Financial Benchmarks is an organised market, exchange or another institution specifically authorised by law to provide the related services or data, Borsa İstanbul may decide not to carry out the processes determined under this article concerning the oversight of service providers.

(4) Principles regarding outsourcing of services and submission of data are determined and regulated in the Borsa İstanbul A.Ş. Financial Benchmark Management Procedure.

Conflicts of Interest

ARTICLE 7- (1) Borsa İstanbul protects the integrity and independence of the processes of creation, calculation and dissemination of Financial Benchmarks. To this end, Borsa İstanbul

formulates policies and rules concerning the identification, disclosure, administration, prevention or reduction of conflicts of interest.

(2) In the course and within the scope of identification, disclosure, administration, prevention or reduction of conflicts of interest, and in accordance with the level of all existing or potential conflicts of interest detected as above, and the level of risks posed by the Financial Benchmarks, Borsa İstanbul ensures:

- a) that the existing or potential conflicts of interest do not affect the processes of determination of Financial Benchmarks; and
- b) that personal interests, relations or business relations do not negatively affect the performance of activities and operations conducted by Borsa İstanbul as an Administrator; and
- c) that the realms of authority and the areas of responsibility of the Units operating in the processes of calculation of Financial Benchmarks are separated for the sake of clear determination and identification of the duties and responsibilities between the Units and prevention of potential conflicts of interest or perception of conflicts of interest; and
- d) that before presentation to users, the Financial Benchmarks undergo the required control processes in accordance with the standards and rules determined by Borsa İstanbul, and are reviewed and revised by employees having the required professional experience; and
- e) that all data, information and other inputs produced, received or entered by Borsa İstanbul are kept in strict confidence, without prejudice to the disclosure/information obligations of Borsa İstanbul; and
- f) that effective and efficient systems and methods are developed and installed as and when needed in order to keep under control Borsa İstanbul of information which may affect Financial Benchmarks between employees carrying out the activities containing the risk of conflict of interests, and between such employees and third parties; and
- g) that remuneration policies are formulated in such manner not to allow the awarding of employees entrusted with tasks relating to calculation of Financial Benchmarks directly or indirectly over the level of Financial Benchmarks; and
- h) that rules and measures are determined in order to minimise the existing and potential conflicts arising out of Borsa İstanbul's control and shareholding structure or out of other interests of all Borsa İstanbul Group employees relating to Financial Benchmarks; and
- i) that measures and actions are taken as and when required for prevention, reduction or clarification of conflicts of interest between the activities of Borsa İstanbul in relation to calculation of Financial Benchmarks and the activities of Borsa İstanbul's subsidiaries or Borsa İstanbul's other activities; and
- j) that the conflicts of interest arising out of Borsa İstanbul's shareholding structure or the control of Exchange are disclosed and reported in a timely manner to the Stakeholders and the relevant authorities.

(3) Principles concerning determination, disclosure, administration, prevention or reduction of conflicts of interest are set down and regulated in the Borsa İstanbul A.Ş. Procedure on Prevention of Conflicts of Interest in Financial Benchmarks.

Control Framework

ARTICLE 8- (1) Borsa İstanbul establishes a control framework regarding the processes of determination and dissemination of Financial Benchmarks.

(2) The control framework built by Borsa İstanbul with a prudent approach in accordance with the degree of importance of the existing or potential conflicts of interest by also taking into account the inputs and outputs of Financial Benchmarks covers the following issues and subjects:

