

THOMSON REUTERS BENCHMARK SERVICES LIMITED

Benchmark Statement WM/Reuters London 4pm Closing Spot Rate

Date of Publication and Last Update: 24 July 2018

Thomson Reuters Document Classification: Public



TABLE OF CONTENTS

1.	Introduction.....	3
2.	Overview of Methodology.....	4
3.	Potential Limitations of the Benchmark	6
4.	Methodology Changes and Benchmark Cessation	7
5.	Further Information	8

© Thomson Reuters 2018. All Rights Reserved.

Thomson Reuters, by publishing this document, does not guarantee that any information contained herein is or will remain accurate or that use of the information will ensure correct and faultless operation of the relevant service or associated equipment. Neither Thomson Reuters, nor its agents or employees, shall be held liable to any user or end user for any loss or damage (whether direct or indirect) whatsoever resulting from reliance on the information contained herein.

This document may not be reproduced, disclosed, or used in whole or part without the prior written consent of Thomson Reuters.



1. Introduction

The WM/Reuters London 4pm Closing Spot Rate service (the “Benchmark”) was introduced in 1994 to provide a standard set of currency benchmark rates so that portfolio valuations could be compared with each other and their performance measured against benchmarks without having any differences caused by exchange rates. These rates were adopted by index compilers, the Financial Times and other users and became the de facto standard for Closing Spot Rates on a global basis.

The foreign exchange markets including the spot currency markets represented by the Benchmark are global in nature. The Bank for International Settlements reported that trading in foreign exchange markets averaged US\$5.1 trillion per day in April 2016¹ with spot transactions accounting for US\$1.7 trillion of that. During that month, “sales desks in five countries – the United Kingdom, the United States, Singapore, Hong Kong SAR and Japan – intermediated 77% of foreign exchange trading”¹. Participants in the wider FX markets include dealers, institutional investors, central banks, hedge funds and non-financial customers.

Thomson Reuters Benchmark Services Limited (“TRBSL” or “the Administrator”) is the administrator of the WM/Reuters London 4pm Closing Spot Rate. The WM/Reuters London 4pm Closing Spot Rate is a foreign exchange currency benchmark based on readily available data and subject to the EU Benchmark Regulation² (“BMR”). TRBSL administers the WM/Reuters London 4pm Closing Spot Rate in accordance with Article 20 (“Critical benchmarks”) of the EU BMR. TRBSL has adopted policies and procedures to comply with the Regulation.

The Benchmark is intended to cover the currencies for those countries that are included in a global or regional stock market index or where there is sufficient liquidity in the currency market to provide accurate fixings. The addition of currencies not meeting these criteria will be at the discretion of TRBSL. Currently the Benchmark comprises 155 currencies as listed in the Benchmark Methodology³ and the Benchmark determination is centred around 4pm UK time with publication following this determination.

The primary infrastructure used to source spot foreign exchange (FX) rates used in the determination of the Benchmark is the Thomson Reuters Market Data System. Other systems may be used by exception where the appropriate rates are not available on the Thomson Reuters architecture.

All currencies within the Benchmark are referred to as “Trade Currencies” or “Non-trade Currencies”.

For Trade Currencies, the data source (“Data Source”) to be used is determined by TRBSL on a per currency basis and based primarily on the liquidity available on the trading platform in said currencies.

¹ Bank for International Settlements, “Triennial Central Bank Survey, Foreign Exchange turnover in April 2016”

² Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016

³ See the WM/Reuters FX Benchmarks Methodology for a full list of currencies



Such Data Sources are reviewed periodically with respect to their quality and the representativeness of the FX rates with respect to the wider market. Data Sources for the determination of the Benchmark are the following highly liquid order matching platforms: Thomson Reuters Matching, EBS and Currenex. The Benchmark is not based on the contribution of input data. Readily available input data for determination of the Benchmark from these platforms are either traded rates or order rates, with traded rates taking precedence where available subject to the TRBSL's expert judgment.

All other currencies within the Benchmark are referred to as "Non-Trade Currencies". The Data Source for Non-Trade Currencies is Thomson Reuters indicative quote data from "Reuters Instrument Codes" or "RIC".

