Ground rules

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Guide to the Calculation of Tradeweb FTSE EuroGov Closing Prices

v1.6

FTSE RUSSELL
An LSEG Business

Tradeweb

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Section 1

Introduction

1. Introduction

1.1 Scope

1.1.1 This guide describes the method by which Tradeweb FTSE EuroGov Closing Prices for European Government Bonds (EuroGov) Closing Prices are derived. The process is jointly the responsibility of Tradeweb and FTSE Russell.

1.1.2 More specifically, the scope is limited to the nominal/conventional fixed-rate Euro-denominated European Government Bonds issued by the following countries or supranational entities:

1. Austria
2. Belgium
3. Finland
4. France
5. Germany
6. Greece
7. Ireland
8. Italy
9. Netherlands
10. Portugal
11. Spain
12. European Union

1.1.3 It is expected that when-issued bonds will be available in the closing prices publication on the next business day following the date of the auction (T+1).

1.2 FTSE Russell

FTSE Russell is a trading name of FTSE International Limited, Frank Russell Company, FTSE Global Debt Capital Markets Limited (and its subsidiaries FTSE Global Debt Capital Markets Inc. and FTSE Fixed Income Europe Limited), FTSE Fixed Income LLC, FTSE (Beijing) Consulting Limited, Refinitiv Benchmark Services (UK) Limited, Refinitiv Limited and Beyond Ratings.

1.3 Tradeweb

1.3.1 Tradeweb Europe Limited is a company registered in England and Wales with company number 03912826 and authorised and regulated by the Financial Conduct Authority with firm reference number (FRN) 193705. Tradeweb Europe Limited is a subsidiary of Tradeweb Markets Inc., a leading, global operator of electronic marketplaces for rates, credit, equities and money markets. References in this guide to Tradeweb refer to Tradeweb Europe Limited.

1.4 EU and UK Benchmark Regulation and IOSCO Principles for Financial Benchmarks

1.4.1 FTSE Russell will administer the EuroGov Closing Prices in accordance with Regulation (EU) 2016/1011 (the EU Benchmark Regulation), The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019 (the UK Benchmark Regulation) and the IOSCO final report on Principles for Financial Benchmarks published in July 2013 (the IOSCO Principles).

1.5 Publication

1.5.1 The closing prices are calculated at the end of each business day. Delivery is available through a variety of mechanisms including the Tradeweb Marks file service.

1.6 Trading holidays and early close

1.6.1 Tradeweb will not publish EuroGov Closing Prices during trading holidays. The trading holiday schedule can be found at the following link: https://www.tradeweb.com/who-we-are/trading-calendar.

1.6.2 Publication times will be adjusted on early close days.

Section 2

Management responsibilities

2. Management responsibilities

2.1 FTSE International Limited (FTSE)

2.1.1 FTSE is the administrator of the Tradeweb FTSE EuroGov closing prices[1].

2.2 Tradeweb

2.2.1 Tradeweb is responsible for calculating the closing prices based on price quotes available on their electronic trading platform.

2.2.2 Tradeweb is the calculation agent of the Tradeweb FTSE EuroGov Closing Prices as defined by the IOSCO Principles.

2.3 FTSE EMEA Fixed Income Advisory Committee

2.3.1 The FTSE EMEA Fixed Income Advisory Committee has been established by FTSE Russell.

The committee provides external oversight of the process by which Tradeweb calculates end-of-day closing prices for all conventional European Government Bonds. The committee may also approve changes to this methodology. The Terms of Reference of the FTSE EMEA Fixed Income Advisory Committee are set out on the FTSE Russell website and can be accessed using the following link:

FTSE_EMEA_Fixed_Income_Advisory_Committee.pdf

[1] The term administrator is used in this document in the same sense as it is defined in Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds (the European Benchmark Regulation) and The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019 (the UK Benchmark Regulation).

Section 3

Derivation of Tradeweb FTSE EuroGov Closing Prices

3. Closing prices

3.1 Closing prices for conventional European Government Bonds

The Tradeweb FTSE European Government Bond Closing Prices (EuroGov Closing Prices) are based on attributable bid and offer quotes from dealers on Tradeweb's dealer-to-client trading platform in a two-minute collection window centred around the notional market closing time of 16:15 London local time (times may vary around public holidays, for example early close on Christmas Eve). The dealers categorise their clients into tiers, where each tier represents quotes received by the different clients via the trading platform. Clients may execute trades based on the attributable quotes by using the click-to-trade protocol. The two-minute collection window from 16:14 to 16:16 London local time is broken down into five-second intervals for each security, resulting in 24 windows. Prices are sampled at a random time within the first five-second interval. Prices are then sampled a further 23 times at regular five-second intervals from the first interval.