- a) The conflicts of interest in conformity with the issues set out in Article 7 “Conflicts of Interest” of this Directive; and
- b) The measures and actions taken for the sake of reliability and integrity of Financial Benchmarks in the course of the processes of calculation of Financial Benchmarks in conformity with the issues set out in sections 3 and 4 titled “Quality of the Financial Benchmarks” and “Quality of the Methodology” respectively of this Directive; and
- c) The measures and actions taken for the sake of integrity of inputs, in such manner to include also the stages of detailed examination (due diligence) focused on the sources of inputs used in Financial Benchmarks; and
- d) The measures and actions taken in respect of functionality of accountability and complaint mechanisms in conformity with the issues set out in section 5 titled “Accountability” of this Directive; and
- e) The infrastructures, policies and methods built for administration of risks, also including the operational risks; and
- f) An effective and efficient whistleblowing mechanism which allows early learning of probable corruptions or nonconformities and also allows the whistleblowing of such types of incidents to an authority, other than Borsa İstanbul, if and when required, in conformity with the issues set out in Article 20 “Complaints Procedures” of this Directive; and
- g) The regulations regarding appointment and assignment of employees having the required knowledge and experience in the determination of Financial Benchmarks and periodic review of specialization of these employees; and
- h) The regulations relating to training programs for employees appointed for and assigned in the determination of Financial Benchmarks, also covering such issues as ethical values, prevention of conflicts of interest, and operational continuity.

(3) Principles regarding the control framework are determined and set out in the Borsa İstanbul A.Ş. Financial Benchmark Management Procedure.

(4) Where a Financial Benchmark is based on Submissions, with the intention of assuring the integrity of inputs, Borsa İstanbul:

- a) Makes sure as far as possible that the Submitters correctly represent all participants by taking into consideration the changes intended to be measured by the Financial Benchmarks; and
- b) Determines the required rules within the frame of Article 18 titled “Submitter Code of Conduct” and the quality and integrity standards showing the qualifications and scope of the Submission to be taken into consideration by Borsa İstanbul in determinations of Financial Benchmarks, and employs a system comprised of appropriate measures and

actions with a view to ensuring that Submitters comply with such standards; and

- c) Decides at which frequency the data will be received and collected from Submitters; and
- d) Determines and implements the measures needed to be taken in order to effectively monitor and examine the inputs and Submission. These measures cover both the measures required to be taken prior to determination and dissemination in order to proactively detect the probable mistakes in inputs and Submission and to avoid such mistakes, and the analyses of trends and extreme values subsequent to determination and dissemination.

(5) Principles concerning the Submission are determined and set out in the Financial Benchmark Management Procedure.

Internal Oversight

ARTICLE 9- (1) Borsa İstanbul conducts an appropriate oversight function for the purpose of revision of all aspects and stages of the processes relating to determination of the Financial Benchmarks.

(2) Oversight function generally encompasses the following items:

- a) Job definitions of employees to be entrusted with the tasks concerning the conduct of oversight function, and benchmarksto be relied upon in selection of these employees; and
- b) Summary information relating to membership of a committee assigned for oversight function or of similar other groups assigned for the same purpose, and also, statements regarding conflicts of interest to be received from said groups, committees and employees, and processes in regard to nomination, election or dismissal and replacement of members of such committees or groups; and
- c) Examination and assessment of the characteristics and qualifications of the Financial Benchmarks, and their targeted, expected or known purposes of use, and the level of significance of the detected existing or potential conflicts of interest; and
- d) Rules in relation to periodic review of the definition of the Financial Benchmarks and the Methodologies; and
- e) Rules with regard to assessment of the Methodologies with a view to checking and reviewing whether the Financial Benchmarks are continuing to appropriately indicate the predetermined purposes of measurement or not, and review and examination of the changes made or stipulated to be made in the Methodologies, and receipt of opinions of the Stakeholdersrelated to aforesaid changes in accordance with Article 16 “Changes to the Methodology”, or request of said changes; and
- f) Rules with regard to actions and measures to be taken in order to be continuously informed about the problems and risks related to the Financial Benchmarks, and conduct of internal and external examinations on the Financial Benchmarks as far as possible; and
- g) In the case of cessation of the Financial Benchmarks, rules with regard to review and approval of the processes regarding cessation, by also making reference to the rules to be followed in the receipt of opinions of Stakeholders in connection therewith; and
- h) Rules with regard to oversight of administration and operations of the Financial Benchmarks, also including the determination of the Financial Benchmarks within the

scope of outsourcing of services; and

- i) Rules with regard to assessment of results of internal and external audits, and follow up of the implementation of remedial measures proposed in the results of said audits; and
- j) Rules with regard to checking whether or not the Financial Benchmarks are calculated in accordance with the Methodologies, and audit of the Expert Judgments and the Submitters taken into account in the calculations, if any.

