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AGENCIJA ZA BANKARSTVO
FEDERACIJE BOSNE I HERCEGOVINE

INSTRUCTION

on the Application of the Standardised and Simplified Standardised Approaches to the Measurement of Interest Rate Risk in the Banking Book

Sarajevo, February 2024

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Pursuant to Article 21(3) of the Decision on the Management of Interest Rate Risk in the Banking Book („Official Gazette of the Federation of BiH", number 98/23), Articles 5(1)(h) and 23(1)(d) of the Law on the Banking Agency of the Federation of Bosnia and Herzegovina („Official Gazette of the Federation of BiH", number 75/17) and Article 16(1)(k) of the Statute of the Banking Agency of the Federation of BiH („Official Gazette of the Federation of BiH", number 03/18), the Director of the Banking Agency of the Federation of Bosnia and Herzegovina issued the following on February 13th, 2024

INSTRUCTION
ON THE APPLICATION OF THE STANDARDISED AND SIMPLIFIED STANDARDISED APPROACHES TO THE MEASUREMENT OF INTEREST RATE RISK IN THE BANKING BOOK

I Introductory Provisions

Article 1

Subject Matter of the Instruction

(1) This Instruction prescribes in greater detail the standardised and simplified standardised approaches to the measurement of interest rate risk in the banking book in accordance with Article 8(2) and (3) of the Decision on the Management of Interest Rate Risk in the Banking Book (hereinafter: Decision).

(2) The provisions of this Instruction shall apply to banks headquartered in the Federation of Bosnia and Herzegovina and licensed by the Banking Agency of the Federation of Bosnia and Herzegovina (hereinafter: Agency).

II Standardised Approach

Article 2

Underlying Assumptions of the Standardised Approach

(1) In assessing interest rate risk in the banking book (hereinafter: IRRBB) in accordance with the standardised approach, a bank shall capture, at a minimum, the following:
   a) interest rate financial derivatives referred to in Annex II of the Decision on Calculation of Bank Capital,
   b) interest rate-sensitive assets, other than those which are deducted from Common Equity Tier 1 capital,
   c) interest rate-sensitive liabilities, other than those which constitute Common Equity Tier 1 capital and other perpetual instruments without maturity dates,
   d) interest rate sensitive off-balance sheet instruments and
   e) trading book business referred to in Article 39 of the Decision on Calculation of Bank Capital, if the interest rate risk for the positions concerned is not captured in another risk.

(2) The net interest income impact shall be calculated for one-year time horizon.

(3) A bank shall apply the six interest rate shock scenarios in accordance with Article 14(4) of the Decision, in order to capture parallel and non-parallel gap risks in respect of economic value of equity measure, which are prescribed in greater detail in Article 9 of this Instruction.

(4) A bank shall apply the two interest rate shock scenarios in accordance with Article 14(4)(a) and (b) of the Decision, in order to capture parallel gap risks in respect of the bank's net interest income measure.

(5) When setting an economic value of equity measure, the future cash flows shall be discounted, assuming a run-off balance sheet, while in the case of setting a net interest income measure, the interest income and expenses shall be projected, assuming a constant balance sheet.

II.1 Economic Value of Equity

Article 3
Slotting of Cash Flows into Time Buckets for the Purposes
of Determining Economic Value of Equity

(1) The expected cash flows shall be slotted into 19 time buckets shown in Table 1.

Table 1 - Time buckets

Sequence number	Time buckets (mo.=month; y=year)	Time bucket midpoint (t_k) (in years)	Time bucket duration (in years)
1.	Overnight (O/N)	0.0028	0
2.	> O/N ≤ 1 mo.	0.0417	1/12
3.	> 1 mo. ≤ 3 mo.	0.1667	2/12
4.	> 3 mo. ≤ 6 mo.	0.375	3/12
5.	> 6 mo. ≤ 9 mo.	0.625	3/12
6.	> 9 mo. ≤ 12 mo.	0.875	3/12
7.	> 12 mo. ≤ 18 mo.	1.25	6/12
8.	> 18 mo. ≤ 2 y	1.75	6/12
9.	> 2 y ≤ 3 y	2.5	1
10.	> 3 y ≤ 4 y	3.5	1
11.	> 4 y ≤ 5 y	4.5	1
12.	> 5 y ≤ 6 y	5.5	1
13.	> 6 y ≤ 7 y	6.5	1
14.	> 7 y ≤ 8 y	7.5	1
15.	> 8 y ≤ 9 y	8.5	1
16.	> 9 y ≤ 10 y	9.5	1
17.	> 10 y ≤ 15 y	12.5	5
18.	> 15 y ≤ 20 y	17.5	5
19.	> 20 y	25	10

(2) The slotting of cash flows into time buckets shall be determined according to the number of days remaining until the maturity of the instrument or until the next interest rate repricing, counted from the reporting date.

(3) In the slotting of cash flows into time buckets, the bank shall apply a run-off balance sheet, meaning that existing banking book instruments amortise (run off) and are not replaced by any new instruments.

(4) For fixed rate instruments, cash flows shall be slotted into time buckets according to the residual maturity, counted from the reporting date.

(5) For instruments with a contractual floating interest rate:
   a) cash flows from the reference interest rate and remaining part of the principal of the instrument shall be slotted into the time bucket until the next interest rate repricing, counted from the reporting date,

b) cash flows from the margin shall be slotted into the time bucket according to the residual maturity of the instrument, counted from the reporting date.

(6) The bank shall calculate the economic value of equity separately for each material currency.

