Pursuant to Article 50, paragraph (5), Article 101, paragraph (2), items (1) and (2), Article 102, paragraph (3) and Article 105, paragraph (3) of the Credit Institutions Act (Official Gazette 159/2013, 19/2015, 102/2015 and 15/2018) and Article 43, paragraph (2), item (9) of the Act on the Croatian National Bank (Official Gazette 75/2008 and 54/2013), the Governor of the Croatian National Bank hereby issues the

Decision on amendments to the Decision on governance arrangements

Article 1

In the Decision on governance arrangements (Official Gazette 96/2018), in Article 1, paragraph (1), at the end of item (8), the conjunction "and" is deleted and a semi-colon is inserted.

At the end of item (9), the full stop is deleted and the conjunction "and" is inserted.

After item (9), item (10) is added which reads:

"10) rules on the management of interest rate risk arising from non-trading book activities.".

Article 2

In Article 4, item (1) is amended to read:

"1. 'interest rate risk arising from non-trading book activities' ('IRRBB') means the current or prospective risk to both the earnings and the economic value of a credit institution arising from adverse movements in interest rates that affect interest rate sensitive instruments, including gap risk, basis risk and option risk;".

After item (32), items from (33) to (36) are added which read:

"33. 'gap risk' means the risk resulting from the term structure of interest rate sensitive instruments that arises from differences in the timing of their rate changes, covering changes to the term structure of interest rates occurring consistently across the yield curve (parallel risk) or differentially by period (non-parallel risk);

34. 'basis risk' means the risk arising from the impact of relative changes in interest rates on interest rate sensitive instruments that have similar tenors but are priced using different interest rate indices. Basis risk arises from the imperfect correlation in the adjustment of the rates earned and paid on different interest rate sensitive instruments with otherwise similar rate change characteristics;

35. 'option risk' means the risk arising from options (embedded and explicit), where the credit institution or its customer can alter the level and timing of their cash flows, namely

the risk arising from interest rate sensitive instruments where the holder will almost certainly exercise the option if it is in their financial interest to do so and the risk arising from flexibility embedded implicitly or within the terms of interest rate sensitive instruments, such that changes in interest rates may affect a change in the behaviour of the client;

36. 'credit spread risk from non-trading book activities' ('CSRBB') means the risk driven by changes in the market perception about the price of credit risk, liquidity premium and potentially other components of credit-risky instruments inducing fluctuations in the price of credit risk, liquidity premium and other potential components, which is not explained by IRRBB or by expected credit/(jump-to-)default risk."

Article 3

After Article 63, Title VI.A and its title "RULES ON THE MANAGEMENT OF INTEREST RATE RISK ARISING FROM NON-TRADING BOOK ACTIVITIES" and Articles 63a to 63v and their titles are inserted which read:

"VI.A RULES ON THE MANAGEMENT OF INTEREST RATE RISK ARISING FROM NON-TRADING BOOK ACTIVITIES

IRRBB management system

Article 63a

The IRRBB management system shall include at least the following:

1) overall strategy for the management of IRRBB;
2) written policies and procedures for the management of IRRBB;
3) systems used by the credit institution to identify, assess and manage IRRBB; and
4) limit systems that ensure that IRRBB exposures are in line with a credit institution's risk appetite and the overall approach to IRRBB measurement and management.

Terms specific for IRRBB

Article 63b

For the purposes of IRRBB measurement and management, the following terms shall have the following meanings:

