
RULES OF THE TREASURY BOND INDEX FAMILY

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DEFINITIONS

Administrator	GPW Benchmark S.A., with its seat in Warsaw
BondSpot	BondSpot S.A., with its seat in Warsaw
Trading Day	a working (business) day when the TBSP Market is open for trading
GPW	Giełda Papierów Wartościowych w Warszawie S.A. (Warsaw Stock Exchange), with its seat in Warsaw
Index	any Index listed in point 2.1 of the Rules
Financial Product	a financial instrument as defined in the Act of 29 July 2005 on Trading in Financial Instruments and/or a structured deposit as defined in the Act of 29 August 1997 "Banking Law"
Key Elements of the Method (KEM)	any Method elements whose change may be considered a material change, as defined in Article 28(2) of the Benchmarks Regulation
KNF	the Polish Financial Supervision Authority
Oversight Committee	the Oversight Committee for Capital Market Benchmarks which serves as an oversight function as defined in Article 5 of the Benchmarks Regulation
Adjustment Coefficient	the coefficient used by the Administrator to recalculate Index value in cases where the Index Portfolio is adjusted or interest payments are reinvested into the Treasury Bonds
Reference Prices	TBSP.Price and TBSP.fixPrice reference prices which constitute the input data used to determine Indices
TBSP.Price	a TBSP.Price reference price as defined in the Regulation on Reference Prices
TBSP.fixPrice	a TBSP.fixPrice reference price as defined in the Regulation on Reference Prices
Method	the detailed principles for Index determination which include Key and other Elements of the Method
Paris Agreement	the global Paris Agreement adopted under the United Nations Framework Convention on Climate Change, ratified by the European Union on 5 October 2016
Portfolio	the Treasury Bonds which constitute Index components , in relation to which Reference Prices are determined
Rules	these Rules of the Treasury Bond Index Family
TBSP Rules	the binding Treasury BondSpot Poland Market Rules published by BondSpot

Rules on Reference Prices	the Regulations of setting TBSP.Price and TBSP.fixPrice reference prices published by Bondspot, including all amendments and supplements
Benchmarks Regulation	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 for measuring the results of investment funds and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No. 596/2014
TBSP Market	the Treasury BondSpot Poland market, which is a multilateral trading facility as defined in the Act of 29 July 2005 on Trading in Financial Instruments and where wholesale trading in treasury securities, incl. Treasury Bonds, takes place
Fixing Session	a reference period set forth in the valid Rules of Reference Price Setting which forms the basis for setting Reference Prices
Treasury Bonds (TB)	treasury securities issued by the Polish Minister of Finance on behalf of the State Treasury of Poland whose original maturity exceeds one year, as defined in Article 95 of the Public Finance Act of 27 August 2009
Financial Contract	a financial contract within the meaning of Article 3(1)(18) of the Benchmarks Regulation
Use Contract	a contract between the Administrator and a User under which the right of Index use and application is granted
User	an entity authorised to use an Index or Indices in accordance with point 2.5.1 hereof

1. GENERAL PROVISIONS

1.1. The Rules

1.1.1. These Rules specify:

- a) the detailed principles of Index construction and publication,
- b) the role of the Administrator in Index determination,
- c) the principles of Index use applicable to Users,
- d) the Key Elements of the Method ("KEM") for Index determination, in accordance with Article 13(1)(a) of the Benchmarks Regulation, as well as the materiality thresholds of changes,
- e) a description of input data, including a description of input data types, as well as the guidelines for input data priority and hierarchy in the Index determination Method in line with Article 11(1)(c) of the Benchmarks Regulation,
- f) the mechanisms used to identify any circumstances where input data volume and/or quality cease to meet the standards necessary for accurate and reliable Index determination by means of the Method, and how Indices should be determined in such an event, in compliance with Article 12(3) of the Benchmarks Regulation,
- g) the principles of the cyclical Method review in accordance with Article 13(1)(b) of the Benchmarks Regulation,
- h) the term "material change of the Method" and the principles of consulting any proposed material change to the definition or the Method, in accordance with Article 13(1)(c) of the Benchmarks Regulation,
- i) principles governing the cessation of Index and/or Indices provision, as set forth in Article 28(1) of the Benchmarks Regulation.