(7) IRRBB-related financial derivatives, except for options, should be separated into two legs, a paying leg and a receiving leg, where the paying leg shall be treated as an outflow of cash flows, while the receiving leg shall be treated as an inflow of cash flows. A cross-currency interest rate swap involving swapping principal or interest in different currencies should be shown per each leg and per each currency. The interest income and expenses of financial derivatives used for hedging shall be included separately from the income and expenses deriving from the hedged positions.

(8) The bank shall show the cash flows from non-performing exposures by time buckets consistently over time and minus the amount of expected credit losses, which should reflect the expected cash flows by amount and by maturity, if the non-performing loan ratio of the bank equals or exceeds 3% of the total credit exposures.

Article 4
Behavioural Options

(1) Non-maturity deposits under Article 5 of this Instruction, fixed rate loans with an early repayment option under Article 6 of this Instruction, fixed rate term deposits with an early redemption option under Article 7 of this Instruction, and fixed rate off-balance sheet exposures to retail counterparties should be treated as positions with behavioural options.

(2) Regarding fixed rate off-balance sheet exposures to retail counterparties referred to in paragraph (1) of this Article, if they exceed 2% of the total interest rate-sensitive assets referred to in Article 2(1)(b) of this Instruction, the bank should estimate the amount that will be redeemed by individual scenarios (baseline and interest rate shock scenarios), based on historic observation. The amounts estimated to be redeemed should be slotted into time buckets of Table 1 of this Instruction according to the expected redemption time.

(3) Unlike off-balance sheet exposures referred to in paragraph (2) of this Article, fixed rate off-balance sheet exposures to wholesale customers shall be treated as automatic options in accordance with Article 8 of this Instruction.

Article 5
Non-Maturity Deposits

(1) A bank shall classify non-maturity deposits depending on the counterparty as:
   a) Retail non-maturity deposits, further classified into:
      1) retail transactional deposits and
      2) retail non-transactional deposits.
   b) Wholesale non-maturity deposits, further classified into:
      1) deposits of financial customers and
      2) wholesale non-financial deposits.

(2) The bank shall distinguish the stable from the non-stable part of the non-financial deposits referred to in paragraph (1) of this Article using historical data on changes in the deposits due to changes in risk-free interest rates for a period of at least the preceding 10 years. In exceptional situations, the bank may also use a shorter historical data series with an adequate explanation.

(3) The bank shall further distinguish the stable non-maturity deposits referred to in paragraph (2) of this Article into a core and a non-core component.

(4) To determine the amount of the non-core component of stable non-maturity deposits, the bank should multiply the total amount of the stable non-maturity deposits by the pass-through rate that shall be assessed considering items with similar characteristics, and:

a) the current level of interest rates, as well as the spreads between the bank's offer rates and market rates, other market participants' offer rates and other relevant data related to the bank's customers,

b) the unlikely repricing of the core component of non-maturity deposits even under significant changes in the interest rate environment.

(5) In scenarios prescribing an increase of short-term interest rates as referred to in Article 14(4)(a), (c) and (e) of the Decision, the core component of non-maturity deposits shall be multiplied by a coefficient of 0.8.

(6) In scenarios prescribing a downward movement of short-term interest rates as referred to in Article 14(4)(b), (d) and (f) of the Decision, the core component of non-maturity deposits shall be multiplied by a coefficient of 1.2.

(7) When determining the share of the core component of non-maturity deposits, the bank will apply the following caps:

a) a maximum of 90% of the total retail transactional deposits may be considered as the core component of retail stable non-maturity deposits,

b) a maximum of 70% of the total retail non-transactional deposits may be considered as the core component of retail stable non-maturity deposits,

c) a maximum of 50% of the total wholesale non-financial deposits may be considered as the core component of non-financial wholesale stable non-maturity deposits.

(8) The core components of the stable non-maturity deposits should be allocated consistently into the time buckets, based on internal data on the behaviour of such deposits and subject to an additional restriction calculated on a weighted average basis, and separately by currencies:

a) 5 years, for retail transactional non-maturity deposits,

b) 4.5 years, for retail non-transactional non-maturity deposits,

c) 4 years, for non-financial wholesale non-maturity deposits.

(9) Financial non-maturity deposits shall not be subject to behavioural modelling and shall be slotted into the „Overnight" time bucket.

(10) Non-stable non-maturity deposits and non-core components of non-maturity deposits shall be slotted into the „Overnight" time bucket.

(11) The bank shall treat all non-maturity deposits as non-core components of non-maturity deposits if the total amount of non-maturity deposits accounts for less than 2% of the bank's total interest rate-sensitive liabilities.

Article 6
Fixed Rate Loans with Early Repayment Option

(1) Fixed rate loans to retail customers will be considered as loans with an early repayment option, where the customer is entitled to prepay part or all of the loan.

(2) For the purposes of the baseline scenario, a bank shall determine and apply in a way consistent over time the conditional prepayment rate per material currency. The given rate should reflect the annual expected prepayments for each individual homogenous product group and be determined based on historic observation of the loan prepayments that is consistent over time and expected market interest rates.

(3) The bank shall adjust the conditional prepayment rates to the stress scenarios by multiplying them by the predefined coefficients that reflect the prepayment expectations in the periods of increasing or decreasing interest rates. In scenarios prescribing an increase in interest rates as referred to in Article 14(4)(a), (d) and (e) of the Decision, the conditional prepayment rate will be multiplied by a coefficient of 0.8, while in scenarios prescribing a decrease in interest rates as referred to in Article 14(4)(b), (c) and (f) of the Decision, the conditional prepayment rates will be multiplied by a coefficient of 1.2.