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1) ‘interest rate sensitive instruments’ means assets, liabilities and off-balance-sheet items in the non-trading book, excluding assets deducted from common equity tier 1 (CET1) capital;
2) ‘earnings measures’ means measures of changes in expected future profitability within a given time horizon resulting from interest rate movements;
3) ‘economic value (EV) measures’ means measures of changes in the net present value of the interest rate sensitive instruments over their remaining life resulting from interest rate movements. EV measures reflect changes in value over the remaining life of the interest rate sensitive instruments, i.e. until all positions have run off;
4) ‘economic value of equity (EVE) measures’ means a specific form of EV measure where equity is excluded from the cash flows;
5) ‘conditional cash flow modelling’ means cash flow modelling under the assumption that the timing and amount of cash flows is dependent on the specific interest rate scenario, i.e. it is assumed that the timing of cash flows of options, of instruments with embedded, explicit options and of instruments of which the maturity depends on clients’ behaviour, is modelled conditional on the interest rate scenario;
6) ‘unconditional cash flow modelling’ means cash flow modelling under the assumption that the timing and amount of cash flows is independent of the specific interest rate scenario;
7) ‘run-off balance sheet’ means a balance sheet where existing non-trading book positions amortise and are not replaced by any new business;
8) ‘dynamic balance sheet’ means a balance sheet incorporating future business expectations, adjusted for the relevant scenario in a consistent manner;
9) ‘constant balance sheet’ means a balance sheet including off-balance-sheet items in which the total size and composition are maintained by replacing maturing or repricing cash flows with new cash flows that have identical features with regard to the amount, repricing period and spread components.

General provisions

Article 63c

(1) A credit institution shall manage risks arising from its IRRBB exposures that affect both its earnings and economic value.

(2) A credit institution shall identify its existing and prospective exposure to IRRBB in a proportionate manner, depending on the level, complexity and riskiness of the non-trading book positions it faces, or an increasing risk profile taking into account its business model, its strategies and the business environment it operates in or intends to operate in.

(3) A credit institution shall also consider its general level of sophistication and internal approaches to risk management to make sure that its approaches, processes and systems for the management of IRRBB are coherent with its general approach to risk management and its specific

approaches, processes and systems implemented for the purpose of the management of other risks.

(4) When calculating the impact of interest rate movements in the earnings perspective, a credit institution shall consider not only the effects on interest income and expenses, but also the effects of the market value changes of instruments either shown in the profit and loss account or directly in equity. A credit institution shall take into account the increase or reduction in earnings and capital over short- and medium-term horizons resulting from interest rate movements.

(5) The change in earnings shall be the difference between expected earnings under a base scenario and expected earnings under an alternative, more adverse shock or stress scenario from a going-concern perspective.

Overall strategy for the management of IRRBB

Article 63d

(1) A credit institution shall consider the following as the interest rate sensitive instruments defined in Article 63b, item (1):

1) non-performing exposures;

2) interest rate derivatives; and

3) other off-balance-sheet items such as interest rate sensitive loan commitments.

(2) 'Non-performing exposures' means exposures defined in Annex V of Commission Implementing Regulation (EU) No 680/2014 of 16 April 2014 laying down implementing technical standards with regard to supervisory reporting of institutions according to Regulation (EU) No 575/2013 of the European Parliament and of the Council.

(3) A credit institution shall monitor and assess its CSRBB-affected exposures, by reference to the asset side of the non-trading book, where CSRBB is relevant for the risk profile of the credit institution. For the purposes of this paragraph, 'asset side' includes only fair value assets, unless the credit institution proves that the risk is also present in other asset items in the non-trading book.

(4) An RC parent credit institution and an EU parent credit institution having its head office in the RC shall ensure that internal governance arrangements and processes for the management of IRRBB are consistent and well integrated on a consolidated and a sub-consolidated basis.

Responsibilities of the management board

Article 63e

(1) Regarding the IRRBB management process, a credit institution's management board shall:

1) establish a system to take appropriate actions to identify, measure, monitor and control IRRBB, consistent with the approved strategies and policies by setting:

1. appropriate limits on IRRBB, including ensuring compliance with those limits, and procedures for approvals of necessary exceptions;
2. systems and standards for measuring IRRBB, valuing positions and assessing performance, including procedures for updating interest rate shock and stress scenarios and key underlying assumptions driving the IRRBB analysis;
3. a comprehensive IRRBB reporting and review process; and
4. effective internal controls and management information systems (MISs);

2) approve major hedging or risk-taking initiatives in advance of implementation; positions related to internal risk transfers between the non-trading book and the trading book should be properly documented;

3) establish a system of regular reporting to the management board, at least quarterly, on the level and changes in the credit institution's IRRBB exposure; and

4) ensure that the validation of IRRBB measurement methods and assessment of corresponding model risk are included in the policies reviewed and approved by the management board.

