Statement of Compliance with the IOSCO Principles for Financial Benchmarks January 18, 2018

The Federal Reserve Bank of New York is the Administrator of the Effective Federal Funds Rate (EFFR) and the Overnight Bank Funding Rate (OBFR) Benchmarks¹. The Federal Reserve Bank of New York's Audit Group has independently reviewed the organizational and operational framework used to administer the EFFR and the OBFR and has determined that they are in compliance with the Principles for Financial Benchmarks ("the Principles") published by the International Organization of Securities Commissions (IOSCO). The purpose of this statement is to increase transparency surrounding the administration of these Benchmarks in a manner consistent with the Principles.

In 2013, IOSCO published the Principles, which have been <u>endorsed by the Financial Stability Board</u> as being standards of best practice for Benchmark administration. Because the Federal Reserve Bank of New York is a component of the Federal Reserve System and administers the EFFR and the OBFR for public policy purposes, the EFFR and the OBFR are not within the scope of the Principles. However, as a matter of policy, the Federal Reserve Bank of New York is committed to administering the Benchmarks in a manner consistent with the Principles.

Governance: The Federal Reserve Bank of New York has primary responsibility for all aspects of the determination of the EFFR and the OBFR and has <u>Ethics and Conflicts of Interest</u> policies in place, as well as additional policies for staff involved in the production of Benchmarks. A control framework has been implemented that defines the roles and responsibilities of the Administrator in the production of the EFFR and the OBFR and an internal Oversight Committee has been established to periodically review and provide challenge on the Benchmark production process.

Quality of the Benchmark: The EFFR and the OBFR are intended to be accurate and reliable representations of activity in federal funds and the combined federal funds and Eurodollar markets, respectively, and are calculated using observable, arm's length transactions in these markets collected by the FR 2420 report. A <u>data exclusions</u> policy has been implemented that permits the removal of erroneous transaction data from the Benchmark calculations. In extraordinary circumstances in which the primary data source is unavailable, a <u>data contingency</u> process has been developed. Volumes and volume-weighted percentile rates are published each day with the Benchmarks. An internal Oversight Committee periodically reviews the production of the Benchmarks.

Quality of the Methodology: The Benchmarks are calculated as volume-weighted median rates of data collected by the FR 2420 Report on Selected Money Market Rates. All data collected and used in the production of the Benchmarks are subject to internal controls. Any material change to the methodology of, or decision to terminate, a Benchmark would be communicated to the public and public comment would be solicited, to the extent reasonable.

Accountability: The Federal Reserve Bank of New York has developed a process for receiving and addressing complaints, has an internal Audit Group that reviews the quality of the Benchmark production process, and maintains a robust audit trail of all actions taken in the production of the Benchmarks.

The below table provides additional detail regarding the compliance of the EFFR and the OBFR with each of the IOSCO Principles, where applicable.

¹ Benchmark is defined by IOSCO in the Glossary of Key Terms in Annex A of the Principles for Financial Benchmarks.

Principle	Overview	Assessment	Comment
1. Overall	The Administrator should retain primary responsibility for all	Compliant	The Federal Reserve Bank of New York is the
Responsibility	aspects of the Benchmark determination process. For	_	Administrator of the EFFR and the OBFR and has primary
of the	example, this includes:		responsibility for all aspects of the Benchmark
Administrator			determination process, including the development,
	a) Development: The definition of the Benchmark and		dissemination, operation, and governance of the
	Benchmark Methodology;		Benchmarks.
	b) Determination and Dissemination: Accurate and		
	timely compilation and publication and distribution of		a) The definitions and descriptions of the <u>EFFR</u> and
	the Benchmark;		the OBFR are available on the Federal Reserve
	c) Operation: Ensuring appropriate transparency over significant decisions affecting the compilation of the		Bank of New York public website. Detailed descriptions of the data collected by the FR 2420
	Benchmark and any related determination process,		Report of Selected Money Market Rates are
	including contingency measures in the event of		available in the FR 2420 Reporting Instructions.
	absence of or insufficient inputs, market stress or		available in the TR 2420 Reporting instructions.
	disruption, failure of critical infrastructure, or other		b) The EFFR and the OBFR are calculated in a
	relevant factors; and		controlled internal application and are disseminated
	d) Governance: Establishing credible and transparent		on the Federal Reserve Bank of New York public
	governance, oversight and accountability procedures		website at approximately 9:00 A.M. ET each
	for the Benchmark determination process, including		morning. In the case of a delay to either Benchmark,
	an identifiable oversight function accountable for the		subscribers will be notified of the delay by email.
	development, issuance and operation of the		
	Benchmark.		c) A <u>data contingency</u> policy defines how the
			Benchmarks will be calculated and disseminated
			should there be a problem in the normal production
			process. Any use of an alternative data source in the
			calculation of a Benchmark will be disclosed on the
			Federal Reserve Bank of New York public website.
			d) An internal Oversight Committee periodically
			reviews and provides challenge on the Benchmark
			production process. The actions taken in the
			Benchmark calculation process are audited by an
			independent internal auditing body within the
			Federal Reserve Bank of New York and an
			oversight body within the Federal Reserve Board of
			Governors, in line with the Federal Reserve Bank of
			New York's other operations.