Determination of the Benchmark includes a validation process whereby, among other steps, TRBSL reviews input data and the Benchmark pursuant to certain pre-determined tolerance checks. When applying tolerance checks, an employee has discretion (subject to internal policies and procedures) to include or reject certain input data in the determination of the Benchmark.

The Benchmark is considered to be a reliable reference rate for the FX currencies it comprises provided that the input data are both reliable and observable market data that reflect the economic realities of the market for each FX currency.

This benchmark statement shall be updated whenever there is a change to the type of the Benchmark or to the Methodology used in the determination of the benchmark.

2. Overview of Methodology

The Data Source for the determination of Non-Trade Currencies is Thomson Reuters. Over a five minute period starting 2 minutes and 30 seconds before 4pm UK time to 2 minutes and 30 seconds after 4pm UK time, snapshots of quoted rates are taken every 15 seconds. The median bid and offer rates are calculated from the individual snapshots for each currency. These bid and offer rates are validated prior to publication against currency specific thresholds and this may result in expert judgment being applied.

The Data Source for the determination of Trade Currencies are the order matching platforms listed in Section 1. Over a five-minute period, traded rates and bid and offer order rates from the platforms are captured every second from 2 minutes 30 seconds before to 2 minutes 30 seconds after 4pm UK time. All traded rates are subjected to validation checks which may result in some input data being excluded from the Benchmark determination.



Valid traded rates from all Data Sources will be combined and, subject to a minimum number of traded rates being present using a threshold determined by TRBSL using expert judgment, the traded rates are used as input data in the determination of the Benchmark. A median bid and offer traded rate are calculated independently, using data from the combined pool of trades across Data Sources. The mid-rate is calculated from the median bid and offer traded rates. A minimum standard spread is applied to the mid-rate to calculate a new bid and offer. These bid, offer and mid rates are the Benchmark fixings for these currencies and will be validated prior to publication using currency specific tolerance thresholds and this may result in expert judgment being applied.

If the minimum number of traded rates is not reached, then order rates are used to determine the Benchmark in respect of such currencies. Best bid and offer order rates are captured simultaneously to the capture of traded rates but are not combined across the different Data Sources. All order rates are subjected to validation checks which may result in some input data being excluded from the Benchmark determination.

A median bid and offer order rate is calculated for each Data Source. The mid-rate is calculated from the median bid and offer order rates. A minimum standard spread is applied to the mid-rate to calculate a new bid and offer. The bid, offer and mid rates from the Data Source with the highest number of valid orders over the five-minute period will be selected as the Benchmark fixings for publication. The Benchmark fixings will be validated prior to publication using currency specific tolerance thresholds and this may result in expert judgment being applied.

Under exceptional circumstances, it may be necessary to amend the rates for one or more currencies after publication. This will be determined by TRBSL, after consultation with key users, if appropriate. Under no circumstances will the Benchmark for one day be amended after the publication of the following weekday's Benchmark.

In the event that there is a disruption to the publication of the Benchmark or it is necessary to amend a published Benchmark, TRBSL will notify clients as early as possible.

No models or method of extrapolation or interpolation are used by TRBSL when determining the Benchmark. Further, the Benchmark is not determined by means of a portfolio of constituents.

TRBSL determines the Benchmark in respect of the following steps:

- the Data Source to use for each currency comprised in the Benchmark;
- setting the threshold for determining when to use order rates rather than traded rates; and



- validation of rates taken from Data Sources for Trade Currencies and Non-Trade Currencies.

Expert judgment is subject to TRBSL's internal guidelines and quality control procedures and is exercised with the intent of ensuring the quality and integrity of the Benchmark. In particular, TRBSL may rely on its own judgement more frequently in an active albeit low liquidity market where transactions may not be consistently available. TRBSL's internal guidelines and quality control procedures governing the application of expert judgment are intended to provide consistency and oversight to this process. Employees receive initial and on-going training in how to comply with these guidelines and procedures.