(2) A credit institution's management board may designate an organisational unit, committee or employees responsible for IRRBB control and management and it shall ensure that senior management, expert individuals or an asset and liability management committee (ALCO) designated for the actions referred to in paragraph (1) of this Article are appointed in a documented, clear and transparent manner and it shall set them clear objectives and responsibilities.

(3) A credit institution' management board shall ensure that the IRRBB identification, measurement, monitoring and control functions have clearly defined responsibilities, and that they are independent from risk-taking functions on IRRBB and report IRRBB exposures directly to the management board or the persons referred to in paragraph (2) of this Article.

Risk appetite

Article 63f

(1) A credit institution shall determine its risk appetite for IRRBB in terms of the acceptable impact of fluctuating interest rates on both earnings and economic value.

(2) A credit institution with significant exposures to gap risk, basis risk or option risk shall determine its risk appetite in relation to each of these material sub-types of IRRBB and it shall establish limits for each of these sub-types.

Risk appetite framework

Article 63g

(1) A credit institution's management board shall adopt clearly defined risk appetite statements that are implemented through comprehensive risk appetite frameworks, i.e. policies and procedures for limiting and controlling IRRBB.

(2) In its risk appetite frameworks, a credit institution shall delineate and approve delegated powers, lines of responsibility and accountability over IRRBB management decisions and it shall list the instruments, hedging strategies and risk-taking opportunities authorised for IRRBB.

(3) In defining its risk appetite, a credit institution shall take account of earnings risks that may arise as a consequence of the accounting treatment of transactions in the non-trading book. The risk to earnings may not be limited to interest income and expenses: the effects of changes in interest rates on the market value of instruments that, depending on accounting treatment, are reflected either through the profit and loss account or directly in equity (via other comprehensive income), should be taken into account separately. A credit institution shall also take into account the earnings impact related to embedded optionalities in fair value instruments under ongoing interest rate shocks and stress scenarios, as well as the potential impact on the P&L accounts of hedging interest rate derivatives if their effectiveness was hampered by interest rate changes.

System of limits

Article 63h

(1) A credit institution shall establish limits that target maintaining IRRBB exposures consistent with its risk appetite and with its overall approach for measuring IRRBB, in particular the following:

1) policy limits appropriate to the nature, size, complexity and capital adequacy of the credit institution, as well as its ability to measure and manage its risks;
2) aggregate limits that clearly articulate the acceptable amount of IRRBB should be applied on a consolidated basis and, as appropriate, at the level of individual affiliates;
3) systems to ensure that positions that exceed, or are likely to exceed established limits receive prompt management attention and are escalated without delay; there should be a clear policy on who will be informed, how the communication will take place and the actions which will be taken in response; and
4) the reporting of risk measures to the management board should have at least a quarterly frequency and should compare current exposure with policy limits.

(2) A credit institution shall establish and monitor the framework of hedging strategies to control mark-to-market risks in instruments that are accounted for at market value.

Policies and processes for the management of IRRBB

Article 63i

(1) A credit institution's management board shall, based on its overall IRRBB strategy, adopt robust IRRBB policies, processes and systems which should ensure that:

1) procedures for updating scenarios for the measurement and assessment of IRRBB are set up;
2) the measurement approach and the corresponding assumptions for measuring and assessing IRRBB, including the allocation of internal capital to IRRBB risks, are appropriate and proportional;
3) the assumptions of the models used are regularly reviewed and, if necessary, amended;
4) standards for the evaluation of positions and the measuring of performance are defined;
5) appropriate documentation and control over permissible hedging strategies and hedging instruments exist; and
6) the lines of authority and responsibility for managing IRRBB exposures are defined.

