BALANCE SHEET REVIEW
OF THE ROMANIAN INSURANCE SECTOR

METHODOLOGICAL GUIDANCE
2020

July 2020

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Glossary of terms and abbreviations

Auditors – Independent external reviewers appointed to perform the BSR
BEL – Best estimate Liability
BSCR - Basic Solvency Capital Requirements
BSR - Balance-Sheet Review
CoC – Cost-of-capital rate
DPD - Days past due
DTA - Deferred tax assets
DTL - Deferred tax liabilities
DR – Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing the Solvency II Directive
ESG - Economic scenario generator
GWP - Gross Written Premium
HRG - Homogeneous risk group
IBNR - Incurred But Not Reported claims
IFRS – International Financial Reporting Standards
ISA – International Standards on Auditing
LoB - Line of business
MCR - Minimum Capital Requirement
MTPL - Motor third party liability insurance
NSLT – Non-similar to Life techniques
PIM – Partial Internal Model
QRT – Quantitative Reporting Template
Q&A - Question and Answer process
RBNS - Reported But Not Settled claims
RFF - Ring-Fenced Funds
SC - Steering Committee
SCR – Solvency Capital Requirement
SLT – Similar to Life techniques
Solvency II Directive - Directive 2009/138/EC of the European Parliament and the Council of 25 November 2009
TP – Technical Provisions
ULAE - Unallocated Loss Adjustment Expense
VA - Volatility adjustment

1 Introduction

This Methodology has been developed to provide guidance for the performance of the 2020 Balance-Sheet Review (BSR) of the Romanian Insurance sector. It clarifies the reference framework providing additional guidance and clarifications where considered appropriate, including in regards technical and operational procedures and taking advantage of the experience obtained and materials used in previous BSRs in the insurance sector aiming ensuring consistency of exercises across Member States.

This guidance aims to assure a consistent application of the methodology to all participating undertakings. Additional technical support and clarifications where necessary will be provided by a Consultant in consultation with the Steering Committee (SC) and directly by the SC.

The auditors will be able to submit their questions in a consolidated manner to a dedicated mailbox (bsr@asfromania.ro). The Consultant will circulate the Q&A log answers to all auditors on a regular basis (typically once per week or sooner for critical or high priority issues) through email.

1.1 Context

In order to have an enhanced insight into and raise awareness of the risks and vulnerabilities of the Romanian insurance sector, the Autoritatea de Supraveghere Financiară (ASF) has decided to perform an independent BSR in cooperation with the European Insurance and Occupational Pensions Authority (EIOPA).

A similar exercise was performed on the Romanian insurance market in 2014-2015, with highly relevant results both for insurance undertakings and policyholders. While there has been a steady evolution of the sector since this exercise was completed, the Romanian insurance market is characterized by a high level of concentration and maintains its dependence to motor third party liability (MTPL) insurance, as well as a rapid growth on specific undertakings on the credit and suretyship business.

The review will be carried out by independent external parties with high professional reputation and international experience. The review will be overseen by a Steering Committee (SC) that includes representatives from the ASF and EIOPA.

After consulting the SC, the ASF will select a consultant that will ensure a harmonized application of the review's methodology by the auditors as well as a similar treatment of the participating undertakings by the respective auditors.

The review covers 26 insurance and reinsurance undertakings in Romania subject to Solvency II regime (Annex 1).

1.2 Objectives

The main objectives of the BSR are:

a) to analyze the insurance portfolio of each participating insurance undertaking in order to establish the obligations under the insurance contracts, to assess the adequacy of technical provisions under Solvency II and have a reasoned estimate of the economic value of the respective technical provisions;
b) to assess the appropriateness under the Solvency II framework of the recognition and valuation principles applied to all assets and liabilities;
c) to assess under the Solvency II framework the effectiveness of the risk transfers to third parties of risks stemming from (re)insurance contracts written by the insurance undertakings including finite reinsurance contracts;
d) to calculate the prudential indicators in accordance with Solvency II (MCR, SCR and Own Funds);
e) to assess the appropriateness under the Solvency II framework of the system of governance;

f) to review the risks of the insurance undertakings and to provide insight and raise awareness of the insurance' sector risks and vulnerabilities including potential contagions to the rest of the financial sector and the real economy.

These assessments will include a thorough check of the completeness and accuracy of the general ledger of the insurance undertaking, the analysis of insurance portfolios, methodologies, assets and liabilities including the assessment of the adequacy of technical provisions.

Following the objectives indicated in a)-f), auditors will be required to perform the necessary activities to review the participating undertakings' Solvency II balance sheets, governance and prudential indicators which shall cover:

- Reconciliation, reliability, quality, sufficiency and relevance of data - auditors will be required to perform data checks on the information provided by the participating undertakings. Impact shall be quantified;
- Valuation and recognition - auditors will be required to perform an assessment of all material assets and liabilities' recognition and valuation according with the Solvency II framework and propose adjustments, as needed, to the value of assets and liabilities;
- Accounting policies - auditors will be required to provide an opinion about the appropriateness of the accounting policies and methodologies used by the participating undertakings. Impact shall be quantified;
- Adequacy of the level of obligations under the insurance contracts - auditors will be required to perform an analysis of the insurance portfolio, of the internal methodologies for computing the technical reserves, of the data used for computing the technical reserves, to report findings and propose adjustments, as needed, to the value of technical reserves;
- Effectiveness of risk transfers - auditors will be required to provide an opinion about the effectiveness of the risks transfers to third parties stemming from (re)insurance contracts written by the undertakings including finite reinsurance contracts. Impact shall be quantified;
- Intra-group transactions - auditors will be required to assess the impact of intra-group transactions including a thorough analysis of the amount estimated to be recovered out of assets derived from intra-group transactions. Impact shall be quantified;
- Prudential indicators - auditors will be required to calculate the prudential indicators in accordance with Solvency II (MCR, SCR and Own Funds);
- System of governance - auditors will be required to give an opinion about the appropriateness of the system of governance including the internal control mechanisms in place;
- Reports (See 1.4 Reports).

1.3 Timeline

The review by auditors is expected to commence by December 2, 2020 and shall be concluded until March 2, 2021.

Each auditor shall:

- By November 19, 2020 produce a blueprint. Each auditor will participate at a preparatory meeting with the Consultant and the SC to provide an overview of the proposed work.
- Twice a month, submit to the Consultant and SC a progress report. Auditors will need to be available to discuss with the Consultant and SC the interim results during the monthly meetings of the SC and during conference calls.
- By March 2, 2021 submit to the Consultant and SC the final reports. Auditors shall submit a draft report 2 weeks before their final reporting to provide the Consultant and the SC adequate time to review the reports, provide feedback and give the time necessary for auditors to perform any updates before the March 2 deadline.

The Consultant shall submit to the SC the final report until April 2, 2021 at the latest. The Consultant shall submit a draft report 2 weeks before its final reporting to provide the SC adequate time to review the report, provide feedback and give the time necessary for the Consultant to perform any updates before the April 2 deadline.

The ASF shall publish the final report by April 23, 2021.

1.4 Reports

Auditors are required to provide early and regular reporting to the Consultant and SC. The following reports are envisaged (see 1.3 Timelines):

- Blueprint (in English): At the beginning of the reviews, each auditor will produce a blueprint which will describe the work plan proposed for performing the review, including the detailed procedures and timing. It shall include a detailed indication of the estimated number of hours needed to complete each stage of the review, any expected limitations, materiality computation and selected accounts for review, as well as any other information as considered relevant for the specific undertaking.

- Progress reports (in English): The progress reports shall clearly identify the implementation stage, relevant findings and concerns.

  Additionally, auditors may at any time during the review draw up a complementary letter if they consider that the Consultant and the SC should be informed about facts and issues that are or may be urgent or of particular interest and importance to the successful completion of the BSR.

- Conclusion report (in Romanian and English): The type of report to be provided is a proposed Agreed Upon Procedures format in accordance with ISRS 4400 with an advisory element.

  Auditors shall also obtain from the participating undertakings, review and submit as Appendixes to the final report, and as soon as available together with the progress reports, the following Solvency II Quantitative Reporting Templates (QRT)s at individual level (i.e. templates under Implementing Regulation (EU) 2015/2450 of 2 December 2015:
  - All quarterly quantitative templates
  - From the annual quantitative templates:
    - S.03.03.01 – Off-balance sheet items, general, as at 30.06.2020
    - S.04.01.01 – Activity by country, for the period 01.01.-30.06.2020
    - S.04.02.01 – Information in class 10 for the period 01.01.- 30.06.2020
    - S. 05.02.01 – Premiums, claims and expenses by country (identical with the period of S.05.01.01)
    - S 07.01.01 – Structured products
    - S. 10.01.01 – Securities lending and repos
    - S.12.02.01 – Gross TP and Gross BE for different countries
    - S.14.01.01 – Life obligations analysis at 30.06.2020 for the period 01.01-30.06.2020
    - S. 17.02.01 – Non-life TP for different countries as at 30.06.2020
    - S. 19.01.01 – for MTPL only, annual data
    - S. 20.01.01 - for MTPL only, annual data
    - S. 21.01.01 – for MTPL only, annual data
    - SCR QRTs - S.25.01.01, S.26.01.01, S.26.02.01, S.26.04.01, S.26.05.01, S.26.06.01, S.27.01.01, S.28.02.01
    - S.30.03.01 – Outgoing Reinsurance Program basic data
    - S.30.04.01 – Outgoing Reinsurance Program shares data

  Auditors may be required to fill additional templates where requested by the Consultant.

  The objective of the particular engagement is for the auditors to carry out procedures of an audit nature as described in the methodology and to report on the factual findings and on their conclusions over the findings. The report shall identify the financial information of insurer's assets and liabilities as well as the non-financial information relating to applicable regulatory framework to which the agreed-upon procedures have been applied, include a statement that the procedures performed were those agreed upon, list the specific procedures performed and describe the auditor's factual findings including sufficient details of errors, exceptions found and conclusions. The Agreed Upon Procedures engagement requires the performance of audit steps and therefore should be completed with reference to the other International Standards on Auditing (ISAs).

The procedures described in the methodology have to be complied with. Any departures from the methodology and the reasoning behind should be promptly reported to the Consultant and SC to be agreed-upon.

The auditors are requested to use their professional judgment to determine the extent and nature of any additional procedures or information considered appropriate taking into account the scope of work requested in this exercise and their assessment of the specific characteristics of the respective undertakings under review. Auditors are required to apply expert judgement when providing their conclusions over findings.

2 Framework and assumptions

2.1 Reference date

The cut-off/reference date for the reviews is **June 30, 2020.**

The auditor shall consider any subsequent event relevant to the analysis performed, including application of supervisory measures or provision of recommendations by the ASF or any other relevant information as applicable. Subsequent events should be included in the final report together with an analysis of their impact over findings (not directly in the adjusted assets value at the reference date). This applies to all areas under review.

2.2 Reference framework

The reference framework for the BSR is the Solvency II requirements, including the following:

- Directive 2009/138/EC of the European Parliament and of the Council of 25 November 2009 on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II Directive);
- Omnibus II (Directive 2014/51/EU of the European Parliament and of the Council of 16 April 2014 amending Directives 2003/71/EC and 2009/138/EC and Regulations (EC) No 1060/2009, (EU) No 1094/2010 and (EU) No 1095/2010;
- Commission Delegated Regulation (EU) 2015/35 of 10 October 2014 supplementing the Solvency II Directive (DR);
- Commission Delegated Regulations (EU) amending Commission Delegated Regulation (EU) 2015/35;
- Technical standards for application of the Solvency II Directive;
- EIOPA Guidelines on implementation of the Solvency II Directive and Regulations.

The auditors shall consider the applicable legal framework and the applicable International Standards on Auditing (ISA) (see 1.4).

2.3 Materiality

The following shall be adhered to:

a) The insurance specific classes listed below shall be subject to review regardless of their weight on total assets.
    - Technical provisions;
    - Reinsurance recoverables;
    - Insurance and intermediaries receivables and payables;
    - Reinsurance receivables and payables.

b) For all the other balance sheet classes the materiality threshold will consider ISA320 “Materiality in Planning and Performing and Audit” and Article 291 of the published DR, by which it shall be considered the magnitude of an omission or misstatement that, individually or in the aggregate, in light of the surrounding circumstances, could reasonably be expected to influence the economic decisions of the users of the results of the BSR exercise;
c) The balance sheet classes selected for review shall at least include all classes equal or above 1% of the Solvency II Balance Sheet Total Assets / Total liabilities;
d) All adjustments equal or above 5% at individual account level shall be reported.

The determination and use of materiality will not be only a mathematical exercise but will also require professional judgment in assessing risk and hence excluded classes of assets and liabilities may be included in the review where considered appropriate by the auditor, or additional sample or procedures may be proposed.
To ensure consistency the Consultant and/or the SC may review, at the time of the blueprint discussion or afterwards, those judgments and ask the auditors to amend their sample if deemed necessary (e.g. if an auditor of one undertaking identifies risk, which is also present in other undertaking but is not specifically identified by their auditors).

2.4 Sampling

Sampling shall consider ISA 530, “Audit sampling can be applied using either non-statistical or statistical sampling approaches”.

The auditor shall exercise judgment in identifying methods to:
- Define the population
- Determine statistical sample size
- Determine judgmental sample size
- Choose sample selection methods

Sampling should be enough to draw inferences about the entire population from the results of a sample.

The sampling of the classes listed in 2.3 a) i.e. Technical provisions, Reinsurance recoverables, Insurance and intermediaries receivables and payables, Reinsurance receivables and payables, shall aim a 90% coverage, without extrapolation.

For other classes, auditors shall select the sampling method considered the most appropriate in order to form a conclusion concerning the population from which the sample is drawn.

Auditors are requested to clearly describe the following:
- Blueprint – the sampling method to be used for each Solvency II balance sheet account and why it was considered the most appropriate;
- Progress reports – the size of the sample per each Solvency II balance sheet account together with a brief description of the inputs affecting the sample size, as well as any deviations from the Blueprint if the case with justification;
- Final report – the sampling method, size of the sample, conclusions and how drawn inferences for the entire population.

3 Balance Sheet Review

3.1 System of Governance and accounting policies

3.1.1 System of Governance

In accordance with Article 41 of the Solvency II Directive, insurance undertakings shall have in place an effective system of governance which provides for sound and prudent management of the business.

The auditors are required to:

- review the appropriateness of the undertakings' system of governance including the internal control mechanisms in place based on the requirements of the Solvency II framework including EIOPA Guidelines on System of Governance (EIOPA-BoS-14/253)[1].

In regards to the processes and internal control framework, auditors are required to:

- obtain an understanding of the policies and procedures in place that management uses to determine that directives are carried out and applied at various organizational and functional levels (e.g., segregation of duties, safeguarding of assets, monitoring of processes, information processing)
- identify controls (manual, IT dependent manual, application, IT general controls), understand their design and determine which are relevant (the ones that have been implemented and that are sufficiently precise and sensitive to prevent, or detect and correct, material misstatements)
- design and execute tests of the relevant controls, identify deficiencies, if any,
- conclude on whether controls are properly designed and operated effectively as at the review date.

  Procedures to be designed by the auditors shall at a minimum cover the identification and testing of entity level controls which involves the understanding of how the entity's internal control operates at the entity level in relation to (a) control environment, (b) management's risk assessment process, (c) monitoring of controls, (d) information and communication process), (e) IT processes.

  The assessment of the internal control mechanisms in place shall at a minimum address the following processes: Underwriting, Technical provisions, Reinsurance, Investments, Solvency II reporting.

Output:

- Findings and recommendations for remedial actions
- Conclusion on the appropriateness of the system of governance including the internal control mechanisms in place.

3.1.2 Accounting policies review

The review will be centered on ensuring that the undertaking has a robust set of clearly defined policies and processes for the correct interpretation of accounting rules as imposed by the Solvency II framework and best market practices in the insurance sector, namely in regards recognition and measurement. Also it is requested identification of any issues that are most likely to result in material misstatement of the balance sheet value.

The auditors are required to propose adjustments following:

- The review of the accounting policies
- The procedures to be performed as detailed in Chapter 3.3.

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[1] Guidelines based on Articles 40 to 49, Article 93, Article 132 and Article 246 of Solvency II Directive and on Articles 258 to Article 275 of the DR.

Output:
- Findings and recommendations for remedial actions
- Adjusted Balance Sheet (including adjustments proposed by the auditors based on the quantification of findings)
- Conclusion on the appropriateness of the accounting policies and methodologies used.

3.2 Reliability, quality, sufficiency and relevance of data

In accordance with Article 82 of the Solvency II Directive, insurance undertakings internal processes and procedures should be in place to ensure the appropriateness, completeness and accuracy of the data used in the calculation of their technical provisions.

The auditors are required to:
- Obtain the description of the process for collecting and processing of data and compare with the requirements of the Title I, Chapter III, Section 2 of the DR, specifically whether it includes:
    - the definition of criteria for the quality of data and an assessment of the quality of data, including specific qualitative and quantitative standards for different data sets
    - the use of and setting of assumptions made in the collection, processing and application of data
    - the process for carrying out data updates, including the frequency of updates and the circumstances that trigger additional updates
    - procedures to ensure that:
        - the data are used consistently over time in the calculation of the technical provisions
        - the data are consistent with the purposes for which it will be used
        - the amount and nature of the data ensure that the estimations made in the calculation of the technical provisions on the basis of the data do not include a material estimation error
        - the data are consistent with the assumptions underlying the actuarial and statistical techniques that are applied to them in the calculation of the technical provisions
        - the data appropriately reflect the risks to which undertaking is exposed with regard to its insurance and reinsurance obligations
- Check completeness of data used in the calculation of the technical provisions, i.e. whether all of the following conditions are met:
    - the data include sufficient historical information to assess the characteristics of the underlying risks and to identify trends in the risks
    - the data are available for each of the relevant homogeneous risk groups used in the calculation of the technical provisions and no relevant data is excluded from being used in the calculation of the technical provisions without justification (please refer also to the specific areas)
    - specific reconciliation check with Trial Balance/Solvency II balance sheet of databases obtained are included in each relevant area, as applicable (e.g.: Insurance portfolio, List of reported claims)
- Check that data used in the calculation of the technical provisions is accurate through tests including:
    - Check the duplication of unique fields (Policy ID number, Claim file number)
    - For date fields, check that no expiration dates are in the past (policies)
    - For date fields, check that no starting dates (claims occurrence, opening) are in the future
    - For numerical fields check that fields expected to have positive values are not negative and vice versa (e.g. the receivables are positive)
    - Cross time checks
    - Samples from the databases obtained from the undertaking should be defined in each area and checks of details included should be performed against supporting documentation (please refer to each relevant area). These samples may be extended depending on the information received from the undertaking and based on the auditors' professional judgment

- Data adjustments or removals
    - Understand whether there are audit trails documenting when data is adjusted or removed
    - If such data adjustments are performed by the undertaking to overcome incomplete data, the auditor should assess if the expert judgment is applied correctly, the rationale justifying those adjustments and how sensitive are the results of the calculation to the adjustments applied
- Claims management
    - The claims management unit will likely be the original source of the claims data for non-life. Therefore, when performing an assessment of the data used to calculate NL-TP the auditors are expected to form a judgment on the reliability of the data coming from the claims management unit (e.g. general organization, decision making process, timetable for average payouts, accuracy of the amounts paid, how complaints and litigations are handled, how often are claims re-opened, automatic and additional controls performed on the data by management)
    - Investigate registration of claims (e.g. time lag between information received and registration, registration in a logical order (e.g. chronological) unique identification and accurate tracing, registration of all reported events covered by the contract, (old) closed claims records readily available, etc), claims files (accessible documentation by appropriate staff, file containing all relevant information, estimation of the claim cost includes all reported events, etc) and payment of benefits (e.g. payment calculation/amount reflecting all relevant information, payments appearing in the accounting system, analysis of the data flow, etc)
    - Please corroborate the results from the above, to the procedures performed in Section 3.1 on the Processes and internal control framework
- External data

Where the undertaking uses external data, the auditors should check if data is exposed to at least same data standards as internal data and meets the criteria set out on EIOPA Guidelines on the valuation of technical provisions in regards to the use of external data (GL 15 and 16).

Any data quality issues should be addressed ideally before other procedures are started. If the reviewed undertaking is not able to deliver the data requested or the data delivered is not complete or accurate, the auditor is requested to:

- Assess whether the lack of information is blocking performance of critical procedures
- Propose alternative approach/procedures to the Consultant (e.g.: use of approximations to calculate the best estimate)
- Apply a conservative proxy

Output:

- Findings and recommendations
- Assessment of impact on BSR procedures for relevant sections (the auditor should conclude whether data quality is sufficient for performing the needed procedures, request additional information or propose remedial action).

3.3 Review of the Solvency II Balance Sheet

In accordance with the Solvency II framework, solvency requirements should be based on an economic valuation of the whole balance sheet (Solvency II balance sheet).

The valuation of the Solvency II balance sheet’s assets and liabilities shall be performed with reference to Article 75 of the Solvency II Directive that requires an economic, market-consistent approach to the valuation of assets and liabilities, supplemented by the applicable additional requirements of the Solvency II Directive, DR and the EIOPA Guidelines in particular EIOPA-BoS- 15/113 on the recognition and valuation of assets and liabilities other than technical provisions, and, EIOPA-BoS-14/166 on the valuation of technical provisions .

Valuation should be performed by the insurance undertakings and reviewed by the auditors. It is the responsibility of the auditors to ensure that the assumptions and the techniques used in the valuation are adequate and accurate. The auditors shall detail the assessment performed including over (in)active markets, valuation techniques and assumptions used together with the rationale behind, main assumptions and adjustments performed by the auditor, at a sufficient level of detail to allow performance of quality assurance procedures by the Consultant.

Output:

- Findings and recommendations for remedial actions
- Adjusted Balance Sheet (including adjustments proposed by the auditors based on the quantification of findings

3.3.1 Technical Provisions

In accordance with article 76 of the Solvency II Directive, the value of technical provisions shall correspond to the current amount insurance and reinsurance undertakings would have to pay if they were to transfer their insurance and reinsurance obligations immediately to another insurance or reinsurance undertaking.

The auditors are required to:

- Assess if the calculation of technical provisions is performed in accordance with Articles 75-86 of the Solvency II Directive, Articles 17-61 of the DR and EIOPA Guidelines EIOPA-BoS-14/166 on the valuation of technical provisions and Guidelines EIOPA-BoS-14/165 on contract boundaries.

3.3.1.1 Segmentation and homogeneous risk groups

In accordance with article 80 of the Solvency II Directive, insurance undertakings shall segment their insurance and reinsurance obligations into homogeneous risk groups (HRG)s, and as a minimum by lines of business (LoB)s, when calculating their technical provisions. LoBs refer to Annex 1 of the DR.