2. Oversight of Third Parties	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: 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. This Principle does not apply in relation to a third party from	Not Applicable	All aspects of the Benchmark production process are carried out by the Federal Reserve Bank of New York, with no third party involvement. Similarly, respondent banks to the FR 2420 report submit data directly to the Federal Reserve System and no third parties are involved in the collection of inputs.
	whom an Administrator sources data if that third party is a Regulated Market or Exchange.		
3. Conflicts of Interest for Administrators	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	Compliant	The Federal Reserve Bank of New York has Ethics and Conflicts of Interest policies in place and, as Administrator of the Benchmarks, has implemented additional policies to mitigate and avoid conflicts of interest related to the Benchmarks that include prohibiting direct financial exposure of staff to the Benchmarks they calculate and publish, requiring that all calculations and uses of judgment be subject to dual approval between two staff members, and subjecting all uses of staff expert judgment, such as exclusions of data from the Benchmark calculations, to separate periodic review by an internal Oversight

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;
- 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 Committee, in line with Principle 5.

The Federal Reserve Bank of New York is tasked with implementing monetary policy through open market operations to maintain the EFFR within the target range set by the Federal Open Market Committee. This task, however, is independent from the process of calculating the EFFR. The data calculation methodology provides for staff discretion, namely in the form of excluding erroneous transactions only in extraordinary circumstances, and dual approval between two staff members involved in the daily rate production is required to both exclude transactions from a calculation and to calculate and publish the Benchmarks.

The Federal Reserve Bank of New York does not have any affiliates or aspects of its organizational structure that carry additional conflicts of interest. The Federal Reserve Bank of New York, a corporate instrumentality of the United States government, has no parent company.

In the event that new conflicts arise, an internal Oversight Committee, in conjunction with the Ethics Office of the Federal Reserve Bank of New York, will develop amendments to the conflicts of interest policies. Additionally, the Federal Reserve Bank of New York maintains a Code of Conduct for staff. Staff is subject to ethics training on a periodic basis and the Ethics Office requires all Federal Reserve Bank of New York staff to complete an annual certification to attest that they have read and will adhere to the code.

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 or any of its affiliates; and b) Provide that an Administrator or any of its affiliates; and any relevant Regulatory Authority in a timely manner. 4. Control Framework for 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 in line with principles of the Top of the material of the production of the framework includes: 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 insulatined, in line with principles 6 to 15 on the quality of the Benchmark production process during each quarter, including exclusions of submitted data and the use of contingency policies. This committee is also reviewing all uses of staff judgment in the Benchmark production process during each quarter, including exclusions of submitted data and the use of contingency policies. This committee is also reviewing exclusion of submitted data and the use of contingency policies. This committee is also to calculate the FFR and the OBFR. Collects a broad sample of transcriber to a provide the data t				
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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;
- 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