(4) For each time bucket, the expected amount of prepayment per time bucket shall be calculated by multiplying:

a) the amount of the fixed rate loans of a certain homogeneous product group denominated in a certain currency where the amount of the loans for a certain time bucket shall be reduced by the amounts of the prepayments of all time buckets preceding the specific time bucket and

b) the respective time-weighted conditional prepayment rate, obtained when the conditional prepayment rate referred to in paragraph (2) of this Article is multiplied by the length of the respective time bucket specified in Table 1 of this Instruction (e.g. the determined annual conditional prepayment rate is 3%). The respective time-weighted conditional prepayment rate for the „overnight-1 month" time bucket shall be obtained by multiplying 1/12 and 3%. For the 1-3 months time bucket, the given rate shall be obtained by multiplying 2/12 and 3%, etc., and adjusted in accordance with paragraph (3) of this Article.

(5) The rate referred to in paragraph (2) of this Article should be 0% if the total amount of the loans referred to in paragraph (1) of this Article is less than 5% of the bank's total interest rate-sensitive assets.

(6) The bank shall slot all other cash flows under the loans in question for which no early repayment option is expected into time buckets of Table 1 of this Instruction according to the residual contractual maturity.

(7) The bank shall slot fixed rate loans to wholesale customers, where they have the ability to prepay part or all of the loan, by deducting the expected prepayment amount from the total loan amount and slotting the amount thus obtained into time buckets according to the residual maturity, while treating the expected prepayment amount as an embedded automatic option and valuing it in accordance with Article 8 of this Instruction.

Article 7
Term Deposits with Early Redemption Option

(1) Fixed rate retail term deposits shall be considered as term deposits with an early redemption option, where the customer holds the ability/option to redeem the deposit before the contractual maturity date.

(2) If the customer does not hold the legal option to redeem the deposit referred to in paragraph (1) of this Article, it shall not be considered as a deposit with an early redemption option, i.e. it shall be slotted into time buckets based on Article 3(4) of this Instruction.

(3) Wholesale fixed rate term deposits will be slotted into time buckets based on Article 3(4) of this Instruction. If the wholesale customer holds the option to redeem the deposit before the contractual maturity date, this will be treated as an embedded automatic option in accordance with Article 8 of this Instruction.

(4) For the purposes of the baseline scenario, the bank should perform an estimation of the rate of early redeemed deposits based on historic behaviour of individual homogenous product groups for each material currency individually. This rate should reflect the cumulative expectations of early redemptions during the contractual duration of term deposits, while the expected amount of early redeemed deposits should be slotted into the „Overnight" time bucket.

(5) The rate referred to in paragraph (4) of this Article should be 0% if the total amount of the term deposits referred to in paragraph (1) of this Article is less than 5% of the bank's interest rate-sensitive liabilities.

(6) The bank shall adjust the rate referred to in paragraph (4) of this Article to the stress scenarios by multiplying it by the predefined coefficients that reflect the expectations of change in the early redemption rates in the periods of increasing or decreasing short-term interest rates. In scenarios prescribing an increase of the short-term interest rates as referred to in Article 14(4)(a), (c) and (e) of the Decision, the rate of early redeemed deposits will be multiplied by a coefficient of 1.2, while in scenarios prescribing a decrease of the short-term interest

rates as referred to in Article 14(4)(b), (d) and (f) of the Decision, the given rate will be multiplied by a coefficient of 0.8.

(7) The expected amount of early redeemed deposits shall be calculated by the multiplication of:
   a) the term deposits referred to in paragraph (1) of this Article of an individual homogenous product group denominated in a certain currency and
   b) the respective rate referred to in paragraph (4) of this Article adjusted as described in paragraph (6) of this Article.

(8) The expected amount of early redeemed deposits shall be slotted into the „Overnight" time bucket. The bank shall slot all other cash flows under the deposits in question for which no early redemption option is expected into time buckets of Table 1 of this Instruction according to the residual contractual maturity.

Article 8
Automatic Options

(1) In the case of options embedded in instruments (e.g. wholesale loans with an early repayment option referred to in Article 6(7) of this Instruction, wholesale term deposits with an early redemption option referred to in Article 7(3) of this Instruction, loans with interest rate caps or floors), the bank shall separate the amount of embedded automatic option from the amount of underlying instrument in which the automatic option is embedded. The cash flows from the instruments minus the cash flows related to the automatic options shall be slotted into time buckets, without taking into account the embedded automatic options, while the automatic options shall be valued separately.

(2) The bank shall value the automatic options per each individual scenario and currency, in accordance with the internal methodology, and multiply the values thus calculated by a coefficient of 1.1 and deduct the obtained values of automatic options per each individual scenario from the values of options in the baseline scenario, in order to obtain the change in the value of options by individual scenarios and currencies.

(3) The sum of changes in the value of all bought automatic options in that currency and that scenario shall be deducted from the sum of changes in the value of all sold automatic options per individual currency and individual scenario and discounted by the applicable risk-free yield curve.

(4) The changes in value of the automatic options shall be added to the changes in economic value of equity.

