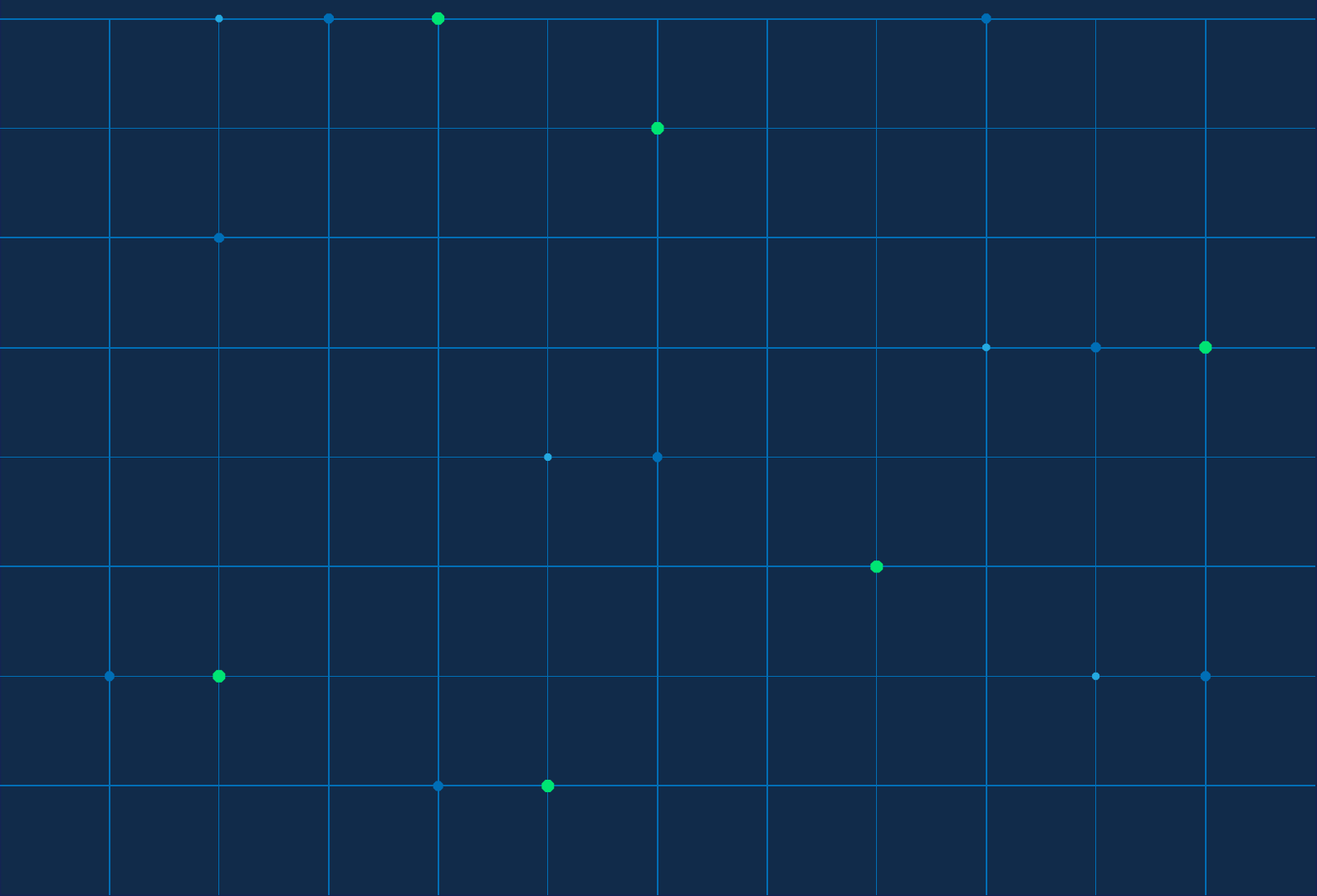


CME Term SOFR Reference Rates BMR Benchmark Regulation Statement

CME Group Benchmark Administration Limited

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Introduction

The “CME Term SOFR Reference Rates” group of benchmarks, provided by CME Group Benchmark Administration Limited (CBA), are determined from input data of the same nature which provides specific measures of the same or similar market or economic reality; and therefore classified as a “family of benchmarks” under Article 3(1)(4) BMR.