(2) The policies should be well reasoned, robust and documented and should address all IRRBB components that are important to the institution's individual circumstances and should include the following:

1) the application of the boundary between 'non-trading book' and 'trading book'; internal risk transfers between the non-trading book and the trading book should be properly documented and monitored within the broader monitoring of the IRRBB originated by interest rate derivatives instruments;
2) the more detailed definition of economic value and its consistency with the method used to value assets and liabilities (e.g. based on the discounted value of future cash flows, and on the discounted value of future earnings) adopted for internal use;
3) the more detailed definition of earnings risk and its consistency with the credit institution's approach to developing financial plans and financial forecasts adopted for internal use;
4) the size and the form of the different interest rate shocks to be used for internal IRRBB calculations;
5) the use of conditional or unconditional cash flow modelling approaches;
6) the treatment of 'pipeline transactions' (including any related hedging);
7) the aggregation of multicurrency interest rate exposures;
8) the measurement and management of basis risk resulting from different interest rate indexes;
9) the treatment of non-interest-bearing assets and liabilities of the non-trading book (including capital and reserves) in calculations measuring IRRBB for the internal capital adequacy assessment process (ICAAP);
10) the behavioural treatment of current and savings accounts;
11) the measurement of IRRBB arising from behavioural and automatic options in assets or liabilities, including convexity effects and non-linear payoff profiles;

12) the degree of granularity employed in measurement calculations (e.g. use of time buckets); and

13) the internal definition of commercial margins and adequate methodology for internal treatment of commercial margins.

(3) A credit institution shall review all IRRBB policies, at least annually, and revise them as needed.

Internal controls

Article 63j

(1) A credit institution shall undertake regular reviews and evaluations of its internal control systems and IRRBB management processes to ensure compliance with established policies and procedures.

(2) The reviews and evaluations referred to in paragraph (1) of this Article shall be conducted regularly by individuals or organisational units that are independent of the function under review.

(3) An internal audit function shall establish a regular review of IRRBB identification, measurement, monitoring and control processes.

Ensuring data quality

Article 63k

(1) A credit institution shall support the management of IRRBB in a timely and accurate manner through the IT systems and applications used to:

1) carry out, process and record business events;

2) identify, measure and aggregate IRRBB exposures; and

3) prepare reports.

(2) The systems referred to in paragraph (1) of this Article shall:

1) be capable of fully and clearly recording all transactions, taking into account their IRRBB characteristics;

2) offer sufficient flexibility to accommodate a reasonable range of shock and stress scenarios and any additional scenarios;

3) enable the measurement, assessment and monitoring of the contribution of individual transactions to overall exposure;

4) be able to compute economic value and earnings-based measures of IRRBB, as well as other measures of IRRBB based on the interest rate shock and stress scenarios; and

5) incorporate supervisory-imposed constraints on internal risk parameter assumptions.

(3) IT systems should be able to gather detailed information on the repricing date(s) of a given transaction, interest rate type or index, any options (including early repayment or redemption) and the fees relating to the exercise of these options.

(4) A credit institution shall have in place adequate organisational controls of IT systems to prevent the loss of data used by IRRBB applications, and to control changes to the coding used in those applications, so as to ensure, in particular:

1) the reliability of input data and parameters, and the integrity of processing systems for IRRBB models;

2) that the likelihood of errors occurring in the IT system is minimised; and

3) that adequate measures are taken if market disruptions or slumps occur.

(5) A credit institution shall implement appropriate processes that ensure that the data entered into the IT system is correct and establish appropriate mechanisms to verify the correctness of the aggregation process and the reliability of model results.

(6) A credit institution shall identify potential reasons for discrepancies and irregularities that may arise at the time of data processing and have procedures in place to handle those discrepancies and irregularities, including procedures for the mutual reconciliation of positions to enable these discrepancies and irregularities to be eliminated.