The auditors are required to:

- Obtain the segmentation into LoBs and HRGs and compare it with the Solvency II framework requirements, respectively, according to Article 80 of the Solvency II Directive and Article 35, 55, Annex I of the DR and Section 2 of EIOPA Guidelines on the valuation of technical provisions, which establish the general principles governing segmentation into LoBs and HRGs, as well as the relevant LoBs
- Verify that the technical provisions have been segmented into HRGs, at least at the level of LoBs in accordance with Article 80 of Solvency II Directive and Article 55 of the DR
- Review whether the undertaking has fulfilled the following requirements, before proceeding to the split of the contracts into HRGs:
    - Availability of data in a more granular level
    - The use of data in a more granular level has material impact on the level of the best estimate of HRGs
- Review any policies that have not been assigned to a Solvency II LoB; where have these policies been allocated and documentation stating the reasons
- Review the way the undertaking ensures that the grouping of policies creates HRGs that appropriately reflect the risks of the individual policies included in that group
- Review the description of the existing HRGs, including the characteristics defining these groups
- Verify how the undertaking ensures that the segmentation is correct
- Ascertain whether the undertaking has taken into account the following factors, before the segmentation into HRGs:
    - The nature of the underlying risk
    - The risk characteristics
    - None detection of significant differences in the nature and complexity of the risks underlying the policies that belong to the same group.

    - The grouping of policies does not misrepresent the risk underlying the policies and does not misstate their expenses
    - The relevance of size of the HRG
    - Whether a different calibration is used for those insurance liabilities where the capital requirements for the underwriting risks are determined by the use of an internal model
    - The grouping of policies is likely to give approximately the same results for the best estimate calculation as a calculation on a per policy basis, in particular in relation to financial guarantees and contractual options included in the policies.
- Mapping along insurance contracts, homogeneous groups and lines of business
- Mapping of health business across SLT and NSLT products
- Assess if the segmentation into LoBs distinguishes between life and non-life insurance obligations based on the nature of the underlying risk:
    - Insurance obligations of business that is pursued on a similar technical basis to that of life insurance are considered as life insurance obligations, even if they are non-life insurance from a legal perspective
    - Insurance obligations of business that is not pursued on a similar technical basis to that of life insurance are considered as non-life insurance obligations, even if they are life insurance from a legal perspective
- Assess if unbundling has been performed where appropriate for certain products and policies with a description and justification of the approach followed. Unbundling may not be required where only one of the risks covered by a contract is material. In this case, the contract should be allocated according to the major risk driver.

3.3.1.2 Recognition and contract boundaries

In accordance with Article 17 of the DR, insurance undertakings shall recognise an insurance or reinsurance obligation at the date the undertaking becomes a party to the contract that gives rise to the obligation or the date the insurance or reinsurance cover begins, whichever date occurs earlier. Insurance and reinsurance undertakings shall only recognise the obligations within the boundary of the contract. Insurance undertakings shall derecognise an insurance or reinsurance obligation only when it is extinguished, discharged, cancelled or expires.

In accordance with Article 18 of the DR, all obligations relating to the contract, including obligations relating to unilateral rights of the insurance undertaking to renew or extend the scope of the contract and obligations that relate to paid premiums, shall belong to the contract unless otherwise stated in the DR provision. Undertakings should determine the contract boundaries of their (re)insurance contracts in order to decide whether options to renew the contract, to extend the insurance coverage to another person, to extend the insurance period, to increase the insurance cover or to establish additional insurance cover gives rise to a new contract or belongs to the recognized contract. Where the option belongs to the recognized contract the provisions for policyholder options should be taken into account, thus the auditor shall ensure that the determination of the contract boundaries is consistent with the Solvency II regulation. Regarding accepted reinsurance contracts, their boundaries shall be defined according to Article 18 of the DR independently of the boundaries of the underlying reinsurance contracts to which they relate.

The auditors are required to:
- Obtain the accounting policy for recognition and derecognition of (re)insurance obligations business and contract boundaries and compare it with the Solvency II framework requirements, respectively, according to the Article 17, 18 of the DR and EIOPA Guidelines on contract boundaries, which establish principles for the recognition and derecognition of contracts as well as the determination of their contract boundaries
- Review whether the undertaking follows the recognition and derecognition principles regarding (re)insurance obligations according to Article 17 of the DR
- Verify the correctness of inclusion of future premiums
- Identify where the contract boundary lies on each of the insurance contracts. For example, is there a set of agreed principles or criteria that is followed when deciding where the contract boundaries lie?

- Determine the extent to which the terms and conditions of the insurance contracts have been reviewed to establish the contractual boundary of the policy
- Identify whether there is the right to re-rate or cancel the contract within each of the insurance contracts
- Review how the phrases 'Financial Guarantee' and 'Individual Risk Assessment' have been interpreted by the undertaking
- Detect any legal issues that have arisen in identifying the contractual boundaries of the policies
- Consider local regulation and business practice and whether any forthcoming changes in law or regulation are likely to affect the method of calculation of the technical provisions
- Review the decision process for which parts of the contract belong to the contract boundary.

3.3.1.3 Proportionality assessment

The auditors are required to review the undertakings' proportionality assessment according to Article 56 of the DR and EIOPA guidelines GL 44-49 and to examine whether material deviations occur between the actual results and the predictions of technical provisions in order to propose appropriate adjustments to the actuarial techniques used and/or the underlying assumption.

A possible procedure to determine the most proportionate actuarial method following an assessment based on the nature, scale and complexity of the risk profile of the undertaking is provided below.

- Review whether the method determined is appropriate for the calculation of technical provisions through an assessment which includes:
  1. Evaluation of the nature, scale and complexity of the risks underlying their (re)insurance obligations
  2. Evaluation in qualitative or quantitative terms of the error introduced in the results of the method due to any deviation between the following: the assumptions underlying the method in relation to the risks and the results of the assessment.
- Review whether the method is not considered proportionate to the nature, scale and complexity of the risks, which is in force if the aforementioned error is material, unless:
  - No other method with a smaller error is available and the method is not likely to result in an underestimation of the amount of technical provisions or
  - The method leads to an amount of technical provisions of the (re)insurance company higher than the amount that would result from using a proportionate method and the method does not lead to an underestimation of the risk inherent in the (re)insurance obligations that it is applied to.
- The walkthrough, to be justified in the reporting to the Consultant and SC, of three steps defines the above assessment:
  - Step 1: Assessment of the nature, scale and complexity of underlying risks
  - Step 2: Check whether valuation methodology is proportionate to risks as assessed in step 1, having regard to the degree of model error resulting from its application. The model error has to be within the limits of materiality
  - Step 3: Back testing and review of the assessment carried out in steps 1 and 2.

    The auditor can examine whether material deviations occur between the actual results and the earlier predictions of technical reserves in order to propose appropriate adjustments to the actuarial techniques used and / or the underlying assumptions. Moreover, it should be ensured that the frequency of the back testing is proportionate to the materiality of assumptions and the size of the deviation, as well as also performed each time that the risk profile of the undertaking significantly changes.

    According to Article 83 of the Solvency II Directive, insurance undertakings should compare the outcome of the best estimation of the technical provisions against actual experience.

3.3.1.4 Best Estimate Liability (BEL)

In accordance with Article 77 of the Solvency II Directive, the best estimate shall correspond to the probability-weighted average of future cash-flows, taking account of the time value of money (expected present value of future cash-flows), using the relevant risk-free interest rate term structure. The calculation of the best estimate shall be based upon up-to-date and credible information and realistic assumptions and be performed using adequate, applicable and relevant actuarial and statistical methods. The cash-flow projection used in the calculation of the best estimate shall take account of all the cash in- and out-flows required to settle the insurance and reinsurance obligations over the lifetime thereof. The best estimate shall be calculated gross, without deduction of the amounts recoverable from reinsurance contracts and special purpose vehicles. Those amounts shall be calculated separately, in accordance with Article 81 of the Solvency II Directive. For the Solvency II process, the best estimates have to be mapped to the LoBs of Solvency II; the best estimate is calculated at the level of the policy and aggregated subsequently without diversification effects. The aggregated totals are always equal regardless of the perspective. The best estimate is calculated on a different basis for life and non life liabilities. For life contracts the best estimate value is divided to the value of the deterministic cash flows of the contract and the value of the stochastic cash flows of the contract. The value of options and guarantees, which are further analyzed, are calculated separately.

3.3.1.4.1 BEL - Life and Health SLT (excluding index-linked and unit-linked)

3.3.1.4.1.1 Sampling

The insurance portfolio of each insurance undertaking, which includes the description of the key features of all products provided, should be analyzed indicating the following characteristics (non-exhaustive):

- Name of the product
- Version of the product
- Line of business related to the product
- Amount of gross premiums
- Amount of technical provisions at the reference date
- Amount of expenses
- Main options and guarantees associated with the product
- Type of distribution channel.

The outcome of this analysis should allow obtaining a view about the main characteristics of the life products of the undertaking, which were used by the undertaking as assumptions for the BEL calculation.

In life insurance, where relevant, a split of products shall be made based on the provided guarantee rates. The outcome could be a table with the portfolio split per currency and guaranteed interest rates. It should be explicitly mentioned whether any significant changes in the composition of the portfolio have occurred.

Moreover, in regards to the policy-by-policy best estimate calculation, the auditor shall create a list from the selected insurance contracts for audit purposes (sample) in an appropriate manner in order to efficiently represent a thorough and adequate analysis of the total business portfolio. The sample list (non – exhaustive) should include the following characteristics:

- Policy number
- Insurance product type
- Inception date
- Maturity/Expiration date
- Frequency of the premium payment
- Age of the insured on the inception date
- Annual gross written premium
- Date of the last received premium

- Date of the last due premium
- Method of payment
- Percentage of commission
- Method of payment
- Unit linked reserves
- Sum assured
- Surrender value

The auditors should proceed with a recalculation of the BEL for the selected sample and compare with BEL computed by the insurance undertaking. In case of differences, the auditor shall assess the impact over the procedures to be performed for the technical provisions assessment.

3.3.1.4.1.2 Actuarial model – BEL methodology

In order to calculate the BEL, undertakings should use actuarial and statistical methods, which appropriately reflect the risks that affect the cash-flows. The best estimate is calculated by the use of a model, which is determined by the undertaking according to the complexity, scale and nature of the exposures.

Auditors shall conduct a review of the approach and design of the underlying liability model. The following procedures shall be performed:

- Review of the description of the underlying methods for the valuation of the insurance liabilities including justification for the use of the chosen methodology
- Check that the use of simulation techniques for the determination of the best estimate of liabilities is not necessary by applying the following principle: When the difference between the calculation of best estimate based on a simulation technique and the calculation of the best estimate based on an analytical/deterministic technique is smaller than 5% of the technical provisions.
- In case of not using the optimal calculation method, request of a documentation of the simplified methods used, approximations and simplifications, including reasons for not applying the main actuarial techniques and reasoning for using simplifications.
  A list with non-exhaustive reasons is set out below:
  - Limited availability of data about the underlying insurance liability. This could be caused by limited historical data or data required to calibrate the assumptions
  - Limited availability of data at a sufficient granular level
  - Limited information about policy holder behavior and/or management actions
  - Limited computational power to execute the calculations within an acceptable time slot
  - Limited human resources to develop the methodology and incorporate it in a model
  - A product is relatively new and as per the valuation date the methodology has not been incorporated in the models
  - A group of contracts has a limited size and does not contain any complex and unique contract features
- Following the ascertainment that the insurance undertaking is allowed to use simplifications/approximations, the underlying simplifications should be reviewed.
  A non-exhaustive list with possible simplifications for the valuation of the best estimate of technical provisions is set out below:
  - Scaling methods; the best estimate of a representative portfolio is used as a basis for scaling
  - Usage of model points (aggregated contract information) instead of a calculation with all contracts
  - Estimation based on crude data (single or a few model points)
  - Expert judgement
  - The valuation as used for IFRS reporting may be used if no other solutions are available. It is required to document adequately the applied simplifications and an estimate of the related model error

    - According to Article 60 of the DR and without prejudice to Article 56, undertakings may calculate the best estimate of life insurance obligations with an arrangement by which the insurance undertaking has the right or the obligation to adjust the future premiums of an insurance contract to reflect material changes in the expected level of claims and expenses (premium adjustment mechanism) using cash flow projections which assume that changes in the level of claims and expenses occur simultaneously with premium adjustments and which result in a net cash flow that is equal to zero, provided that all of the following conditions are met:
        - the premium adjustment mechanism fully compensates the insurance undertaking for any increase in the level of claims and expenses in a timely manner;
        - the calculation does not result in an underestimation of the best estimate;
        - the calculation does not result in an underestimation of the risk inherent in those insurance obligations

    It should be ensured that when using approximations, the following requirements are fulfilled:
    - The insufficiency of data is not due to inadequate internal processes and procedures of collecting, storing or validating data used for the valuation of technical provisions
    - There are no relevant external data which could be used by the undertaking to enhance the quality of the available data
    - It would not be practicable for the undertaking to adjust the data to remedy the insufficiency.
- Comparison of the modelled liabilities with the total booked value in balance sheet for reconciliation purposes
- Review of the amount of unmodelled insurance portfolio, reasonability for not modelling that part of business and verification of its materiality
- Verification of whether the amount of unmodelled business is consistent with the undertaking's threshold of unmodelled business
- Check that the calculation of the cash flows is consistent with technical features along different products
- Review of how recoverables are implemented along with general approximations and simplifications used to capture recoverables separately in order to assess the ability of the model to produce outcomes based on the split between gross and net of reinsurance
- Review of the modelling of operating assumptions, whose analysis is further analyzed
- Review of the modelling methodology underlying options and guarantees along with possible simplifications used, whose analysis is further analyzed
- Review of the modelling methodology underlying the projection of characteristics of participating business
- Review whether manual adjustments are implemented under liability process and the reasonableness behind them
- Review of whether the undertaking follows a model point approach instead of a policy by policy approach and if yes, verification that the model points adequately reflect the risk drivers and values of the product, as well as assurance that the model point projection of cash flows surpasses the projection on a policy by policy basis. Moreover, the grouping policies and their representation by model points along with the grouping criteria should be reviewed
- Assessment of whether the use of model point is appropriate by meeting the following conditions:
    - The grouping of policies and their representation by model points is acceptable provided that it can be demonstrated by the undertaking that the grouping does not misrepresent the underlying risk and does not significantly misstate the costs
    - The grouping of policies should not distort the valuation of technical provisions by, for example, forming groups containing life policies with guarantees that are "in the money" and life policies with guarantees that are "out of the money"
    - Sufficient validation should be performed by the undertaking to be reasonably sure that the grouping of life policies has not resulted in the loss of any significant attributes of the portfolio being valued. Special attention should be given to the amount of guaranteed benefits and any possible restrictions (legislative or otherwise) for an undertaking to treat different groups of policyholders fairly (e.g. no or restricted subvention between homogeneous groups)

    - The projection on a policy-by-policy basis would be an undue burden on the undertaking compared to the projection based on suitable model points
- Assessment of the impact of using grouping criteria instead of policy by policy basis
- Comparison for the sample of policies (on a policy by policy basis) of cash flows projected with result obtained with a calculation file (e.g. Prophet, Excel)
- Review of the modelling of future cash flows in a less granular level, such as per line of business, in order to assess the reasonableness of the discounted future cash flows for each line of business
- Performance of sensitivity analysis in order to test the reasonableness of the cash flows under deterministic and stochastic scenarios along with the assumptions used
- Performance of scenario analysis in order to compare the extremely high and low cash flows with the middle of the range of technical provisions in order to verify the reasonableness of the model's results.

The review of the best estimate methodology and its compliance to Solvency II regulation requires the adoption of the following procedures:
- Review of how it is ensured that the technical provisions have been calculated in a prudent, reliable and objective manner
- Verification that the best estimate is calculated separately for each currency in which the obligation is denominated
- Explanation of the process that the best estimate is calculated in a transparent manner and in such a way as to ensure that the calculation method and the results that derive from it are capable of review by an independent qualified expert
- Detection of areas where, when calculating the technical provisions, a probability weighted average of future cash flows approach is not followed. For example, derivation of Solvency II technical provisions by making adjustments to IFRS technical provisions
- Review of whether the reserving methodology is appropriate for the risks being assessed
- Confirmation that the calculation of BEL:
    - does not take into account investment returns (i.e. interests earned, dividends, etc.)
    - includes the investment management expenses in the expenses as a cash out-flow
    - excludes intra-group relations and in particular profits and cash flows which may be generated by another group entity via an intra-group arrangement
    - includes only future cash-flows associated with recognized obligations within the boundary of the contract and no future business is taken into account
- Review of whether future premium cash flows from policyholders have been included within technical provisions. How the uncertainty is taken into account?
- Detection of any expected payments to policyholders under any of the policies that are not contractually guaranteed. What allowance for these has been made in the technical provisions?
- Review of any group (if exist) policies when calculating the best estimates for life insurance obligations. If yes, how is it satisfied that the grouping of policies does not misrepresent the risk and is likely to give approximately the same results for the best estimate calculation as a calculation for individual policies on a best estimate basis?
- Review of any financial guarantees or contractual options allowed, included under any of the policies, in the calculation of technical provisions
- In certain specific circumstances that the best estimate of technical provisions is negative, it is acceptable, but it should be ensured that the undertaking has not set to nil the value of the best estimate of those individual contracts. A zeroing could take place only in the level of a homogeneous risk group.
  In case that the technical provisions are negative due to the fact that the present value of future premiums is higher than the present value of future outgoing cash flows including the value of the options and guarantees and the allocated risk margin, it is required to monitor the level of the premiums. The premiums have to be in range of what is acceptable in the market
- Verification of correctness of the approach to unmodelled business lines (i.e. those for which IFRS reserves are taken as BEL or other simple approach is used). What criteria the undertaking is using to define threshold of acceptable share of unmodelled business?

- Surrender value floors will have no impact on the level of the technical provision. In the projection of future cash flows, it should be ensured that payments due to surrender or lapse of the contract will be included in the valuation of the technical provision. This means that if the sum of a best estimate and a risk margin of a contract is lower than the surrender value of that contract there is no need to increase the value of insurance liabilities to the surrender value of the contract.
- Review of the experience studies conducted for the reasonableness and appropriateness of the selected assumptions.

3.3.1.4.1.3 Guarantees and options

For the calculation of the best estimate, insurance undertakings shall identify and take into account: all financial guarantees and contractual options included in their (re)insurance policies and all factors which may affect the likelihood that policy holders will exercise contractual options or the value of the guarantees.

When considering the use of a closed formula approach or a stochastic approach for the valuation of contractual options and financial guarantees included in insurance contracts, insurance undertakings should apply the proportionality assessment according to Article 56 of the DR. Whenever neither method is possible, undertakings may use as a last resort an approach consisting in the following steps: i) Analysis of the characteristics of the option or guarantee and of how it would affect the cash-flows; ii) Analysis of the amount the option or guarantee is expected to be currently in-the-money or out-of-the-money; iii) Determination of the cost of the option or guarantees is expected to vary with time; iv) Estimation of the probability that the option or guarantee would become more or less costly in the future; v) Verify that the method and assumptions underlying the calculation of BEL regarding contractual options and guarantees are determined in an appropriate way e.g. by performing sensitivity analysis in order to assess the materiality of assumptions.

The auditors are required to:

- Obtain the accounting policy for valuation of guarantees and options and compare it with the Solvency II framework requirements, respectively, according to the Article 79 of the Solvency II Directive and Article 32 of the DR, which establish principles for the valuation of guarantees and options
- Review the description of the methods used to project options and guarantees with details regarding all parameters considered in the actuarial model
- Ensure that the undertaking has performed an assessment of the appropriateness of the undertaking's proportionality assessment including the appropriateness of the analysis of policyholder behavior and the evaluation of the error introduced in the result of the method chosen, including information about sensitivity analysis, back testing etc.
- Ensure that a process has been put in place and is documented to identify all relevant contractual options and financial guarantees as well as the factors indicative of the extent to which policyholders will use those options and realize the value of the guarantees
- Ensure that the undertaking has established that the methods to value the identified contractual options and financial guarantees have been documented with due observance of the provisions set out in Guidelines 35-37, 53 and 54 of the EIOPA Guidelines on valuation of technical provisions (EIOPA BoS-14-166) and Articles 26 and 32 of the DR.

Policyholder behavior

When determining the likelihood that policyholders will exercise contractual options, including lapses and surrenders, insurance undertakings shall conduct an analysis of past policyholder behavior and a prospective assessment of expected policyholder behavior.

The auditors are required to:

- Verify that the best estimate assumptions underlying the policyholder behavior are determined in an appropriate way and in line with the requirements settled in Article 22 and 26 of the DR
- Review whether that analysis takes into account all of the following (Article 26):

    - how beneficial the exercise of the options was and will be to the policy holders under circumstances at the time of exercising the option
    - the influence of past and future economic conditions
    - the impact of past and future management actions
    - any other circumstances that are likely to influence decisions by policyholders on whether to exercise the option
- Ensure that any assumption regarding policyholder behavior included in the calculation of the best estimate is documented, evidenced and signed off by senior management
- Ensure that all policyholder behavior is documented and reported on an annual basis or more frequently if there are strong indications that the behavior evolved significantly since the last reporting date
- Verify that the impact of the policyholder behavior on the best estimate is determined and provided to senior management and other users of the value of the best estimate to understand the impact
- Ensure that in case of performing stochastic scenarios and simulations, dynamic policyholder behavior assumptions take into consideration the following principles:
    - dynamic policyholder behavior is appropriately founded in statistical and empirical evidence
    - economic scenario generator (ESG) is up to date and properly calibrated
    - dynamic policyholder behavior should not be assumed independent from changes in the financial markets and the financial position of the undertaking
    - whether sensitivity analysis is performed on assumptions in order to measure the impact on BEL.
    - grouping performed in order to carry out the projections is appropriate.

3.3.1.4.1.4 Future discretionary benefits

'Future discretionary bonuses' and 'future discretionary benefits' mean future benefits other than index-linked or unit-linked benefits of (re)insurance contracts which have one of the following characteristics: (a) They are legally or contractually based on one or more of the following results: (i) The performance of a specified group of contracts or a specified type of contract or a single contract; (ii) The realized or unrealized investment return on a specified pool of assets held by the insurance undertaking; (iii) The profit or loss of the insurance undertaking or fund corresponding to the contract; (b) They are based on a declaration of the insurance undertaking and the timing or the amount of the benefits is at its full or partial discretion.

For the calculation of the best estimate, insurance undertakings shall identify and consider the value of future discretionary benefits which are expected to be made, whether or not those payments are contractually guaranteed. However, payments that relate to surplus funds which possess the characteristics of Tier 1 basic own funds should not be included.