The CME Term SOFR Reference Rates, are classified as “interest rate benchmarks” under Article 3(1)(22), and consists of the 1 Month CME Term SOFR Reference Rate; 3 Month CME Term SOFR Reference Rate; and 6 Month CME Term SOFR Reference Rate.

As interest rate benchmarks, the CME Term SOFR Reference Rates do not pursue ESG objectives.

These Benchmarks are administered and calculated by CME Group Benchmark Administration Limited (CBA), authorized and supervised, as a Benchmark Administrator by the UK Financial Conduct Authority.

BMR / RTS	BMR Benchmark Statement requirement	Administrator's statement
Article 27 (1) BMR	<p>Within two weeks of the inclusion of an administrator in the register referred to in Article 36, the administrator shall publish, by means that ensure fair and easy access, a benchmark statement for each benchmark or, where applicable, for each family of benchmarks, that may be used in the Union in accordance with Article 29. Where that administrator begins providing a new benchmark or family of benchmarks that may be used in the Union in accordance with Article 29, the administrator shall publish, within two weeks and by means that ensure a fair and easy access, a benchmark statement for each new benchmark or, where applicable, family of benchmarks. The administrator shall review and, where necessary, update the benchmark statement for each benchmark or family of benchmarks in the event of any changes to the information to be provided under this Article and at least every two years.</p>	<p>In order to facilitate fair and easy access, this Benchmark Statement appears on the Administrator's website.</p> <p>The Administrator shall ensure that this Benchmark Statement is updated in the event of any material changes and no later than every two years.</p>
The Benchmark Statement shall:		
(a)	<p>clearly and unambiguously define the market or economic reality measured by the benchmark and the circumstances in which such measurement may become unreliable;</p>	<p>The CME Term SOFR Reference Rates provides forward looking estimates of overnight SOFR for three tenors: 1-month, 3-months and 6-months.</p> <p>The CME Term SOFR Reference Rates may become unreliable as a result of insufficient input data or severe market disruption.</p> <p>The input data used in the calculation of the CME Term SOFR Reference Rates Benchmark is from CME Group's Designated Contracts Market (DCM). Details of the CME SOFR Futures contracts and their volume and open interest is available at CME Group - Secured Overnight Financing Rate (SOFR) Futures.</p>
(b)	<p>lay down technical specifications that clearly and unambiguously identify the elements of the calculation of the benchmark in relation to which discretion may be exercised, the criteria applicable to the exercise of such discretion and the position of the persons that can exercise discretion, and how such discretion may be subsequently evaluated;</p>	<p>The CME Term SOFR Reference Rates do not include the use of discretion in the benchmark determination process.</p>
(c)	<p>provide notice of the possibility that factors, including external factors beyond the control of the administrator, may necessitate changes to, or the cessation of, the benchmark; and</p>	<p>There is the possibility that factors, including external factors beyond the control of the Administrator, may necessitate changes to, or the cessation of, the Benchmarks.</p>

BMR / RTS	BMR Benchmark Statement requirement	Administrator's statement
		<p>Where material changes to or the cessation of the Benchmarks become necessary, the Administrator will engage stakeholders and users by way of a public consultation.</p> <p>All changes are reviewed and approved by the Oversight Committee.</p>
(d)	<p>advise users that changes to, or the cessation of, the benchmark may have an impact upon the financial contracts and financial instruments that reference the benchmark or the measurement of the performance of investment funds.</p>	<p>Changes to, or the cessation of, the Benchmarks may have an impact upon the financial contracts and financial instruments that reference the benchmark or the measurement of the performance of investment funds.</p> <p>The Administrator advises users of the Benchmarks to regularly assess whether it remains appropriate, suitable and fit for purpose. Users should develop contingency provisions and fall-back plans in the event of the benchmark becoming unavailable.</p>
Article 27(2) BMR	A benchmark statement shall contain at least:	
(a)	the definitions for all key terms relating to the benchmark;	See the Appendix for definitions used in this Benchmark Statement.
(b)	the rationale for adopting the benchmark methodology and procedures for the review and approval of the methodology;	<p>The CME Term SOFR Reference Rates Methodology is based on the discussion paper "Inferring Term Rates from SOFR Futures Prices" as published by the Division of Research & Statistics and Monetary Affairs, Federal Reserve Board, Washington D.C. on 5 February 2019.</p> <p>The Administrator regularly reviews the methodology to ensure that the Benchmarks remain representative of the economic reality intended to be represented.</p> <p>Amendments to the methodology are proposed by the Administrator, after wide consultation with the relevant stakeholders, and approved by the Oversight Committee.</p>
(c)	The criteria and procedures used to determine the benchmark, including a description of the input data, the priority given to different types of input data, the minimum data needed to determine a benchmark, the use of any models or methods of extrapolation and any procedure for rebalancing the constituents of a benchmark's index;	<p>The calculation is based on a waterfall including transactions and executable orders from the Designated Contract Market (DCM) operated by CME Inc.</p> <p>In particular, the following future contracts are used as inputs to the calculation:</p>

