

Average Deposit Index (ADI) as a reference interest rate under loans denominated in BGN

Detailed information about Methodology application and calculation examples

1. Purpose

The Methodology governs the methods of calculating the Average Deposit Index (ADI) as a reference interest rate of UniCredit Bulbank AD (the Bank) under loans denominated in BGN as well as its application and periodic change.

2. Scope

ADI is a reference interest rate applicable to loans with a floating interest rate, denominated in BGN, granted by the Bank to individuals and legal entities.

3. Data Source and Calculation Method

The Interest Rate Statistics of the Bulgarian National Bank (BNB) serves as a data source about ADI, and more specifically the table “Interest Rates and Volumes of Outstanding Amounts on Overnight Deposits, Time Deposits and Deposits Redeemable at Notice of Non-financial Corporations and Households Sectors” published on the website of the BNB: http://www.bnb.bg/Statistics/StMonetaryInterestRate/StInterestRate/StIRInterestRate/index.htm?toLang=_EN hereinafter referred to as the “Interest Rate Statistics” or the “Table”.

Only the data about deposits in BGN is used.

ADI is an average (weighted average) interest rate of the whole volume of deposits in BGN of non-financial corporations and households sectors in the Bulgarian banking system.

Since presently BNB itself does not publish the total weighted average interest rate but nonetheless provides all necessary data for its calculation, the Bank calculates it entirely on the basis of this data as follows:

- A. Client categories and deposits types are identified which total all deposits in BGN available in the Interest Rate Statistics, and more specifically the columns in the Table listed below:
 - o Non-financial corporations:
 - Overnight deposits in BGN;
 - Time deposits in BGN over 1 day up to 2 years;
 - Time deposits in BGN over 2 years;
 - Deposits redeemable at notice in BGN up to 3 months;

- Deposits redeemable at notice in BGN over 3 months;
 - Households:
 - Overnight deposits in BGN;
 - Time deposits in BGN over 1 day up to 2 years;
 - Time deposits in BGN over 2 years;
 - Deposits redeemable at notice in BGN up to 3 months;
 - Deposits redeemable at notice in BGN over 3 months;
 - In order to avoid any misunderstanding it shall be noted that the current Table contains other categories of time deposits as well (over 1 day up to 1 month, over 1 month up to 3 months, over 3 months up to 6 months, over 6 months up to 12 months and over 1 year up to 2 years), but they shall be ignored for the purposes of the calculation, since they are presented in aggregate under the “time deposits in BGN over 1 day up to 2 years” category.
- B. The two rows of the Table corresponding to an annual effective interest rate and volumes (in million BGN) for the respective (one and the same) month are identified. The first row contains the values to be averaged, and the second – the weights of each value.
- C. For each of the categories (columns) under item A the two values from the rows under item B shall be multiplied, i.e. the annual effective interest rate by the volume, in million BGN, representing its weight.
- D. The products in item C shall be summed up.
- E. Separately, only the weights (volumes in million BGN) shall be summed up for each of the categories (columns) under item A.
- F. The result in item D shall be divided by the result in item E.
- G. The result in item F shall be rounded to the second digit after the decimal point.

In brief, the following formula shall be applied:

$$\frac{\sum_i^n (AEIR_i \times W_i)}{\sum W_i}$$

where:

- AEIR is the annual effective interest rate;
- W is the respective volume which represents the weight;
- i is the clients category, type of deposits, respectively, listed in item A;
- n is the finite number of the clients categories and type of deposits respectively, listed in item A.

Below is an example of calculation of ADI value as at April 2018:

INTEREST RATES AND VOLUMES OF OUTSTANDING AMOUNTS ON OVERNIGHT DEPOSITS, TIME DEPOSITS AND DEPOSITS REDEEMABLE AT NOTICE OF NON-FINANCIAL CORPORATIONS AND HOUSEHOLDS¹ SECTORS²