The auditors are required to:

- Obtain the accounting policy for valuation of future discretionary benefits and compared it with the Solvency II framework requirements, respectively, according to the Article 1 (35), 24 and 25 of the DR, which establish principles for the valuation of future discretionary benefits
- Verify the comprehensive analysis of past experience, practice and distribution mechanism when assessing the proportionality of a simplified method used for determining the future discretionary benefits.

3.3.1.4.1.5 Assumptions

The auditors are required to:

- Obtain the accounting policy the assumptions underlying the methodologies to calculate the technical provisions and compare it with the Solvency II framework requirements, respectively, according to the Article 77 of the Solvency II Directive and Article 22 of the DR, which establish principles for assumptions underlying the calculation of the best estimate of technical provisions
- Follow the required procedures to assess the assumptions used to calculate the best estimate:
    - Are assumptions consistent with industry practice?

- Reconciliation to audited resources
- Explanation of the assumptions
- How the undertaking ensures that the underlying techniques and approaches are adequate, appropriate and realistic. Is this information credible? Does the undertaking use approximations?
- Frequency of re-evaluation of the assumptions used
- Performance of validation on the assumptions. How is ensured consistency over time?
- Where there is insufficient internal or external data, what approximations have been made?
- Reliance on external data for any of the technical provisions' assumptions
- Whether the assumptions reflect the uncertainties in the cash flows of the relevant insurance contracts
- The assumptions have been subjected to a process of internal or external review prior to formal approval of the relevant management
- Description of management actions when setting the technical provisions
- What are the specific assumptions regarding management actions
- Whether the setting of assumptions is well established and documented
- List and description of the key assumptions used to derive the technical provisions, e.g. inflation, rate
- changes, risk mix etc.
- Review the modelling projection of the economic assumptions and check that the methodology allows the projection of economic assumptions consistently with a market consistent valuation
- Verify that the economic and non-economic assumptions underlying the calculation of technical provisions are determined in an appropriate way and in line with the requirements settled in Article 22 of the DR.

Economic assumptions

Risk - free interest rate term structure

When calculating the Solvency II technical provisions, the best estimate is discounted for the time value of money (expected present value of future cash flows), using the relevant risk – free interest rate term structure published by EIOPA.

The auditors are required to assess:

- the yield curve used for the discounting of the future cash flows and conduct a comparison with EIOPA risk free yield curve for the reference date, which is communicated at the following link:
  https://www.eiopa.europa.eu/tools-and-data/risk-free-interest-rate-term-structures-0_en
- whether volatility adjustment (VA) or matching adjustment (MA) has been applied for the discounting of the future cash flows
- check of consistency of VA with EIOPA published figures (aforementioned link)
- whether risk free curves, MA, VA assumptions used are consistent with EIOPA guidelines
- whether the transitional measure on the risk-free interest rates has been applied for the discounting of future cash flows

Long Term Guarantees – Volatility Adjustment

In accordance to Article 77d of Omnibus II, an insurance undertaking may apply a volatility adjustment (VA) to the relevant risk-free interest rate term structure. For each relevant currency, the VA to the relevant risk-free interest rate term structure shall be based on the spread between the interest rate that could be earned from assets included in a reference portfolio for that currency and the rates of the relevant basic risk-free interest rate term structure for that currency.
The VA curve is issued by EIOPA on a monthly basis (aforementioned link).

The auditors are required to check that the application of the long-term guarantee measures is in line with the necessary conditions, performing the following procedures:

- Verify that the adjustment is applied across the portfolio, per country and per currency
- Verify that the undertaking has set up a liquidity plan projecting the incoming and outgoing cash flows in relation to the assets and liabilities subject to VA in order to ensure that an adequate level of liquidity exists on a continuous basis
- Ensure that the undertaking has adopted the use of VA into its risk management system and risk management policy setting out the criteria for the application of the adjustment
- Ensure that the undertaking assesses the sensitivity of the technical provisions and eligible own funds to the assumptions underlying the calculation of the VA
- Ensure that the undertaking assesses the possible effect of a forced sale of assets on its eligible own funds
- Ensure that the undertaking assesses the impact of a reduction of the VA to zero
- Ensure that in case an insurance undertaking applies the transitional measure on the risk-free interest rates simultaneously with the use of VA, then the transitional measure applies on the interest rate structure includes VA
- Verify that the amount of the VA remains unchanged after the application of the shocks to the basic interest rate term structure, under the interest rate risk sub-module and the spread risk sub-module of the SCR standard formula
- Ensure that the SCR has been calculated with and without the use of the adjustment.

Investment return

The investment return is considered equal to the risk – free interest rate term structure published by EIOPA.

Market inflation rates

The auditors are required to perform the following:
- Review the methodology for the derivation / construction of the inflation rate
- Comparison with the current inflation in Romania
- Check whether inflation assumptions are consistent with market data

Assumption benchmarking: If the inflation assumption is 50% different from the benchmark market assumption for similar undertakings, then adjustments should be conducted.
The International Monetary Fund (IMF) communicates the inflation indexes inside the World Economic Outlook (WEO) database at the following link: http://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx

Currency exchange rates

For insurance undertakings with obligations in different currencies, respective exchange rates should be documented.
The Romanian National Bank publishes the exchange rates in the following link: https://www.bnr.ro/Exchange-rates-1224-Mobile.aspx

Corporate tax rate

The underlying corporate tax rate should be compared with the corporate tax in Romania.

The auditors are required to perform the following:
- In case that a model is used in order to produce the financial market assumptions, it should be ensured that:
    - The model generates prices which are consistent with financial markets
    - The model does not lead to arbitrage opportunities
    - The calibration of the parameters/scenarios is consistent with the relevant risk-free interest rate term structure
- Review of the derivation of the non - economic assumptions

Non-economic assumptions

The auditors are required to perform the following:

- Gathering of all underlying assumptions for the calculation of the best estimate, i.e. mortality rates, morbidity rates, critical illness rates, longevity rates, lapse rates / persistency, cancellation rates, option take up rates, surrender assumptions, paid – up rates and expenses
- Review of the experience studies conducted for the reasonableness and appropriateness of the selected assumptions (e.g. binomial test)
- Check best estimate assumptions against experience
- Benchmark assumptions to market peers
- Verification whether policyholder actions are modelled, including a check of whether the dynamic assumptions are justified by experience data (e.g. the proportion of policyholders that are expected to take up options to change the terms of the contract)
- Verification whether management actions are modelled, comparison with actions assumed by other undertakings in the market to see whether the assumed actions would be considered aggressive relative to the market (e.g. change in bonus rates, change in product charges).

Expenses

According to Article 78 of the Solvency II Directive, when calculating technical provisions, an undertaking shall take into account all expenses that will be incurred in servicing (re)insurance obligations, as well as inflation, including expenses and claims inflation.

The auditors are required to perform the following:

- Ensure that the cash flow projection takes into account all of the following expenses:
    - administrative expenses
    - investment management expenses
    - claims management expenses
    - acquisition expenses
- Moreover, the following procedures shall be considered regarding the expenses' assumptions:
    - Whether the future expenses included within the technical provisions for inflation (expenses inflation and claims inflation) have been adjusted
    - Description of the estimation and incorporation of the future inflation in the technical provision projections
    - Justification of the allocation of the expenses appropriately between future business and existing business
    - Projection of the future expected expenses cash flows or underlying assumptions about how the expenses will change relative to the current expenses as the existing liabilities run off
    - Explanation of the calculation of the amount included in the technical provisions for investment management expenses
    - Explanation of the calculation of the amount included in the technical provisions for risk mitigation and management action expenses
    - Treatment of expenses that do not result in cash flows. For example, whether future investment management expenses have been included in the technical provisions or investment returns have been netted off.

3.3.1.4.2 BEL - Index-linked and unit-linked

This is the total amount of technical provisions for index – linked and unit – linked business i.e. technical provisions for life insurance obligations, where the investment risk is borne by the policyholders.
The actuarial method used and the selection of assumptions is based on the same principles analyzed for life portfolio.

The auditors are required to perform the following:

- Reconciliation between the financial statements and the economic balance sheet with respect to all balance sheet entries related to unit linked
- Ascertainment that the calculation of unit linked products includes the identification of the following components when calculating the best estimate:
    - Death benefit. In these contracts the beneficiary receives either the fund value or the death benefit. Thus the probability weighted average of the loss should be assessed.
    - Discounted value of the fees received over de duration of the contract with the discount rate provided by EIOPA
    - Expenses directly related with the unit linked contracts or management of these contracts.
    - Value of the unit account which is actually for the benefit of the policyholder, which should be equal on both sides of the balance sheet.
- Verification that the unit linked insurance contracts do not contain embedded derivatives, which is a common mistaken approach. In order to ensure the appropriate classification of the contracts, the "host contract" should be assessed without considering any added options and guarantees. Then, if the market or investment risk is for the risk of the policyholders, these insurance contracts are to be segmented as unit linked.
  It should be highlighted that under IFRS, investment contracts do not transfer significant insurance risk from the policyholder to the undertaking. However, the Solvency II regime does not recognize this distinction; therefore these contracts are presented as part of the unit linked contracts.

3.3.1.4.3 BEL - Non Life and Health NSLT

The Non-Life and Health NSLT BEL is usually performed by projecting the claims in triangulation format. The triangles should be prepared and analyzed separately for direct, proportional indirect and non-proportional indirect business. Practices of registration and valuation of claims in the above-mentioned business differ, hence calculations should be performed separately. Further to this, technical provisions should also be analyzed separately. However, in case that the data are not sufficient in order for the undertaking to form separate triangulation analysis, the undertakings should assess the materiality of a less granular approach. Therefore, the auditor can assess whether an analysis based on the combined triangles could be performed by the undertaking, by checking if the projection is representative of the expected claims development.

3.3.1.4.3.1 Data Checks

The auditors are required to perform the following:

- Analyze the undertaking's insurance portfolio and the key features of all Lobs, indicating the following characteristics:
    - Amount of Gross Written Premiums (GWP)
    - Amount of Gross Earned Premiums (GEP)
    - Amount of Unearned Premium Reserve (UPR)
    - Amount of Outstanding Claims Reserve (OCR)
    - Amount of Allocated Loss Adjustment Expense (ALAE)
    - Amount of Unallocated Loss Adjustment Expense (ULAE)
    - Amount of Paid Claims
    - Amount of total Technical Provisions
- Evaluate that internal controls related to reserving process are in place and conducted in an appropriate manner.
- Verify that the insurance undertaking's provided checks on the Data Input are conducted.
  A non-exhaustive list of the checks that should be verified by the auditor is the following:
    - Reconciliation checks for all the Lobs between the Balance Sheet, P&L and Triangles for the following amounts:
        - Claims
        - Salvages and Recourses (if they are not included in the triangles)

    - Expenses
    - Premiums
  - Review of any plausibility checks and/ or reconciliations between prior year's triangles and the corresponding current year's triangles. The auditor shall verify that the two periods' triangles include the same equal amounts per origin year and year of development. The reconciliations should verify the following:
    - No differences in the triangle amounts are detected between the two periods (both per triangle and LoB).
    - Differences could be detected in case that a reallocation of amounts has been conducted by the undertaking. This could be justified if the sum of differences per triangle amounts to zero.
    - In the case above or in any other case of reconciliation issue, the undertaking should justify the reason of the differences detected.
  - Documentation of data limitations including an analysis on the impact of material data limitations on modelling. Any limitations implied in the data should be clearly justified and documented and should not affect more than 5% of the total Non - Life business
  - Review of the justification provided by the insurance undertaking for any reconciliation issue identified and materiality assessment of the misstatements (where applicable).
- Review the materiality assessment and the application of the proportionality criterion for the semi/unmodelled business and verify that it does not exceed the 5% of the total Non-Life portfolio. As semi/unmodelled business it is defined the part of business of a homogenous risk group for which a proper actuarial analysis has not been performed.

For the purposes of the detailed quality checks for amount of <u>Outstanding Claims Reserve</u> (OCR - reported and incurred but not reported), the auditors are required to perform the following:
- Obtain the detail of reported claims (at claim level) as at 30 June 2020 and reconcile it with the relevant accounts at the same date. Investigate differences and propose adjustment if needed
- Obtain the detail of reported claims (at claim level) as at 31 December 2018 and reconcile it with the relevant accounts at the same date. Investigate differences and propose adjustment if needed
- Obtain the detail of amounts paid (claims paid) during the period 1 January 2019- 30 June 2020 and in the period 1 July 2020 – 31 July 2020 reconcile it with the expense presented in the relevant accounts.

For the claims which were in reserves as of 31 December 2018, compute the difference at claim level between the reported claims as of 31 December 2018 less payments made during the period 1 January 2019 - 30 June 2020 and the reported claims as of 30 June 2020.

The variation must take in consideration:
- Fully paid claims: claims which appear in the reported claims detail at 31 December 2018, payments were made for these claims and they no longer appear in the reported claims reserve at 30 June 2020
- Claims closed without payment: claims which appear in the reported claims detail at 31 December 2018, no payment was made and they no longer appear in the reported claims reserve at 30 June 2020
- Claims for which partial payment was made: claims which appear in the reported claims detail at 31 December 2018, a payment was made, and they also appear in the reported claims detail at 30 June 2020
- Claims reassessed: claims which appear in the reported claims detail at 31 December 2018 and also appear in the reported claims detail at 30 June 2020 with a different value but no payment was made during this period.

Based on this the auditor should assess whether the claim amount established by the undertaking at 30 June 2020 is relevant and reasonable under the circumstances.

Overall differences, having in mind the materiality provisions in 2.3, per line of business should be investigated and adjustment should be proposed as needed as an overstatement/understatement of reported claims detail.

The auditors should furthermore compare the amounts in reported claims as at 30 June 2020 with:

- the amounts subsequently paid for the claim files in balance as at 30 June 2020 that were subsequently closed (until 31 July 2020), or
- the amount in reported claims detail as of 30 June 2020 plus any payments after 30 June 2020 up to 31 July 2020, if the case).
- ask the undertaking to explain any differences considering the materiality provisions in 2.3 (including providing the appropriate supporting documents).

Based on this the auditor should assess whether the claim amount established by the undertaking at 30 June 2020 is relevant and reasonable under the circumstances.

Sample tests for reliability, quality, sufficiency and relevance of data

The auditors are required to select a sample of top 10 and 10 random claims files covering different lines of business representing minimum 80% of the population value for each of non-life and respectively life from reported claims detail as at 30 June 2020 and compare the amounts against the amounts from the supporting evidence.

The auditors are required to:

- Obtain from the undertaking the claims under litigations as of 30 June 2020. From the claims under litigation the auditor should select from each line of business (lines of business covering minimum 80% of the population value for each of non-life and respectively life) top 10 and 10 random claims and compare the amounts against the amounts from the supporting evidence.
- Obtain from the undertaking closed and reopened claim files, select a sample of the top 10 files and random 10 files reopened between 1 January 2019 and 30 June 2020 and assess if the claim files selected were closed/re-opened in accordance with the undertaking's internal procedures and whether the closing of the files were justified and supported by evidence. If the undertaking policy is to reopen a file under a different identification number the auditor should obtain relevant information for identifying the reopened claims.

The auditor is expected to use professional judgment and to extend the sample as appropriate by taking into account relevant risks (e.g. for long term lines of business it is important to include older claims), different years of occurrence, large/medium/small claims, bodily injury/ property damage, files with significant readjustments, files by geographical area, recent claims still open (2-3 years), new claims, old claims still open, old claims closed and reopened.

The auditor should obtain the detail of the customer's (policyholders) complaints during the period 1 January 2019 – 30 June 2020. The auditor should analyze the complaints (types, number, values, line of business) in relation also with other evidence obtained: court decision for legal cases, decisions of the ASF, subsequent settlements and should report any identified weaknesses in the claims handling process which result in material misstatements.

The auditor shall select from the development triangles top 10 and 10 random claims from the first year of the development triangle per line of business as 30 June 2020 (such as to cover minimum 80% of the IBNR value as of 30 June 2020) in order to assess the ultimate loss. Analyze outliers as per procedures described in 3.3.1.4.3.2.

3.3.1.4.3.2 Actuarial Model – BEL Methodology

In order to calculate the best estimate of liabilities, undertakings should use actuarial and statistical methods, which appropriately reflect the risks that affect the cash-flows. The best estimate is calculated by the use of a model, which is determined by the undertaking according to the complexity, scale and nature of the exposures.

The valuation of the best estimate for provisions for claims outstanding and for premium provisions should be carried out separately.

The auditors are required to perform the following:

- Obtain the cash flows projections for the calculation of the best estimate and compare them with the Solvency II framework requirements, respectively, according to the Article 77 of the Solvency II Directive and Article 28, 29 and 30 of the DR, which establish principles for the identification and calculation of the cash flow projections.

Outstanding Claims Reserve (Non – Life and Health NSLT)

With respect to the best estimate for provisions for claims outstanding, the cash-flow projections relate to claim events having occurred before or at the valuation date – whether the claims arising from these events have been reported or not (i.e. all incurred but not settled claims). The cash-flow projections should consider future benefit payments to policyholders and beneficiaries, payment of expenses (allocated and unallocated), taxation payments, future premium (adjustments made after valuation date to premiums already paid) and payments for salvage and subrogation.

The outstanding claim reserve is calculated as the sum of Reported But Not Settled claims (RBNS), Incurred But Not Reported claims (IBNR) and cost for claims settlement.

The auditors are required to perform the following:

- Review of the justification provided by the undertaking concerning the appropriateness of the methods applied, as well as its consistency over time (in case of amendments on the methodology process, the auditor shall identify and assess the reasonableness and justification provided by the undertaking)
  To be noted that the projection of the cash-flows can be performed through a number of methodologies. The most common used methods are: Chain Ladder, Bornhuetter – Fergusson, Average Cost per Claim, etc.
  In the case of the ULAE the auditor shall make sure that the undertaking has clearly described the methodology followed for the treatment of the ULAE reserve and verify the reasonability of the calculation method applied.
- Verify that the underlying assumptions of the selected actuarial method are clearly described, are applicable and are reasonable to the specific portfolio.
- Verify that the whole business has been modelled appropriately and in case of semi/unmodelled business it should be verified that it is due to limitations of data
- Verify that the analysis of the Gross Best Estimate Claims Provision has been conducted by LoB and separately for Attritional and Large claims, where this is applicable. For more clarification on the large claims determination please refer to the Assumptions – OCR section.

  A non – exhaustive list of indicative KRIs is provided below along with the check points that the auditor could assess:
- Ultimate Loss Ratio
  The year-on-year Ultimate Loss Ratios should not present fluctuations. In case that there is a deviation of 4% - 5% and above among the accident years, this should be justified by the undertaking. Further to this, any increasing or decreasing trends on the ultimate loss ratios should be explained so that the auditor has a full assessment of the rationale behind.
- Premiums
  Premiums depict the volume of the business of the undertaking. Any differentiation could affect the characteristics of the portfolio. Hence, any increasing or decreasing trends on the amount of premiums should be explained by the undertaking so that the auditor has a full assessment of the rationale behind.
- Settlement speed
  The settlement speed should be reviewed and any deviation should be justified by the undertaking. The claims settlement speed should be checked in order that the claims development included in the development factors determination to be assessed. For more explicit information, refer to Annex 2.
  Concerning the settlement speed the auditor shall perform checks between the consecutive accident years' elements for any given development year. Any deviation above 4% - 5% should be justified by the undertaking for the auditor to assess the reasonableness of the respective inclusion in the claims projection.
- Frequency - Ultimate number of claims

The ultimate number of claims should be checked in terms of consistency within the years. The undertaking should justify any deviation. Any increasing or decreasing trends on the amount of ultimate number of claims should be explained by the undertaking so that the auditor has a full assessment of the rationale behind.

- Severity - Average cost per claim
  The average cost per claim should be checked in terms of consistency within the years especially for those LoBs that are related to significant amounts of costs. The undertaking should justify any differentiations.
- Claims provisions run-off
  The auditor should review the run-off analysis prepared by the undertaking and assess if the claims provisions in the beginning of the year are adequate to cover the claims arose during the year. In case of a negative run-off result the auditor should investigate the reasons for this and how this is related to the appropriateness of the reserving methodology used by the undertaking.

Further details on Key Risk Indicators are provided in Annex 2.

Projection Methods - Link Ratio Methods on Paid/Incurred

The Link Ratio Methods are a generalization of the Chain Ladder Method, based on the analysis of the cumulative payments (Plaid Claims' triangles) or incurred claims (Incurred Triangles) along the years.
The main assumptions of this method are:

- The independent development of the payments/ incurred claims during the scoped origin years
- Weighted average past inflation will be repeated in the future. This is because claims inflation is one of the influences swept up within the projection factors.

In case a Link Ratio Method has been applied, the auditor shall conduct the review on following areas:

- Verify that the choice of the triangle (Paid or incurred) has been applied based on the nature of the specific portfolio.
- Review the justification and documentation related to any data exclusions (if any).
  Link Ratio exclusions: one or more link ratios could be taken out from the set of data used for estimating the development factors. In such case, the auditor shall ensure that the past experience is unlikely to be repeated in the future. A non-exhaustive list of the reasons that could justify link ratio exclusions is following:
  - Change in the underwriting policy
  - Change in the settlement process
  - Change in the accounting rules
  - Change in macroeconomic variables
  - Change in portfolio mix or distribution channels
- In case that curve fitting is applied by the undertaking, the auditor should consider that its aim is to smooth the observed link ratios development pattern identifying its systematic behavior and eliminating the random noise. The auditor shall:
  - Verify that potential outliers have been excluded by the curve fitting process
  - Verify that the curve fitting has been applied to a proper subset of development factors, selected from the ones estimated in the Ratio Analysis
  - Verify that a goodness of fit test has been applied in order to assess the appropriateness of the curve
  - Check the graph comparing the selected and observed curve with the fitted curves in order to assess the appropriateness of the curve.
- In case that a tail factor is applied by the undertaking, the auditor should consider that its aim is to capture the undeveloped information of the examined triangle and that the factor should be set carefully. The auditor shall:
  - Review the justification and the documentation on the reason for the inclusion of tail factor on the development of the triangle
  - Verify that the documentation includes quantitative and qualitative explanation on the selected tail factor and the chosen tail length

- Assess the inclusion of the tail factor. A non-exhaustive list with possible checks for the tail factor is set below:
  - The use of Curve Fitting Methods
  - The use of Incurred to Paid ratio

  The setting of this parameter has to be done carefully, especially for long tail business. Market data may be helpful to derive an estimate for the number of future development periods
- Compare the tail factor applied with benchmarks (e.g. factors from other portfolios with similar claims development, factors estimated by other undertakings or market data) and verify its consistency overtime
- Verify that the choice of the length of the tail depends on the size of the analyzed triangle as well as the nature of claims.