- responsibilities of staff involved in the Benchmark production process, including the use of a Benchmark calculation application, the daily review of data included in the Benchmarks, and the calculation and dissemination of the Benchmarks. In extraordinary circumstances, staff may use judgment in removing from the Benchmark calculations data deemed likely to be erroneous if the reporting institution cannot confirm or revise the data prior to the calculation of the Benchmarks. Any such use of staff judgment is subject to dual approval between two staff members and periodic review by an internal Oversight Committee. A data contingency policy specifies contingency data sources in the case that FR 2420 data are unavailable on a given morning, and defines how the Benchmarks would be calculated and disseminated in the case that there is a problem with the standard production process. The Federal Reserve Bank of New York maintains contingency policies to mitigate operational risk, which include the ability to calculate and disseminate the Benchmarks from offsite locations. A Benchmark will be revised if subsequent data submissions shift the calculated Benchmark by greater than one basis point. Published Benchmarks will only be revised on the same day, except for extraordinary circumstances, and any revisions will be published by 2:30 PM ET.
- c) Whistleblowing mechanism: The Federal Reserve Bank of New York maintains an internal whistleblowing mechanism to address the internal reporting of misconduct. Additionally, The Federal Reserve Bank of New York maintains a Tips and Complaints mechanism for general external complaints, as well as an email address (rateproduction@ny.frb.org) to accept complaints related to the Benchmarks. Any complaints received are reviewed by an internal Oversight Committee.

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	outriers.		 d) Staff expertise: All roles involved in the calculation of the Benchmarks are performed by staff with knowledge of the underlying markets and training in the Benchmark calculation process. Staff involved in the production of Benchmarks receives periodic reviews of competency. Consistent with Principle 14, the EFFR and the OBFR are based entirely on observable transactions, as opposed to submissions or calculations.
5. Internal	Administrators should establish an oversight function to	Compliant	An internal Oversight Committee reviews and provides
Oversight	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	Compilant	challenge on the Benchmark production process. Internal policies are in place defining the responsibilities of the Committee and the details of its membership. The Committee consists of members from across the Federal Reserve Bank of New York organizational structure who are not involved in the daily production of the Benchmarks, and includes the Chief Risk Officer and other senior staff from various control areas of the Federal Reserve Bank of New York. The Oversight Committee meets on at least a quarterly basis to provide effective oversight and challenge to the Federal Reserve Bank of New York Benchmark production process. The committee's responsibilities include:
	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: a) The terms of reference of the oversight function; b) Criteria to select members of the oversight function;		 a) Benchmark design: Performing periodic review of the definition and methodology of the Benchmarks; Taking measures to remain informed regarding issues and risks to the Benchmarks; and Periodically reviewing the calculation methodology
	c) 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.		of the Benchmarks, and overseeing any proposed changes to a methodology. b) Integrity of the Benchmark determination and control framework: • Internal or external audit findings related to the

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;
 - 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 where 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.

- Benchmark production process;
- Any use of non-standard procedures in the production of the Benchmarks, including the use of staff expert judgment or contingency data sources;
- Existing and potential conflicts of interest and related policies imposed on staff; and
- Complaints or inquiries received by the Federal Reserve Bank of New York regarding the Benchmarks.

External parties are not included in the oversight of the Benchmarks. However, the Federal Reserve Bank of New York has put in place sufficient controls to prevent material conflicts of interest related to the production of Benchmarks, and consults both the Federal Reserve Board of Governors and the Federal Open Market Committee, as appropriate, on issues related to the calculation and production of the EFFR and the OBFR.

Consistent with Principle 14, the EFFR and the OBFR are based entirely on observable transactions, as opposed to submissions or calculations.

	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.		
6. Benchmark Design	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.	Compliant	The Federal Reserve Bank of New York has designed the EFFR and the OBFR with the goal of creating accurate and reliable representations of the federal funds and the combined federal funds and Eurodollar markets, respectively. Each Benchmark provides a reliable measure of market activity and, in line with Principle 7, the data
	Benchmark design should take into account the following generic non-exclusive features, and other factors should be considered, as appropriate to the particular Interest:		underlying the EFFR and the OBFR are representative samples of the federal funds market and of Eurodollar transactions controlled by U.S. bank offices. The FR 2420