Article 9
Six Interest Rate Shock Scenarios

(1) Table 2 shows the shock values calculated for parallel, short and long interest rate shocks for selected currencies:

Table 2 - Shock values for selected currencies

Sequence number	Currency		$\overline{R}_{\text{shock type},c}$ Shock values per individual shock type in individual currency (basis points)		
	Code	Currency name	Parallel	Short	Long
1.	ARS	Argentine Peso	400	500	300
2.	AUD	Australian Dollar	300	450	200
3.	BAM	Convertible Marka	250	350	150
4.	BGN	Bulgarian Lev	250	350	150

5.	BRL	Brazilian Real	400	500	300
6.	CAD	Canadian Dollar	200	300	150
7.	CHF	Swiss Franc	100	150	100
8.	CNY	Chinese Yuan	250	300	150
9.	CZK	Czech Koruna	200	250	100
10.	DKK	Danish Krone	200	250	150
11.	EUR	Euro	200	250	100
12.	GBP	Pound sterling	250	300	150
13.	HKD	Hong Kong Dollar	200	250	100
14.	HUF	Forint	300	450	200
15.	IDR	Rupiah	400	500	350
16.	INR	Indian Rupee	400	500	300
17.	JPY	Yen	100	100	100
18.	KRW	Won	300	400	200
19.	MXN	Mexican Peso	400	500	300
20.	PLN	Zloty	250	350	150
21.	RON	Romanian Leu	350	500	250
22.	RUB	Russian Ruble	400	500	300
23.	SAR	Saudi Riyal	200	300	150
24.	SEK	Swedish Krona	200	300	150
25.	SGD	Singapore Dollar	150	200	100
26.	TRY	Turkish Lira	400	500	300
27.	USD	United States Dollar	200	300	150
28.	ZAR	Rand	400	500	300
29.		Other currencies	400	500	350

(2) The values referred to in Table 2 of this Article shall be applied for the purposes of creating interest rate shock scenarios. For that purpose, the bank shall apply the methodology referred to in Article 10 of this Instruction.

Article 10
Parametrisation of Standard Interest Rate Shock Scenarios

(1) For each currency c, the specified parallel, short and long shock shall be added to the risk-free interest rate, i.e. the following parametrisations of the six standard interest rate shock scenarios provided for in Article 14(4) of the Decision shall be applied:

a) Parallel interest rate shock for currency c: A constant parallel shock up or down across all time buckets:

$$\Delta R_{parallel,c}(t_k) = \pm \bar{R}_{parallel,c}$$

where:

$\Delta R_{parallel,c}$ = the interest rate change under the parallel shock for currency c;

t_k = the midpoint (in time) of the kth time bucket;

$\pm \bar{R}_{parallel,c}$ = the interest rate plus or minus the constant amount of basis points (bps) under the parallel shock for currency c.

b) Short-term interest rate shock for currency c: A shock up or down which is the greatest in the midpoint of the shortest maturity. That shock shall be obtained through the scaling factor:

$$\Delta R_{short,c}(t_k) = \pm \bar{R}_{short,c} \cdot e^{\frac{-t_k}{4}}$$

where:

t_k = the midpoint (in time) of the kth time bucket,

c) Long-term interest rate shock for currency c: This shock shall be applied only to the rotation shocks:

$$\Delta R_{long,c}(t_k) = \pm \bar{R}_{long,c} \cdot (1 - e^{\frac{-t_k}{4}})$$

d) Rotation shocks for currency c, i.e. steepener and flattener shocks: include rotations in the interest rate yield curve, where the long-term and short-term rates are repriced, while the interest rate shift in each midpoint of the maturity shall be obtained by applying the following formulas:

$$\Delta R_{steepener,c}(t_k) = -0.65 \cdot |\Delta R_{short,c}(t_k)| + 0.9 \cdot |\Delta R_{long,c}(t_k)|$$

$$\Delta R_{flattener,c}(t_k) = +0.8 \cdot |\Delta R_{short,c}(t_k)| - 0.6 \cdot |\Delta R_{long,c}(t_k)|$$

(2) After calculating individual shocks referred to in the previous paragraph, they shall be added to the risk-free yield curve to obtain interest rate $R_{i,c}$ by which the cash flows across the respective time buckets will be discounted, in accordance with Article 12 of this Instruction.

Article 11
Post-Shock Interest Rate Floor

(1) The post-shock interest rate floor shall be applied for each individual currency, depending on the period to maturity, starting from –150 basis points for immediate maturities to 12 months. The floor shall increase by three basis points per year, eventually reaching 0% for maturities of 50 years and more.

(2) If the risk-free interest rates are lower than the interest rate floor referred to in paragraph (1) of this Article, the bank shall apply a lower rate.

Article 12
Determining Net Discounted Position by Scenarios

(1) A bank shall determine the total net interest rate-sensitive position for each material currency individually, as follows:
a) the cash flows of assets shall have a positive sign, while the cash flows of liabilities shall have a negative sign;
b) all positive and all negative cash flows within time buckets shall be netted, forming a net long or short position per time bucket.

(2) The net long or net short position across individual time buckets shall be discounted towards a present value by using the discount factor $DF_{i,c(tk)}$ that shall be calculated based on the respective risk-free interest rate $R_{i,c(tk)}$ at the bucket midpoint for the respective scenario i and currency c multiplied by the bucket midpoint tk, i.e.:

$$DF_{i,c}(tk) = exp(-R_{i,c}(tk) * tk)$$

(3) All discounted net positions across individual time buckets shall be summed up by the baseline scenario and by the shock scenarios, to determine the economic value of equity for the baseline scenario and the shock scenarios by material currencies.

Article 13
Determining Total Change in Economic Value of Equity of a Bank

(1) The change in the economic value of equity shall be calculated by subtracting the economic value of equity in the stress scenario from the economic value of equity in the baseline scenario, and by adding the change of the value of the automatic options calculated in accordance with Article 8 of this Instruction.