Projection Methods - Bornhuetter-Ferguson Methods on Paid / Incurred

The Bornhuetter-Ferguson Method combines the projected ultimate (obtained for example by means of a Development Factor Method) with an alternative (a priori) value, using a weighted credibility approach.

In case a Borhuetter-Fergusson method has been applied, the auditor shall:

- Review the justification and documentation concerning the selection of the method applied
- Check that the a priori ultimate is a reliable estimate. The source of the a priori ultimate shall be clearly documented and justified by the undertaking
- Assess whether the a priori Loss Ratio selected by the undertaking is appropriate. The standard practice is to use the earned premium, but the undertakings, might select different exposure based on number of risks, providing the reason. Follows a non-exhaustive list of areas where an undertaking could base the a priori value adopted:
  - Quantitative internal information provided by the run-off triangle itself (i.e. the development factors) or analysis on frequency and severity change, volume measures for the portfolio under consideration (i.e. premiums)
  - The undertaking’s target loss ratio (the undertaking should justify the rationale behind the selection of the ratio)
  - The average of previous years’ loss ratios
  - External information like market statistics, group information or data of similar portfolios.
- Verify that the method has been performed appropriately considering both a priori and the chain-ladder methodology
- Verify that the calibration of the credibility factors (weights) is based on appropriate considerations
- Verify that the percentage of the development factor on which the method is applied is less than 85%. It should be noted that the aforementioned percentage is a market benchmark. The insurance undertaking should justify the application of the method in each origin year.

Projection Methods - Average Cost per Claim Method on Paid

The Average Cost per Claim Method (ACPC) is defined using one of the previously described models on paid amounts plus a separated projection on claim numbers, in the situation of both amounts and number of claims being available. This method allows for getting useful information on claims settlement speed.

In case an Average Cost per Claim method has been applied, the auditors are required to perform the following:

- Verify the method applied for the ultimate number of claims has been considered as reliable
- Verify that for each origin year, both the number and average amount of claims relating to each development year are constant proportions of the totals from that origin year
- Verify that in case any factor has been excluded, documentation and justification is provided by the undertaking and has been assessed by the auditor

- The coherence between the data underlying the two projections involved in this method (claims run-off triangle and number of claims triangle) has to be verified
- Check that, when projecting number of claims with a Development Factor Method, the underlying assumption is that settlement rates are independent by accident year. This assumption should be checked before to proceed in its application
- The underlying assumptions are tested with care by the undertaking before their use
- In case the paid triangles include partial payments made on claims that are still outstanding, the preferable solution is to leave the partial payments in the paid amount triangle but exclude them from the number of closed claims triangle).

Allocated Loss Adjustment Expenses (ALAE)

ALAE is related to the claims handling expenses that can be allocated directly to a single claim.

The auditor shall ensure that:

- The ALAE amounts are included in the triangles used for the projection of best estimate
- In case that ALAE amounts are not included in the triangles
    - Assessment of the treatment of the handling expenses with regards to the materiality and the proportionality criterion
    - Review of the documentation and justification of the treatment followed
    - Verification that the data used for the approximation of ALAE are appropriate, accurate and complete
    - Verification of the parameters used for the approximation of the ALAE amounts.

Unallocated Loss Adjustment Expenses (ULAE)

ULAE is related to the claims handling expenses that cannot be allocated directly to a single claim.

The auditor shall:

- Ensure that the treatment of ULAE is clearly defined by the undertaking
- Review the insurance undertaking's documentation related to the ULAE and verify the reasonability of the ULAE calculation method
- Verify that the ULAE reserve has been aggregated with the claims provisions.

Annuity Claims

Where Non-Life / Health NSLT insurance policies give rise to the payment of annuities, these should be valued using methodologies usually applicable to the valuation of life technical provisions.

The auditors are required to perform the following:

- Review the valuation of technical provisions for such annuities
- Verify that the technical provisions related to such annuities are calculated separately from the technical provisions related to the remaining non-life and health obligations. They should apply appropriate life insurance valuation techniques
- Ensure that the valuation is consistent with the valuation of life insurance annuities with comparable technical features
- Otherwise, if the insurance undertaking has considered the annuities as lump-sum payments, the inclusion in the run-off triangle should be verified and in addition the justification of this selection to be reviewed.

Payment Pattern

For each LoB and for each calendar year the Payment Pattern is defined as the percentage of the expected payment for the calendar year over the sum of the expected payments for all the calendar years. The payment pattern is then applied to the claims provisions in order to determine the cash flows.

The auditors are required to perform and assess the following:

- Review and assess the description of the applied valuation methods
- The payment patterns derived sum to 1
- Justification on the appropriateness of the method used
- In case a paid claims triangle has been used for the payment pattern derivation, the ultimate claims of the projected triangle should be verified that it is equal to the selected ultimate claims

The auditor is expected, as it is referred above, to comment on the appropriateness of the method used. If a simplified method is used to give a view on the rationale, the auditor should use methods to estimate potential error (e.g. use of several other methods, application of a formula to estimate the error where applicable, use of simulation techniques to calculate the error), assess the key expert judgment applied by the undertaking where applicable and verify how the back testing on the utilized results from claims provision is conducted.

The auditor is required to include comments, conclusions as well as judgment over the different findings and the necessary quantitative assessments.

Premium Provision (Non – Life and Health NSLT)

Premium provision is related to the future claims that may be incurred by the existing policies ("one year" or "multi-year" contracts). Cash-flow projections for the calculation of the premium provision include benefits and claims (cash out-flows), expenses (cash out-flows) and future premiums (cash in-flows) and other cash flows relating to these events.

The most common approach followed for the calculation of Premium Provision is the Loss Ratio approach adjusting the UPR with the combined loss ratio. Hence, the UBEL of the Premium Reserves is defined as the sum of the claims related component and the administration expenses related component.

The auditor shall perform the following procedures:

- Verify that the premium reserve has been calculated taking into account the relevant cash out-flows and cash in-flows.
- Verify that both the Loss Ratio and the Administrative Expense Ratio are representative of the historical data of the undertaking or when expert judgment has been used for their derivation to understand the reasonability of the estimations having reviewed the insurance undertaking's justification
- Verify that in case of existing multi-year contracts in the insurance undertaking's portfolio, they have been included in the calculation appropriately
- Verify that in case that the premiums are paid in installments, they have been included in the calculation of premium provision appropriately
- Verify that the valuation of premium provisions has taken into account the future policyholder's behavior.

<u>*Payment Pattern*</u>

The auditors are required to perform and assess the following:

- Review and assess the description of the applied valuation methods
- The payment patterns derived sum to 1
- Justification on the appropriateness of the method used
- In case a paid claims triangle has been used for the payment pattern derivation, the ultimate claims of the projected triangle should be verified that it is equal to the selected ultimate claims
- In case the payment pattern used for the Premium Provision is the same with the one derived by the Claims provisions, this selection should be assessed with regards to the materiality and the proportionality criterion

Both Outstanding Claims Reserve and Premium Provision need to be discounted for the time value of money (expected present value of future cash flows), using the relevant risk – free interest rate term structure as provided by EIOPA. The BEL is derived by discounting the expected future payments of the Undiscounted BEL by the reference basic risk free rate curve. More information on the assessment is provided in section of Assumptions.

3.3.1.4.3.3 Assumptions

Article 77 of the Solvency II Directive and Article 22 of the DR, establish principles for assumptions underlying the calculation of the best estimate of technical provisions.
The calculation of the best estimate shall be based upon up-to-date and credible information and realistic assumptions and be performed using adequate, applicable and relevant actuarial and statistical methods.

The auditor shall follow the following procedures in order to assess the assumptions used to calculate the best estimate:

- Verify that the assumptions are consistent with industry practice
- Review the justification of the assumptions
- Check that the underlying techniques and approaches are adequate, appropriate, realistic and that the information is credible based on the insurance undertaking's justification. In case the insurance undertaking uses approximations their reasonableness and deviation from the best practice with regards to the materiality and proportionality criterion should be assessed
- Check that the frequency of re-evaluation of the assumptions is considered rationale
- Ensure the consistency of the performance of the assumptions
- Verify all the approximations performed in case of insufficient internal or external data
- Verify the appropriateness, accuracy and completeness of external data
- Ensure that the assumptions reflect the uncertainties in the cash flows of the relevant insurance contracts
- Verify that the assumptions have been subjected to a process of internal or external review prior to formal approval of the relevant management
- Review the description of management actions available concerning the setting of the technical provisions
- Review the documentation and justification with regards to the assumptions underlying the management actions
- Review the list and description of the key assumptions used to derive the technical provisions, e.g. inflation, rate changes, risk mix etc.

Assumptions related to Outstanding Claim Reserve

Analysis of historical development of key figures

It is expected that the undertaking provides some indicative statistics per LoB that present the characteristics of the portfolio, the stability within the years or any differentiations. Such statistics could be:

- Number of policies per LoB
- Outstanding Claims, Paid Claims, etc. per LoB
- Premiums per LoB.
- Loss Ratios
- Average frequency of claims
- Average severity of claims
- Expenses (both Allocated and Unallocated)
- Comparison of the development between close origin years

Identification of Attritional / Large claims

The definition of large claim in the qualitative approach may vary according to the type of business and the size of the portfolio. The undertaking should provide methodological explanation and justification of the choice and definition of the approach (both quantitative and qualitative).
The auditor shall:

- Assess the threshold for the determination

- Assess the need to split between Attritional/Large claims. The decision for splitting should depend on the number of the large claims that are included in the triangle
- Understand the method used for the estimation of the Large claims
- Verify that the undertaking provides the conditions under which this split is applied and information of any differentiations and/or specificities that concern the treatment of large claims.

For large claims, case-by-case reserving may be appropriate. The auditor shall request supporting evidence on:

- The procedures applicable to assess the initial valuation of a claim. Usually, when a claim process is open, undertakings assign an initial estimate to the claims costs, based on an average provision defined by HRG. If relevant, the auditor may evaluate the adequacy of these average provisions, comparing them with the ultimate costs of claims already settled;
- The frequency of performing the reviews of the claim valuation. When claims managers get more information about the process, they update the amount of the provision. Accordingly, undertakings should develop mechanisms to assure each claims provision is correctly assigned. The auditor shall analyse the efficiency of that mechanism. For this purpose, the auditor could make a case-by-case study through a chosen sample of all claims processes;
- For long term lines of business, claim files are likely to stay open for a long period of time, as information is collected gradually. The auditor shall verify that those claims are not closed and re-opened several times and that the initial value takes into account this long process;
- The undertaking's policy regarding the closing of the claim files has an impact on the RBNS BEL. The auditor shall assess this policy, and see in which cases claims are closed. A way to do it could be to select a claim that was subject to legal proceedings, as it usually takes a while.

Assumptions related to Premium Provision

Expenses

The cash-flow projections should comprise all future claim payments as well as claims expenses arising from these events.

For the assessment of the future expenses, undertakings should take into account all the expenses that are directly related to the on-going administration of obligations related to recognize (re)insurance contracts, together with a share of the relevant overhead expenses.
Claims management expenses are expenses that will be incurred in processing and resolving claims, including legal and adjuster's fees and internal costs of processing claims payments. Some of these expenses could be assignable to individual claim (e.g. legal and adjuster's fees), others are a result of activities that cover more than one claim (e.g. salaries of staff of claims handling department).

General Assumptions

Liabilities in different currencies

In case the undertaking has liabilities in more than one currency, the auditor shall check that the volume of claims in currency other than the domestic is sufficient in order to be projected separately.

Inflation

When projecting the future payments, inflation should be taken into account. The auditor shall check that:

- If the analysis of the past inflation trends shows an instable inflation environment and the undertaking assumes that changes in future inflation could be relevant, the additional inflation effect needs to be added to the results
- The assumptions as well as decisions regarding the BEL calculation based on this evaluation need to be justified and documented by the undertaking

Further to the above, the auditor shall ensure that the undertaking has performed a proportionality assessment which has taken into account the materiality per actuarial method performed.

Risk - free interest rate term structure

When calculating the Solvency II technical provisions, the best estimate is discounted for the time value of money (expected present value of future cash flows), using the relevant risk – free interest rate term structure published by EIOPA.

The auditor shall assess:

- the yield curve used for the discounting of the future cash flows and conduct a comparison with EIOPA risk free yield curve for the reference date, which is communicated at the following link: https://www.eiopa.europa.eu/tools-and-data/risk-free-interest-rate-term-structures-0_en
- whether VA or MA have been applied for the discounting of the future cash flows
- check of consistency of VA with EIOPA published figures (aforementioned link)
- whether risk free curves, MA, VA assumptions used are consistent with EIOPA guidelines
- whether the transitional measure on the risk-free interest rates has been applied for the discounting of future cash flows.

Long Term Guarantees – Volatility Adjustment

In accordance to Article 77d of Omnibus II, an insurance undertaking may apply a volatility adjustment (VA) to the relevant risk-free interest rate term structure.
For each relevant currency, the VA to the relevant risk-free interest rate term structure shall be based on the spread between the interest rate that could be earned from assets included in a reference portfolio for that currency and the rates of the relevant basic risk-free interest rate term structure for that currency.
The VA curve is issued by EIOPA on a monthly basis (aforementioned link).

The following procedures shall be performed by the auditor in order to check that the application of the long term guarantee measure is in line with the necessary conditions:

- Verify that the adjustment is applied across the portfolio, per country and per currency
- Verify that the undertaking has set up a liquidity plan projecting the incoming and outgoing cash flows in relation to the assets and liabilities subject to VA in order to ensure that an adequate level of liquidity exists on a continuous basis.
- Ensure that the undertaking has adopted the use of VA into its risk management system and risk management policy setting out the criteria for the application of the adjustment
- Ensure that the undertaking assesses the sensitivity of the technical provisions and eligible own funds to the assumptions underlying the calculation of the VA
- Ensure that the undertaking assesses the possible effect of a forced sale of assets on its eligible own funds
- Ensure that the undertaking assesses the impact of a reduction of the VA to zero
- Ensure that in case an insurance undertaking applies the transitional measure on the risk-free interest rates simultaneously with the use of VA, then the transitional measure applies on the interest rate structure includes VA
- Verify that the amount of the VA remains unchanged after the application of the shocks to the basic interest rate term structure, under the interest rate risk sub-module and the spread risk sub-module of the SCR standard formula
- Ensure that the SCR has been calculated with and without the use of the adjustment.

Identification of Binary Event

The definition of binary events refers to claims with very high severity but low frequency. They include losses with low probability but high cost that due to the nature are not captured by the underlying data and are difficult to analyze. Such claims could be extreme catastrophe events, legislative changes or claims steaming from unknown risks.

The auditor shall:

- Review the documentation and justification provided concerning the binary events
- Assess the undertaking's definition for binary events
- Assess qualitatively the framework in place for the treatment of such events
- Examine any historical exposure to such event and the treatment provided by the undertaking (if any).

The auditor should consider if the justification provided is satisfactory and used consistently over time, focusing on the impact of binary events on at least the value of future claims, the future payment pattern and the expenses.

3.3.1.5 Risk margin

The risk margin is determined as the present value of the cost of holding the SCR for non - hedgeable risks during the whole run-off period of the in-force portfolio, using the relevant risk-free interest rate term structure. The calculation should be performed according to the formula presented in the Article 37 of DR. Undertakings should consider whether or not it would be appropriate to apply a simplified valuation technique for the risk margin. As an integral part of this assessment, the undertakings should consider what kind of simplified methods method would be most appropriate for the business. The chosen method should be proportionate to the nature, scale and complexity of the risks of the business in question.

See below the hierarchy of simplified calculations (in the context of the standard formula) of the risk margin. The application of simplifications for cases where the SCR is calculated with internal models should follow the general approach with an appropriate case-by-case assessment.

1. Full calculation of all future SCRs without using simplifications
2. Approximation of the individual risks or sub-risks within some or all modules and sub-modules to be used for the calculation of future SCRs.
3. Approximation of the whole SCR for each future year, e.g. by using a proportional approach
4. Estimation of all future SCRs “at once”, e.g. by using an approximation based on the duration approach
5. Approximation of the risk margin by calculating it as a percentage of the best estimate.

The auditor shall:

- Check the appropriateness of the method used for the calculation of the risk margin with regards to the underlying assumptions of each simplification
- Check the insurance undertaking's justification for any simplification used when calculating the risk margin
- Check if the risk margin calculation is performed separately for each LoB/ for life and non-life business. If not, check how the risk margin is allocated across each LoB and understand why this approach has been adopted
- Check the Cost-of-capital rate (CoC) used in addition to the basic risk free yield curve without applying a VA or a MA in order to calculate the risk margin
- Check which risks have been included in the future SCRs when calculating the risk margin
- Check if for the risks that have been included in the future SCRs, the appropriate correlation matrix has been taken into account.
- Check that the total risk margin is calculated as the sum of the present value of the cost of capital in each future year until the obligations have been settled
- If an internal model exists, check the ability to project the future SCRs required to calculate the risk margin
- Use any available risk indicators in order to assess and verify the adequacy of the risk margin. An indicative, non-exhaustive list of indicators is presented in the Annex 2 of this document.

3.3.2 Assets and liabilities other than the technical provisions

Insurance undertakings should use market consistent valuation methods prescribed in international accounting standards (IFRS) adopted by the Commission in accordance with Regulation (EC) No 1606/2002, unless the undertaking is required by the Solvency II framework to use a specific valuation method in relation to an asset or liability or is permitted to use methods based on the valuation method it uses for preparing its financial statements. It should be followed a valuation hierarchy with quoted market prices in active markets for the same assets or liabilities being the default valuation method in order to ensure that assets and liabilities are valued at the amount for which they could be exchanged in the case of assets or transferred or settled in the case of liabilities between knowledgeable and willing parties in an arm's length transaction, as required by Article 75 of the Solvency II Directive. This approach should be applied by undertakings regardless of whether international or other valuation methods follow a different valuation hierarchy.

3.3.2.1 Goodwill and Intangible Assets

In accordance with Article 12 of the DR, insurance undertakings shall value at zero goodwill and other intangible assets, unless the intangible asset can be sold separately and the insurance undertaking can demonstrate that there is a quoted market price for the same or similar assets. Computer software tailored to the needs of the undertaking and “off the shelf” software licenses that cannot be sold to another user shall be valued at zero.

The auditor shall investigate any deviations from the above requirement, report findings and propose recommendations for remedial actions/adjustments.

3.3.2.2 Deferred tax assets and deferred tax liabilities

In accordance with Article 15 of the DR and the final report EIOPA-BoS-15/113, deferred tax assets and liabilities shall be recognized in accordance with IFRS (IAS 12), and valued, other than deferred tax assets arising from the carryforward of unused tax credits and the carryforward of unused tax losses, on the basis of the difference between the values ascribed to assets and liabilities recognised and valued in accordance with Article 75 of the Solvency II Directive, and in the case of technical provisions in accordance with Articles 76 to 85 of that Directive, and the values ascribed to assets and liabilities as recognised and valued for tax purposes.
Insurance undertakings shall only ascribe a positive value to deferred tax assets where it is probable that future taxable profit will be available against which the deferred tax asset can be utilized, taking into account any legal or regulatory requirements on the time limits relating to the carryforward of unused tax losses or the carryforward of unused tax credits.

The auditors are required to:

- Obtain the accounting policy describing deferred tax recognition and valuation on the Solvency II balance sheet and compare it with the Solvency II framework requirements
- Verify:
  - accuracy of the computation of the deferred tax
  - reconcile the value of total DTA/DTL with the Solvency II balance sheet, investigate differences, considering the materiality provisions described in 2.3, if any
  - that the overall DTA/DTL of the undertaking is split into the various items with reference to the specific category of asset that has generated the corresponding deferred taxes and that the DTA/DTL are offset if, and only if, the following two conditions are fulfilled:
    - the undertaking has a legally enforceable right to set off current tax assets against current tax liabilities; and
    - the DTA and the DTL relate to income taxes levied by the same taxation authority on either the same taxable entity or different taxable entities which intend to settle current tax liabilities and assets on a net basis (for example, in case of group consolidation for tax purposes).

- Obtain the recoverability test (recognition of a DTA has to be subject to a recoverability test, which aims at showing that sufficient profits will be available in the future to absorb the tax credit) and assess the reasonability of the assumptions regarding future profits used in the recoverability test as of 30 June 2020 (taking into account aspects such as, but without being limited to: historical analysis of the process of budgeting versus actual results, budgets for future periods, reasonability of the assumptions used in the budgeting process) together with any legal or regulatory requirements on the time limits relating to the carry forward of unused tax losses / credits.

Special attention should be given to adjustments proposed by the auditor throughout the BSR exercise that may impact the deferred tax recognized. The impact shall be quantified and adjustments should be performed as needed.

3.3.2.3 Pension benefit surplus/obligations

In accordance with the DR and final report EIOPA-BoS-15/113, IAS 19 which prescribes the accounting and disclosures for employee benefits, except those to which IFRS 2 Share based payments applies, is consistent with Solvency II as regards measurement principles for employee benefits.

The auditors are required to:

- Obtain the accounting policy describing pension benefit surplus and pension benefit obligations recognition and valuation and compare it with the Solvency II framework requirements
- Perform an understanding of the pension benefits granted to employees and any other scheme in place related to benefits to employees by discussing with management, reviewing labour contracts and/or other supporting documents (including for eg. Consolidated Annual Report for the parent undertaking)
- Request the undertaking pension benefits assessment including computation from the undertaking and reconcile with the corresponding account from the Solvency II balance sheet and/or trial balance accounts. Investigate difference, considering the materiality provisions described in 2.3, if any
- Request supporting documents, information and details in order to review the above assessment performed by the undertaking. Involve specialists ("actuarial") as needed, depending on the complexity of the calculations.

3.3.2.4 Property, plant and equipment held for own use

In accordance with the DR and final report EIOPA-BoS-15/113, insurance undertakings shall not value property, investment property, plant and equipment with cost models where the asset value is determined as cost less depreciation and impairments. For property, plant and equipment, the option (IAS 16) consistent with Solvency II is the revaluation model.

The auditors are required to:

- Obtain the accounting policy for Property, plant and equipment held for own use recognition and valuation and compare it with the Solvency II framework requirements
- Request breakdown of the property, plant and equipment held for own use as at 30 June 2020, as well as 31 December 2019, and reconcile with the trial balance corresponding accounts and Solvency II balance sheet and investigate differences, considering the materiality provisions described in 2.3, if any
- Perform selection in accordance with the instructions in 2.4 and request for the sample:
    - supporting documents and information in order to verify the ownership rights for the respective item
    - the valuation report prepared by an independent appraiser and:
        - Reconcile the value from the valuation report to the value from breakdown received above
        - Verify whether the valuation was performed by an independent appraiser member of the appropriate
        - professional body
        - Review and assess the valuation of the respective item. In this respect, the auditor will involve valuation specialists in the review of the valuation report in terms of method of valuation and assumptions used, market comparables included, the computations, any other significant assumptions, in order to assess the appropriateness of the valuation report and the fairness of the valuation

- Request information regarding subsequent events from the undertaking which may show a deterioration in the value of the respective item or other impairment as applicable (e.g. the auditor will request the detail(s) regarding property, plant and equipment held for its own use at a subsequent date, etc.).