(3) Oversight function may be carried out by separate committees, groups or employees or in accordance with appropriate administration procedures, within the frame of the Borsa İstanbul A.Ş. Financial Benchmark Management Procedure and in such manner to allow efficient and effective control of the processes of determination of the Financial Benchmarks. Groups of Financial Benchmarks may be separately handled according to their types or asset classes, providing that the provisions of this article are complied with.

(4) Where conflicts of interest arise out of or due to activities performed or actions taken by shareholders of Borsa İstanbul, or those who hold management of Borsa İstanbul under control, or Borsa İstanbul and/or any one of its affiliates, Borsa İstanbul establishes an independent oversight body where the Stakeholders, Subscribers and other Submitters about whom Borsa İstanbul has information are represented in a balanced manner, and which will operate and work in such manner to eliminate the resulting conflicts of interest.

(5) In the case of determination of Financial Benchmarks based upon Submission, the oversight function further covers:

- a) Oversight and audit of detailed examination (due diligence) and follow-up processes to be carried out by Borsa İstanbul on Submissions or inputs (This process also encompasses the regular assessment of inputs and Submissions structures, and the definition of parameters to be employed in analysis of inputs and Submissions, or the questioning of role of Borsa İstanbul in testing of extraordinary inputs and Submissions, or in sampling of them.); and
- b) Oversight of the principles mentioned in Article 18 titled “Submitter Code of Conduct” of this Directive; and
- c) Effective regulations and systems employed for handling and resolution of breaches of the principles mentioned in Article 18 titled “Submitter Code of Conduct” of this Directive; and
- d) In the case of detection of potential irregular or suspicious Submissions or suspicious acts and activities, or in the case of receipt of reports about abuses and improper behaviours of Submitters, the appropriate measures for reporting and whistleblowing of the same to CMB.

THIRD PART

Quality of the Financial Benchmarks

Financial Benchmark Design

ARTICLE 10- (1) Borsa İstanbul aims to reflect accurately and reliably the economic facts of the changes aimed to be measured while designing the Financial Benchmarks, and in order to achieve

This document is owned by Borsa İstanbul A.Ş.. Current version of this document is published in corporate web site of Borsa İstanbul A.Ş. Before use, please check whether this file is the correct version of document or not.

its objective, eliminates the factors which may cause an impairment in the prices, rates or values of the Financial Benchmarks.

(2) To the extent it is fit and appropriate in the designing of Financial Benchmarks, but not limited thereto, Borsa İstanbul:

- a) Employs a sample of a size fit to and adequate for the change aimed to be measured; and
- b) Takes the size and liquidity of the relevant market into consideration; and
- c) Takes the size of market used as a base in determination of Financial Benchmarks and the volume of transactions executed in the market into account comparatively; and
- d) Takes the distribution of the executed transactions among market participants into consideration; and
- e) Takes the market dynamics into account.

Data Sufficiency

ARTICLE 11- (1) Borsa İstanbul uses sufficient data in order to ensure that the changes aimed to be measured in the determination of Financial Benchmarks are accurate and reliable.

(2) Borsa İstanbul makes sure that the data used by it:

- a) Are composed of prices, rates, indices or values formed under competitive supply and demand conditions in order for them to be calculable under the broadest probable conditions without compromising the integrity of Financial Benchmarks; and
- b) Are based upon observable transactions executed between buyers and sellers in such manner to reflect the market conditions and if needed, to be testable by back-testing in terms of appropriateness, so as to ensure that the Financial Benchmarks can function as a reliable indicator of prices, rates, indices or values reflected by them.

(3) This Article does not necessitate the formation of all Financial Benchmarks on the data about executed transactions, and does not preclude the determination of Financial Benchmarks based on data which do not originate from transactions, such as volatility indices. Pursuant to Article 12 titled “Hierarchy of Data Inputs” of this Directive, Borsa İstanbul may, in determinations of Financial Benchmarks, also use buy and sell orders which are formed upon matching of supply and demand in a competitive market environment, and are based upon observable transactions, providing that they are executed in an active market, as well as some other different data types, such as data derived out of the previous transactions, which stand as an extension of or complementary to the executed transactions.