(2) When calculating the change in the economic value of equity for each interest rate shock scenario, the bank will add together any negative and positive changes for each material

currency, where it will multiply positive changes by a factor of 50% in the case of currencies other than BAM or EUR.

(3) The change in the economic value of equity, in terms of the requirements referred to in Article 16(2)(a) and (3) of the Decision, shall be calculated as the ratio of the absolute value of the change referred to in paragraph (1) of this Article with the largest negative impact on the economic value of equity (under the six interest rate shock scenarios) to the bank's Tier 1 capital.

II.2 Neto Interest Income

Article 14

Slotting of Cash Flows into Time Buckets for the Purposes of Determining Interest Rate Risk's Impact on Net Interest Income

(1) For the purposes of projecting the net interest income, the cash flows from interest rate-sensitive instruments shall be slotted into a matrix, where in the columns of the matrix the expected cash flows shall be slotted into time buckets in accordance with Table 3 of this Instruction, while in the rows of the matrix they shall be slotted in accordance with Table 4 of this Instruction.

Table 3 Time buckets for slotting of expected cash flows into columns of matrix

Sequence number	Time buckets (mo.=month; y=year)	Time bucket midpoint (in years) t_k	Remaining time in net interest income horizon
1.	Overnight (O/N)	0.0028	0.9972
2.	> O/N ≤ 1 mo.	0.0417	0.9583
3.	> 1 mo. ≤ 3 mo.	0.1667	0.8333
4.	> 3 mo. ≤ 6 mo.	0.375	0.625
5.	> 6 mo. ≤ 9 mo.	0.625	0.375
6.	> 9 mo. ≤ 12 mo.	0.875	0.125

Table 4 Time buckets for slotting of expected cash flows into rows of matrix

Sequence number	Time buckets (mo.=month; y=year)	Time bucket midpoint (in years) REF_j
1.	> O/N ≤ 12 mo.	1
2.	> 12 mo. ≤ 1.5 y	1.25
3.	> 1.5 y ≤ 2 y	1.75
4.	> 2 y ≤ 3 y	2.5
5.	> 3 y ≤ 4 y	3.5
6.	> 4 y ≤ 5 y	4.5
7.	> 5 y ≤ 6 y	5.5
8.	> 6 y ≤ 7 y	6.5
9.	> 7 y ≤ 8 y	7.5
10.	> 8 y ≤ 9 y	8.5
11.	> 9 y ≤ 10 y	9.5
12.	> 10 y ≤ 15 y	12.5
13.	> 15 y ≤ 20 y	17.5
14.	> 20 y	25

(2) The expected cash flows for the purposes of determining the interest rate risk's impact on the net interest income should include the principal and interest.

(3) Slotting of the expected cash flows into time buckets by the columns for fixed rate instruments shall be performed according to the number of days remaining until the maturity of the financial instrument, while slotting of the cash flows into time buckets by the rows shall be performed depending on the contractual maturity date of the instrument, taking into account the behavioural options, except for non-maturity deposits.

(4) The slotting of the expected cash flows into time buckets by the columns and by the rows for floating rate instruments shall be performed according to the number of days remaining until the next interest rate repricing, counted from the reporting date.

(5) The bank shall report all cash flows related to floating rate instruments and non-maturity deposits in the first time bucket of Table 4 of this Article, i.e. up to one year.

(6) The slotting of the fixed component of financial derivatives shall be performed as in the case of the instruments referred to in paragraph (3) of this Article, while slotting of the variable component of financial derivatives shall be performed as in the case of the instruments referred to in paragraphs (4) and (5) of this Article.

(7) For the purposes of determining the interest rate risk's impact on the bank's net interest income, in addition to the impact of the automatic options in accordance with Article 15 of this Instruction, the three components that include the following need to be taken into account:

a) the net interest income until the next interest rate repricing of the instruments (the net interest income flows that are fixed and whose amount will not change due to the interest rate repricing), which is defined in greater detail in Article 16 of this Instruction. Accrued interest as at the date of calculation, i.e. the reporting date, need to be subtracted from this amount.

b) the net interest income based on the projection of the movement of the risk-free yield curve from the interest rate repricing of the instruments up to the end of the net interest income horizon, in accordance with the assumption of a constant balance sheet, which is defined in greater detail in Article 17 of this Instruction.

c) the projection of the net interest income based on the commercial margin from the moment when a new commercial margin may be agreed (most often at maturity of the instrument) up to the end of the net interest income horizon, in accordance with the assumption of a constant balance sheet, which is defined in greater detail in Article 18 of this Instruction, where the projected margins should be based on the margins of recently bought/sold products with similar characteristics, rather than the historical /original margins.

Article 15
Automatic Options

In the calculation of the interest rate risk's impact on the net interest income, the bank will further adjust calculations related to the automatic options embedded in the interest rate-sensitive instruments referred to in Article 8 of this Instruction, namely:

a) only options that can be exercised within the net interest income horizon, i.e. one year, shall be taken into account,

b) the values of the sold and bought options should be calculated based on the expected cash flows referred to in Article 8 of this Instruction in the baseline and interest rate shock scenarios,

c) all instruments vis-à-vis retail and wholesale counterparties, whose optionality is automatically activated, shall be assumed to be replaced by an instrument with comparable characteristics up to the end of the net interest income horizon, i.e. one year.