Appraisals of land and buildings older than 31 December 2019 should not be taken into account for the purpose of the BSR exercise. For land and buildings, for which the latest appraisal was done before 31 December 2019, a new appraisal should be performed. For appraisals of land and buildings performed starting 31 December 2019, appropriate verifications should be performed to ensure that the value reflects the circumstances at the reference date (30 June 2020).

3.3.2.5 Investments (other than assets held for index-linked and unit-linked contracts)

The auditors are required to perform procedures for each type of the investments separately, as outline below. Guidance is included for the most usual type of such investments. Instructions will be provided on a case by case basis for other material items existing in the undertaking portfolio not covered by this specific guidance.

3.3.2.5.1 Property (other than for own use)

As referred in 3.3.2.4, in accordance with the DR and final report EIOPA-BoS-15/113, insurance undertakings shall not value property, investment property, plant and equipment with cost models where the asset value is determined as cost less depreciation and impairments. For property (other than for own use), the option (IAS 40) consistent with Solvency II is the fair value model.

The auditors are required to:

- Obtain the accounting policy for Property (other than for own use) recognition and valuation and compare it with the Solvency II framework requirements
- Perform the same procedures as described in 3.3.2.4.

3.3.2.5.2 Holdings in related undertakings, including participations

In accordance with Article 13 of the DR and final report EIOPA-BoS-15/113, insurance undertakings shall value holdings in related undertakings, in accordance with the following hierarchy of methods: (a) using quoted market prices in active markets for the same assets or liabilities; (b) using the adjusted equity method (based on Solvency II consistent recognition and measurement for the subsidiary's balance sheet) where valuation in accordance with point (a) is not possible; (c) using either the valuation method set out in Article 10(3) of the DR or alternative valuation methods in accordance with Article 10(5) of the DR provided that all of the following conditions are fulfilled: (i) neither valuation in accordance with point (a) nor point (b) is possible; (ii) the undertaking is not a subsidiary undertaking.

The auditors are required to:

- Obtain the accounting policy for Holdings in related undertakings, including participations recognition and valuation and compare it with the Solvency II framework requirements
- Obtain breakdown in respect to the Holdings in related undertakings, including participations in balance as at 30 June 2020, and 31 December 2019, containing information with respect to purchase date and any other subsequent participation, the acquisition cost and participation percentage at all respective dates, as well as any other relevant information regarding the acquisition and the related holding, including information regarding market quotation if any. Reconcile with corresponding accounts and the Solvency II balance sheet and investigate any differences, considering the materiality provisions described in 2.3
- Understand group's structure and verify completeness by

- o inspecting the available information and documents throughout the procedures performed during the review period, by reading the minutes of the general shareholders' meetings, board of directors and any other committees or boards that are relevant for the management of the undertaking's activity
- o performing independent research using information publicly available in order to review the list of shareholdings of key management personnel, administrators or any other relevant person to the undertaking and its activity

- Verification of existence of the Holdings in related undertakings, including participations through examination of:
    - the evidence of ownership as well as independent verifications with public information available
    - information/details regarding the acquisition cost against supporting documents, including bank statements
- Assessment of the reasonableness of the valuation/recoverability of the Holdings in related undertakings, including participations:
    - valued at the quoted market price in an active market: i) Verify compliance with IFRS 13 fair value requirements. Involve specialists/experts (financial instruments valuation specialists) as needed, depending on the complexity of the definitions and calculations; ii) Obtain supporting evidence from external sources (e.g stock exchange closing price) for the valuation and investigate any difference, considering the materiality provisions described in 2.3
    - valued by application of equity method:
        - Holdings in insurance and reinsurance undertakings: Obtain the Solvency II balance sheet as of 30 June 2020 for each holding and check the correct application of the equity method according to the Solvency II framework (for Romanian undertakings the Solvency II balance sheet may be reviewed as part of this exercise; for other undertakings such as Romanian but not reviewed under the BSR or in other member states the auditor will request the audited Solvency II balance sheet and audit report as at 30 June 2020 for each holding)
        - Holdings in undertakings other than insurance and reinsurance undertakings: Obtain the IFRS financial statements as of 30 June 2020 for each holding and check the correct application of the equity method according to the Solvency II framework: for each holding representing at least 0.5% from total assets the auditor will request the audited IFRS financial statements and the audit report as of 30 June 2020 and will review assets and liabilities valuation and propose adjustments as needed to ensure Solvency II framework compliance (for example intangibles are allowed under IFRS but specific compliance criteria is required by the Solvency II framework).

The auditors should perform a verification/assessment of the balance sheet of the holding by either:
- o reviewing the audit reports and assessing the quality of the work performed or
- o performing the procedures consistent to the ones required to be performed at individual level and commensurate to the size and complexity of the holding

In both cases the auditor shall ensure that assets and liabilities valuation rules are consistent with the requirements of this methodology (for example reference date for valuation report of property) and propose adjustments as needed.

3.3.2.5.3 Equities

In accordance with the DR and final report EIOPA-BoS-15/113, the fair value measurement of IAS 39 and IFRS 13 is consistent with Solvency II.

The auditors are required to:
- Obtain the accounting policy for Equities recognition and valuation and compare it with the Solvency II framework requirements

- Request the investment policy statement approved by the undertaking and its subsequent amendments valid at the reference date
- Request a breakdown containing all the investments held by the undertaking (with high level of details such as: counterparty identification, currency, country, traded market – if any, rating of the counterparty, etc.) and reconcile the respective detail with corresponding accounts and the Solvency II balance sheet. Investigate differences, considering the materiality provisions described in 2.3, if any
- Compare the investments held by the undertaking against its investment policy and investigate any deviations
- Request the confirmation regarding the quantity of each investment held from the Custodians, as applicable, through confirmation letter procedures and reconcile the information from the confirmation from the Custodian with the information from the breakdown received
- Select equity investments (see materiality provisions described in 2.3) to cover at least 90% from Equities and for the sample:
    - Obtain the evidence from external sources for the valuation of the equity securities investments in accordance with Solvency II framework (e.g. stock exchange closing price, etc) and compare the supporting evidence against the breakdown and other information received from the undertaking
    - Review the rating information against public sources available
    - Assess the reasonableness of the respective valuation, including the assumptions used, against the Solvency II requirements for this type of investments. Involve experts as needed depending on the complexity of the valuation.

3.3.2.5.4 Bonds – Government bonds and Corporate bonds

In accordance with the DR and final report EIOPA-BoS-15/113, the fair value measurement of IAS 39 and IFRS 13 is consistent with Solvency II.

The auditors are required to:

- Obtain the accounting policy for Bonds recognition and valuation and compare it with the Solvency II framework requirements
- Request the investment policy statement approved by the undertaking and its subsequent amendments valid at the reference date
- Request a breakdown containing all the investments held by the undertaking (with high level of details such as: counterparty identification, currency, country, traded market – if any, rating of the counterparty, etc.) and reconcile the respective detail with corresponding accounts and the Solvency II balance sheet. Investigate differences, considering the materiality provisions described in 2.3, if any
- Compare the investments held by the undertaking against its investment policy and investigate any deviations
- Request the confirmation regarding the quantity of each investment held from the Custodians, as applicable, through confirmation letter procedures and reconcile the information from the confirmation from the Custodian with the information from the breakdown received
- For each Government bonds category and Corporate bonds category select bonds (see materiality provisions described in 2.3) to cover at least 90% from each category, and for the sample:
    - Obtain the evidence from external sources for the valuation of the fixed income securities investments in accordance with the Solvency II framework (e.g. Bloomberg/Reuters print-screens with related quotations, etc) and compare the supporting evidence against the breakdown and other information received from the undertaking
    - Review the rating information against public sources available
    - Review any available public information to identify any changes in credit risk (operations such as: extension of maturity, modification of principal and/or interest payments, roll over of principal at maturity into new debt issue, other)

- Assess the reasonableness of the respective valuation, including the assumptions used, against the Solvency II requirements for this type of investments. Involve experts as needed depending on the complexity of the valuation.

3.3.2.5.5 Bonds – Structured notes

In accordance with the DR and final report EIOPA-BoS-15/113, the fair value measurement of IAS 39 and IFRS 13 is consistent with Solvency II.

The auditors are required to:

- Obtain the accounting policy for Bonds – Structured notes recognition and valuation and compare it with the Solvency II framework requirements
- Request the investment policy statement approved by the undertaking and its subsequent amendments valid at the reference date
- Request a breakdown containing all the investments held by the undertaking (with high level of details such as: counterparty identification, currency, country, traded market – if any, rating of the counterparty, etc) and reconcile the respective detail with corresponding accounts and the Solvency II balance sheet. Investigate differences, considering the materiality provisions described in 2.3, if any
- Compare the investments held by the undertaking against its investment policy and investigate any deviations
- Request the confirmation regarding the quantity of each investment held from the Custodians, as applicable, through confirmation letter procedures and reconcile the information from the confirmation from the Custodian with the information from the breakdown received
- Request the structured notes prospect and other documentation available in order to understand the structured note terms and conditions
- Obtain the valuation model and evidence for the valuation of the structured notes securities investments in accordance with Solvency II framework and compare the supporting evidence against the breakdown and other information received from the undertaking
- Assess the reasonableness of the respective valuation, including the assumptions used, against the Solvency II requirements for this type of investments. Involve experts as needed depending on the complexity of the valuation. Review any available public information to identify any changes in credit risk of the counterparty and asses if any adjustments are necessary.

3.3.2.5.6 Derivatives assets/liabilities

In accordance with the DR and final report EIOPA-BoS-15/113, the fair value measurement of IAS 39 and IFRS 13 is consistent with Solvency II. In case of financial liabilities adjustments might be needed if the fair value includes changes in own credit standing in subsequent periods as there should be no subsequent adjustments to take account of the change in own credit standing of the insurance undertaking after initial recognition.

The auditors are required to:

- Obtain the accounting policy for Derivative financial instruments recognition and valuation and compare it with the Solvency II framework requirements
- Request the investment policy statement approved by the undertaking and its subsequent amendments valid at the reference date
- Request a breakdown containing all the investments held by the undertaking (with high level of details such as: counterparty identification, currency, country, traded market, rating of the counterparty, etc.) and reconcile the respective detail with corresponding accounts and the Solvency II balance sheet. Investigate differences, considering the materiality provisions described in 2.3, if any
- Compare the investments held by the undertaking against its investment policy and investigate any deviations
- Request the confirmation regarding the terms and conditions of the derivative financial instruments from the counterparty, as applicable, through confirmation letter procedures and reconcile the information from the

confirmation from the counterparty with the information from the breakdown received. Investigate any differences, considering the materiality provisions described in 2.3
- Request the derivative contracts and other documentation available in order to understand the derivative instrument note terms and conditions
- Obtain the valuation model and the evidence for the valuation of the derivative financial instruments in accordance with the Solvency II framework and compare the supporting evidence against the breakdown and other information received from the undertaking
- Assess the reasonableness of the respective valuation, including the assumptions used, against the Solvency II requirements for this type of investments. Involve experts as needed depending on the complexity of the valuation. Review any available public information to identify any changes in credit risk of the counterparty and asses if any adjustments are necessary.

3.3.2.5.7 Deposits and other cash equivalents

In accordance with the DR and final report EIOPA-BoS-15/113, the fair value measurement of IAS 39 and IFRS 13 is consistent with Solvency II.

The auditors are required to:
- Obtain the accounting policy for Deposits and other cash equivalents recognition and valuation and compare it with the Solvency II framework requirements
- Request the investment policy statement approved by the undertaking and its subsequent amendments valid at the reference date
- Request a breakdown containing all the investments held by the undertaking (with appropriate details) and reconcile the respective detail with corresponding accounts and the Solvency II balance sheet. Investigate differences, considering the materiality provisions described in 2.3, if any
- Compare the investments held by the undertaking against its investment policy and investigate any deviations
- Request confirmation letter from financial institutions regarding deposits and other cash equivalents and compare the confirmation letter details against the breakdown received and investigate any differences, considering the materiality provisions described in 2.3
- Review the valuation of the foreign currencies balances as well as the accrued interest and investigate any differences, considering the materiality provisions described in 2.3
- Assess the counterparty credit risk for each financial institution and propose adjustments if recoverability issues are encountered.

3.3.2.6 Assets held for index-linked and unit-linked contracts

The auditors are required to perform procedures for each type of the investments as outlined in 3.3.2.5. Investments (other than assets held for index-linked and unit-linked contracts).
Guidance is included for the most usual type of such investments. Instructions will be provided on a case by case basis for other material items existing in the undertaking portfolio not covered by this specific guidance.

3.3.2.7 Reinsurance: recoverables, accounts balances and effectiveness of risk transfer

Reinsurance recoverables

The calculation by insurance undertakings of amounts recoverable from reinsurance contracts and special purpose vehicles shall comply with Articles 76 to 80 of the Solvency II Directive i.e. insurance undertakings shall apply the same Solvency II principles to recoverables from reinsurance contracts as are applied to the valuation of gross liabilities. Shall be considered all the contractual cash-flows and expected non-payment due to default or dispute. This includes all relevant cash inflows, in particular recoverables from reinsurance in respect of claims payments, recoverables from reinsurance in respect of allocated claims expenses and revenues from reinsurance commissions and applicable profit sharing arrangements. This also includes all relevant cash outflows, in particular future premiums payable in respect of reinsurance contracts and if relevant outflows from profit sharing arrangements.

The calculation of the amounts recoverable from the reinsurance contracts shall also take into account the time difference between recoveries and direct payments. The result shall be adjusted to take into account the expected losses due to default of the counterparty. This adjustment shall be calculated separately and be based on an assessment of the probability of default of the counterparty and the average loss resulting therefrom (loss-given-default). For this purpose, the change in cash flows shall not take into account the effect of any risk mitigating technique that mitigates the credit risk of the counterparty, other than risk mitigating techniques based on collateral holdings. Compliance with Article 41 of Commission Delegated Regulation 2015/35 about the consistency between the reinsurance recoverables boundaries and the corresponding products' contract boundaries shall be ensured.

Deposits made in respect of the reinsurance cash inflows or outflows must be shown separately in the balance sheet. Suitable adjustment must be made to the recoverables to avoid any double-counting.

The auditors are required to:
- Perform an evaluation the appropriateness of management's methodology, judgments and assumptions used to calculate reinsurance recoverables and whether they are in accordance with the undertaking's accounting policies and the relevant standards;
- Evaluate the accuracy, completeness and relevance of data on which the estimate is based

For such purposes, the auditor shall perform/understand the following:
- Understand the method by which the reinsurance recoverables are calculated
- Understand how the timing difference between a recovery and the actual receiving of that recovery is allowed within the valuation of the reinsurance recoverables
- If the reinsurance recoverables are calculated on a consistent basis to the contractual boundaries of the underlying insurance contracts
- Check that the split of reinsurance recoverables is performed by LoB and by type of technical provision
- Understand the method followed for the adjustment of the reinsurance recoverables for the probability of default of the reinsurer
- Any simplifications used when calculating the expected losses due to default of the reinsurance counterparty based on the proportionality principle.
- Check that the appropriate parameters are used for the counterparty default adjustment
- Check that the recovery rate used is equal to 50% unless any historical data exist
- Check that when the expected losses due to default is calculated, the recoverable amount outstanding is adjusted to allow for any deposits already made. Check how these deposit arrangements work
- Check if there are risk mitigation techniques in place to prevent counterparty risk losses included in the technical provision calculation
- Check if any of the reinsurance arrangements are collateralized and if so how has this been reflected in the calculations
- Any simplifications used when calculating the expected losses due to default of the reinsurance counterparty based on the proportionality principle.

Additionally, the auditor shall:
- Perform analytical review by comparing the reinsurance recoverables per each type of technical provision (reported claims, premium reserve, etc) and lines of business as at 30 June 2020 and as at 31 December 2019 and investigate unexpected, unusual variances or significant adjustments recorded on reinsurance balances and use professional judgment to evaluate the results
- Perform analytical review by comparing the gross technical provisions and reinsurance recoverables as at 30 June 2020 and as at 31 December 2019 and investigate unexpected, unusual variances or significant adjustments recorded on reinsurance balances and use professional judgment to evaluate the results

- Select a sample of reinsurance recoverables in order to achieve a coverage of 80% of LoBs or type of reinsurace recoverables (e.g unearned premium ceded, reported claims, incurred but not reported claims, etc) and to perform reasonability test and use professional judgment to evaluate the results
- Select a sample in accordance with 2.4 of individual claim amounts from the detail of reported claims reinsurance recoverables as of 30 June 2020 and reconcile values for reinsurer's share in technical provisions based on the information from the reinsurance contracts and the reported claims detail. Differences which remain unreconciled must be adjusted
- Perform an assessment of the recoverability of reinsurance assets (e.g. assess any potential indicators suggesting no recoverability of the reinsurance assets recorded: obtain reinsurers credit ratings; obtain correspondence with reinsurers including information regarding disputes or other relevant matters; assess whether delayed payments from the reinsurer exist, if applicable, resulting from inability to pay or from other factors such as disputes with reinsurers).

In case of deviation from the Solvency II framework, the auditor shall assess the impact and propose adjustment so that the undertaking complies with the required framework as of 30 June 2020.

Reinsurance balances and effectiveness of risk transfer

Outward reinsurance
The auditors are required to:
- Obtain and read the internal policies, procedures and accounting policies for re-insurance operations, make inquiries of the persons responsible for the reinsurance in order to understand the accounting policies, principles and process for selecting and accepting the contracts (when such principles and/or process are not already apparent from the written procedures) and
- Assess whether the undertaking's accounting policies are in compliance with the fair value principles in accordance with IFRS 13 and the Solvency II framework.
- In case of deviation from framework, the auditors should evaluate the adjustment needed so that the undertaking complies with the required accounting framework as of the reference date.

Additionally, the auditor shall:
- Obtain the reinsurance program and agreements and provide a brief description of the main characteristics of the program and assess the compliance of the program with the requirements of Title I, Chapter V, section 10 of the DR as regards the following aspects:
    - the reinsurance program effectiveness by identification of the level of risk transfer appropriate to the undertaking's defined risk tolerance limits and the type of reinsurance arrangements which are most appropriate considering the undertaking's risk profile
    - the reinsurance agreements in force including whether there is evidence of review and approval of the initial treatment (including transfer of risk) in accordance with the entity's policies and the relevant standards (e.g. inspect the agreement's key terms such as type of contract (i.e. quota share or excess of loss), contract period, coverage period, cancellation terms, loss coverage, accumulating retentions, additional premiums, profit sharing commissions, and loss settlement terms); assess the effective risk transfer and consideration of basis risk based on qualitative assessment of the reinsurance treaty (reading the reinsurance conditions whether there are triggers of non-traditional reinsurance treaties) and quantitative assessment of the reinsurance treaty and reassess the ceded technical reserves in accordance with the risk transfer conclusion
        - The auditor is required to use professional judgment in selecting the most appropriate quantitative assessment method for analysis and concluding on the effectiveness of risk transfer.
          Quantitative assessment of the reinsurance treaties could be based on methods applied depending on LoB or risk insured, such as for example:
          i) Compare the present value of reinsurer net losses from the contract with the present value of reinsurance contract premiums;

ii) Premium to Limit of Coverage Ratio: Under this criterion, the contract is unlikely to be a risk transfer, if the value of the ratio approaches or exceeds 1 (suggested threshold); or
iii) The expected reinsurer's deficit method (suggested threshold 1%)
iv) Use any available risk indicators in order to assess and verify the extend of reinsurance as well as the impact of reinsurance cover in the claims. An indicative, non-exhaustive list of indicators is presented in Annex 2 of this document

- Review a sample of signed reinsurance contracts in force and with effects on accounting balances as at 30 June 2020 covering minimum 80% of premiums ceded in passive (outward) reinsurance and claims ceded in reinsurance during the period 1 January 2020 – 30 June 2020 and compare them with the qualitative criteria requirements of Article 209 Title I, Chapter V, section 10 of the DR and the requirements of the effectiveness of risk transfer of Article 210 Title I, Chapter V, section 10 of the DR. For the contracts selected:
  - Review the quality of each reinsurer based on ratings where available or other market financial information and compare the available information about the counterparty with the requirements of Art. 211 Title I, Chapter V, section 10 of the DR and conclude whether the protection offered by the reinsurer is appropriately recognized
  - Make inquiries of persons responsible and document the types of policies and premiums volumes which are not included in any reinsurance agreement and document the reason behind (when such reasons are not already apparent from the written procedures)
  - Obtain (if available) and review the undertaking's analysis of the operational result from reinsurance per contract/LoB
  - Obtain and review the liquidity management procedures applied for any timing mismatch between claims' payments and reinsurance recoverable

Based on the analysis performed, in case of any departure from requirements the auditor will present findings and recommendations for remedial actions.

Further the auditor is required to:

- Obtain the breakdown of the accounts balances (for reinsurance receivables and reinsurance payables separately) on each reinsurer as of 30 June 2020 and reconcile it with the respective accounts in the balance sheet. Any differences, considering the materiality provisions described in 2.3, must be reconciled. Differences which remain unreconciled must be adjusted
- Select a sample of minimum 80% of the reinsurance balances as of 30 June 2020 (for reinsurance receivables and reinsurance payables separately) for which the auditor will send confirmation letters. In cases of no replies from counterparties or differences found, the auditor will request the reconciliations agreed between the undertaking and the respective reinsurers as of 30 June 2020 or as of 31 December 2019. If the undertaking does not have reconciliation procedure in place the auditor should analyze the documents supporting the recognition of the payables/receivables from reinsurers, review correspondence with reinsurers where available and conclude if the amounts were appropriately recognized in accordance with the accounting policy
- Perform an analytical review by comparing the balances of reinsurance receivables/payables per counterparty and/or LoBs as at 30 June 2020 and as at 31 December 2019 or 31 December 2018, investigate unexpected, unusual variances or significant adjustments recorded on reinsurance balances and use professional judgment to evaluate the results.

In relation to reinsurance <u>receivables</u> the auditor is required to:

- Obtain the management approach or the accounting policy related to allowance (impairment) for reinsurance receivables, obtain the computation for the impairment of reinsurance receivables as of 30 June 2020 and correlate the impairment policy of the undertaking with other available information and conclude whether is appropriate
- Review subsequent collection/subsequent payments made until 31 July 2020, subsequent cancelations/write off of receivables/payments and other documents supporting the settlement of receivables/payables from reinsurers and obtain explanations for old unsettled receivables amounts and conclude whether the receivable collection is appropriately estimated

- The reinsurance assets which are being in dispute or subject to arbitration or litigation shall be reviewed for possible uncollected amounts.