For each collection window, an average mid-price is calculated across the dealer's tiers. There is no minimum size required for inclusion in the averaging, except that the tiered price must be a valid non-zero quote with an attributable size greater than 0. The prices are then subject to two layers of filtering: first by standard deviation (SD) to eliminate outlying dealers based one standard deviation away from the mean. The second step is removing a few dealers from the collection window at random. The filtering process is applied separately to each of the 24 intervals.

The number of dealers to randomly remove from the collection window is chosen based on this table below:

Number of remaining dealers quoting prices, post SD-filter	Number of dealers removed
13 or more	3
12	2
11	1
10 or less	0

The reference price for the bond is then taken as the mean of all remaining mid-prices, rounded to three decimal places for bonds with 10 years or less to maturity and two decimal places for bonds with more than 10 years to maturity.

3.2 Price verification

Tradeweb compares the resultant mid-prices against the previous day's price in the context of yield curve movements and prices from transactions on the Tradeweb system. In addition, during the price review, Tradeweb checks that there are an adequate number of dealers (five or greater) contributing prices during the collection window. Deviations outside of pre-defined price tolerances and/or dealer contribution levels will result in a price failing the verification process and the trigger of a contingency plan. That is to say, the contingency plan will be triggered if (1) the number of contributing dealers falls below five or (2) the other checks fail.

3.3 Contingency plans

If a price cannot be calculated using the primary method or if a price has been calculated but fails the verification process, then contingency plans are implemented according to the hierarchy below. If a price is unavailable or fails verification using one layer of contingency, then the next layer on the hierarchy is triggered.

Contingency one: the primary method is used but based on a window running from 16:09 to 16:11.

Contingency two: the primary method is used but based on a window running from 16:04 to 16:06.

Contingency three: The previous day's closing price is used with a maximum of five consecutive business days utilising contingency three (previous day). If the same price has been recycled for greater than five business days, this check is considered to have failed.

Contingency four: no price

3.4 Governance and oversight

Every quarter, Tradeweb provides reports to the FTSE Russell EMEA Fixed Income Advisory Committee showing details of price contributions of all dealers for each EUGV; the number of times contingency plans have been required; and the number of times each dealer has been dropped from the closing price calculations as a result of each of the standard deviation and randomness filters. Also, every quarter FTSE Russell requests Tradeweb data from ten randomly chosen business days in the past quarter to reproduce the calculations of primary and window-based contingency prices for all EUGVs on those days.

Section 4

Pricing of illiquid EuroGov

4. Pricing of illiquid EuroGov

4.1 An illiquid EuroGov is one for which there are consistently insufficient dealer prices available to calculate a reliable and transparent closing price. If for any EuroGov there are fewer than five dealers contributing prices during the end-of-day pricing window, then that EuroGov will be deemed illiquid and except in the case of a security near maturity, will fall to the next contingency calculation.

4.1.1 Illiquid conventional EuroGov that are close to maturity will be priced at par if their dealer count falls below the threshold of five, rather than having a price derived from market snapshots of dealer quotes. The point at which a EuroGov security will default to being priced at par is determined by the number of days remaining to maturity. Any EuroGov security with fewer than a specified minimum number of days to maturity will be priced at par. This value may be subject to change and may be varied by EuroGov security type. In other words, if a security is within the defined near-to-maturity (usually seven days to maturity) window, it will be priced using standard methodology unless its dealer count falls below five, where it will be priced at par instead.

4.1.2 Once a EuroGov becomes illiquid and is priced according to the appropriate illiquid EuroGov pricing methodology above, it will continue to be priced using this methodology unless and until it regains consistent liquidity. The EuroGov will be regarded as liquid once again if there are at least five contributing dealers during the end-of-day pricing window.

Section 5

Price challenges

5. Price challenges

5.1 Tradeweb and FTSE Russell have established a means by which clients can query or challenge the price or other measures of value of any EuroGov which has been calculated using the closing prices methodology.

5.1.1 Users who wish to challenge a price or other measure of value can do so using the following link:

https://reports.tradeweb.com/closing-prices/challenge/

5.1.2 Clients contacting FTSE Russell with the intention of challenging a price, or with a query that may reasonably be expected to result in a challenge, will be referred to Tradeweb and the above link. FTSE Russell will subsequently contact Tradeweb to check whether a challenge was made and the outcome.

5.1.3 Clients submitting a query will receive an email acknowledgement. Details of the resolution of the issue will be further communicated to the client in a timely manner. Where files are republished, all clients using the price service will be notified by email.

5.1.4 Details of challenges and ensuing actions will be tracked and reported on a quarterly basis to the FTSE Russell EMEA Fixed Income Advisory Committee.

Appendix A

Further information

For contact details, please visit the FTSE Russell website or contact FTSE Russell client services at info@ftserussell.com.

Website: www.lseg.com/en/ftse-russell/

For further information on the delivery mechanisms for the Tradeweb FTSE EuroGov closing prices, please contact Tradeweb at ECS@Tradeweb.com.

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