Hierarchy of Data Inputs

ARTICLE 12- (1) Borsa İstanbul incorporates the hierarchy of data used in determination of Financial Benchmarks, and if used, the principles of Expert Judgments, in the Methodology of the relevant Financial Benchmarks.

(2) Data use hierarchy generally contains the following items:

- a) If the Financial Benchmarks are dependent upon Submission, the transactions executed by the Submitter in the market in respect of changes aimed to be measured by the Financial Benchmarks, in accordance with the available market conditions; and

- b) Items obtained through observation or reporting of transactions fit to the available market conditions, with regard to changes aimed to be measured by the Financial Benchmarks; and
- c) Items obtained through observation or reporting of transactions executed in the related markets and fit to the available market conditions; and
- d) Realistic buy and sell orders which may be converted into transactions; and
- e) Other market data or Expert Judgments.

(3) In the case of availability of an active market as defined in Article 11 titled “Data Sufficiency” of this Directive, this Article does not preclude Borsa İstanbul from using data that are fit to and compliant with the rule regarding the structure, integrity, continuity and reliability of Financial Benchmarks, under the rules set out in the Methodology of the related Financial Benchmarks. Borsa İstanbul may use all data believed to be in conformity with the Methodology of the related Financial Benchmarks, with the intention of assuring the quality and integrity of Financial Benchmarks.

Transparency of Financial Benchmark Determination

ARTICLE 13- (1) Borsa İstanbul ensures adequate transparency in respect of determinations of Financial Benchmarks.

(2) To this end, Borsa İstanbul publishes the following information relating to the Financial Benchmarks in Borsa İstanbul’s corporate web site and/or Borsa İstanbul’s data distribution channels within the stipulated period of time:

- a) Transaction amount and transaction volume information indicating the size and liquidity of the market used as a base in determinations; and
- b) Information on average volume and price, and on the range containing said volume and price; and
- c) Brief explanations about the Expert Judgments used therein, if any; and
- d) Indicative and benchmark rates of each market use used therein; and
- e) Mechanisms of formation / determination of prices used therein,

and explanations about similar other data pertaining thereto.

(3) In sharing the information regarding determination of the Financial Benchmarks, Borsa İstanbul takes care to make sure that the disclosed information is easily understandable by the Stakeholders and the relevant authorities.

Periodic Review

ARTICLE 14- (1) With the intention of detecting the events requiring to make a change in the Methodology of Financial Benchmarks, Borsa İstanbul periodically reviews the circumstances and conditions of changes aimed to be measured by the related Financial Benchmarks.

(2) Borsa İstanbul also periodically reviews and checks whether or not the effects of changes aimed to be measured by Financial Benchmarks are reducing, or whether or not they constitute and form a base for a reliable Financial Benchmark.

(3) In the case of an essential change or modification in the Financial Benchmarks as a result of the periodic reviews, Borsa İstanbul publishes in Borsa İstanbul's corporate web site the summary information concerning its periodic reviews, together with justification thereof.

FOURTH PART

Quality of the Methodology

Content of the Methodology

ARTICLE 15- (1) Borsa İstanbul documents and publishes in Borsa İstanbul's corporate web site the Methodologies of Financial Benchmarks, in such manner to contain also the justification of the method chosen by it, as far as possible.

(2) The Methodologies also contain the details which allow the Stakeholders to understand how the subject Financial Benchmarks are calculated, and make it possible for them to assess the representativeness of Financial Benchmarks, and the fitness of Financial Benchmarks on the part of the related Stakeholders, and whether the Financial Benchmarks are fit to be used as a reference in financial products or not.