(7) An RC parent credit institution and an EU parent credit institution having its head office in the RC shall ensure that the data used to feed models measuring the IRRBB across the group is consistent with the data used for financial planning.

Internal reporting

Article 63l

(1) A credit institution shall ensure that internal risk-reporting systems provide timely, accurate and comprehensive information about its exposures to IRRBB. Internal reports shall be delivered to the management board and senior management at least quarterly. A credit institution shall regularly review the accuracy of these reports.

(2) The reports referred to in paragraph (1) of this Article should contain information at relevant levels of aggregation (by consolidation level and currency) and a level of information adapted to the particular management level and to the specific situation of the credit institution and the economic environment. The reports should include at least the following:

1) summaries of the aggregate IRRBB exposures, including information on exposures to gap, basis and option risk; the reports should contain explanations of all major assets, liabilities, cash flows, and strategies that are driving the level and direction of IRRBB;

2) compliance with policies and limits;

3) key modelling assumptions, such as characteristics of non-maturity deposits (hereinafter referred to as ‘NMDs’), prepayments on fixed rate loans, early withdrawals of fixed term

deposits, drawing of commitments, currency aggregation and treatment of commercial margins;

4) details of the impact of key modelling assumptions on the measurement of IRRBB in terms of both economic value measures and earnings measures, including changes in assumptions under various interest rate scenarios;

5) details of the impact of interest rate derivatives on the measurement of IRRBB, in terms of both economic value measures and earnings measures;

6) details of the impact of fair value instruments, including Level 3 assets and liabilities as defined by the International Financial Reporting Standard 13 Fair Value Measurement (IFRS 13), on the measurement of IRRBB in terms of both economic value measures and earnings measures;

7) results of stress tests referred to in Article 63r of this Decision, the shocks referred to in Article 63p of this Decision, the supervisory outlier test referred to in Article 63v of this Decision and assessments of sensitivity to key assumptions and parameters; and

8) summaries of the reviews of IRRBB policies, procedures and adequacy of the measurement systems, including any findings of internal and external auditors or other equivalent external parties.

(3) The reports referred to in paragraph (1) of this Article should, on a regular basis, include the results of the model reviews and audits as well as comparisons of past forecasts or risk estimates with actual results to inform potential modelling shortcomings, such as:

1) assessments of modelled prepayment losses against historical realised losses; and

2) identification of portfolios that may be subject to significant mark-to-market movements.

IRRBB model governance

Article 63m

(1) A credit institution shall ensure that the validation of IRRBB measurement models and the assessment of corresponding model risk are integrated within the governance processes and policies independently of their development. The model validation policy should be integrated within the governance processes for model risk management and should specify:

1) individuals and/or organisational units responsible for the development, validation, documentation, implementation and use of models; and

2) the model oversight responsibilities as well as policies including the development of initial and ongoing validation procedures, evaluation of results, approval, version control, exception, escalation, modification and decommission processes.

(2) The model validation framework should include the following four core elements:

1) evaluation of conceptual and methodological soundness, including developmental evidence;

2) ongoing model monitoring, including process verification and benchmarking;

3) outcomes analysis, including back-testing of key internal parameters (e.g. stability of deposits, loan prepayment rates, early redemptions of deposits, pricing of instruments); and

4) thorough assessment of any expert opinions and judgements used in internal models.

(3) The management board and/or senior management shall approve the review and validation results and any recommendations on model usage. A credit institution shall organise ongoing model review, process verification and validation at a frequency that is consistent with the level of model risk determined by the management board.

(4) In the ongoing review process, a credit institution shall establish a set of exception trigger events that obligate the model reviewers to notify the management board and/or senior management in a timely fashion, in order to determine corrective actions and restrictions on model usage. Within the ongoing model review, there should be a clear control process of model versions and appropriate authorisations.