Sampling
Depending on the types of reinsurance treaties (proportional/non-proportional) which are in force in the undertaking the auditor is required to verify the accuracy of calculations for a sample of the reinsurance transactions. The sample should be designed in a manner that at least 80% of the LoBs or reinsurer which fall under the reinsurance treaties, are covered (fronting operations should also be included in the sample):

- Select a sample 3 policies for each selected LoB and verify if the reinsurance premium amount is correctly computed and in accordance with the reinsurance treaty
- Select a sample 3 policies for each selected LoB and verify if the reinsurance claim amount is correctly computed and in accordance with the reinsurance treaty
- Select a sample 3 policies for each selected LoB and verify if the reinsurance commission is correctly computed and in accordance with the reinsurance treaty

In cases were errors are found the auditor will estimate whether an extension of sample is required to evaluate if any adjustment is necessary.

For reinsurance treaties with minimum or deposits premiums or sliding scale commission's features, the auditor will assess the reasonability of the recognized amounts based on the estimations of 30 June 2020.

In cases where the reinsurance treaties contain adjustable features the auditor will test the calculation of the adjustments to reinsurance premiums and/or commissions at the adjustment date closest to 30 June 2020. It should be understood the details of the calculation to the reinsurance contract terms and determined that the adjustment has been properly accounted for.

The auditor is required to benchmark ceded premiums/claims against the gross premiums/claims per LoB as of 30 June 2020 and 31 December 2019 and use the details of the reinsurance treaties to investigate unexpected deviations. The auditor is required to use professional judgment to evaluate the results.

As regards <u>deposits to/from reinsurers</u> the auditor is required to:

- Obtain the breakdown of the deposits to/from reinsurers as of 30 June 2020 and reconcile it with respective accounts from the trial balance
- Examine terms and conditions under which these deposits fall and verify the appropriate classification of these deposits in respect to maturity
- For the deposits to/from reinsurers the method applicable for valuation, will relate to a quoted market price for cash deposits not available. The auditors are required to assess if an acceptable proxy of the fair value was used for valuation of cash deposits (the valuation of reinsurance liabilities will follow the general principles and hence no adjustment will be taken into account for the own credit standing of the insurance undertaking).

<u>*Inward reinsurance*</u>
The procedures which are applicable for outward reinsurance will be performed also for inward reinsurance.

In addition, the auditor is required to perform the following procedures:

- Obtain an understanding of the underwriting internal processes and procedures of the undertaking with specific focus on: procedures for accepting direct writers and subsequent monitoring of compliance with treaties based on a risk assessment process:
  - Review whether before entering into new contractual arrangement, information is obtained on the ceding insurer and on assumed insurance contracts, and whether there is any analysis of the profitability and risks of those reinsurance contracts
  - Understand if there is any analysis regarding the forecast maximum insurance loss amount in major concentrated risks

- Understand whether there is appropriate monitoring after signing an assumed reinsurance contract
  - Whether the undertaking relies on the assessment of the direct writer or perform own assessment)
  - Whether there is any monitoring of programs that might give underwriters latitude to make exceptions
  - Whether the reinsurance treaties contain clauses that allow the undertaking to audit the work of the direct writer (reinsurance administration, claims and underwriting)
  - Select a sample of top 10 reinsurance treaties in term of premiums accepted and review if the above procedures were applied
- Assess whether the accounting policy for technical provisions is appropriate, considering that reinsurance underwriting risk should not be treated in a similar manner with ordinary underwriting risk, due to the complexity of treaties
- For the technical provisions concerning inward reinsurance which are underwritten for overseas insurers, assess whether the differences in the accounting system of the countries of the ceding parties are taken into account by the undertaking

The auditor shall report the findings and recommendations for remedial actions, as well as, the conclusion (quantitative and qualitative) regarding the effectiveness of the risk transfers to third parties of risks stemming from (re)insurance contracts written by the insurance undertaking including finite reinsurance contracts.

3.3.2.8 Insurance receivables

Receivables from policyholders

Insurance receivables include only insurance business written directly by the undertaking in its own name. In accordance with the DR and final report EIOPA-BoS-15/113, the general fair value principles in IFRS 13 are consistent with Solvency II.

The auditors are required to:
- Obtain the accounting policy describing receivables from policyholders' recognition and valuation and compare it with the Solvency II framework requirements
- Understand the accounting policy for the recognition of receivables from policyholders for life and nonlife policies and their valuation under Solvency II, evaluating the compliance, verification of application of the fair value, verification of the relevance of the assumptions used for fair value computations and the mathematical accuracy of the fair value computations in accordance with the Solvency II framework.

<u>Recognition of receivables</u>
The auditor is required to:
- Obtain the detail of all the receivables from policyholders as at 30 June 2020, at the level of each policy (the detail should include also the ageing (days overdue) related to all the receivables from policyholders as at 30 June 2020 at the level of each policy)
- Reconcile the total receivables from policyholders from the respective detail with the corresponding accounts and the Solvency II balance sheet as at 30 June 2020. Any differences, considering the materiality provisions described in 2.3, must be investigated and adjustments proposed for unreconciled differences
- Obtain all the subsequent cash collections from policyholders related to the receivables as at 30 June 2020 at the level of each policy until 31 August 2020 (including clearance of the suspense accounts for unallocated collections as of 30 June 2020)
- In order to assess the reliability, quality, sufficiency and relevance of data the auditor will select a sample of receivables from policyholders as at 30 June 2020 namely: top 10 receivables and 10 random items, from each LoB (for the LoBs achieving coverage of minimum 80% from the total receivables from policyholders of the undertaking, for each of life and non-life segments). For the selected sample:
  - Obtain for these policies the supporting documents for the recorded receivable (the policy for the GWP, any previous collections) and match the information from the supporting documents with the information

contained in the details related to receivables from policyholders received from the undertaking, including amount
  - Verify the accuracy of the computation of the ageing of receivable
  - Check contamination of receivables
  - Match for these policies the subsequent cash collection information from detail obtained with the original bank statements / petty cash receipts
  - Request for these policies the last unpaid invoices and the last collection document (bank statement /petty cash receipt) in order to validate the overdue days from the ageing detail
  - Verify the computation of premium reserve and correlate the information for the selected policies with the technical provisions procedures and details
  - In case of any differences found between supporting documents and details received or computation differences the auditor should quantify the impact (including consideration as to whether to extent the sample and/or the procedures to be performed) and determine if any adjustment is needed.
- Perform analytical review by comparing the balances of receivables from policyholders as at 30 June 2020 and as at 31 December 2019 per lines of business, days past due (DPD) intervals and investigate unexpected or unusual variances that could indicate a potential misstatement
- Obtain all the subsequent cancellations related to the receivables as at 30 June 2020 at the level of each policy until 31 August 2020. Adjust the balance of receivables as of 30 June 2020 with the amount of cancelled premiums.

Valuation of receivables
The auditor is required to:
- Obtain the management approach and the accounting policy related to provisions (impairment) for receivables from policyholder
- Obtain the computation of the allowance for receivables from policyholders at the level of each policy as of 30 June 2020 and reconcile the total allowance from the respective detail received with the corresponding accounts from trial balance as at 30 June 2020
- Correlate the computation of allowance for receivables from policyholders with the accounting policy related to the provisioning of receivables from policyholders and investigate any inconsistencies/discrepancies
- Perform analytical review by comparing the balances of allowance for receivables from policyholders as 30 June 2020 and as at 31 December 2019 per lines of business, DPD intervals and investigated unusual or opposite/contradictory variations
- Review the historical evidence in respect of the receivable collection and assess the adequacy of the method/policy used by the undertaking as follows:

  For 30 June 2020:
  - Perform own analysis in terms of ageing and subsequent cash collected by comparing the amounts receivable as at 30 June 2020, on intervals of overdue days as following: 0 DPD, 1-30 DPD, 31-60 DPD, 61-90 DPD, and 91+DPD, with the cash collected during 1 July 2020 -31 August 2020, matched on each interval. The analysis will be made in both absolute and relative terms
  - For the policies that were due as of 30 June 2020 compute the provision required for all amount not subsequently collected at the level of each policy (until 31 August 2020)(“Provision 1”).

  For 31 December 2019:
  - Perform own analysis in terms of ageing and subsequent cash collected by comparing the amounts receivable as at 31 December 2019, on intervals of overdue days as following: 0 DPD, 1-30 DPD, 31-60 DPD, 61-90 DPD, 91+DPD, with the cash collected during 1 January 2020 -31 August 2020, matched on each interval. The analysis will be made in both absolute and relative terms and calculate collection ratio per each bucket.

   - For each DPD interval as at 30 June 2020 apply the collection ratio per each bucket and compute the provision required based on the historical analysis (“Provision 2”).

  Compare results under point 1 and point 2 above and conclude on provision required as follows:
  - If Provision 1 > Provision2 apply Provision 2
  - If Provision 1 < Provision2 apply Provision 1
  Compare the selected result with provision recorded by the undertaking and propose adjustment if any difference, considering the materiality provisions described in 2.3.

  The auditor should exercise professional judgment to determine whether other assumptions are relevant for the computation of the provision and also correlate the results with other accounts (e.g. technical provisions).

- Obtain from the undertaking the detail of future premiums included in the receivables from policyholders that fall within the contract boundaries as defined in Article 18 of the DR (i.e. premiums paid in instalments and due in the future, annual premiums on multi-year contracts, bound but not incepted business)
- Assess the correctness of the detail through:
   - Understanding of the terms and conditions attached to the policies (for the LoBs achieving coverage of minimum 80% from the total receivables from policyholders of the undertaking)
   - Review correlation of the detail with the future premiums included in the computation of the technical provisions as described in 3.3.1.2 Technical provisions - Recognition and contract boundaries; If any discrepancies identified the auditor shall assess the need for adjustments.

Receivables from recourses

In accordance with the DR and final report EIOPA-BoS-15/113, the general fair value principles in IFRS 13 are consistent with Solvency II.

The auditors are required to:
- Obtain the accounting policy describing receivables from recourses’ recognition and valuation and compare it with the Solvency II framework requirements
- Understand the accounting policy for the recognition of receivables from recourses and their valuation under Solvency II, evaluating the compliance, verification of application of the fair value, verification of the relevance of the assumptions used for fair value computations and the mathematical accuracy of the fair value computations in accordance with the Solvency II framework
- Obtain the detail of all the receivables from recourses as at 30 June 2020 and as at 31 December 2019, at the level of each recourse (item) and reconcile the total receivables from recourses from the respective details with the corresponding accounts from trial balance as at 30 June 2020 and 31 December 2019
- Perform analytical review by comparing the balances of receivables from recourses as at 30 June 2020 and as at 31 December 2019 per LoBs, DPD intervals and investigated unusual, opposite/contradictory variations.

Sample
In order to assess the reliability, quality, sufficiency and relevance of data the auditor will select a sample of receivables from recourses as at 30 June 2020 namely: top 5 recourses from each LoB (for the lines of business achieving coverage of minimum 80% from the total receivables from recourses.
For the selected sample, the auditor shall at minimum:
- Obtain for these recourses the supporting documents for the recorded receivable and match the information from the supporting documents with the information contained in the details related to item, including amount
- Verify the accuracy of the computation of the ageing of receivable and investigate any unusual discrepancies
- In case of any differences found between supporting documents and details received or computation differences the auditor should quantify the impact (including consideration as to whether to extent the sample and/or the procedures to be performed) and determine if any adjustment is needed.

Valuation of receivables
The auditor is required to:

- Obtain management approach and the accounting policy related to allowance (impairment) for receivables from recourses.
- Obtain the computation of the allowance for receivables from recourses at the level of each policy as of 30 June 2020 and reconcile the total allowance from the respective detail received with the corresponding accounts from trial balance as at 30 June 2020
- Correlate the computation of allowance for receivables from recourses as of 30 June 2020 with the accounting policy related to the provisioning of receivables from recourses and investigate any inconsistencies/discrepancies

- Review the historical evidence where available in respect of the receivable from recourses collection and assess the adequacy of the method use by the undertaking:
    - Obtain the detail with all the cash collections from the period 1 January 2020 to 31 August 2020 for the recourses related to the receivables in balance as of 31 December 2019 at the level of each recourses/counterparty. Select a sample of 5 random items from each LoB (for the lines of business achieving coverage of minimum 80% from the total receivables from recourses) presented in the collections detail and compare it with the bank statement in order to review the accuracy of the detail received
    - Perform own analysis in terms of ageing and subsequent cash collected by comparing the amounts receivable as at 31 December 2019, on intervals of overdue days as following: 0 DPD, 1-30 DPD, 31-60 DPD, 61-90 DPD, 90-180 DPD and 181+DPD, with the cash collected during 1 January 2020 - 31 August 2020, matched on each interval. The analysis will be made in relative terms by computing the collection ratios per DPD buckets
    - For the receivables from recourses as at 30 June 2020 DPD apply the collection ratios for each DPD bucket and compare with the provision booked by the undertaking as of 30 June 2020. The auditor should assess if any adjustment is required

The auditor should exercise professional judgment to determine whether other assumptions are relevant for the computation of the provision.

Analysis should also be performed using segmentations the auditor considers relevant due to different collection patterns: recourses from individuals, recourses from companies, external recourses from green card or recourse from insurance undertakings.

In cases where the recourse is under litigation the auditor should verify whether in the computation of the allowance the estimated future litigation costs were appropriately taken in consideration by the undertaking.

In cases where the period of time for collecting the recourses is higher than 1 year the auditor should verify whether the future cash flows were appropriately discounted by the undertaking.

The auditor should evaluate whether in cases where financial and economic information available on the market was incorporated in the computation of the allowance for receivables from recourses (eg information regarding counterparties financial difficulties).

3.3.2.9 Loans and mortgages

In accordance with the DR and final report EIOPA-BoS-15/113, the general fair value principles in IFRS 13 are consistent with Solvency II.

The auditors are required to:

- Obtain the accounting policy describing loans and mortgages recognition and valuation and compare it with the Solvency II framework requirements
- Obtain the detailed list of loans granted by the undertaking as at 30 June 2020 and reconcile the outstanding balances with the trial balance
- Obtain a schedule of changes/ movement in loans, detailing withdrawals of new loans, reimbursements of loans and interest payments during the period 1 January 2020 – 30 June 2020, understand the nature of any fluctuations and ensure they are reasonable when compared to new or existing loan agreements
- Assess the collectability of loans restructured/rescheduled, loans with extended maturities or loans with features outside the market practice. Specifically assess information about counterparty credit risk, based on publicly available information and/or internal credit analysis (at minimum the financial statements information) performed by the undertaking
- Review for reasonableness the calculations of accrued interest
- Send confirmation letters for entire loans exposure and review responses documentation as to amounts owed, terms, collateral, restrictions and the entity's compliance with the provisions of the agreements
- Assess the fair value computation performed by the undertaking (i.e. review assumptions used for discounting future cash flows).

  If loans are granted to related parties please consider also the procedures from the related parties section.

3.3.2.10 Cash and cash equivalents

In accordance with the DR and final report EIOPA-BoS-15/113, the fair value measurement of IAS 39 and IFRS 13 is consistent with Solvency II.

The auditors are required to:

- Obtain the accounting policy for Cash and cash equivalents recognition and valuation and compare it with the Solvency II framework requirements
- Request the investment policy statement approved by the undertaking and its subsequent amendments valid at the reference date
- Request a breakdown containing all the investments and cash and cash equivalents held by the undertaking (with appropriate details) and reconcile the respective detail with corresponding accounts and the Solvency II balance sheet. Investigate differences, considering the materiality provisions described in 2.3, if any
- Compare the investments held by the undertaking against its investment policy and investigate any deviations
- Request confirmation letter from financial institutions regarding current accounts and other cash equivalents (balances, liens and restricted cash) and compare the confirmation letter details against the breakdown received and investigate any differences, considering the materiality provisions described in 2.3
- Verify the availability of the cash and cash equivalents using the public available sources (for cash used as liens or other restricted cash)
- Review the valuation of the foreign currencies balances as well as the accrued interest and investigate any differences, considering the materiality provisions described in 2.3
- Request the supporting documents for the inventory procedures for any other cash item held by the undertaking (other than current accounts and other cash equivalents held at financial institutions) and compare against the breakdown. Investigate any differences, considering the materiality provisions described in 2.3.
- Assess the counterparty credit risk for each financial institution and propose adjustments if recoverability issues are encountered.

3.3.2.11 Other assets / receivables (trade, not insurance)

In accordance with the DR and final report EIOPA-BoS-15/113, the general fair value principles in IFRS 13 are consistent with Solvency II.

The auditors are required to:

- Obtain the accounting policy for other assets and receivables recognition and valuation and compare it with the Solvency II framework requirements
- Obtain an understanding of the items recorded in this caption and assess their recoverability.

3.3.2.12 Contingent liabilities

In accordance with Article 11 of the DR and the final report EIOPA-BoS-15/113, insurance undertakings shall recognise material contingent liabilities, as defined in IAS 37 and endorsed by the Commission in accordance with Regulation (EC) No 1606/2002, as liabilities. Contingent liabilities shall be material where information about the current or potential size or nature of those liabilities could influence the decision-making or judgement of the intended user of that information, including the supervisory authorities. Contingent liabilities shall be valued based on the expected present value of future cash-flows required to settle the contingent liability over the lifetime of that contingent liability, using the basic risk-free interest rate term structure.

In order to identify contingent liabilities that have to be recognized as liabilities, the auditors shall perform the following procedures:

- Obtain the list of litigations in which the undertaking is defendant as at 30 June 2020 including an assessment of the outcome, and inquire the management about the outcome of the litigations in which there may be a potential liability for the undertaking
- Request confirmation letters from all external lawyers who collaborated with the undertaking during 2019 and 2020 until the date of review
- Obtain and review the minutes of the meetings for General Shareholders' Meetings, Board of Directors and any other relevant committee of the undertaking (i.e. Audit Committee, Executive Committee, etc.) during 2019 and 2020 until the date of review
- Obtain and review correspondence with supervisory or fiscal authorities during 2019 and 2020 until 31 July 2020
- Obtain the list of contracts and agreements and using professional judgment select for review contracts which could prone to potential contingent liabilities.

3.3.2.13 Provisions other than technical provisions

In accordance with the DR and the final report EIOPA-BoS-15/113, IAS 37 has consistent measurement principles for Provisions other than technical provisions.

The auditors are required to:

- Obtain the accounting policy describing Provisions other than technical provisions recognition and valuation and compare it with the Solvency II framework requirements
- Obtain an understanding of the items recorded in this caption and assess their valuation.

Procedures performed for 3.3.2.12 Contingent liabilities are also relevant for this caption.

3.3.2.14 Debts owed to credit institutions

In accordance with the DR and final report EIOPA-BoS-15/113, the fair value measurement of IAS 39 and IFRS 13 is consistent with Solvency II. In case of financial liabilities adjustments might be needed compared to IFRS, if the fair value includes changes in own credit standing in subsequent periods as there should be no subsequent adjustments to take account of the change in own credit standing of the insurance undertaking after initial recognition.

The auditors are required to:

- Obtain the accounting policy for Debts owed to credit institutions' recognition and valuation and compare it with the Solvency II framework requirements

- Request a breakdown containing all the debts owed to credit institutions and reconcile the respective detail with corresponding accounts and the Solvency II balance sheet and investigate differences, considering the materiality provisions described in 2.3, if any.
- Request confirmation letter from all counterparty financial institutions and compare the confirmation letter details against the breakdown received. Investigate any differences, considering the materiality provisions described in 2.3
- Request the valuation of the debts owed to credit institutions as well as the agreements and any other supporting documents in order to understand the terms and conditions of the respective transactions
- Obtain the evidence for the valuation of the debts owed to credit institutions in accordance with the Solvency II framework and compare the supporting evidence against the breakdown and other information received from the undertaking
- Assess the reasonableness of the respective valuation, including the assumptions used, against the Solvency II requirements for this type of investments. Involve specialists/experts as needed, depending on the complexity of the calculations.

The auditor shall perform confirmation procedures of balances as of 31 December 2019 and 30 June 2020 to all financial institutions with which the undertaking had relationship during the period 31 December 2019 – 30 June 2020.

3.3.2.15 Financial liabilities other than debts owed to credit institutions

In accordance with the DR and final report EIOPA-BoS-15/113, the fair value measurement of IAS 39 and IFRS 13 is consistent with Solvency II. In case of financial liabilities adjustments might be needed compared to IFRS, if the fair value includes changes in own credit standing in subsequent periods as there should be no subsequent adjustments to take account of the change in own credit standing of the insurance undertaking after initial recognition.

The auditors are required to:

- Obtain the accounting policy for Financial liabilities other than debts owed to credit institutions' recognition and valuation and compare it with the Solvency II framework requirements
- Request a breakdown containing all the financial liabilities other than debts owed to credit institutions and reconcile the respective detail with corresponding accounts and the Solvency II balance sheet and investigate differences, considering the materiality provisions described in 2.3, if any
- Request confirmation letter from all counterparties (related parties or other parties with which the undertaking has financial liabilities) and compare the confirmation letter details against the breakdown received. Investigate any differences considering the materiality provisions described in 2.3
- Request the valuation of the financial liabilities other than debts owed to credit institutions as well as the agreements and any other supporting documents in order to understand the terms and conditions of the respective transactions
- Obtain the evidence for the valuation of the financial liabilities other than debts owed to credit institutions in accordance with the Solvency II framework and compare the supporting evidence against the breakdown and other information received from the undertaking
- Assess the reasonableness of the respective valuation, including the assumptions used, against the Solvency II requirements for this type of investments. Involve specialists/experts as needed, depending on the complexity of the calculations.

3.3.2.16 Intermediaries payables

In accordance with the DR and final report EIOPA-BoS-15/113, the general fair value principles presented in IFRS 13 are consistent with Solvency II.