BMR / RTS	BMR Benchmark Statement requirement	Administrator's statement
		<ul style="list-style-type: none"> • CME one-month SOFR Futures (SR1): 7 (seven) consecutive months contracts • CME three-month SOFR Futures (SR3): up to 4 (four) consecutive months contracts <p>Details of the CME SOFR Futures contracts and their trading volumes are available at CME Group - Secured Overnight Financing Rate (SOFR) Futures.</p> <p>The calculation methodology is based on 14 observation windows of 30-minutes each, from 7:00am CT to 2:00pm CT. During each window, a VWAP of executed transactions in the above future contracts and snapshots of their executable bid-ask are taken to determine a Settlement Price for each observation window. Those are then weighted in the final benchmarks' calculation.</p> <p>If none of the observation windows contains actual transactions, the previous day Settlement Prices are used.</p>
(d)	the controls and rules that govern any exercise of judgement or discretion by the administrator or any contributors, to ensure consistency in the use of such judgement or discretion;	N/A – The methodology does not include the use of judgement or discretion in the benchmark determination process.
(e)	the procedures which govern the determination of the benchmark in periods of stress or periods where transaction data sources may be insufficient, inaccurate or unreliable and the potential limitations of the benchmark in such periods;	<p>The methodology includes contingency measures to deal with determination of the Benchmarks in periods of stress or periods where transaction data sources may be insufficient, inaccurate or unreliable.</p> <p>The methodology states that if input data are unavailable on the day, the CME Term SOFR Reference Rates from the previous day are re-published.</p>
(f)	the procedures for dealing with errors in input data or in the determination of the benchmark, including when a redetermination of the benchmark is required; and	The Administrator has in place operating procedures to ensure the integrity of input data and prompt correction of calculation errors, including re-publication of the Benchmark.
(g)	the identification of potential limitations of the benchmark, including its operation in illiquid or fragmented markets and the possible concentration of inputs.	The methodology states that if input data are unavailable on the day, the CME Term SOFR Reference Rates from the previous day are re-published.

BMR / RTS	BMR Benchmark Statement requirement	Administrator's statement
		In the event that the previous day CME Term SOFR Reference Rates are republished for more the 3 (three) consecutive business days, the Administrator must promptly convene the Oversight Committee to assess available remedial actions.
RTS 1(1)	The benchmark statement shall state:	
(a)	the date of publication of the statement and, where applicable, the date of its last update;	Please see the beginning of this document for the date of publication and last update.
(b)	where available, the international securities identification number (ISIN) of the benchmark or benchmarks; alternatively, for a family of benchmarks, the statement may provide details of where the ISINs are publicly accessible free of charge;	Not applicable to these Benchmarks
(c)	whether the benchmark, or any benchmark in the family of benchmarks, is determined using contributions of input data;	The Benchmarks are not determined using contributions of input data.
(d)	whether the benchmark or any benchmark in the family of benchmarks qualifies as one of the types of benchmarks listed under Title III BMR, including the specific provision by virtue of which the benchmark qualifies as that type.	The CME Term SOFR Reference Rates is an interest rate benchmark in accordance with Article 18 of the BMR (Title III, Chapter 2).
RTS 1(2)	In defining the market or economic reality, the benchmark statement shall include at least the following information:	
(a)	a general description of the market or economic reality;	The CME Term SOFR Reference Rates provides forward-looking estimates of overnight SOFR. The benchmark design is based on the research paper published by the Division of Research & Statistics and Monetary Affairs, Federal Reserve Board, Washington D.C..
(b)	the geographical boundaries, if any, of the market or economic reality;	SOFR is a broad measure of the cost of borrowing cash overnight, collateralized by US Treasury securities. The Secured Overnight Financing Rate (SOFR) is calculated and published by the Federal Reserve Bank of New York (NY Fed). CME Term SOFR Reference Rates benchmark provide the forward-looking measurement of overnight SOFR based on market expectations implied from derivatives markets.