(5) A credit institution may outsource the development and/or validation of IRRBB models. Before using a third-party model, a credit institution shall carry out a procedure in accordance with the provisions of relevant regulations governing outsourcing of business activities of credit institutions. A credit institution shall ensure there is adequate documentation on its use of third-party models, including any specific customisation.

(6) A credit institution may rely on third-party IRRBB models to manage and control IRRBB, provided that these models are adequately customised to properly reflect the specific characteristics of the credit institution in question. The credit institution should fully understand the underlying analytics, assumptions and methodologies of the third-party models and ensure that they are adequately integrated into the credit institutions' overall risk management systems and processes.

(7) A credit institution shall include model inputs or assumptions, whether stemming from internal model processes or from third parties, in the validation process, and document and explain model specification choices as part of the validation process.

IRRBB measurement

Article 63n

(1) A credit institution shall establish robust internal measurement systems (hereinafter referred to as 'IMSs') that capture all components and sources of IRRBB which are relevant for its business model.

(2) A credit institution shall measure its exposure to IRRBB in terms of potential changes to both the economic value and earnings. A credit institution shall use complementary features of both approaches to capture the complex nature of IRRBB over the short-term and long-term time horizons. In particular, a credit institution shall measure and monitor:

1) the overall impact of key modelling assumptions on the measurement of IRRBB in terms of both economic value measures and earnings measures; and

2) the IRRBB of their non-trading book interest rate derivatives where relevant for the business model.

(3) If a credit institution excludes commercial margins and other spread components from economic value measures, it shall use:

1) a transparent methodology for identifying the risk-free rate at inception of each instrument; and

2) a methodology that is applied consistently across all interest rate sensitive instruments and all business units.

(4) A credit institution shall include commercial margins when calculating earnings measures.

(5) A credit institution shall include non-performing exposures (net of impairment and provisions) in interest rate sensitive instruments reflecting expected cash flows and their timing.

(6) When measuring its exposure to IRRBB, a credit institution shall develop and use its own assumptions and calculation methods and may not purely rely on the calculation and outcomes of the supervisory outlier tests referred to in Article 63v of this Decision. A credit institution shall fully integrate the supervisory outlier tests into the internal framework for the management of IRRBB and shall use them as complementary tools for measuring exposure to IRRBB.

Methods for IRRBB measurement

Article 63o

(1) A credit institution shall identify and measure all components of IRRBB referred to in Article 4, paragraph (1), items (33) to (36).

(2) For measuring and monitoring of IRRBB, a credit institution shall use at least one earnings-based measure and at least one economic value measurement method that, in combination, capture all components of IRRBB. Credit institutions in categories 1 and 2 under the document “Supervisory review and evaluation process (SREP)” published on the Croatian National Bank website, and institutions with complex or sophisticated business models, shall use multiple measurement methods.

Interest rate shock scenarios for ongoing management

Article 63p

(1) A credit institution shall regularly measure its exposure to IRRBB in terms of changes in economic value and earnings under various interest rate shock scenarios for potential changes in the level and shape of the interest rate yield curves, and to changes in the relationship between different interest rates (i.e. basis risk). A credit institution shall perform the measurement at least quarterly and more frequently in times of increased interest rate volatility or increased IRRBB levels.

(2) Taking account of the proportionality principle, a credit institution may apply a conditional or unconditional cash flow modelling approach.

(3) A credit institution shall assess exposures in each currency in which it has positions in interest rate sensitive instruments. For the material currency exposures, the interest rate shock scenarios should be currency-specific and consistent with the underlying economic characteristics.

(4) When selecting interest rate shock scenarios, a credit institution shall consider the following:

1) that interest rate shock scenarios be commensurate with the nature, scale and complexity of its activities as well as its risk profile, taking into account sudden and gradual parallel and non-parallel shifts and changes in the yield curves; scenarios should be based on the historical movements and behaviour of interest rates, as well as simulations of future interest rates;
2) interest rate scenarios should reflect changes in the relationships between key market rates in order to address basis risk;
3) the six interest rate shock scenarios set out in Annex III of the EBA Guidelines on the management of interest rate risk arising from non-trading book activities (EBA/GL/2018/02); and
4) any additional interest rate shock scenarios required by the Croatian National Bank.