3. Potential Limitations of the Benchmark

The ability of TRBSL to determine and publish the WM/Reuters FX Benchmarks in accordance with this Methodology depends on

- activity in each currency on a case by case basis for spot settlement, and
- the quality and representativeness of the rates available to TRBSL for the calculation of the Benchmark.

Use of Data Sources including order matching platforms and quotes available on the Thomson Reuters Market Data System, both of which represent the trading and quote activity of a range of market participants, maintains the representativeness of the rates available to TRBSL and mitigates the risk of a concentration of input data.

If any reduction of quality in the rates or fragmentation of activity is identified or foreseen, TRBSL shall review the Benchmark Methodology and its effectiveness in determining suitable benchmarks given conditions in the underlying markets. Such reviews shall be in accordance with the TRBSL Benchmark Internal Review Procedures.

The design of the Benchmark is resilient against disruptions and periods of low liquidity. However, technical problems or extreme market events may lead to unusually illiquid or fragmented markets, resulting in inadequate input data. Expert judgment is used to determine such circumstances. In such cases, TRBSL will endeavour to re-publish the most recent Benchmark fixings for the affected currency or currencies until the disruption has ended or changes have been implemented.



4. Methodology Changes and Benchmark Cessation

The Benchmark Methodology has been adopted as being a reliable and resilient means for providing a benchmark that accurately represents market rates for the FX currencies it comprises at 4pm UK time.

The Benchmark Methodology is subject to a review in order to assess its ongoing fitness for purpose on at least an annual basis. In the event that the review leads TRBSL to believe that a change to the Methodology is required and that the change is material in its effect on the benchmark, a market consultation will be conducted in accordance with the TRBSL Benchmark Methodology Change Procedures in order to seek feedback from a representative range of stakeholders. TRBSL will review all feedback and, if following such review it resolves to proceed with the proposed change or changes, will provide sufficient notice to users of the Benchmark before implementing such change or changes.

Circumstances beyond the control of TRBSL may necessitate an immediate change to or the cessation of the Benchmark. Such circumstances include without limitation (i) a sustained loss of liquidity in the underlying FX markets and (ii) a loss of liquidity in the available Data Sources such that the Data Sources are no longer representative of FX rates in the wider market.

In the event that an immediate change is required, TRBSL will provide as much notice as is practicable in accordance with the TRBSL Benchmark Methodology Change Procedures and following such change will conduct an internal review of the Benchmark Methodology.

If it becomes necessary to cease calculation and distribution of the benchmark, TRBSL will implement the TRBSL Benchmark Cessation Policy. This includes conducting an analysis of the estimated usage of the Benchmark and, where feasible, the selection of a credible alternative benchmark. In all cases, TRBSL will take all reasonable steps to ensure that all users and other stakeholders are made aware as soon as possible of any intention or possible necessity to cease the Benchmark.

Any material change to the Benchmark Methodology or cessation of the Benchmark may have an impact on any financial contract or financial instrument that references the Benchmark or on the measurement of the performance of an investment fund that uses or refers to the Benchmark. Financial instruments that reference the Benchmark include spot FX contracts and exchange traded and OTC derivative contracts including outright forwards, FX swaps and option contracts. The Benchmark is also used in indices based on portfolios of securities denominated in multiple currencies. Such indices may themselves be replicated by funds or serve as benchmarks for derivative contracts.

A material change to the Methodology may lead to a change in the economic reality represented by the Benchmark and therefore to the economic exposure of any financial contract or financial instrument that



references the Benchmark. A cessation of the Benchmark would require the selection of an alternative benchmark or the implementation of any fallback procedures for financial contracts or financial instruments that reference the Benchmark.

5. Further Information

The Benchmark Methodology used in the determination and administration of the WM/Reuters London 4pm Closing Spot Rate is available on TRBSL's [website](#).

General statistics regarding activity in the FX market is compiled and published by the Bank for International Settlements. The most recent Triennial Survey of foreign exchange and OTC derivative trading is available at www.bis.org.

For further information about the WM/Reuters London 4pm Closing Spot Rate, please refer to the website at financial.thomsonreuters.com/wmreuters or contact the Administrator at wmreuters.sales@thomsonreuters.com.