1.2. Administrator

1.2.1. The Administrator exercises full control over provision of Indices.

1.2.2. Control over Index provision includes any actions necessary to fulfil the duties of the Administrator related to the Indices, as defined in the Benchmarks Regulation, in particular:

- a) administering the arrangements for Index compilation,
- b) collecting, analysing and processing input data for the purposes of Index determination,
- c) setting algorithms used for Index determination.

1.3. Oversight Committee

1.3.1. The Oversight Committee exercises ongoing supervision over all aspects of Index provision.

1.3.2. The Oversight Committee performs a periodic review of:

- a) the definitions and the Method of determination of Treasury Bond Indices, and

- b) the list of Key Elements of the Method the change of which may be considered a material change as defined in Article 28(2) of the Benchmarks Regulation, in accordance with the Procedure for the Review and Change of Capital Market Indices.
 - 1.3.3. The list of Key Elements of the Method employed to determine the materiality of Method change is presented in Annex 1 hereto.
 - 1.3.4. The tasks and the detailed rules on Oversight Committee organisation and functioning are specified in separate Rules of the Oversight Committee.
- 1.4. Communication between the Administrator and Users
 - 1.4.1. The Administrator publishes any information and documents addressed to Users on the gpwbenchmark.pl website.
 - 1.4.2. Users use the contact details provided at gpwbenchmark.pl to communicate with the Administrator, or proceed as specified in relevant Licence Agreement.
- 1.5. Right to use the Indices
 - 1.5.1. The Administrator grants rights to use the Indices.
 - 1.5.2. The Administrator grants rights to use the Indices to the extent defined in the Benchmarks Regulation, based on a relevant License Agreement.
 - 1.5.3. The agreement referred to in point 1.5.2 stipulates in particular:
 - a) the Administrator's obligation to provide Indices in accordance with any legal regulations applicable to the Administrator, and in accordance with these Rules,
 - b) User's obligation to pay a fee to the Administrator in return for the right to Index use,
 - c) the rules and scope of the Administrator's liability towards Users.
- 1.6. Complaints
 - 1.6.1. Users and other persons concerned may lodge complaints with the Administrator under the principles set forth in the "Documentation" section at gpwbenchmark.pl.
 - 1.6.2. A complaint may be lodged as regards whether an Index and/or Indices appropriately represent the underlying market, Portfolio composition, change to the Index determination process, applying a method to a specific Index, and other decisions taken by the Administrator, i.e.:
 - a) how control over provision of Indices is exercised,
 - b) the process of Index publication,
 - c) any departures from the Rules.
 - 1.6.3. The Administrator immediately examines any complaints with due care and pursuant to the relevant internal policy, with due regard to the right to appeal against the Administrator's decision to the Oversight Committee.

2. LIST OF INDICES BELONGING TO THE TREASURY BOND INDEX FAMILY

2.1 The family of Treasury Bond Indices includes:

- 1) **TBSP.Index – Treasury BondSpot Poland Index**, an Index of Treasury Bonds with maturity of at least six months
- 2) **GPWB-B1Y3Y – GPWB Poland Government Bond 1Y-3Y**, an Index of Treasury Bonds with maturity within 12 to 36 months
- 3) **GPWB-B1Y4Y – GPWB Poland Government Bond 1Y-4Y**, an Index of Treasury Bonds with maturity within 12 to 48 months
- 4) **GPWB-B1Y5Y – GPWB Poland Government Bond 1Y-5Y**, an Index of Treasury Bonds with maturity within 12 to 60 months
- 5) **GPWB-B3Y5Y – GPWB Poland Government Bond 3Y-5Y**, an Index of Treasury Bonds with maturity within 36 to 60 months
- 6) **GPWB-B5Y – GPWB Poland Government Bond 5Y+**, an Index of Treasury Bonds with maturity of at least 60 months.