reporting panel is regularly updated to capture shifts in the a) Adequacy of the sample used to represent the Interest; entities active in these markets. b) Size and liquidity of the relevant market (for example whether there is sufficient trading to provide The EFFR and the OBFR are each calculated as a volumeobservable, transparent pricing); weighted median, which, as noted in a Technical Note, is c) Relative size of the underlying market in relation to more resilient to outlier and erroneous transactions than the volume of trading in the market that references the other commonly used central tendency measures, such as the Benchmark: volume-weighted average. Data can be excluded from the d) The distribution of trading among Market Participants Benchmark calculation in extraordinary circumstances, (market concentration): including when staff identifies one or more submitted e) Market dynamics (e.g., to ensure that the Benchmark transactions as potentially anomalous or erroneously reflects changes to the assets underpinning a reported and the reporting institution cannot revise the data Benchmark). or cannot be contacted to confirm the accuracy of the data in time for the publication of the Benchmarks. The design of the Benchmarks and their underlying data are assessed on a regular basis, and, in line with Principle 12, could be modified in the case of market evolution to more accurately reflect the underlying interest. 7. Data **Compliant** The EFFR and the OBFR consist only of observable The data used to construct a Benchmark determination should transactions that are priced based on the competitive forces be sufficient to accurately and reliably represent the Interest **Sufficiency** measured by the Benchmark and should: of supply and demand and are conducted at arm's length. Reporting entities are required to exclude indicative prices a) Be based on prices, rates, indices or values that have and transactions conducted with affiliated entities from the been formed by the competitive forces of supply and FR 2420 data underlying the Benchmarks. demand in order to provide confidence that the price discovery system is reliable; and The FR 2420 Report of Selected Money Market Rates. which is the form that reporters complete to provide the data b) Be anchored by observable transactions entered into at arm's length between buyers and sellers in the that is used to calculate the EFFR and the OBFR, collects a broad sample of transactions in the federal funds and market for the Interest the Benchmark measures in order for it to function as a credible indicator of Eurodollar markets. prices, rates, indices or values. The FR 2420 report is reviewed by the Office of This Principle requires that a Benchmark be based upon (i.e., Management and Budget for renewal at least every three anchored in) an active market having observable Bona Fide, years, and can be amended if deemed necessary to capture Arms-Length Transactions. This does not mean that every different segments of the unsecured wholesale U.S. dollar individual Benchmark determination must be constructed funding markets. 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.

8. Hierarchy of Data Inputs

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:

- 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;
- Reported or observed concluded Arm's-length Transactions in related markets;

Compliant

Except in extraordinary circumstances, the Benchmarks are based entirely on data collected from the FR 2420 Report of Selected Money Market Rates, which includes observable transactions that are priced based on the competitive forces of supply and demand and are conducted at arm's length. A data contingency waterfall process has been developed where, in the case that FR 2420 transaction data are insufficient to calculate the Benchmarks on a given day or other circumstances prevent the normal production of the Benchmarks, the Benchmarks will be calculated based on federal funds and Eurodollar data received from brokers in these markets. These data, which are still based on actual transactions, do not represent the entire market that is captured by the FR 2420 report, but are a sizeable portion of

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e) Other market information or Expert Judgments.

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

the overall market and have historically tracked the FR 2420 data closely. In the case that both the FR 2420 data and contingency data are insufficient to calculate the Benchmarks, the prior day's Benchmark value will be published.

Any use of an alternative data source for a Benchmark will be disclosed on the Federal Reserve Bank of New York public website.

9. Transparency of Benchmark Determinations

The Administrator should describe and publish with each Benchmark determination, to the extent reasonable without delaying an Administrator publication deadline:

- 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.

Compliant

The volume and several volume-weighted percentile rates of transactions underlying the Benchmarks are published on a daily basis. On a quarterly basis, <u>summary statistics</u> related to the data are published which are calculated using any additional submissions received subsequent to the publication of the daily Benchmarks.

As stated in the <u>Data Exclusions</u> policy available on the Federal Reserve Bank of New York website, staff involved in the Benchmark production process reviews the data each morning prior to the calculation of the Benchmarks. In extraordinary circumstances in which potential errors or other anomalies are discovered and the reporting institution is not able to confirm or revise its submission, staff judgment may be used to exclude such transactions. Any use of staff judgment is subject to dual approval between two staff members and is subsequently reviewed by an internal Oversight Committee.