(3) The Methodologies formed by Borsa İstanbul contain the following information at minimum:

- a) Definitions of keywords used frequently in the related Methodology; and
- b) All benchmarks and methods relating to determination of Financial Benchmarks, such as the inputs used in determination of Financial Benchmarks, and the selection of inputs, and the principles concerning the use of Expert Judgments, if any, and priorities granted to certain data types, and minimum data quantity needed to calculate the Financial Benchmarks, and models or calculation methods used therein, if any; and
- c) Methods and applications employed for the sake of ensuring the consistency of use of Expert Judgments, if any, among the Financial Benchmarks; and
- d) Hierarchy of data employed in determination of the Financial Benchmarks; and
- e) Methods employed for determination of Financial Data in the case of lack of data or under extraordinary market conditions; and
- f) Methods used for correction of probable mistakes, also including the cases which may necessitate the re-determination of Financial Benchmarks; and
- g) Information on approval and periodic review of the Methodology (also including the external periodic reviews if and to the extent applicable); and
- h) Where appropriate, the cases required to be consulted to the Stakeholders, and the methods of consultation; and
- i) Potential restrictions of Financial Benchmarks, such as formation of a fragmental market, or low level of liquidity.

(4) In the case of determination of Financial Benchmarks based on Submission, Borsa İstanbul clearly determines the benchmarks as to which Submission will be taken into account and which will be excluded from the determination. The problems arising out of the location of Submitters operating and working in locations subject to different regulations are also taken into consideration in these

Benchmarks. Rules concerning the amendment and revision of Benchmarks, also including the prior notice periods, will be clearly set down in the Benchmarks, and the benchmarks will be published in Borsa İstanbul's corporate web site.

Changes to the Methodology

ARTICLE 16- (1) Borsa İstanbul may change the Methodologies of Financial Benchmarks due to changes in the definition of Financial Benchmarks, failure of Financial Benchmarks to represent the changes aimed to be measured, lack of minimum components needed for determination of them, data insufficiency, or changes in applicable laws or market structure, or for other reasons.

(2) Principles regarding changes in the Methodologies containing also the following principles are determined and set out in the Borsa İstanbul A.Ş. Financial Benchmark Management Procedure:

- a) Information on the definition of material change as determined by the oversight function referred to in Article 9 of this Directive, and on the methodology and timing of information of Financial Benchmarks, Subscribers (and other Stakeholders if and to the extent it is fit to the width and depth of use) about said change, or receipt of their opinions thereon; and
- b) How the changes made in the Methodology will be examined and reviewed by the said oversight function; and
- c) That if a change is needed, Borsa İstanbul will make a statement as to contents and justification of such change, and potential results of change, and when the change is specified to be made effective; and
- d) That Borsa İstanbul will determine a clear time schedule and will inform the Stakeholders about the change adequately beforehand so as to provide them with an adequate opportunity to analyze the effects of material changes planned to be made, and to express and declare their opinions, by also taking into consideration the assessment of Borsa İstanbul about general conditions and incidents; and
- e) That also after expiration of the time granted for submission of opinions, Borsa İstanbul will make available to all Stakeholders in summary form both the opinions expressed by Stakeholders (except for the Stakeholders requesting their opinions to be kept in confidence), and the replies given by Borsa İstanbul to said opinions.

Transition

ARTICLE 17- (1) Borsa İstanbul may cease Financial Benchmarks due to changes in the definition of Financial Benchmarks, failure of Financial Benchmarks to represent the changes aimed to be measured, lack of minimum components needed for determination of them, data insufficiency, or changes in applicable laws or market structure, or for other reasons.

(2) If and to the extent their application is considered by Borsa İstanbul to be feasible and meaningful, the principles regarding cessation of Financial Benchmarks containing also the following principles are determined and set out in the Borsa İstanbul A.Ş. Financial Benchmark Management Procedure:

- a) Benchmarks which are compliant with the features of the existing Financial Benchmarks (for instance, credit quality, term structure and liquidity of alternative market) as much as possible; and differences among Financial Benchmarks; and to which extent the

alternative Financial Benchmarks meet and satisfy the active/passive needs of Stakeholders; and whether there are transparent transaction data or not; and whether the alternative Financial Benchmarks are investable or not; and benchmarks which may help in selection of reliable alternative Financial Benchmarks, also including effects on Stakeholders and effects of applicable laws and regulations; and