3. DEFINITIONS AND METHOD OF DETERMINATION TREASURY BOND INDEX

3.1. Definition of Indices

- 3.1.1. Indices belonging to the Family of Treasury Bond Indices reflect the wholesale TB market performance.
- 3.1.2. The Indices belong to a benchmark family as defined in Article 3(1)(4) of the Benchmarks Regulation, since:
 - a) they are determined based on input data of the same character,
 - b) Indices are intended to measure the same market, which has been described in point 3.2 of the Rules.
- 3.1.3. The Administrator classifies Indices as non-significant benchmarks as defined in Article 3(1)(27) of the Benchmarks Regulation.

3.2. Underlying market

- 3.2.1. The Indices are intended to reflect the performance of the wholesale market for fixed-interest and zero-coupon Treasury Bonds, denominated in Polish zlotys (PLN), organised by BondSpot.
- 3.2.2. Each Index measures the capitalisation of its Portfolio, understood as the current market value of the Bonds (Reference Price reflecting the nominal value and interest accrued).

3.3. Portfolio composition

- 3.3.1. Each Index Portfolio contains fixed-interest and zero-coupon Treasury Bonds denominated in Polish zlotys (PLN), issued by the Polish Minister of Finance on behalf of the State Treasury of Poland, for which the nominal (face) value of a specific issue exceeds PLN 5 bn.
- 3.3.2. The weights of Treasury Bonds in Index Portfolios are determined based upon the value of the issue.
- 3.3.3. The Portfolios of specific Indices differ in terms of the period to maturity (as specified in conditions of issue) of the Treasury Bonds, and are adjusted accordingly and in compliance with point 3.9 of the Rules.

- 3.3.4. Each Index is determined by taking into account changes in the prices of the Treasury Bonds included in the Portfolio of that Index, the value of interest accrued, and revenue from reinvested interest coupons ("total return index").

3.4. Input data

- 3.4.1. For the purpose of Index determination, the Administrator uses Reference Prices as input data. The Reference Prices, provided and made public by BondSpot, reflect the transactions in Treasury Bonds concluded by participants of the TBSP Market at Fixing Sessions, or binding offers ("Proposals") thereof.
- 3.4.2. The Reference Price referred to in point 3.4.1 is the value, expressed as a percentage point of PLN 100 of the nominal value of a specific Treasury Bond.
- 3.4.3. Subject to the principles specified in point 3.7 of the Rules, the Administrator uses the following to determine an Index:
- a) TBSP.Price Reference Price from the first Fixing Session,
 - b) TBSP.Price Reference Price from the second Fixing Session, and
 - c) TBSP.fixPrice Reference Price, set by BondSpot based on the TBSP.Price Reference Price after the last Fixing Session on a given Trading Day when it was possible to set the TBSP.fixPrice Reference Price.
- 3.4.4. When adopting the Reference Prices as Index input data, the Administrator took into account that the Reference Prices are:
- a) adequate for providing an accurate and reliable reflection of the underlying market specified in point 3.2 hereof,
 - b) fully verifiable,
 - c) easily available.
- 3.4.5. The input data used by the Administrator are equivalent, which means that the Administrator has not specified any hierarchy of their use.
- 3.4.6. The Administrator indicates that the Method applied by BondSpot to provide input data, i.e. Reference Prices, is based on the hierarchy principle, whereby priority is given to transaction data.
- 3.4.7. When determining the Indices, the Administrator does not use input data which would be contributed within the meaning of Article 3(1)(8) of the Benchmarks Regulation.
- 3.4.8. The Index determination Method does not provide for the use of any extrapolation models or methods.
- 3.4.9. In Index determination, the Administrator does not exercise any expert judgement or discretion as regards the input data.

3.5. Environmental, social and governance factors ("ESG")

- 3.5.1. The Index determination Method currently does not take into account the fulfilling of environmental, social policy or governance objectives.
- 3.4.2. The Indices do not qualify as EU Climate Transition Benchmarks or EU Paris-aligned Benchmarks.
- 3.4.3. The Index determination Method does not include the targets of reducing carbon dioxide emissions or achieving the objectives of the Paris Agreement.

3.6. Basic parameters of Indices

3.6.1. The base dates of the Indices are as follows:

- a) 29 December 2006 for TBSP.Index,
- b) 30 December 2016 for other Indices.