(5) In low interest rate environments, a credit institution shall also consider negative interest rate scenarios and the possibility of asymmetrical effects of negative interest rates on its interest rate sensitive instruments.

(6) A credit institution shall use the results of interest rate shock scenarios as a basis in the decision-making at appropriate management level. This includes strategic or business decisions, the allocation of internal capital, and risk management decisions, as well as establishing and reviewing the policies and limits for IRRBB.

Interest rate stress scenarios

Article 63r

(1) A credit institution shall perform IRRBB testing at least annually and more frequently in times of increased interest rate volatility and increased IRRBB levels.

(2) A credit institution shall perform reverse stress tests in order to:

1) identify interest rate scenarios that could severely threaten its capital and earnings; and
2) reveal vulnerabilities arising from its hedging strategies and the potential behavioural reactions of its customers.

(3) In testing vulnerabilities under stressed conditions, a credit institution shall use larger and more extreme shifts and changes in interest rates than those used for the purpose of ongoing management, including at least the following:

1) substantial changes in the relationships between key market rates (basis risk);

2) sudden and substantial shifts in the yield curve (both parallel and non-parallel);

3) breakdowns of key assumptions about the behaviour of asset and liability classes;

4) changes in key interest rate correlation assumptions;

5) significant changes to current market and macro conditions and to the competitive and economic environment, and their possible development; and

6) specific scenarios that relate to the individual business model and profile of the credit institution.

(4) A credit institution shall use the results of interest rate stress scenarios as a basis in the decision-making at appropriate management level. This includes strategic or business decisions, the allocation of internal capital, and risk management decisions, as well as establishing and reviewing the policies and limits for IRRBB.

Measurement assumptions

Article 63s

(1) When measuring IRRBB, a credit institution shall fully understand and document key behavioural and modelling assumptions. These assumptions should be aligned with business strategies and be tested at least annually.

(2) A credit institution shall, in relation to both economic value and earnings-based measures of IRRBB, take into account assumptions made for the purpose of risk quantification in relation to at least the following areas:

1) the exercise of interest rate options (automatic or behavioural) by both the credit institution and its customer under specific interest shock and stress scenarios;

2) the treatment of balances and interest flows arising from NMDs;

3) the treatment of fixed term deposits with risk of early redemption;

4) the treatment of fixed rate loans and fixed rate loan commitments;

5) the treatment of own equity in internal economic value measures; and

6) the implications of accounting practices for the measurement of IRRBB, and in particular hedge-accounting effectiveness.

(3) A credit institution shall review significant measurement assumptions at least annually, and more frequently during rapidly changing market conditions.

Behavioural assumptions for customer accounts with embedded customer optionality

Article 63t

(1) In assessing the implications of optionality, a credit institution shall take into account:

1) the potential impact on current and future loan prepayment speeds arising from the interest rate scenario, underlying economic environment and contractual features, and the various dimensions influencing the embedded behavioural options;

2) the elasticity of adjustment of product rates to changes in market interest rates; and

3) the migration of balances between product types as a result of changes in their features, terms and conditions.

(2) A credit institution shall have policies in place governing the setting of, and the regular assessment of, the key assumptions for the treatment of on- and off-balance-sheet items that have embedded options in their interest rate risk framework. This means that a credit institution shall:

1) identify all material products and items subject to embedded options that could affect either the interest rate charged or the behavioural repricing date (as opposed to contractual maturity date) of the relevant balances;

2) have appropriate pricing and risk mitigation strategies (e.g. use of derivatives) to manage the impact of optionality within the risk appetite, which may include early redemption penalties chargeable to the customer as an offset to the potential break costs (where permitted);

3) ensure that modelling of key behavioural assumptions is justifiable in relation to the underlying historical data, and based on prudent hypotheses;

4) be able to demonstrate that it has accurate modelling (back-tested against experience);

5) maintain appropriate documentation of assumptions in its policies and procedures, and have a process for keeping them under review;

6) understand the sensitivity of its risk measurement outputs to these assumptions, including undertaking stress testing of the assumptions and taking the results of such tests into account in internal capital allocation decisions; and

7) perform regular internal validation of these assumptions to verify their stability over time and to adjust them if necessary.