The auditors are required to:

- Obtain the accounting policy describing intermediaries payables' recognition and valuation and compare it with the Solvency II framework requirements
- Obtain the breakdown of payables to intermediaries (broker/agents) as of 30 June 2020 and reconcile the respective detail with the corresponding accounts from trial balance as at 30 June 2020. Investigate differences, considering the materiality provisions described in 2.3, if any
- Review undertaking's reconciliation with intermediaries procedure as of 30 June 2020 and investigate unreconciled items considering the materiality provisions described in 2.3, if any
- Obtain the detail with all the payments from the period 1 July 2020 to 31 July 2020 related to the payables to intermediaries in balance as of 30 June 2020 at the level of each counterparty. Investigate payments which are higher than the liabilities presented in the breakdown of payables to intermediaries as of 30 June 2020
- Perform an understanding of the computation amounts payable to intermediary. Depending on the type of computation manual/automat, number of the staff involved, complexity of the formulas in the commissions schemes used on each line of business, the auditor should test the accuracy of the computations
- Perform an analytical review on the balances with intermediaries as of 30 June 2020 and 31 December 2019 per counterparty and investigate unusual variations. The auditor should use professional judgment to evaluate the results
- If the undertaking policy is to settled the commissions liabilities when the premium is cashed the auditor should performed a reasonability analysis of commissions payable to intermediaries which are not due as of 30 June 2020 based on the average commission ratios and the respective premium reserve as of 30 June 2020 by line of business. The analysis should be conducted in correlation also with the average commission ratios used.

3.3.2.17 Payables (trade, not insurance) and any other liabilities

In accordance with the DR and final report EIOPA-BoS-15/113, the general fair value principles presented in IFRS 13 are consistent with Solvency II.

The auditors are required to:

- Obtain the accounting policy describing other liabilities' recognition and valuation and compare it with the Solvency II framework requirements
- Obtain the breakdown of payables and of other liabilities as of 30 June 2020 and reconcile it with the corresponding accounts and the Solvency II balance sheet. Investigate differences, considering the materiality provisions described in 2.3, if any
- Perform analytical review for the payables and for other liabilities accounts by comparing balances as of 30 June 2020 and 31 December 2019 and identify variations which could signal that the undertaking has limited financial procedures for interim reporting and not all liabilities are computed and recorded as of 30 June 2020
- Depending on the materiality of the amounts presented in payables and in other liabilities the auditor should select liabilities representing minimum 80% of each balances as of 30 June 2020 and should verify the completeness of the liabilities by performing a search for unrecorded liabilities at 30 June 2020 by selecting top 20 subsequent related disbursements in July 2020
- Perform a review of the trade payables breakdown and search for unusual items (e.g., significant debit balances in the trade payables sub ledger or other unexpected amounts) to verify proper classification and valuation
- For tax liability accounts the auditor shall review the computations of significant liabilities (income, VAT, withholding, local taxes representing at least 50% of the balance) in balance as at 30 June 2020 and reconcile the computations with the respective accounts; review the latest fiscal authorities control report and assess if there are any implications on the current tax liabilities; review whether the undertaking was subject to fees, penalties or rectification of previous tax declaration and assess if there are any implications on the current tax liabilities. It should be involved tax specialists depending on the complexity of tax items
- For payroll related liabilities the auditor should obtain the payroll register as at 30 June 2020 and reconcile it with the respective accounts in the trial balance. Obtain payroll payments in July 2020 and compare it to the payroll liabilities recorded in the trial balance as at 30 June 2020

- For any other liabilities not captured above the auditor should refer to Article 75 of the Solvency II Directive as follows: liabilities should be valued at the amount for which they could be transferred, or settled, between knowledgeable willing parties in an arm's length transaction.

3.3.3 Related parties' review

Related parties are defined in accordance with IFRS as adopted by EU, by the IAS 24 Related parties disclosures.

The scope of this review is to review accuracy of the identification of related parties of the undertaking as well as the nature of the relationship between the undertaking and these related parties, the type and scope of the transactions performed between these parties, and controls in order to identify and disclose the intra-group relations.

The auditor may request any other appropriate information, details or supporting documents based on their professional judgment in order to be able to conclude and to quantify any potential impact from related parties' transactions.

In order to perform the review, the auditors are required to perform the following procedures:
- Obtain the list of related parties of the undertaking
- Interview the management concerning: the identity of the undertaking's related parties, including changes from prior periods, the nature of the relationship between the undertaking and these related parties and the type and purpose of the transactions performed with these parties
- Interview the management and other key personnel in the undertaking concerning the existing controls in order to identify the related party relations and transactions according to the applicable financial reporting framework, the authorization and approval of these related party transactions and agreements, authorization and approval of related party transactions outside the undertaking's scope of business
- Use its professional judgment in order to identify any other related party and transactions:
    - by inspecting the available information and documents throughout the procedures performed during the review period, by reading the minutes of the general shareholders' meetings, board of directors and any other committees or boards that are relevant for the management of the undertaking's activity
    - performing independent research using information publicly available in order to review the list of shareholdings of key management personnel, administrators or any other relevant person to the undertaking and its activity
- Obtain the details regarding the outstanding balances with related parties as at 31 December 2019 and 30 June 2020, and the details of all transactions during 2019 year and January-March 2020
- Obtain the details concerning guarantees received or given to/from related parties as at 30 June 2020 and 31 December 2019
- Reconcile all breakdowns/details obtained from the undertaking with the corresponding trial balance accounts/extracts from accounts at the respective dates, as applicable
- Understand and review the reconciliation process with related parties of the undertaking at the respective dates, as well as to investigate any material differences between the amounts reported by the undertaking and the ones reported/confirmed/reconciled by the related party
- Request confirmation letters from all related parties with which the undertaking had transactions during 2019 and 2020 and compare the confirmation letters with the details received from the undertaking. Investigate any differences considering the materiality provisions described in 2.3
- Understand and review the transactions performed with the related parties regarding the sale of the investments or other assets and purchase/repurchase of investments or other assets
- For the top 10 related parties outstanding balances as at reference date and top 10 related parties transactions during the period 2019-2020 until the reference date, the auditor is required to inspect and review the underlying contracts and agreements and to assess the business reasoning (or its absence) within the transactions, the transaction terms and whether the transactions are performed on terms equivalent to the

market ones, whether the transactions were appropriately booked and disclosed in accordance with the applicable financial reporting framework and whether the transactions were appropriately authorized and approved. In cases when this selection does not cover at least 50% from outstanding balances and at least 50% from the total transactions performed in the period Jan 2019 – June 2020, the auditor is required to supplement the selection in order to achieve the minimum coverage

- Assess recoverability of the balances with related parties taking into account the ageing, subsequent settlement, the existing information about the financial situation of the counterparty, other public information, if available
- Consider any subsequent event relevant to the analysis performed, including subsequent settlement of transactions, correspondence with related parties, or any other relevant information as applicable.

Output:

- Findings and recommendations for remedial actions
- Conclusion regarding impact of operations and transactions of natural and legal persons with close links to the insurance undertaking.

4 Own Funds

In accordance to Article 87 of the Solvency II Directive, Own funds shall comprise the sum of basic own funds and ancillary own funds. Basic own funds are defined as the assets minus the liabilities while ancillary own funds are capital instruments that can be called up to absorb losses, specifically including unpaid share capital, letters of credit, guarantees and any other legally binding commitment. Own-fund items shall be classified into three tiers. The classification of those items shall depend upon whether they are basic own fund or ancillary own-fund. Own funds could be split between eligible and non - eligible.

The auditor shall perform the following procedures:

- Verify that, as specified in the Article 88 of the Solvency II Directive, the Basic Own Funds consist of:
  - The excess of assets over liabilities, which shall be reduced by the amount of own shares held by the insurance undertaking, and
  - subordinated liabilities
- Verify that in case that the insurance undertaking holds Ancillary Own Funds, as specified in the Article 90 of the Solvency II Directive, a prior supervisory approval is required
- Verify that the Ancillary Own Funds consist of
  - Unpaid share capital or initial fund that has not been called up
  - Letters of credit and guarantees
  - Any other legally binding commitments received by insurance undertakings, other than Basic own funds
- Assess the accuracy of Tiering by verifying that:
  - The classification into Tiers is consistent with Articles of 69, 71 - 78 of the DR and Articles 93 and 94 of the Solvency II Directive
- With regards to the SCR, verify that:
  - The eligible amount of Tier 1 items shall be at least one half of the SCR.
  - The eligible amount of Tier 3 items shall be less than 15% of the SCR.
  - The eligible amount of own funds to cover the SCR shall be equal to the sum of the amount of Tier 1, the eligible amount of Tier 2 and the eligible amount of Tier 3
  - The sum of the eligible amounts of Tier 2 and Tier 3 items shall not exceed 50% of the SCR
- With regards to the MCR, verify that:
  - The eligible amount of Tier 1 items shall be at least 80% of the MCR
  - The eligible amounts of Tier 2 items shall not exceed 20% of the MCR
  - The eligible amount of basic own funds to cover the MCR shall be equal to the sum of the amount of Tier 1 and the eligible amount of basic own-fund items classified in Tier 2
- The auditors shall verify for correctness and compliance with the regulatory requirements of the Own Funds items.

Output:

- Conclusion over the Own funds correctness and compliance with the regulatory requirements providing the proper recalculations when deemed necessary

5 Capital Requirements

5.1 Basic Solvency Capital Requirements and Operational Risk Capital Requirements

The Basic Solvency Capital Requirements (BSCR) is the SCR before any adjustment, combining capital requirements for six risk modules. The auditor shall:

- Verify that the appropriate correlation matrix has been used for the aggregation of the risk sub-modules
- For the undertakings that performed SCR calculation at the reference date, verify for correctness and compliance with the regulatory requirements providing the proper recalculations when deemed necessary.
- For the undertakings that did not perform SCR calculation at the reference date, verify for correctness and compliance with the regulatory requirements of the last calculated SCR and perform SCR calculation at the reference date.
- Form a view about the appropriateness of the IT tools used for the calculation of capital requirements.

5.1.1 Market Risk

According to the Articles 164 – 188 of the DR the Market risk consists of the following six market risk sub-modules:

- Interest Rate
- Spread
- Equity
- Property
- Currency
- Concentration

The auditor shall verify that the appropriate correlation matrix has been used for the aggregation of the market risk sub-modules.

5.1.1.1 Interest Rate Risk Sub-module

Interest rate risk exists for all assets and liabilities which are sensitive to changes in the term structure of interest rates or interest rate volatility, whether valued by mark-to-model or mark-to-market techniques. The auditor shall:

- Identify and reconcile the exposures included in the insurance undertaking's portfolio that are sensitive to changes in the term structure of interest rates with the Solvency II balance sheet
- Verify that the insurance undertaking for the assets other than the reinsurance recoverables valuation has used the risk free yield curves as of the reporting period without applying a VA or a MA
- Verify that the method used for the assets revaluation is appropriate
- Verify that the appropriate risk free yield curve used is in line with the currency that the insurance portfolio's assets have been denominated.

5.1.1.2 Spread Risk Sub-module

Spread risk results from the sensitivity of the value of assets, liabilities and financial instruments to changes in the level or in the volatility of credit spreads over the risk-free interest rate term structure. The auditor shall:

- Identify and reconcile the exposures included in the insurance undertaking's portfolio that are sensitive to changes in the level or in the volatility of credit spreads over the risk-free interest rate term structure with the Solvency II balance sheet
- Verify the correctness of the applicable asset's modified duration
- Verify the application of the appropriate risk factor.

5.1.1.3 Equity Risk Sub-module

Equity risk arises from the level or volatility of market prices for equities. Exposure to equity risk refers to all assets and liabilities whose value is sensitive to changes in equity prices. The auditor shall:

- Identify and reconcile the exposures included in the insurance undertaking's portfolio whose value is sensitive to changes in equity prices
- Assess the appropriateness of the type I and type II exposures
- Verify the parameters used for the equity risk calculation.

5.1.1.4 Property Risk Sub-module

Property risk arises as a result of sensitivity of assets, liabilities and financial investments to the level or volatility of market prices of property. The auditor shall:

- Identify and reconcile the exposures included in the insurance undertaking's portfolio whose value depends on the volatility of market prices of property with the Solvency II balance sheet
- Verify the parameter used for the property risk calculation.

5.1.1.5 Currency Risk Sub-module

Currency risk arises from changes in the level or volatility of currency exchange rates and affects the assets and liabilities denominated in a currency other than the domestic. The auditor shall:

- Identify the assets and liabilities denominated in a currency other than the domestic
- Verify the parameters used for the currency risk calculation focusing on the currencies pegged to Euro.

5.1.1.6 Concentration Risk Sub-module

The scope of the concentration risk sub-module extends to assets considered in the equity, spread risk and property risk sub-modules, and excludes assets covered by the counterparty default risk module in order to avoid any overlap between both elements of the standard calculation of the SCR.

The auditor shall:

- Identify the exposures that should be included in the concentration risk and to be reconciled with the respective accounts in the Solvency II balance sheet
- Verify the excess exposures and the risk factors for the concentration risk calculation
- Verify that the risk capital of the appropriate exposures has been set to zero.

5.1.2 Counterparty Default Risk

The counterparty default risk module shall be obtained according to the section 6 of the DR, which establishes the definition, the formula for the calculation of the counterparty default risk and the approved simplifications.
The counterparty default risk module reflects possible losses due to unexpected default of counterparties and debtors of the undertakings over the forthcoming twelve months.

The following procedures shall be performed by the auditor:

- Justification that the undertaking has established and documented that the SCR for counterparty default risk has been calculated for all balance sheet items to which this risk applies, including the determination of the risk mitigating effect based on Article 196 of the DR
- Verification that the undertaking has established and documented that the differentiation into Type 1 and Type 2 exposures has been made in accordance with the DR, as well as that the undertaking has clearly documented the reconciliation to the relevant balance sheet items
- Verification of whether the undertaking has performed an ageing analysis
- Performance of reconciliation between the ageing analysis and the Solvency II balance sheet (Type 2)
- Review of the underlying methodology regarding the netting down of the receivables
- Description of which assets are included under Type 1 and Type 2 exposures and justification of these items with the economic balance sheet
- Justification that the undertaking has established and documented that the exposure to each counterparty has been identified, as well as that multiple exposures to the same counterparty are considered as one single name exposure, according to Article 190 of the DR
- Justification that mortgage loans in the balance sheet have been analyzed to verify that the portfolio meets the characteristics of Article 191 of the DR, i.e. that the capital requirement for mortgage loan shall be calculated under this module
- Identification of key internal controls in the whole process of calculating the counterparty default risk
- Regarding Type 1 exposures, request of a description of each counterparty regarding the determination of the loss given default, which shall include the calculation of the risk mitigation effect, the best estimate of the recoverables, as well as the value of the collateral
- Regarding Type 2 exposures, request of a description of each counterparty regarding the probability of default based on the credit assessment by a nominated ECAI and with special attention when such a credit assessment is not available
- Review of the description of the risk mitigation techniques that may be in force
- Verification of whether the second best rating is considered in the calculation.

5.1.3 Non-Life / Health NSLT Underwriting Risk

Non-life and Health NSLT underwriting risk is the risk arising from Non-Life / Health NSLT insurance obligations, in relation to the perils covered and the processes used in the conduct of business. Non-life / Health NSLT underwriting risk also includes the risk resulting from uncertainty included in assumptions about exercise of policyholder options like renewal or termination options.
The Non-Life / Health NSLT underwriting risk module takes account of the uncertainty in the results of undertakings related to existing (re)insurance obligations as well as to the new business expected to be written over the following 12 months.
The auditor shall:

- Verify that the appropriate correlation matrix is used for the aggregation of the Non-Life / Health NSLT Underwriting risk.

According to the Articles 114 – 135 and 144 - 163 of the DR the Non-Life risk and Health NSLT risks consist of the following three risk sub-modules:

- Premium and Reserve Risk
- Lapse Risk
- CAT Risk

5.1.3.1 Premium and Reserve Risk Sub-module

Premium risk relates to the uncertainty about the volume of business to be written and the sufficiency of the premium rates at which it will be written. Reserve risk relates to the uncertainty about the amount and timing of claim settlement for existing liabilities.

The auditor shall:

- Verify that for the Premium and Reserve risk calculation the direct business lines of business have been aggregated with the respective indirect proportional business
- Verify that the non-proportional indirect business has been allocated to the three relevant lines of business in an appropriate way
- Assess the appropriateness of the premium volume measures
- Verify that the volume measures for the reserve risk calculation is the net of reinsurance BEL
- Verify that the insurance undertaking uses the correct standard deviations for both Premium Risk and Reserve Risk
- Verify the need for the non-proportional adjustment factor application taking into account the characteristics of the insurance undertaking's reinsurance structure
- Verify that the Geographical diversification factor has been calculated appropriately
- Verify that the appropriate correlation matrix has been used by the insurance undertaking.

5.1.3.2 Lapse Risk Sub-module

Lapse risk relates to the risk that future profit already taken into account does not materialize.

The auditor shall:

-
- Require evidence/justification that the undertaking has established and documented that the lapse risk sub-module has been calculated for all (re)insurance policies subject to lapse risk
- Verify that the lapse risk has been applied on the insurance undertaking's profitable business
- Verify that the discontinuance of 40% of the insurance policies for which discontinuance would result in an increase of technical provisions (excluding risk margin)
- Verify that for inward reinsurance a decrease of 40% of the number of insurance or reinsurance contracts underwritten used in the calculation of technical provisions.

5.1.3.3 Non-Life CAT Risk Sub-module

CAT risk relates to catastrophe risk which is defined as the risk of loss, or of adverse change in the value of insurance liabilities, resulting from significant uncertainty of pricing and provisioning assumptions related to extreme or exceptional events. CAT risks stem from extreme or irregular events that are not sufficiently captured by the capital requirements for premium and reserve risk. CAT risk consists of the following risk sub-modules:

- Natural Catastrophe
- Non-Proportional property reinsurance
- Man-made CAT
- Other Non-Life CAT

The auditor shall:

- Verify that the insurance undertaking has established and documented that the SCR for non-life catastrophe risk has been calculated appropriately
- Verify that the insurance undertaking has established and that there is visible evidence that the input for the calculation has been reconciled to the policy and/or claims sub ledger systems and that differences have been explained and resolved
- Verify that the insurance undertaking has established and documented that the outcome of the calculation has been assessed for reasonableness by comparing it by the outcome for previous periods
- Verify that the reinsurance mitigation is applied appropriately.

5.1.3.4 Health CAT Risk

The health catastrophe risk capital requirement covers the risk of loss, or of adverse change in the value of insurance liabilities, resulting from the significant uncertainty of pricing and provisioning assumptions related to outbreaks of major epidemics, as well as the unusual accumulation of risks under such extreme circumstances. The standardized scenarios for health catastrophes considered in the Quantitative Assessment are:

- Mass Accident
- Concentration Scenario
- Pandemic Scenario

The auditor shall:

- Verify that the insurance undertaking has established and documented that the SCR for health catastrophe risk has been calculated appropriately
- Verify that the insurance undertaking has established and documented that there is visible evidence that the input for the calculation has been reconciled to the policy and/or claims sub ledger systems and that discrepancies have been explained and resolved
- Verify that the reinsurance mitigation is applied appropriately.

5.1.4 Life / Health SLT Underwriting Risk

The principles governing life and health SLT underwriting risk module shall be obtained according to the Articles 136 – 143, 151 - 163 of the DR, which establish the definitions, the formulas of calculation, the respective correlation matrix and the approved simplifications.
The following risk sub – modules are included in the life underwriting risk:

- Mortality risk sub-module
- Longevity risk sub-module
- Disability – morbidity risk sub – module
- Lapse risk sub – module
- Revision risk sub – module
- Life catastrophe risk sub - module

The following procedures shall be performed by the auditor:

- Justification that the undertaking has established and documented which sub - modules are considered applicable
- Justification that the undertaking has established and documented that the SCR for life underwriting risk has been correctly calculated based on the correct correlation matrix and calculation principles as described in the DR
- Justification that the undertaking has established and documented that an assessment has been made in order to ensure that outcome of the SCR calculation is valid

- Justification that the undertaking has established and documented that the criteria for simplification have been met where simplified formulas are applied for one or several sub-modules
- Identification of key internal controls in the whole process of calculating life underwriting risk.

5.1.4.1 Mortality Risk

Mortality risk is the risk of loss, or of adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of mortality rates, where an increase in the mortality rate leads to an increase in the value of insurance liabilities.

The following procedures shall be performed by the auditor:

- Justification that the undertaking has established and documented which (re)insurance policies are subject to mortality risk
- Justification that the undertaking has established and documented that the life mortality risk sub-module has been calculated for all (re)insurance policies subject to the life mortality risk
- Justification that the application of mortality scenario shock is consistent with the DR
- A statement exists that the "zero" floor is applied when the "natural" hedge per homogenous risk group is used in determining the mortality capital requirement in case the undertaking provides benefits both in case of death and survival. If the "zero floor" is not applied, an assessment exists regarding the materiality impact of not applying it
- Verification that the following requirements are met when using simplified methods:
    - The simplification is proportionate to the nature, scale and complexity of the risks that the undertaking faces
    - The standard calculation of the mortality risk sub-module is an undue burden for the undertaking
- Verification that the correct formula of simplification has been used based on the DR.

5.1.4.2 Longevity Risk

Longevity risk is associated with the risk of loss, or of adverse change in the value of insurance liabilities, resulting from changes in the level, trend, or volatility of mortality rates, where a decrease in the mortality rate leads to an increase in the value of insurance liabilities.

The following procedures shall be performed by the auditor:

- Justification that the undertaking has established and documented which (re)insurance policies are subject to longevity risk
- Justification that the undertaking has established and documented that the longevity risk sub-module has been calculated for all (re)insurance policies subject to longevity risk
- Justification that the application of longevity scenario shock is consistent with the DR
- A statement exists that the "zero" floor is applied when the "natural" hedge per homogenous risk group is used in determining the longevity capital requirement in case the undertaking provides benefits both in case of death and survival. If the "zero floor" is not applied, an assessment exists regarding the materiality impact of not applying it
- Verification that the following requirements are met when using simplified methods:
    - The simplification is proportionate to the nature, scale and complexity of the risks that the undertaking faces
    - The standard calculation of the longevity risk sub-module is an undue burden for the undertaking
- Verification that the correct formula of simplification has been used based on the DR.

5.1.4.3 Disability – morbidity Risk

Disability-morbidity risk is the risk of loss, or of adverse changes in the value of insurance liabilities, resulting from changes in the level, trend or volatility of disability and morbidity rates.

The following procedures shall be performed by the auditor:

- Justification that the undertaking has established and documented that the disability-morbidity risk submodule has been calculated for all (re)insurance policies subject to disability-morbidity risk
- Justification that the application of disability – morbidity shock is consistent with the DR
- Verification that the following requirements are met when using simplified methods:
  - The simplification is proportionate to the nature, scale and complexity of the risks that the undertaking faces
  - The standard calculation of the longevity risk sub-module is an undue burden for the undertaking
- Verification that the correct formula of simplification has been used based on the DR.

5.1.4.4 Lapse Risk

Lapse risk is the risk of loss or adverse change in liabilities due to a change in the expected exercise rates of policyholder options.