			In the event that data are deemed insufficient to calculate
			one or more of the Benchmarks on a given data, in line with
			Principle 8, staff will use contingency data to calculate the
			Benchmark(s). Any use of an alternative data source will be
			disclosed on the Federal Reserve Bank of New York public
			website.
10 D 1:-	The Administrator should periodically review the conditions	C	Federal Reserve staff monitors wholesale U.S. dollar
10. Periodic	in the underlying Interest that the Benchmark measures to	Compliant	
Review			funding markets, including the federal funds and Eurodollar
	determine whether the Interest has undergone structural		markets underlying the EFFR and the OBFR, and how the
	changes that might require changes to the design of the		dynamics in these markets affect the Benchmarks. The
	Methodology. The Administrator also should periodically		Federal Reserve Bank of New York has established an
	review whether the Interest has diminished or is non-		internal Oversight Committee that reviews the performance
	functioning such that it can no longer function as the basis for		and functioning of the Benchmarks on a quarterly basis.
	a credible Benchmark.		Additionally, the FR 2420 report is renewed every three
			years, and potential changes to the reporting instructions
	The Administrator should Publish or Make Available a		will be reviewed prior to each renewal.
	summary of such reviews where material revisions have been		
	made to a Benchmark, including the rationale for the		Consistent with Principle 12, any changes to the
	revisions.		methodology of a Benchmark will be reviewed by an
			internal Oversight Committee.
11. Content of	The Administrator should document and Publish or Make	Compliant	As described in the <u>Data and Calculation Methodology</u>
the	Available the Methodology used to make Benchmark		policies for the Benchmarks and in line with Principle 6, a
Methodology	determinations. The Administrator should provide the		volume-weighted median calculation methodology is used in
	rationale for adopting a particular Methodology. The		the production of the EFFR and the OBFR. A volume-
	Published Methodology should provide sufficient detail to		weighted median, as noted in a <u>Technical Note</u> , is more
	allow Stakeholders to understand how the Benchmark is		resilient to outlier and erroneous transactions than other
	derived and to assess its representativeness, its relevance to		commonly used central tendency measures, such as the
	particular Stakeholders, and its appropriateness as a reference		volume-weighted average.
	for financial instruments.		
			The definitions and descriptions of the EFFR and the OBFR
	At a minimum, the Methodology should contain:		are available on the Federal Reserve Bank of New York
			public website. Detailed descriptions of the data collected by
	a) Definitions of key terms;		the FR 2420 Report of Selected Money Market Rates are
	b) All criteria and procedures used to develop the		available in the FR 2420 Reporting Instructions.
	Benchmark, including input selection, the mix of		
	inputs used to derive the Benchmark, the guidelines		In line with Principle 9, the use of expert judgment is
	that control the exercise of Expert Judgment by the		described on the Additional Information page of the Federal
	Administrator, priority given to certain data types,		Reserve Bank of New York public website, including
	minimum data needed to determine a Benchmark, and		policies related to the exclusion of erroneous transaction
	any models or extrapolation methods;		data and the use of contingency data sources in the
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	c) Procedures and practices designed to promote		calculation of the Benchmarks.
	consistency in the exercise of Expert Judgment		
	between Benchmark determinations;		A Rate Revisions policy states that, if transaction data are
	d) The procedures which govern Benchmark		revised or an error is discovered in the calculation process
	determination in periods of market stress or		subsequent to the rate publication on the same day, the
	disruption, or periods where data sources may be		affected rate or rates will be revised at approximately 2:30
	absent (e.g., theoretical estimation models);		P.M. ET. These revisions will only take place if the change
	e) The procedures for dealing with error reports,		in the published rate exceeds one basis point. There will not
	including when a revision of a Benchmark would be		be a revision to a prior day's Benchmark, except in
	applicable;		extraordinary circumstances. Any revisions to a Benchmark
	f) Information regarding the frequency for internal		will be clearly indicated on the public website.
	reviews and approvals of the Methodology. Where		
	applicable, the Published Methodologies should also		An internal Oversight Committee meets on a quarterly basis
	include information regarding the procedures and		to provide effective oversight and challenge to the
	frequency for external review of the Methodology;		Benchmark production process.
	g) The circumstances and procedures under which the		
	Administrator will consult with Stakeholders, as		In line with Principles 12 and 13, any changes to the
	appropriate; and		methodology of a Benchmark will be reviewed by an
	h) The identification of potential limitations of a		internal Oversight Committee. The Federal Reserve Bank of
	Benchmark, including its operation in illiquid or		New York would communicate any such changes to the
	fragmented markets and the possible concentration of		public and would seek public comment, to the extent
	inputs.		reasonable, before implementing changes.
	Where a Benchmark is based on Submissions, the		Consistent with Principle 14, the EFFR and the OBFR are
	additional Principle also applies:		based entirely on observable transactions, as opposed to submissions or calculations.
	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.		
12. Changes to	An Administrator should Publish or Make Available the	Compliant	The Federal Reserve Bank of New York may seek to revise
the	rationale of any proposed material change in its Methodology,		the composition or calculation methodology for one or more
Methodology	and procedures for making such changes. These procedures		Benchmarks. An internal Oversight Committee, charged
J.	should clearly define what constitutes a material change, and		with periodically reviewing the calculation methodology of
	the method and timing for consulting or notifying Subscribers		the Benchmarks to ensure that they continue to properly
	(and other Stakeholders where appropriate, taking into		reflect their underlying interests, will review and approve