Article 16
Determining Impact of Interest Cash Flows on Net Interest Income

(1) A bank shall determine the impact of the expected interest cash flows on the net interest income up to the maturity period or the next interest rate repricing of the instruments (including the repricing date) in accordance with Table 3 of this Instruction, provided that the amount of the cash flows is known and fixed and will not change due to interest rate movements and that the cash flows are expected within the net interest income horizon, i.e. one-year period.

(2) For floating rate instruments, the expected interest cash flows after the interest rate repricing date will, for the purposes of paragraph (1) of this Article, cover only the portion of the cash flows that is related to the commercial margin.

(3) Given that these are the expected cash flows that will not change due to interest rate movements, their amount will be the same both in the baseline scenario and in the interest rate shock scenarios, except in the case of application of behavioural options defined in Articles 5-7 of this Instruction.

Article 17
Determining Impact of Risk-Free Interest Rate Component on Net Interest Income

(1) A bank shall, per material currency and per scenario, calculate the impact of the risk-free interest rate component on the net interest income for all repricing items, in accordance with paragraph (2) of this Article, and determine the remaining net interest income horizon.

(2) The risk-free interest rate component referred to in paragraph (1) of this Article shall represent the projected forward interest rate that is expected to be applied to the instruments repricing at the midpoint of the time bucket referred to in Table 3 of this Instruction and with the original maturity at the midpoint of the time bucket referred to in Table 4.

(3) The bank will determine the projected forward interest rate referred to in the previous paragraph using the formula:

$$FWD_{i,c} = -\frac{ln[DF_{i,c}(t_k + REF_j)/DF_{i,c}(t_k)]}{REF_j}$$

where:

t_k = the midpoint of time bucket k;

REF_j = the midpoint of time bucket j;

$FWD_{i,c}$ = the risk-free interest rate component for the respective scenario i and for material currency c;

$DF_{i,c}(t_k)$ = the discounting factor for the individual scenario i and individual currency c at the midpoint of time bucket t_k, as defined in Article 12(2) of this Instruction.

(4) The bank will determine the risk-free interest rate component for each combination of the midpoint of time bucket k and the midpoint of time bucket j by multiplying the projected forward interest rate referred to in the previous paragraph with the remaining time in the net interest income horizon referred to in Table 3 of this Instruction.

(5) The bank will determine the final impact of the projected risk-free interest rate component on the net interest income by multiply the cash flows allocated in the manner set out in Article 14 of this Instruction with the applicable risk-free interest rate referred to in paragraph (4) of this Article.

Article 18
Determining Impact of Commercial Margin on Net Interest Income

(1) A bank shall calculate the impact of the projected commercial margins on the net interest income for all repricing instruments by allocating the cash flows to the commercial margin repricing buckets, and shall estimate the applicable commercial margin rate and determine the remaining time up to the end of the net interest income horizon.

(2) The allocation of the cash flows shall be performed in the manner set out in Article 14 of this Instruction, with a derogation relating to the principal of floating rate instruments, which shall be shown, for the purposes of this Article, in the time bucket according to the residual maturity.

(3) To determine the impact of the projected commercial margins on the net interest income for all repricing instruments, the bank shall allocate the positions into the following product types and currencies:
a) financial assets:
1) debt securities,
2) loans and other accounts receivable – wholesale non-financial customers,
3) loans and other accounts receivable – households (mortgage loans),
4) loans and other accounts receivable – households (non-mortgage loans),
5) loans and other accounts receivable – other counterparties,
6) other financial assets in the banking book,
b) financial liabilities:
1) deposits – wholesale non-financial customers,
2) deposits – households,
3) deposits – other counterparties,
4) debt securities,
5) other financial liabilities in the banking book.

(4) To calculate the commercial margin rates referred to in paragraph (1) of this Article, the bank shall:
a) in case of instruments that meet the active market requirement where the market value of the instrument is capable of being determined on the basis of easily available market prices, determine the commercial margin rates on the basis of the market price with the respective interest with a deduction of the risk-free interest rate;
b) in case of other instruments, determine the commercial margin rates as the weighted average of commercial margins received or paid in transactions in the last one year, having regard to the product type referred to in paragraph (3) of this Article and currency. In the absence of such transactions for some products or currencies in the last one year, the bank shall determine the commercial margin rate on the basis of the margins received and paid for comparable products.

(5) The commercial margin rates set out in paragraph (4) of this Article for the purposes of the baseline scenario shall also apply in the interest rate shock scenarios.

(6) To take into account the remaining time in the net interest income horizon, the rate calculated in accordance with paragraph (4) of this Article shall be multiplied by the remaining time in the net interest income horizon referred to in Table 3 of this Instruction.

(7) The bank will determine the final impact of the projected commercial margin rate on the net interest income by multiplying the cash flows allocated in accordance with paragraph (2) of this Article by the applicable commercial margin rate referred to in paragraph (6) of this Article.

Article 19
Net Interest Income Add-On for Basis Risk

(1) Where the sum of floating rate instruments other than those in the category „Overnight" defined in paragraph (2) of this Article exceeds 5% of the total interest rate-sensitive assets referred to in Article 2 of this Instruction, a bank shall calculate the net interest income add-on for basis risk.

(2) For the purposes of calculating the add-on referred to in paragraph (1) of this Article, the cash flows for floating rate instruments previously allocated according to the time until the next interest rate repricing into time buckets of Table 3 shall be further assigned to the categories depending on the interest rate type to which the instrument is linked, as follows:
   a) Overnight,
   b) 1 month,
   c) 3 months,
   d) 6 months,
   e) 12 months.