	Non-financial corporations										Households									
	Overnight deposits ³	Time deposits						Deposits redeemable at notice ³			Overnight deposits ³	Time deposits					Deposits redeemable at notice ³			
	in BGN	in BGN						in BGN			in BGN	in BGN					in BGN			
		over 1 day up to 2 years						over 2 years	up to 3 months	over 3 months		over 1 day up to 2 years					over 2 years	up to 3 months	over 3 months	
	over 1 day up to 1 month	over 1 up to 3 months	over 3 up to 6 months	over 6 up to 12 months	over 1 up to 2 years					over 1 day up to 1 month	over 1 up to 3 months	over 3 up to 6 months	over 6 up to 12 months	over 1 up to 2 years						
annual effective interest rate																				
2018 I	0.01	0.31	0.32	0.29	0.13	0.28	0.92	1.47	0.12	-	0.03	0.27	0.02	0.05	0.14	0.32	0.96	1.91	0.06	-
2018 II	0.00	0.32	0.36	0.30	0.15	0.28	0.90	1.27	0.13	-	0.02	0.26	0.02	0.05	0.14	0.31	0.88	1.87	0.06	-
2018 III	0.00	0.28	0.29	0.25	0.15	0.27	0.88	1.28	0.15	-	0.02	0.24	0.02	0.05	0.13	0.30	0.81	1.81	0.06	-
2018 IV	0.02	0.22	0.24	0.26	0.13	0.17	0.77	1.37	0.11	-	0.02	0.23	0.02	0.05	0.13	0.29	0.76	1.77	0.06	-
volumes in million BGN																				
2018 I	11502.6	1485.3	501.5	234.6	174.9	510.3	63.9	47.1	7.2	-	9557.0	11220.6	1984.2	1063.0	1723.6	5468.8	981.1	1082.7	7137.6	-
2018 II	11614.2	1498.9	524.3	230.4	174.4	508.4	61.4	47.3	6.9	-	9799.7	11246.5	2026.4	1062.8	1730.3	5469.1	957.9	1080.6	7154.7	-
2018 III	11582.5	1418.4	370.0	312.5	168.5	508.0	59.4	47.2	6.9	-	9924.9	11278.0	2079.3	1062.2	1733.4	5461.5	941.6	1078.8	7168.2	-
2018 IV	10989.3	1815.6	324.5	378.0	182.9	874.6	55.6	50.0	6.2	-	10097.2	11295.2	2124.5	1061.5	1733.7	5455.6	919.9	1080.0	7178.0	-

Example: As of April 2018, the values to be averaged are in the yellow cells, and their respective weights - in the blue cells. The calculation is the following:

$$= (0.02 * 10989.3 + 0.22 * 1815.6 + 1.37 * 50.0 + 0.11 * 6.2 + 0 * 0 + 0.02 * 10097.2 + 0.23 * 11295.2 + 1.77 * 1080.0 + 0.06 * 7178.0 + 0 * 0) / (10989.3 + 1815.6 + 50.0 + 6.2 + 0 + 10097.2 + 11295.2 + 1080.0 + 7178.0 + 0)$$

The weighted average value shall be rounded to the second digit after the decimal point and the resulting value of the index is 0.14 (in %).

Note: The numbers in the above example correspond to the visual representation in the table. However, the actual values in the yellow cells are not rounded to the second digit after the decimal point and those in the blue cells are not rounded to the first digit after the decimal point.

In the process of calculating ADI value, as described above, the Bank does not exercise own discretion, but only applies the generally adopted formula for calculation of weighted average value to statistical data published by the BNB.

In case that at any future time the BNB changes the format of data of the Interest Rate Statistics with regard to the categories of the clients and/or the types of the deposits, the Bank shall adjust the calculations to the new format so as to always ensure that the final result will be an accurately and consistently calculated average interest rate on the whole volume of the deposits in BGN of non-financial corporations and households sectors in the Bulgarian banking system.

In case that at any future time the BNB itself starts calculating and publishing a weighted average interest rate covering the whole volume of the deposits in BGN of non-financial corporations and households sectors, the Bank shall proceed to its direct use by rounding it to the second digit after the decimal point, if necessary.

4. Procedure and frequency of announcement and period of validity.

The value of ADI is changed on a monthly basis.

On its website

<http://www.bnb.bg/Statistics/StMonetaryInterestRate/StInterestRate/StIRInterestRate/index.htm?toLang= EN>

BNB publishes the Interest Rate Statistics before the end of each calendar month based on data as of the preceding calendar month.

Based on the afore mentioned statistical data published by the BNB as at the last month available in the Table, the Bank shall calculate the new value of ADI following the methodology described in item 3 (above) and publish it on its website <https://www.unicreditbulbank.bg/bg/pazarni-lihveni-indeksi/> on the first business day of each calendar month.

The value of ADI calculated and announced in this way shall apply from the first business day (for the Republic of Bulgaria) of the calendar month following the publishing of the respective statistical data by the BNB until the day preceding the first business day of the following calendar month, inclusive.

Example:

- 27 of June: BNB publishes the Interest Rate Statistics on its website with the most recent data as at the month of May.
 - 1 July (and if this date is a non-business day for Bulgaria – the first following business day): The Bank publishes on its website the respective new value of ADI calculated on the basis of the data published by the BNB on 27 June.
 - 1 July (and if this date is a non-business day for Bulgaria – the first following business day): The new value of ADI, that shall be valid for the month of July, becomes effective.
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- 27 July: BNB publishes the Interest Rate Statistics on its website with the most recent data as at the month of June.
 - 1 August (and if this date is a non-business day for Bulgaria – the first following business day): The Bank publishes on its website the respective new value of ADI calculated on the basis of the data published by the BNB on 27 July.
 - 1 August (and if this date is a non-business day for Bulgaria – the first following business day): The new value of ADI, that shall be valid for the month of August, becomes effective.

In the event that the BNB ceases the continuity in relation to the publishing of the data from the Interest Rate Statistics, thus making the Bank unable to calculate ADI for the following month, the Bank shall reserve the right to take a decision for extending the validity of the last available value of ADI for a period ruled by its Management Board (MB) after the end of the month in which the BNB ceases the publishing of the data from the Interest Rate Statistics until the date of identification and approval by the MB of a suitable substituting index.

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