BMR / RTS	BMR Benchmark Statement requirement	Administrator's statement
		The use of US Dollars stretches globally and consequently the use of the Benchmark has no geographical limitations.
(c)	<p>any other information that the administrator reasonably considers to be relevant or useful to help users or potential users of the benchmark to understand the relevant features of the market or economic reality, including at least the following elements insofar as reliable data on these elements is available:</p> <p>(i) information on actual or potential participants in the market;</p> <p>(ii) an indication of the size of the market or economic reality.</p>	<p>(i) CME SOFR futures have been used by over 400 market participants since launch in May 2018. All customer segments are represented including proprietary trading groups, banks, hedge funds and asset managers.</p> <p>(ii) Trading in CME SOFR futures has grown to above 60,000 contracts (approximately \$180 billion in notional equivalent principal value) and is expected to grow further.</p> <p>In addition to the actual volume of transactions, CME SOFR futures markets show consistently actionable quotes in a regulated central limit order book for significant proportions of the trading day, supported by market makers that have committed to streaming quotes for the majority of the relevant trading hours.</p>
RTS 1(3)	In defining the potential limitations of the benchmark and the circumstances in which the measurement of the market or economic reality may become unreliable, the benchmark statement shall include at least:	
(a)	a description of the circumstances in which the administrator would lack sufficient input data to determine the benchmark in accordance with the methodology.	<p>The accuracy and reliability of the Benchmarks could no longer be ensured in the event of continued insufficient liquidity in the underlying CME SOFR Future markets.</p> <p>To that extent, the Administrator regularly monitors transacted volumes for each specific Benchmark and reports to the Oversight Committee any concern regarding the liquidity of the underlying markets.</p>
(b)	where relevant, a description of instances when the accuracy and reliability of the methodology used for determining the benchmark can no longer be ensured, such as when the administrator deems the liquidity in the underlying market as insufficient;	<p>The accuracy and reliability of the Benchmarks could no longer be ensured in the event of continued insufficient liquidity in the underlying SOFR Futures contract.</p> <p>To that extent, the Administrator regularly reviews transacted volumes and will report any concern regarding the liquidity of the underlying market to the Oversight Committee.</p>
(c)	any other information that the administrator reasonably considers to be relevant or useful to help users and potential users to understand the	The Benchmarks rely on the regular functioning of the underlying SOFR Future contracts; reliable representation of

BMR / RTS	BMR Benchmark Statement requirement	Administrator's statement
	circumstances in which the measurement of the market or economic reality may become unreliable, including a description of what might constitute an exceptional market event.	underlying markets could be severely affected if SOFR Futures contracts markets were not operating due to severe disruptions or regulatory limitations to their normal functioning.
RTS 1(4)	In specifying the controls and rules that govern any exercise of judgement or discretion by the administrator or any contributors in calculating the benchmark or benchmarks, the benchmark statement shall include an outline of each step of the process for any ex post evaluation of the use of discretion, together with a clear indication of the position of any person(s) responsible for carrying out the evaluations.	The Benchmarks do not include discretion or expert judgement at any step of their determination process.
RTS 1(5)	In specifying the procedures for review of the methodology, the benchmark statement shall at least outline the procedures for public consultation on any material changes to the methodology.	<p>The methodology provides that the Administrator will consult with stakeholders on material changes to the methodology.</p> <p>Consultation will ordinarily consist of publishing of proposals, providing stakeholders with a reasonable time to respond and publishing actions as a result of the consultation.</p> <p>In addition, the Oversight Committee can request the Administrator to consult on any change as appropriate.</p>
RTS 2	In addition to the information to be included pursuant to Article 1, for a regulated-data benchmark or, where applicable, family of regulated-data benchmarks, the benchmark statement shall state at least the following in its description of the input data:	
(a)	the sources of the input data used;	N/A – Not a regulated data benchmark
(b)	for each source, the relevant type, as listed in Article 3(1)(24) of Regulation (EU) 2016/1011.	N/A – Not a regulated data benchmark
RTS 3	In addition to the information to be included pursuant to Article 1, for an interest rate benchmark or, where applicable, family of interest rate benchmarks, the benchmark statement shall include at least the following information:	
(a)	a reference alerting users to the additional regulatory regime applicable to interest rate benchmarks under Annex I to Regulation (EU) 2016/1011;	As the CME Term SOFR Reference Rate is an interest rate benchmark, the regulatory regime under Annex I to the BMR also applies.
(b)	a description of the arrangements that have been put in place to comply with that Annex.	<p>The arrangements that are in place to comply with Annex I of the BMR are as follows:</p> <p><i>Accurate and sufficient data</i>; the arrangements regarding the priority of use of input data are set out in the published Benchmark Methodology.</p> <p><i>Oversight function</i>: The Administrator has established the Oversight Committee, for which the Terms of Reference,</p>