Behavioural assumptions for customer accounts without specific repricing dates

Article 63u

In making behavioural assumptions about accounts without specific repricing dates for the purposes of interest rate risk management, a credit institution shall:

1) identify 'core' balances, i.e. deposits that are stable and unlikely to reprice even under significant changes in interest rate environment, and/or other deposits whose limited elasticity to interest rate changes could be modelled by the credit institution;

2) provide that modelling assumptions for these deposits reflect depositor characteristics (e.g. retail/wholesale) and account characteristics (e.g. transactional/non-transactional), in such a way that:

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1. retail transactional deposits include non-interest-bearing and other retail accounts whose remuneration component is not relevant in the client's decision to hold money in the account;
2. retail non-transactional deposits include retail accounts whose remuneration component is relevant in the client's decision to hold money in the account;
3. wholesale deposits include accounts from corporate and other wholesale clients, excluding interbank accounts or other fully price-sensitive ones;

3) assess the potential migration between deposits without specific repricing dates and other deposits that could modify, under different interest rate scenarios, key behavioural modelling assumptions;

4) consider potential constraints on the repricing of retail deposits in low or negative interest rate environments;

5) ensure that assumptions about the decay of core and other modelled balances are prudent and appropriate in balancing the benefits to earnings against the additional economic value risk entailed in locking in a future interest rate return on the assets financed by these balances, and the potential forgone revenue under a rising interest rate environment;

6) not exclusively rely on statistical or quantitative methods to determine the behavioural repricing dates and the cash flow profile of NMDs; the determination of appropriate modelling assumptions for NMDs shall include the collaboration of different experts within a credit institution (e.g. risk management and risk control department, sales and treasury);

7) have appropriate documentation of these assumptions in its policies and procedures, and a process for keeping them under review;

8) understand the impact of the assumptions on its own chosen risk measurement outputs and internal capital allocation decisions, including by periodically calculating sensitivity analyses on key parameters (e.g. percentage and maturity of core balances on accounts and pass-through rate) and the measures using contractual terms rather than behavioural assumptions to isolate the impact of assumptions on both economic value and earnings;

9) undertake stress testing to understand the sensitivity of the chosen risk measures to changes in key assumptions, taking the results of such tests into account in internal capital allocation decisions.

Supervisory outlier test

Article 63v

(1) A credit institution shall regularly, at least quarterly, calculate the impact on its EVE of a sudden parallel +/–200 basis points shift of the yield curve.

(2) A credit institution shall regularly, at least quarterly, calculate the impact on its EVE of interest rate shocks, applying scenarios 1 to 6 as set out in Annex III of the Guidelines on the management of interest rate risk arising from non-trading book activities (EBA/GL/2018/02).

(3) The method of carrying out supervisory outlier tests and the time limits for reporting shall be prescribed in the Decision on supervisory reports of credit institutions.

Article 4

(1) On the date of the entry into force of this Decision, the provisions of Articles 1 to 4 and Article 8 of the Decision on the management of interest rate risk in the non-trading book (Official Gazette 120/2016 and 14/2017) shall cease to have effect.

(2) Credit institutions shall adjust to the requirements of this Decision by 31 December 2019.

(3) This Decision shall enter into force on the eighth day after the day of its publication in the Official Gazette.

No.: 180-020/07-19/BV
Zagreb, 3 July 2019

Croatian National Bank

Governor

Boris Vujčić