3.6.2. The value of each Index as of the base date is 1,000.00 points.

3.6.3. Index Portfolio capitalisation as of the base date equals (in PLN):

- 1) **TBSP.Index – Treasury BondSpot Poland Index:** 256,237,055,002.63
- 2) **GPWB-B1Y3Y – GPWB Poland Government Bond 1Y-3Y:** 115,563,344,151.75
- 3) **GPWB-B1Y4Y – GPWB Poland Government Bond 1Y-4Y:** 164,484,386,914.00
- 4) **GPWB-B1Y5Y – GPWB Poland Government Bond 1Y-5Y:** 238,208,981,443.51
- 5) **GPWB-B3Y5Y – GPWB Poland Government Bond 3Y-5Y:** 122,645,637,291.76
- 6) **GPWB-B5Y – GPWB Poland Government Bond 5Y:** 126,849,710,464.72.

3.7. Determination of Indices' values

3.7.1. Index value is determined three times during a Trading Day, whereby:

- a) the initial Index value is determined based on the TBSP.Price Reference Prices set at the first TBSP.Price Session held on the Market on that Trading Day, and if the TBSP.Price Reference Prices are not set for a given series in the Index Portfolio, the initial Index value is determined based on the last TBSP.fixPrice Reference Price for that bond series,
- b) the final Index value is determined based on the TBSP.Price Reference Prices set at the second TBSP.Price Session on that Trading Day,
- c) the closing value of the Index is determined based on the TBSP.fixPrice Reference Prices set by BondSpot in accordance with the Rules of Reference Price Setting.

3.7.2. Index value is accurate to the second decimal place, and is determined according to the following formulas:

$$I_t = \frac{M_t}{M_0 \cdot K_t} \cdot I_0$$

where:

$$M_t = \sum_{i=1}^I (P_i + O_i) \cdot N_i$$

where:

I_t – current Index value;

I_0 – Index value as of base date;

M_t – current capitalisation of Index Portfolio;

M_0 – capitalisation of Index Portfolio as of base date;

K_t – Index Adjustment Coefficient;

P_i – clean price of TS (Reference Price times TS nominal value);

O_i – value of interest payable on a given day, taking into account the settlement cycle of the transaction;

N_i – number of TS of a given series in a specific Index Portfolio.

3.8. Publication of value and use of the Indices

3.8.1. Index values are published three times during a Trading Day, whereby:

- a) initial Index value is published at 10:15 am on a given Trading Day;
- b) final Index value is published at 4:45 pm on a given Trading Day;
- c) closing Index value is published at 5:20 pm on a given Trading Day.

3.8.2. If there is a change in the time of Reference Price setting on a given Trading Day, the Index value will be published within five minutes from the setting of the Reference Price.

3.8.3. In justified cases, the Administrator may:

- a) delay publishing the value of an Index or Indices,
- b) cancel publishing the value of an Index or Indices.

3.8.4. In situations referred to in point 3.8.3, the Administrator will immediately make his or her decision public, and provide the reasons for that decision.

3.8.5. The Administrator will publish the Index values and the information referred to in point 3.8.4 at gpwbenchmark.pl.

3.8.6. The initial Index value published by the Administrator referred to in point 4.3.1.a) and the final Index value referred to in point 4.3.1.b) are solely of informative nature..

3.8.7. The, is The value which reflects the performance of the reference market referred to in point 3.2 and fulfils the purpose of a given Index is the closing value, published according to point 3.8.1.c).

3.8.8. Considering point 3.8.7, an Index in its closing value referred to in point 4.3.1.b) shall be used within the meaning of the Benchmarks Regulation. referred to

3.9. Periodic and extraordinary changes to Portfolios, current adjustments of Indices

3.9.1. The Administrator performs periodic, monthly changes to the composition of each Portfolio for each Index.

3.9.2. A periodic change to an Index Portfolio includes:

- a) removing any Treasury Bonds which, as of any day in the successive month, the maturity date is closer than the minimum maturity period set for the given Index.
- b) adding the Treasury Bonds:
 - (i) for which the TBSP.Price was determined at the second TBSP.Price session on the third Trading Day as specified in point 3.9.3, and
 - (ii) the nominal value of which is above PLN 5 bn,
 - (iii) with maturity in line with the Index specification,
- c) changing the number of TSs of a given series in the Index Portfolio.