(3) In case the instrument is not linked to an interest rate in accordance with the previous paragraph, the cash flows should be assigned to the category other. Incoming cash flows shall be allocated with a positive sign and vice versa.

(4) For the purposes of paragraph (2) of this Article, the bank will not take into account embedded options, i.e. it will treat those options in accordance with paragraph (9) of this Article.

(5) The bank shall estimate interest rate tightening shocks and widening shocks, in a way that they are consistently applied over time, for each reference interest rate type referred to in paragraphs (2) and (3) of this Article, per material currency, on the basis of historic observations of changes in the interest rates of the instruments in each category.

(6) The tightening shocks and widening shocks referred to in the previous paragraph will be determined by comparing interest rates referred to in paragraph (2)(a) to interest rates referred to in paragraph (2)(b) - (e) and paragraph (3) of this Article.

(7) The bank shall apply to repricing cash flows, per material currency, the shocks referred to in paragraph (6) of this Article multiplied by the remaining time in the net interest income horizon referred to in Table 3 of this Instruction.

(8) The bank shall aggregate in one amount separately for the tightening shock and for the widening shock the calculation referred to in paragraph (7) of this Article.

(9) The bank shall calculate both under the tightening and under the widening shock the cash flows from automatic options embedded in floating rate instruments, and shall compare the resulting cash flows to those in the baseline scenario. The resulting difference shall be added to the calculation referred to in the previous paragraph for the tightening shock and the widening shock separately, with a positive sign in case of incoming cash flows and vice versa. In this calculation cash flows shall not be discounted.

(10) The net interest income add-on for basis risk will be the lower amount calculated in accordance with this Article in the tightening or the widening shock scenario.

Article 20
Determining Total Change in Net Interest Income of a Bank

(1) To determine the net interest income, excluding automatic options up to the net interest income horizon, a bank shall take the sum of:
   a) the interest cash flows calculated in accordance with Article 16 of this Instruction,
   b) the projected risk-free interest rate component in accordance with Article 17 of this Instruction and
   c) the projected commercial margin in accordance with Article 18 of this Instruction.

(2) To cover the impact of a shock scenario on the net interest income, the bank shall take the sum of:
   a) the difference between the calculation referred to in paragraph (1) of this Article by shock scenarios and the baseline scenario,
   b) the net interest income add-on for automatic options referred to in Article 15(1) of this Instruction and
   c) the net interest income add-on for basis risk referred to in Article 19 of this Instruction.
   In the calculation in points (a) and (b) the same shock scenario shall be used, while in the calculation referred to in point (c) the tightening or widening shock shall be used depending on which one has a larger negative effect on the net interest income.
(3) The change in the net interest income, in the light of the requirements referred to in Article 16(2)(b) and (4) of the Decision, shall be calculated as the ratio of the absolute value of the shock with the largest negative impact on the bank's net interest income (under the two interest rate shock scenarios) to the bank's Tier 1 capital.

Article 21
Impact of Market Value Change of Instruments Valued at Fair Value Beyond Net Interest Income Horizon

(1) To determine the market value change beyond the net interest income horizon for instruments valued at fair value, a bank shall perform the allocation in such a way that incoming cash flows shall have a positive sign and outgoing cash flows shall have a negative sign, and that all positive and all negative cash flows within time buckets shall be netted, forming a net long or short position per time bucket.
(2) When performing the calculation referred to in the previous paragraph, the bank shall exclude the cash flows related to instruments not accounted for at fair value and cash flows replaced/maturing during the net interest income horizon (in such a manner that they are shown as zero in the respective time bucket in which they are maturing).
(3) To determine the market value change of automatic options valued at fair value and maturing beyond the net interest income horizon, i.e. one year, the bank shall apply the requirement laid down in Article 8 of this Instruction.
(4) To calculate the market value change beyond the net interest income horizon for instruments valued at fair value, the bank shall apply Article 12(2) and (3) and Article 13(1) and (3) of this Instruction.

III Simplified Standardised Approach

III. 1 Economic Value of Equity

Article 22
Economic Value of Equity and Delta Economic Value of Equity

(1) To determine the economic value of equity and delta economic value of equity under the simplified standardised approach, a bank will derogate from the standardised approach as follows:
   a) In the baseline scenario:
      1) By way of derogation from the requirements defined in Article 5(2) to (7) of this Instruction, the bank shall set the amount of core component of non-maturity deposits at 69.23% of the total retail transactional non-maturity deposits, 53.85% of the total retail non-transactional non-maturity deposits, 38.46% of the total non-financial wholesale non-maturity deposits.
      2) By way of derogation from the requirements defined in Article 5(8) of this Instruction, the bank shall allocate the core component of stable non-maturity

deposits evenly (up to 5 years, 4.5 years and 4 years) across the time buckets of Table 5.