- b) Feasibility of determination together with alternative Financial Benchmarks of the Financial Benchmark which will be ceased, for the sake of smooth conduct and administration of the process of transition to a new Financial Criterion; and
- c) Methods to be followed in the case of failure in finding a different Financial Benchmark which may be an alternative to the Financial Benchmark which will be ceased; and
- d) Policy regarding the period of time the Financial Benchmark which will be ceased will be continued to be calculated until the alternative Financial Benchmarks become usable under the existing contracts; and
- e) Processes for selection of an alternative Financial Benchmark and for transition to that alternative Financial Criterion, also including a transition schedule compliant with maturity of financial products and instruments using that Financial Criterion, and adequacy of notice to be sent and circulated to the Stakeholders, which processes will also include the Stakeholders and the related Market Authorities and National Authorities to the extent it is fit and appropriate.

(3) The aforesaid procedures and principles are formed and determined by taking into consideration both the probable effects of cessation of the related Financial Benchmark on economic and financial balances, and the prevalence and depth of the financial products and instruments based on that Financial Criterion.

(4) In determining the procedures and principles to be followed in cessation of Financial Benchmarks, Borsa İstanbul may also take into account the opinions of Stakeholders of the related Financial Criterion, and depending on the kind of Financial Criterion, the opinions of the Regulatory Authority and National Authorities.

(5) Borsa İstanbul encourages the Subscribers owning financial products and instruments based on a Financial Criterion, and other Stakeholders to take the required actions and measures so as:

- a) To ensure that contracts and other financial instruments using the Financial Benchmark incorporate also transition provisions or cessation provisions enforceable if and when the related Financial Benchmark is materially changed or it is ceased; and
- b) To be cognizant of the fact that it may be necessary to make material changes in the Financial Benchmark due to different reasons, also including factors beyond the control of Borsa İstanbul.

Submitter Code of Conduct

ARTICLE 18- (1) In determination of Financial Benchmarks, Borsa İstanbul may use Submissions provided by Submitters.

(2) For use in the case of determination of Financial Benchmarks based on Submissions, the principles regarding the rules required to be complied with by Submitters containing also the

following principles are determined and set out in the Borsa İstanbul A.Ş. Financial Benchmarks Management Procedure:

- a) Selection of Submissions; and
- b) Who may provide Submissions; and
- c) Quality control methods to be employed in order to verify and confirm the identity of Off-exchange Data Submitter organisations or the employees providing Submission in the name of their organisation, and whether said employees are authorised to provide such data in the name of their organisation or not; and
- d) Benchmarks to be applied by Submitter organisations to their employees authorised to provide data and information to Borsa İstanbul; and
- e) Policies aimed to prevent Submitter organisations to suspend or stop their data submission service during the related period; and
- f) Policies aimed to encourage Submitter organisations to provide all of the related data and information; and
- g) Principles regarding internal systems and controls of Submitters, also including the following information:
 - 1) Methods relating to data submission, also including rules applied for determination of data type fit to and compliant with the Methodologies of Financial Benchmarks; and
 - 2) Methods aiming to detect and assess the suspicious data or transactions (including also the in-group transactions), and to assure the truth of data; and
 - 3) Policies setting down the conditions and details of use of Expert Judgment, also including its documentation in writing; and
 - 4) Policies relating to record keeping; and
 - 5) Policies with regard to verification required to be done before submission of data, and as to review of data more than once by employees having adequate technical knowledge and experience; and
 - 6) Regulations concerning the Financial Benchmarks, and training activities on the related regulations, also including market abuse; and
 - 7) Reporting of suspicious data inputs; and
 - 8) Roles and duties of employees in critical positions, and their areas of responsibility; and
 - 9) In-house processes regarding completion of data submission; and
 - 10) Whistleblowing mechanisms compliant with Article 8 titled “Control Framework”; and
 - 11) With the intention of preventing the probable conflicts of interest, a policy for prevention of conflicts of interest, also including the methods and policies with respect to:
 - a. Prohibition of the submission of data by front office, unless the internal oversight and control methods relating to submission of data by the service

provider front office (also including the prevention and audit activities aiming to resolve the probable conflicts of interest in accordance with the provisions of subparagraphs (5) and (9) hereinabove) are found adequate and appropriate by Borsa İstanbul; and