3.9.3. The changes referred to in point 3.9.2 will be made as of the third Trading Day before the start of a new calendar month, and will take into account the most recent

available TBSP.FixPrice published by BondSpot before the beginning of the successive calendar month.

- 3.9.4. The Administrator publishes data on periodic Portfolio changes at least two Trading Days before the start of the successive calendar month.
- 3.9.5. New Portfolio compositions enters into force on the first Trading Day of the next calendar month.
- 3.9.6. When introducing a periodic Portfolio change, the Administrator also recalculates the Adjustment Coefficient.
- 3.9.7. Should the TBSP Market operator remove a given TB series from the list of treasury securities for which a Reference Price is determined, the Administrator makes an extraordinary change to Index Portfolios which include that specific TB series.
- 3.9.8. In order to accommodate for reinvestments of interest payments, the Administrator adjusts the current Index by recalculating the Adjustment Coefficient as of the record date of a given TB series in the Portfolio..
- 3.9.9. The Adjustment Coefficient for a specific Index is recalculated in accordance with the following formula:

$$K_t = \frac{M_t + Q_t - Z_t - O_t}{M_t} \cdot K'_t$$

where:

K_t – new value of Index Adjustment Coefficient;

K'_t – present value of Index Adjustment Coefficient;

M_t – current capitalisation of Index Portfolio;

Q_t – market value of TBs added to Index Portfolio, calculated based on Reference Prices including accrued interest;

Z_t – market value of TBs removed from Index Portfolio, calculated based on Reference Prices including accrued interest;

O_t – value of interest falling due for payment in a given interest period.

4. FINAL PROVISIONS

4.1. Extraordinary waiver

- 4.1.1. Having regard to the security of trading and the interest of market participants, the Administrator may waive specific provisions of the Rules upon consultation with the Oversight Committee.

4.2. Amendments to the Rules

- 4.2.1. The Administrator may amend these Rules upon a positive opinion from the Oversight Committee.
- 4.2.2. The Administrator publishes information about any changes introduced hereto and the dates of their entry into force on its website.

- 4.2.3. The amended Rules will become effective as of the date indicated in the information on the amendment to the Rules, yet no sooner than 30 days after the amended Rules are made available.
- 4.2.4. If an amendment seeks to ensure compliance with binding provisions of law, follows from the KNF's supervisory activity, or is the result of adding provisions on a newly created Index, the Administrator may decide that amendments to the Rules become effective before the date indicated in point 4.2.3.
- 4.2.5 The Rules of the Treasury BondSpot Poland (TBSP.Index) are repealed with effect from the date when these Rules enter into force.

Annex 1. "Material change" to the Method

1. A material change to the Method is a change to a Key Element of the Method (KEM) which would impact the Index performance and exceed two of three materiality thresholds indicated in point 4.
2. For the purposes of identifying a material change to the Method, the Administrator has defined the following Key Elements of the Method:
 - 1) the Index definition indicated in point 3.1
 - 2) the measured underlying market indicated in point 3.2
 - 3) criteria for selecting TBs to be added to a Portfolio (basic criteria) and the principle of weighting the TBs in a Portfolio indicated in point 3.3
 - 4) Index input data indicated in point 3.4
 - 5) the principles and the algorithm for Index value determination indicated in point 3.7
 - 6) publication rules, i.a. publication frequency (timeline) as indicated in point 3.8, except for changing the form of publication at the Administrator's website.
3. As part of the process of testing the materiality of a change to the Method, the Administrator has introduced materiality thresholds that verify the scale and scope of the consequences attributable to a change to given KEMs, which define the limits beyond which the change of the method will be treated as a material change. The test is carried out as a counterfactual test of the model Index taking into account the planned change of the Method and the historical Index values in the reference period.
4. The "materiality thresholds" apply to the following Index Portfolio parameters:
 - average daily change in value,
 - average volatility,
 - average daily value.
5. The materiality threshold levels adopted by the Administrator require the approval of the Oversight Committee.