BMR / RTS	BMR Benchmark Statement requirement	Administrator's statement
		<p>membership, declarations of any conflicts of interest and the processes for election or nomination of members.</p> <p><i>Auditing:</i> The Administrator is authorised and supervised by the UK Financial Conduct Authority and undergoes a regular internal audit in accordance with its regulatory requirements. In addition, audits can be requested at any time by the Administrator's board or the Oversight Committee.</p> <p>The Administrator shall appoint an independent external auditor to review and report on its compliance with the Benchmark Methodology and the BMR, for the first time no later than six months after the launch date of the Benchmark and subsequently every two years.</p> <p><i>Contributor systems and controls:</i> The CME Term SOFR Reference Rates are not determined using contributions, and accordingly these provisions are not applicable.</p>
RTS 4	In addition to the information to be included pursuant to Article 1, for a commodity benchmark or, where applicable, family of commodity benchmarks, the benchmark statement shall at least:	
(a)	indicate whether the requirements of Title II of, or Annex II to, Regulation (EU) 2016/1011 apply to the benchmark, or family of benchmarks as prescribed by Article 19 of that Regulation;	N/A – Not a commodity benchmark
(b)	include an explanation as to why Title II of or, as the case may be, Annex II to that Regulation applies;	N/A – Not a commodity benchmark
(c)	include in the definitions of key terms a concise description of the criteria that define the relevant underlying physical commodity;	N/A – Not a commodity benchmark
(d)	where applicable, indicate where the explanations are published that the administrator is required to publish under paragraph 7 of Annex II to that Regulation.	N/A – Not a commodity benchmark
RTS 5	In addition to the information to be included pursuant to Article 1, for a critical benchmark, or, where applicable, a family of benchmarks that contains at least one critical benchmark, the benchmark statement shall include at least the following information:	
(a)	a reference alerting users to the enhanced regulatory regime applicable to critical benchmarks under Regulation (EU) 2016/1011;	N/A – Not a critical benchmark
(b)	a statement indicating how users will be informed of any delay in the publication of the benchmark or of any re-de-termination of the benchmark and indicating the (expected) duration of measures.	N/A – Not a critical benchmark

BMR / RTS	BMR Benchmark Statement requirement	Administrator's statement
RTS 6	In addition to the cases referred to in the third subparagraph of Article 27(1) of Regulation (EU) 2016/1011, an update of the benchmark statement shall be required whenever the information contained in the statement ceases to be correct or sufficiently precise, and including in any event in the following cases:	
(a)	whenever there is a change in the type of the benchmark;	This Benchmark Statement shall be updated where information contained within it ceases to be correct or sufficiently precise, including where there is a change to the type of input data.
(b)	whenever there is a material change in the methodology used for determining the benchmark or, if the benchmark statement is for a family of benchmarks, in the methodology used for determining any benchmark within the family of benchmarks.	This Benchmark Statement shall be updated where there is a material change in the methodology used for determining the Benchmarks .

1. Appendix I – Key Terms & Definitions

Capitalised terms used in this Benchmark Statement that are not otherwise defined have the meaning set out below:

TERM	DESCRIPTION
Administrator	CME Group Benchmark Administration Limited
CBA	CME Group Benchmark Administration Limited
DCM	Designated Contract Market
BMR	Benchmark Regulation
FCA UK	Financial Conduct Authority (UK)
FED	Federal Reserve System
NY FED	Federal Reserve Bank of New York
OIS	Overnight Indexed Swaps
RTS	Regulatory Technical Standard
SOFR	Secured Overnight Financing Rate
SR1	One-month SOFR Futures
SR3	Three-month SOFR Futures
VWAP	Volume Weighted Average Price