- b. Physical separation of employees and reporting authorities from each other if and to the extent it is feasible and appropriate; and
- c. Assessment as to how the existing or potential inducing acts intending to manipulate the data or to influence them otherwise will be detected, described, managed, reduced and prevented (development of appropriate remuneration policies, and effective handling and resolution of probable conflicts of interest that may arise between data submission activity and other commercial activities of Submitter and its subsidiaries or their customers).

(3) In determinations of the related Financial Benchmarks, Borsa İstanbul uses only the inputs received from Submitters that comply with the aforementioned rules, and appropriately monitors and records whether Submitters comply with the rules set down as above or not.

(4) Borsa İstanbul periodically reviews and audits the rules required to be complied with by Submitters, and takes a statement as to compliance with said rules from Submitters every time when the rules are updated or in any case at least once a year.

Internal Controls over Data Collection

ARTICLE 19- (1) Where data are obtained and collected from external sources, Borsa İstanbul builds appropriate internal control systems fit to the processes relating to collection and transmission of data. These controls cover such points as the selection of external source from which data will be received, how the data will be collected, and how integrity and confidentiality of data will be protected and maintained. Borsa İstanbul gets confirmation from other sources as well for the data obtained from front office employees.

FIFTH PART Accountability

Complaints Procedures

ARTICLE 20- (1) Borsa İstanbul establishes appropriate mechanisms for handling the whistleblowings and complaints as to whether the Financial Benchmarks reflect the changes aimed to be measured by them or not, and whether the Financial Benchmarks are calculated in accordance with the specified Methodology or not, and other decisions and applications of Borsa İstanbul relating to determinations of Financial Benchmarks.

(2) The principles regarding the whistleblowing and complaint mechanisms containing also the following principles are determined and set out in the Borsa İstanbul A.Ş. Whistleblowing Procedure for Financial Benchmarks and the Borsa İstanbul A.Ş. Complaint Procedure for Financial Benchmarks:

- a) Creation of channels through which the Stakeholders may easily report their complaints, such as electronic platforms; and

- b) Processes relating to timely examination and review of the related complaint by an independent employee who does not play a role in the processes of calculation of Financial Benchmarks, and transmission or reporting of results of examination to the complainants and other related persons within a reasonable period of time, and keeping of records in connection therewith, providing that it is not contrary to the related market regulations or public disclosure regulations; and
- c) Processes as to transmission or reporting of the complaint to the administration of Borsa İstanbul if and when needed.

(3) Borsa İstanbul keeps all documents pertaining to a complaint for a minimum period of 5 years following completion of the application process, unless otherwise required as per the legal and administrative regulations pertaining thereto.

(4) Disputes which by nature are not classified as an official complaint regarding Financial Benchmarks are also handled and resolved within the frame of the principles determined in the Borsa İstanbul A.Ş. Whistleblowing Procedure for Financial Benchmarks and the Borsa İstanbul A.Ş. Complaint Procedure for Financial Benchmarks.

Audit

ARTICLE 21- (1) Borsa İstanbul assigns independent internal or external auditors having adequate experience and knowledge to review and report the Financial Benchmark determination processes and the compliance of said processes with the Methodologies and this Directive first time six months after the effective date of this Directive, and later, at least once every two years. The frequency of these audits is determined in proportion to the size and the level of complexity of the activities of Borsa İstanbul relating to the Financial Benchmarks.

(2) In the case of an existing or potential conflict of interests detected by Borsa İstanbul, depending on the level of the conflict of interests (except for the Financial Benchmarks regulated or audited by National Authorities), Borsa İstanbul assigns an independent external auditor having adequate experience and knowledge to periodically review and report whether the Methodology declared by Borsa İstanbul is complied with or not. The frequency of these audits is determined in proportion to both the size and the level of complexity of the activities of Borsa İstanbul relating to the Financial Benchmarks, and the prevalence and depth of use of Financial Benchmarks by the Stakeholders.