account the breadth and depth of the Benchmark's use) of any such proposed revisions. changes. If a proposed change is deemed by the Oversight Committee to be necessary and material in the context of the affected Those procedures should be consistent with the overriding objective that an Administrator must ensure the continued Benchmark(s), the Federal Reserve Bank of New York will, integrity of its Benchmark determinations. When changes are to the extent reasonable, develop a plan for notifying and proposed, the Administrator should specify exactly what these consulting with relevant stakeholders in a manner changes entail and when they are intended to apply. appropriate and proportionate to the circumstances. The Oversight Committee's evaluation of a potential change, and its decisions regarding the appropriate consultation plan, The Administrator should specify how changes to the Methodology will be scrutinized, by the oversight function. will take into account relevant factors such as the uses of the affected Benchmark(s) and the breadth and depth of those The Administrator should develop Stakeholder consultation uses, the type of changes being proposed, and any risks procedures in relation to changes to the Methodology that are posed by delays in implementing those changes. The Federal deemed material by the oversight function, and that are Reserve Board of Governors may be legally required to appropriate and proportionate to the breadth and depth of the engage in a formal notice-and-comment process for some Benchmark's use and the nature of the Stakeholders. types of changes and the Federal Reserve may decide to use such a formal process even when not legally required, but in Procedures should: other cases comments may be sought through more informal a) Provide advance notice and a clear timeframe that means. gives Stakeholders sufficient opportunity to analyze and comment on the impact of such proposed material Any notification of a change to the composition or changes, having regard to the Administrator's calculation process for a Benchmark would describe the assessment of the overall circumstances; and rationale for the change, what the change entails, and when b) b) Provide for Stakeholders' summary comments, and it would apply. 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. 13. Transition The Federal Reserve Bank of New York may terminate a Administrators should have clear written policies and **Compliant** procedures, to address the need for possible cessation of a Benchmark in certain extraordinary circumstances, Benchmark, due to market structure change, product including, but not limited to, if a Benchmark no longer definition change, or any other condition which makes the represented, and could not be modified to represent, its Benchmark no longer representative of its intended Interest. underlying interest, or if market liquidity in the underlying These policies and procedures should be proportionate to the interest declined to the extent that the underlying interest no estimated breadth and depth of contracts and financial longer functioned as an active market. In line with Principle instruments that reference a Benchmark and the economic and 12, any termination or discontinuation of the Benchmark financial stability impact that might result from the cessation would be evaluated by an internal Oversight Committee, and the Oversight Committee would decide on a public of the Benchmark. The Administrator should take into account the views of Stakeholders and any relevant consultation plan.

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

Any notification of the termination of a Benchmark would describe the rationale for the decision and when the Benchmark would be discontinued.