Table 5 Allocation of core component of non-maturity deposits in baseline scenario

Sequence number	Time buckets (mo.=month; y=year)	Retail transactional deposits	Retail non-transactional deposits	Wholesale non-financial deposits
1.	Overnight (O/N)	30.77%	46.15%	61.54%
2.	> O/N ≤ 1 mo.	1.15%	1.00%	0.80%
3.	> 1 mo. ≤ 3 mo.	2.31%	2.00%	1.60%
4.	> 3 mo. ≤ 6 mo.	3.46%	2.99%	2.40%
5.	> 6 mo. ≤ 9 mo.	3.46%	2.99%	2.40%
6.	> 9 mo. ≤ 12 mo.	3.46%	2.99%	2.40%
7.	> 12 mo. ≤ 1.5 y	6.92%	5.98%	4.81%
8.	> 1.5 y ≤ 2 y	6.92%	5.98%	4.81%
9.	> 2 y ≤ 3 y	13.85%	11.97%	9.62%
10.	> 3 y ≤ 4 y	13.85%	11.97%	9.62%
11.	> 4 y ≤ 5 y	13.85%	5.98%	-

   b) In scenarios prescribing a decrease of short-term interest rates:
      1) By way of derogation from the requirements defined in Article 5(2) to (7) of this Instruction, the bank shall set the amount of core component of non-maturity deposits at 90% of the total retail transactional non-maturity deposits, 70% of the total retail non-transactional non-maturity deposits, 50% of the total non-financial wholesale non-maturity deposits.
      2) By way of derogation from the requirements defined in Article 5(8) of this Instruction, the bank shall allocate the core component of non-maturity deposits evenly (up to 5 years, 4.5 years and 4 years) across the time buckets of Table 6.

Table 6 Allocation of core component of stable non-maturity deposits in scenarios prescribing decrease of short-term interest rates

Sequence number	Time buckets (mo.=month; y=year)	Retail transactional deposits	Retail non-transactional deposits	Wholesale non-financial deposits
1.	Overnight (O/N)	10.00%	30.00%	50.00%
2.	> O/N ≤ 1 mo.	1.50%	1.30%	1.04%
3.	> 1 mo. ≤ 3 mo.	3.00%	2.59%	2.08%
4.	> 3 mo. ≤ 6 mo.	4.50%	3.89%	3.12%
5.	> 6 mo. ≤ 9 mo.	4.50%	3.89%	3.12%
6.	> 9 mo. ≤ 12 mo.	4.50%	3.89%	3.12%
7.	> 12 mo. ≤ 1.5 y	9.00%	7.78%	6.25%
8.	> 1.5 y ≤ 2 y	9.00%	7.78%	6.25%

9.	> 2 y ≤ 3 y	18.00%	15.55%	12.51%
10.	> 3 y ≤ 4 y	18.00%	15.55%	12.51%
11.	> 4 y ≤ 5 y	18.00%	7.78%	-

    c) In scenarios prescribing an increase of short-term interest rates:
       1) By way of derogation from the requirements defined in Article 5(2) to (7) of this Instruction, the bank shall set the amount of core component of non-maturity deposits at 48.46% of the total retail transactional non-maturity deposits, 37.69% of the total retail non-transactional non-maturity deposits, 26.92% of the total non-financial wholesale non-maturity deposits.
       2) By way of derogation from the requirements defined in Article 5(8) of this Instruction, the bank shall allocate the core component of stable non-maturity deposits evenly (up to 5 years, 4.5 years and 4 years) across the time buckets of Table 7.

Table 7 Allocation of core component of stable non-maturity deposits in scenarios prescribing increase of short-term interest rates

Sequence number	Time buckets (mo.=month; y=year)	Retail transactional deposits	Retail non-transactional deposits	Wholesale non-financial deposits
1.	Overnight (O/N)	51.54%	62.31%	37.08%
2.	> O/N ≤ 1 mo.	0.81%	0.70%	0.56%
3.	> 1 mo. ≤ 3 mo.	1.62%	1.39%	1.12%
4.	> 3 mo. ≤ 6 mo.	2.42%	2.09%	1.68%
5.	> 6 mo. ≤ 9 mo.	2.42%	2.09%	1.68%
6.	> 9 mo. ≤ 12 mo.	2.42%	2.09%	1.68%
7.	> 12 mo. ≤ 1.5 y	4.85%	4.19%	3.37%
8.	> 1.5 y ≤ 2 y	4.85%	4.19%	3.37%
9.	> 2 y ≤ 3 y	9.69%	8.38%	6.73%
10.	> 3 y ≤ 4 y	9.69%	8.38%	6.73%
11.	> 4 y ≤ 5 y	9.69%	4.19%	-

III. 2 Net Interest Income

Article 23

Neto Interest Income and Delta Net Interest Income

To determine the net interest income and delta net interest income under the simplified standardised approach, a bank will derogate from the standardised approach as follows:
a) the bank shall implement the simplification defined in Article 22 of this Instruction,
b) the bank shall not perform allocation of the cash flows of fixed rate instruments referred to in Articles 6 and 7 of this Instruction, non-performing exposures and fixed rate off-balance sheet exposures to retail counterparties depending on the instrument's original maturity, but it shall calculate the average original maturity by product types defined in Article 18(3) of this Instruction for all fixed rate asset and liability instruments,
c) for the purposes of the calculation in Article 17 of this Instruction, the bank shall apply the calculated average original maturity instead of the midpoint of time bucket j,

d) for the purposes of Article 16 of this Instruction, the bank shall calculate the cash flows from interest expected until the next interest rate repricing period (including the repricing date) by multiplying the amount of principal of all instruments outstanding with its own estimate of average interest rate for all asset and liability instruments with the net interest income horizon, or, in case an instrument is repricing before the net interest income horizon, the midpoint of the time bucket applicable to that instrument.

IV Transitional and Final Provisions

Article 24
Entry into Force

This Instruction shall enter into force on the day of its issuance and shall be published on the official website of the Agency, and a bank shall comply with the requirements of this Instruction no later than 30 June 2025.

Number: 01-701/24   **DIRECTOR**
Sarajevo, February 13ᵗʰ, 2024

                                                                           Jasmin Mahmuzic, sgd