Audit Trail

ARTICLE 22- (1) Borsa İstanbul keeps all records relating to Financial Benchmarks determination processes.

(2) Accordingly, Borsa İstanbul keeps:

- a) All market data, Submission and all of the similar other data used in Financial Benchmarks determination processes; and
- b) The Expert Judgments relied upon in Financial Benchmark determination processes; and
- c) Changes made in and deviations from standard procedures and Methodologies relating to determination of Financial Benchmarks, also including those made or detected in periods of rise of market stress and/or volatility; and

- d) The information on employees who are involved in Financial Benchmark determination processes; and
- e) All questions and answers relating to data employed in determination of Financial Benchmarks

for a minimum period of 5 years, unless otherwise required as per the legal and administrative regulations pertaining thereto, and shares the same with CMB upon demand. If these records are kept by Borsa İstanbul or another organised market, for the sake of compliance with this Article, Borsa İstanbul may act in reliance upon these records, also subject to the relevant written record sharing agreements, if any.

(3) If Financial Benchmarks is based upon Submissions, the Submitters keep:

- a) Methods and rules setting down the submission of data; and
- b) The identity of any other person who procure, generate or provide the data to Borsa İstanbul; and
- c) Names and roles of individuals who are in charge of submission and oversight of data; and
- d) Records of communications between submitters; and
- e) Records of interactions with Borsa İstanbul; and
- f) Questions relating to data provided to Borsa İstanbul; and
- g) Declarations relating to conflicts of interests regarding the products using the Financial Benchmarks and to positions assumed therein; and
- h) Sizes of positions managed on the Financial Benchmarks related instruments in order to facilitate the audits and examinations, on the basis of related Units and employees; and
- i) If any, internal and external audit findings, and remedial measures taken in respect of said findings, and stages of implementation thereof.

for a minimum period of 5 years, unless otherwise required as per the legal and administrative regulations pertaining thereto.

Cooperation With Regulatory Authorities

ARTICLE 23- (1) Borsa İstanbul delivers to CMB and/or to Regulatory Authorities of Stakeholders, upon demand, all kinds of information and documents held by it, also including audit records, under this Directive.

SIXTH PART

Additional Provisions on Interest Rate Financial Benchmarks

Accurate and Sufficient Data

ARTICLE 24- (1) In determination of the interest rate Financial Benchmarks, Borsa İstanbul may make corrections in data by:

- a) Taking into consideration the effects of any market event between the time of transactions

This document is owned by Borsa İstanbul A.Ş.. Current version of this document is published in corporate web site of Borsa İstanbul A.Ş. Before use, please check whether this file is the correct version of document or not.

and the time of submission of input data; or

- b) Making interpolation or extrapolation from transaction data; or
- c) Reflecting the changes in credit rating of Submitters or other market participants.

(2) Borsa İstanbul may perform sensitivity analyses in order to determine the effects on the benchmarksof the transactions which may effect the interest-based Financial Benchmarks, like interest-based swap transactions.

Oversight Function and Auditing

ARTICLE 25- (1) Borsa İstanbul assigns independent internal or external auditors having adequate experience and knowledge to periodically review and report the interest-based Financial Benchmark determination processes and the compliance of said processes with the Methodologies and this Directive first time six months after the effective date of this Directive, and later, at least once every two years. The frequency of these audits is determined in proportion to the size and the level of complexity of the activities of Borsa İstanbul relating to the Financial Benchmarks.

SEVENTH PART

Miscellaneous Provisions

Subjects on Which the Directive Remains Silent

ARTICLE 26- (1) On subjects on which this Directive remains silent or is not adequately clear, the Chief Executive Officer is authorized to take the necessary decisions, and to regulate and direct the practices within the frame of the pertinent regulations.

Effective Date

ARTICLE 27- (1) This Directive becomes effective as of the date it is published.

Enforcement

ARTICLE 28- (1) The provisions of this Directive are enforced and executed by the Chief Executive Officer.