	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.		
14. Submitter	Where a Benchmark is based on Submissions, the	Not	The objectives and functions of this Principle have been
Code of	following additional Principle also applies:	Applicable	addressed in an alternative manner to the extent applicable.
Conduct	The Administrator should develop guidelines for Submitters		The EFFR and the OBFR are based entirely on observable transactions, as opposed to submissions or estimates.
	("Submitter Code of Conduct"), which should be available to		dansactions, as opposed to submissions of estimates.
	any relevant Regulatory Authorities, if any and Published or		The FR 2420 is an information collection authorized by
	Made Available to Stakeholders.		sections 9 and 11 of the Federal Reserve Act (12
			U.S.C. §§ 324 and 248(a)) and by section 7(c)(2) of
	The Administrator should only use inputs or Submissions		the International Banking Act (12 U.S.C. § 3105(c)(2))
	from entities which adhere to the Submitter Code of Conduct and the Administrator should appropriately monitor and		and may be made mandatory under those provisions. The Federal Reserve monitors the FR 2420 report submissions
	record adherence from Submitters. The Administrator should		for inaccurate or misleading data. Institutions that submit
	require Submitters to confirm adherence to the Submitter		late, false, or misleading reports are subject to enforcement
	Code of Conduct annually and whenever a change to the		under federal law. Because these factors mitigate the risks
	Submitter Code of Conduct has occurred.		that are intended to be addressed by a Submitter Code of
	The Administrator's everyight function should be necessarily		Conduct under the IOSCO Principles, the Federal Reserve
	The Administrator's oversight function should be responsible for the continuing review and oversight of the Submitter Code		Bank of New York does not maintain a Submitter Code of Conduct in addition to the published FR 2420 reporting
	of Conduct		conduct in addition to the published FK 2420 reporting

instructions.

of Conduct.

The Submitter Code of Conduct should address:

- a) The selection of inputs;
- b) Who may submit data and information to the Administrator;
- 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:
 - 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.		
15. Internal	When an Administrator collects data from any external source	Compliant	The data collected through the FR 2420 Report of Selected
Controls over	the Administrator should ensure that there are appropriate	Compilant	Money Market Rates is submitted to the Federal Reserve
Data Collection	internal controls over its data collection and transmission		through a secure data collection mechanism. Prior to being
Data Conceilon	processes. These controls should address the process for		used to calculate the Benchmarks, the data are validated and
	selecting the source, collecting the data and protecting the		stored by the Federal Reserve Bank of New York.
	integrity and confidentiality of the data. Where Administrators		
	receive data from employees of the Front Office Function, the		Internal controls have been put in place in regard to
	Administrator should seek corroborating data from other		collecting the data and in protecting the integrity and
	sources.		confidentiality of the data, and staff involved in the
			Benchmark production process is trained in the proper usage
			of the data.
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16. Complaints Procedures

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:

- a) Permit complaints to be submitted through a userfriendly complaints process such as an electronic Submission process;
- b) 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;
- c) Contain a process for escalating complaints, as appropriate, to the Administrator's governance body; and
- d) 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.

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.

Compliant

As stated on the Additional Information page on the Federal Reserve Bank of New York public website, a mailbox (rateproduction@ny.frb.org) has been created to receive and respond to any complaints regarding the Benchmark calculation process or a given day's rate. Additionally, the Federal Reserve Bank of New York maintains a Tips and Complaints page detailing its complaints procedures policies with respect to fraud or other unethical activity. In addition, the Federal Reserve Bank of New York maintains an internal process for the reporting of fraudulent or other unethical activity. An internal Oversight Committee periodically reviews all complaints received regarding the Benchmarks.

17. Audits	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. 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.	Compliant	The data used and actions taken in the Benchmark calculation process are audited by an independent internal auditing body within the Federal Reserve Bank of New York and an oversight body within the Federal Reserve Board of Governors, in line with the Federal Reserve Bank of New York's other operations.
18. Audit Trail	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. f) 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.	Compliant	 The Federal Reserve Bank of New York retains records, for at least five years, of: All transaction data collected for use in the Benchmark determination; Any use of expert judgment in the calculation of the Benchmarks; Any use of non-standard procedures, including the use of contingency data; The identities of staff responsible for the calculation of the Benchmarks; and Any complaints and responses related to the validity and accuracy of the input data.

	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. 		
19. Cooperation with Regulatory Authorities	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.	Compliant	The objectives and functions of this Principle have been addressed in an alternative manner to the extent applicable. The Federal Reserve Bank of New York and the Federal Reserve Board of Governors of the Federal Reserve System have processes in place for sharing information with other authorities, including regulations, memorandums of understanding and information sharing agreements. A request for information related to the Benchmarks by any applicable Regulatory Authorities would be addressed through these existing processes.