The following procedures shall be performed by the auditor:

- Justification that the undertaking has established and documented that the life-lapse risk sub-module has been calculated for all (re)insurance policies subject to lapse risk
- Justification that the application of lapse up scenario shock and lapse down scenario shock is consistent with the DR and calculated on a policy by policy basis
- Verification that the following requirements are met when using simplified methods:
  - The simplification is proportionate to the nature, scale and complexity of the risks that the undertaking faces
  - The standard calculation of the longevity risk sub-module is an undue burden for the undertaking
- An assessment/description exists regarding the exercise rate of the lapses due cancellation options in the contracts
- Review of a list with the description of the existing policyholder options and whether these policyholder options are modelled
- Review of the documentation that describes whether an increase or a decrease in the lapse assumption would lead to an increase or decrease in the technical provisions
- Regarding the lapse mass, validation that the lapse mass scenario shock is applied to all insurance policies with positive surrender strain on a policy by policy basis
- Justification that the floor of zero has been applied in case of the results of the scenario are favorable to the undertaking.

5.1.4.5 Expense Risk

Expense risk arises from the variation in the expenses incurred in servicing (re)insurance contracts.

The following procedures shall be performed by the auditor:

- Justification that the undertaking has established and documented that the life expense risk sub-module has been calculated for all (re)insurance policies subject to expense risk
- Justification that the undertaking has established and documented that the life expense risk sub-module has been calculated for all expenses considered to be relevant by the relevant management, taking account of realistic management action relating to capital restrictions
- Justification that the application of expense scenario shock is consistent with the DR
- Performance of reconciliation is made in which the expense cash flows are allocated to fixed, adjustable and other. In case of adjustable expenses, management actions are determined.

- Verification that the following requirements are met when using simplified methods:
  - The simplification is proportionate to the nature, scale and complexity of the risks that the undertaking faces
  - The standard calculation of the longevity risk sub-module is an undue burden for the undertaking
- Verification that the correct formula of simplification has been used based on the DR.

5.1.4.6 Revision Risk

Revision risk is the risk of loss, or of adverse change in the value of (re)insurance liabilities, resulting from fluctuations in the level, trend, or volatility of revision rates applied to annuities, due to changes in the legal environment or in the state of health of the person insured.

The following procedures shall be performed by the auditor:

- Justification that the undertaking has established and documented which insurance policies are subject to revision risk
- Justification that the undertaking has established and documented that the life revision risk sub-module has been calculated for all (re)insurance policies subject to the life-revision risk
- Justification that the undertaking has established and documented that the shock, for the life-revision risk, as prescribed in DR has been applied.

5.1.4.7 Life catastrophe Risk

Life catastrophe risk is the risk of loss, or of adverse change in the value of insurance liabilities, resulting from the significant uncertainty of pricing and provisioning assumptions related to extreme or irregular events.

The following procedures shall be performed by the auditor:

- Justification that the undertaking has established and documented that the life catastrophe risk sub-module has been calculated for all (re)insurance policies subject to catastrophe risk
- Justification that the application of CAT scenario shock is consistent with the DR
- Verification that the following requirements are met when using simplified methods:
  - The simplification is proportionate to the nature, scale and complexity of the risks that the undertaking faces
  - The standard calculation of the longevity risk sub-module is an undue burden for the undertaking
- Verification that the correct formula of simplification has been used based on the DR.

5.1.5 Operational Risk

The operational risk shall be obtained according to the Article 204 of the DR, which establishes the definition, the formula for the calculation of the operational risk and determination of its individual components.
Operational risk is the risk of loss arising from inadequate or failed internal processes, personnel or systems, or from external events.

The following procedures shall be performed by the auditor:

- Justification that the undertaking has established and documented that the required capital for operational risk is based on Article 204 of the DR (including among others the risk margin, reinsurance and SPVs)
- Performance of reconciliation of premiums and technical provisions as presented in the appropriate lines of business with the formula of calculation
- Performance of reconciliation between the expense cash flows included in the best estimate of the unit linked type products and the factor Exp_{UL} based on the respective formula
- Verification that the factor Exp_{UL} excludes acquisition expenses

- Verification that the calculation of the technical provisions exclude the risk margin and without deduction of recoverables from reinsurance contracts and special purpose vehicles in order to avoid circularity issues.

5.1.6 Where a Partial Internal Model (PIM) is used

In case a PIM is used the following procedures shall be performed by the auditor:

- Check that the model documentation is up-to-date, with clear roles and processes
- Assess, considering that the PIM should be regularly validated by an independent team with findings reported, whether the report is reflecting appropriately the findings and if there is a proper follow up by the undertaking
- Check that the required assessment on the appropriateness of the PIM and standard formula in regards the undertaking's risk profile is performed, at a minimum during the ORSA process
- Assess, considering that the Administrative management or supervisory board should understand the model and should make use of it in its decision-making, whether uses of the model are adequately documented, e.g. in minutes of boards and committee meetings
- Assess whether the integration of the PIM into the standard formula is applied in compliance with the method approved by the supervisor. This does not require an assessment of the appropriateness of the design surrounding the integration techniques considering that it was evaluated and approved by the supervisory authority
- Verify the internal controls supporting the integration of the PIM into the standard formula, and assess the effectiveness of those internal controls, including whether internal validation processes, change management procedures, data quality requirements and other governance measures as approved by the supervisory authority are working in line with the relevant requirements;
- Verify whether the changes made by the undertaking to the model are reported to the supervisor and assess whether changes were classified as minor or major according to the approved policy model change. In case of major changes, assess whether the supervisor's decision for approval is reflected in the model changes and whether the approved model has been used for the SCR calculations. In case of minor changes assess whether those changes have been implemented in compliance with the approved policy model change
- Assess the SCR computation, including quality of data used. This includes checking that all the involved calculation methods follows the model documentation, and vice-versa, e.g. collection, storage, use and treatment of the input data; calibration(s) and expert judgement(s) needed for the model; calculations steps; collection, storage, use and treatment of the outcomes of the model.

5.2 Loss Absorbing Capacity of deferred taxes – LAC DT - and technical provisions – LAC TP

According to the Article 108 of the Solvency II Directive the adjustment for the loss-absorbing capacity of deferred taxes and technical provision shall reflect potential compensation of unexpected losses through a simultaneous decrease in deferred taxes or technical provisions or a combination of the two.

For the assessment of LAC DT, the auditor shall perform the following procedures:

- Check the existence of the recoverability analysis
- Review the projected shocked P&L statements for the business plan period and check the reasonability of the assumptions used for the projection
- Check that for the determination of the loss-absorbing capacity of deferred taxes the deferred taxes amount already presented in the Solvency II balance sheet has been covered by the future profitability
- Verify that the loss-absorbing capacity of deferred taxes does not exceed the tax amount resulting from the relevant profitability
- Confirm that the adapted tax rate used is appropriate
- Verify that the Solvency Capital Requirements used in the calculation of the loss absorbing capacity of deferred taxes is appropriate
- Ensure that the maximum amount does not exceed (tax rate * SCR).

For the assessment of LAC TP the auditor shall perform the following procedures:

- Review the cash-flows used considering the Solvency II requirements and guidance when calculating the impact of a scenario on the basic own funds
- Verify the method used for determining the capital requirement of the sub-modules in the calculation of the BSCR
- Verify the determination of the stress impact on future discretionary benefits
- Review the assumptions on future management actions.

5.3 Ring Fenced Funds

As introduced in the DR, Ring-Fenced Funds (RFF) are arrangements where an identified set of assets and liabilities are managed as though they were a separate undertaking and should not include conventional index-linked, unit-linked or reinsurance business. The reduced transferability of the assets of an RFF should be reflected in the calculation of the excess of assets over the liabilities of the insurance undertaking.

Considering Articles 80-81, 216-217 of the DR, the auditor shall perform the following procedures:

- Verify that the insurance undertaking has assessed whether any own fund items have a reduced capacity to fully absorb losses on a going concern basis due to their lack of transferability
- Verify that the insurance undertaking has identified all assets, liabilities and own funds subject to the arrangement giving rise to a RFF
- Verify that the basic own funds at the level of the RFF are set as restricted own–fund items
- Ensure that the insurance undertaking has calculated a notional SCR for each ring- fenced fund in the same manner as if those RFF and the remaining part of the insurance undertaking were separate undertakings
- Verify that the calculation of the RFF is in accordance with the applicable methodology
- Ensure that the total SCR of the insurance undertaking is derived as the sum of the RFF and the non - RFF parts, in the sense that there is no diversification between those parts
- Assess the materiality level of the RFF by considering the following:
    - The nature of the risks arising from or covered by the RFF
    - The nature of the assets and liabilities within the RFF
    - The amount of restricted own funds within the ring-fenced fund, the volatility of those amounts over time and the proportion of total own funds represented by restricted own funds
    - The proportion of the insurance undertaking's total assets and capital requirements that the RFF represents, individually or combined with other RFF
    - The likely impact of the RFF on the calculation of the SCR due to the reduced scope for risk diversification
- In case that the RFF is considered immaterial, allow for exclusion of the total amount of restricted own-fund items from the amount eligible to cover the SCR and the MCR.

5.4 Minimum Capital Requirements

According to the Articles 248 – 253 of the DR the Minimum Capital Requirements (MCR) calculation depends on the nature of the business of the insurance undertaking.

The auditor shall:

- Understand the type of the insurance undertaking
- Understand the business written by the insurance undertaking in order the Absolute floor of the MCR to be determined in accordance with the Article 248 of the DR
- Review the data used for the linear MCR calculation
- Check that the selected MCR lies in the interval of 25% - 45% of the SCR
- Verify for correctness and compliance with the regulatory requirements in regards to all calculations, providing the proper recalculations when deemed necessary
- Form a view about the appropriateness of the IT tools used for the calculation of capital requirements.

5.5 Transitional measures

In case an insurance undertaking which applies transitional measures fails to meet the SCR without their use, a recovery plan is required showing how it will achieve compliance at the end of the transitional period. The auditor should check the existence of a realistic recovery plan according to which compliance with SCR will be restored within the timeframe defined and whether this has been submitted and approved by the supervisory authority.

The current guidance does not cover transitional measures: on risk-free interest rates, on technical provisions, as they are not known to be used by any Romanian insurance undertaking.
In case that an undertaking applies transitional measures, review the documentation and assess the compliance with Article 308b of the Solvency II Directive.

6 Main risks and vulnerabilities of the insurance sector

The auditors are required to consider the performed procedures and conclude in each case, based on their best knowledge of the Romanian market and of the international practices, which key risks each undertaking faces and how some of them may affect the entire insurance sector or financial market.

Such analysis requires identification of root causes for the main findings, that could be the result of existing local legislation, market practices or constraints (for example: liquidity, concentration, pricing, risks specific to certain lines of business or related to national regulations and international regulations) or any other causes.

Output:

- View on the risk profile of each undertaking based on Solvency II, and provide appropriate information enabling the Consultant to form a recommendation on the main risks and vulnerabilities including possible effect on the entire insurance sector and whether potential contagions to the rest of the financial sector and the real economy exists
- Possible recommendations.

Annexes

Annex 1: Insurance undertakings participating in the BSR

1.	ABC ASIGURARI-REASIGURARI S.A.
2.	ALLIANZ - TIRIAC ASIGURARI S.A.
3.	ASIGURARE REASIGURARE ASIMED S.A.
4.	ASIGURAREA ROMANEASCA - ASIROM VIENNA INSURANCE GROUP S.A.
5.	ASITO KAPITAL S.A.
6.	BCR ASIGURARI DE VIATA VIENNA INSURANCE GROUP S.A.
7.	BRD ASIGURARI DE VIATA S.A.
8.	COMPANIA DE ASIGURARI - REASIGURARI EXIM ROMANIA (CARE - ROMANIA) S.A.
9.	ERGO ASIGURARI DE VIATA S.A.
10.	ERGO ASIGURARI S.A.
11.	EUROINS ROMANIA ASIGURARE REASIGURARE S.A.
12.	EUROLIFE ERB ASIGURARI DE VIATA S.A.
13.	EUROLIFE ERB ASIGURARI GENERALE S.A.
14.	GARANTA ASIGURARI S.A.
15.	GENERALI ROMANIA ASIGURARE REASIGURARE S.A.
16.	GOTHAER ASIGURARI - REASIGURARI S.A.
17.	GRAWE ROMANIA ASIGURARE S.A.
18.	GROUPAMA ASIGURARI S.A.
19.	NN ASIGURARI DE VIATA SA
20.	OMNIASIG VIENNA INSURANCE GROUP S.A.
21.	ONIX ASIGURARI S.A.
22.	POOL-UL DE ASIGURARE IMPOTRIVA DEZASTRELOR NATURALE S.A. (PAID)
23.	SIGNAL IDUNA ASIGURARE REASIGURARE S.A
24.	SOCIETATEA DE ASIGURARE – REASIGURARE CITY INSURANCE S.A.
25.	UNIQA ASIGURARI DE VIATA S.A.
26.	UNIQA ASIGURARI S.A.

Annex 2: Risk Indicators

1.1.1 Data Checks

1. Correctness of premium provision

Segmentation: by LoBs (direct business and proportional reinsurance together within the LoB) and Total

$$\frac{\text{Gross BE Premium Provision}}{\text{Gross expected cash outflows (BE PP)} - \text{Gross expected cash inflows (BE PP)}}$$

Result should be close to 1, unless a stochastic method was used for the cash-flows projection.

Template: S.17.01

Numerator: R0060

Denominator: cash outflows = R0370 + R0380; cash inflows = R0390 + R0400

2. Correctness of claims provision

$$\frac{\text{Gross BE Claims Provision}}{\text{Gross expected cash outflows (BE CP)} - \text{Gross expected cash inflows (BE PP)}}$$

Result should be close to 1, unless a stochastic method was used for the cash-flows projection.

Template: S.17.01

Numerator: R0160

Denominator: cash outflows = R0410 + R0420; cash inflows = R0430 + R0440

1.1.2 Performance of the undertaking's Business (underwriting results)

This section provides information about the performance of the undertaking's business (underwriting results) which is a useful context when assessing the adequacy of the undertaking's reserves.

3. Gross Loss ratio (note: based on local GAAP information not Solvency II information)

Timing: depends if short- or long-term line of business, at least over a few years.

Segmentation: Line of business and total

$$\frac{Gross\ Claims\ Incurred}{Gross\ Earned\ Premium}$$

(N.B.: claims incurred are defined in the templates as the sum of claims paid and the delta of the outstanding amounts).

This ratio gives an indication on the adequacy of the premium and on the loss distribution. It also may inform the external reviewers about the existence of the underwriting cycle. It can be calculated per line of business and compared with peers. External reviewers are invited to take into account any specific events (such as natural catastrophes) which can have an impact on this ratio.

The type of business should be considered before making judgements about loss ratios, however it could be concerning if a high proportion of gross earned premium is needed to cover claims.

Template: S.05.01

Numerator: R0310/C0010:C0120 (relevant item for particular direct insurance LoB) or R0320/C0010:C0120 (relevant item for particular proportional reinsurance LoB) or R0330/C0130:C0160 (relevant item for particular non-proportional reinsurance LoB) or (R0310+R0320+R0330)/C0200 (total)

Denominator: R0210/C0010:C0120 (relevant item for particular direct insurance LoB) or R0220/C0010:C0120 (relevant item for particular proportional reinsurance LoB) or R0230/C0130:C0160 (non-proportional reinsurance LoB) or (R0210+R0220+R0230)/C0200 (total)

4. Gross Combined ratio (note: based on statutory accounts information not Solvency II information)

Timing: depends if short- or long-term line of business, at least over a few years.

Segmentation: Line of business and total

$$\frac{Gross\ Expenses\ Incurred + Gross\ Claims\ Incurred}{Earned\ Premium}$$

This ratio gives an indication on the profitability of a given line of business. It also may inform the external reviewers about the existence of the underwriting cycle.

Template: S.05.01
Numerator: (R0310+R0610+R0710+R0810+R0910+R1010)/C0010:C0120 (relevant item for particular direct insurance LoB) or (R0320+R0620+R0720+R0820+R0920+R1020)/C0010:C0120 (relevant item for particular proportional reinsurance LoB) or (R0330+R0630+R0730+R0830+R0930+R1030)/C0130:C0160 (relevant item for particular non-proportional reinsurance LoB) or (R0310:R0330+R0610:R0630+R0710:R0730+R0810:R0830+R0910:R0930+R1010:R1030)/C0200 (total),
Denominator: R0210/C0010:C0120 (relevant item for particular direct insurance LoB) or R0220/C0010:C0120 (relevant item for particular proportional reinsurance LoB) or R0230/C0130:C0160 (relevant item for particular non-proportional reinsurance LoB) or (R0210+R0220+R0230)/C0200 (total)
Other elements – see description of Gross Loss Ratio

5. **Pure Net Claims Ratio** (note: based on mixed SII and statutory accounts information, works only for LoBs where AY basis is used)

Timing: Over a few years (short- or long-term LoB)
Segmentation: LoBs and total Business (only if for all LoBs and currencies AY basis is used)
This is the pure claims ratio as reported at the end of the accident year. It works only for those LoBs, where claims and provisions for all currencies are reported on an accident year basis.
In this case, it shows the measure of the total net ultimate claims divided by the net earned premium. It does not make any allowance for movements in prior year reserves.

$$\frac{Net\ BE\ Claim\ Provisions + Net\ Claims\ Paid}{Net\ Earned\ Premium}$$

An increasing trend in the claims ratio could mean that the *undertaking*'s recent underwriting has not been as good as in the past. (However a significant decrease in the claims ratio could be a sign that the undertaking is under-reserving and vice-versa.) Also the presence of any trend may be the result of underwriting cycle. The indicator may be calculated in the basis of discounted or undiscounted data.
Templates: S.05.01 and S.19.01
Numerator (S.19.01): in case of undiscounted approach: R0650/C1400 + R0650/C1370 or in case of discounted approach: R0650/C1560 + R0650/C1370
Denominator (S.05.01): R0300/C0010:C0160 (relevant item for particular LoB) or R0300/C0200 (total)

6. **Expense Ratio** (based on statutory accounts)

Timing: Over a few years (short- or long-term LoB?)
Segmentation: LoBs and total Business
This shows the expenses incurred during the year as a proportion of net earned premiums.

$$\frac{Net\ Expenses\ incurred}{Net\ Earned\ Premium}$$

An increasing trend could imply that the undertaking is not controlling its expenses.
Template: S.05.01
Numerator: R0550/C0010:C0160 (relevant item for particular insurance LoB) or R0550/C0200 (total)
Denominator: R0300/C0010:C0160 (relevant item for particular direct insurance LoB) or R0300/C0200 (total)

7. **Pure Net Combined Ratio** (note: works only for LoBs where AY basis is used)

Segmentation: LoBs 1 to 11 (insurance) and total Business
It is an indicator of whether the business has made an underwriting profit, i.e. whether the premium has been able to cover the claims and expenses of the undertaking.

$$\frac{Net\ BE\ Claim\ Provisions\ + Net\ Claims\ Paid}{Net\ Earned\ Premium} + \frac{Expenses\ (N; risks\ covered\ during\ period) + Expenses\ (N; risks\ covered\ prior\ to\ period)}{Premium\ earned\ during\ the\ period\ (N)}$$

If an undertaking has a high combined ratio (in excess of 100%) the premium charged may not be sufficient to cover the claims and expenses of the *undertaking*. Also the presence of any trend in that indicator may be the result of underwriting cycle. Similarly to Pure Net Claims Ratio, it may be calculated on discounted or undiscounted basis.

Templates: S.19.01, S.29.04
Numerators (S.19.01, S.29.04): see Pure Net Claims Ratio (7) + S.29.04.R0100/C0040 + S.29.04.R0100/C0050
Denominators (S.05.01, S.29.04): see Pure Net Claims Ratio (7) + S.29.04.R0080/C0040

1.1.3 Adequacy of claims outstanding

8. RBNS as percentage of incurred (paid+RBNS)

Timing: Trend over several years and change in metric over a year. This can be done for 10 most recent years {e.g. change in metric for years N-10 to N-1 to metric for years N-9 to N} and change in metric over past four years for 10 most recent years {e.g. change in metric for years N-13 to N-3 to metric for years N-1 to N})
Segmentation: Line of business and as Total

$$\frac{Gross\ RBNS}{Gross\ Claims\ Paid\ EoY\ + Gross\ RBNS}$$

This indicator is to be calculated over several years and a downward trend may be an indication of inadequate RBNS reserves.

Templates: S.19.01
Numerator: Sum{R0100:R0250}/C0560
Denominator: Sum{R0100:R0250}/C0170 + Sum{R0100:R0250}/C0560

9. Incurred loss ratio in year (note: based on mixed SII and statutory accounts information; it works only for LoBs with AY basis)

Timing: Results over a few years (short- or long-term)
Segmentation: LoBs and Total

$$\frac{Net\ Claims\ Paid\ Cum\ EoY(AY) + Net\ RBNS\ Claims\ EoY(AY)}{Net\ Earned\ Premium(AY)}$$

Templates: S.19.01 and S.05.01
Numerator (S.19.01): Rxxxx /C1370 + Rxxxx /C1760
Where Rxxxx = R0500:R0650 for relevant accident year (in case of Total business a sum of relevant item over all LoBs)
Denominator (S.05.01 reported in relation to reporting year which corresponds to relevant accident year): R0300/C0010:C0160 (relevant item for particular LoB) or R0300/C0200 (for total) –(meaning taking values from historical reports e.g. if you need Net Earned Premium for 2011 AY you need to take it from QRT based on 2011)

10. Average provision/paid amounts per claim

Timing: external reviewers are recommended to calculate those indicators over at least two years. For long-term lines of business, more years might be necessary, as at the number of outstanding claims might increase over the years.
Segmentation: LoBs 1 to 12

$$\frac{\text{Gross RBNS at the end of the period}}{\text{Number of claims at the end of the year}}$$

Template: S.20.01.
Numerator:Rxxxx/C0050 + Ryyyy/C0130 + Rxxxx/C0190
Denominator: Rxxxx/C0020 + Ryyyy/C0110 + Rxxxx/C0170
Where Rxxxx = R0160 for "total previous year" and "Total" and R0010:R0150 for relevant AY/UY year
Where Ryyyy = R0160 for "total previous year" and R0010:R0150 for relevant AY/UY year and R0170 for "Total"

$$\frac{\text{Amount paid for closed claims during the year}}{\text{Number of closed claims paid during the year}}$$

Template: S.20.01.
Numerator: Rxxxx/C0080 + Ryyyy/C0150 + Rxxxx/C0210
Denominator: Rxxxx/C0060 + Ryyyy/C0140 + Rxxxx/C0200
Where Rxxxx = R0160 for row "total previous year" and R0010:R0150; for particular AY/UY year
Where Ryyyy = R0160 for row "total previous year" and R0010:R0150 - for particular AY/UY year and R0170 for "Total"
The second ratio can be used to control the value of the first one. If the value of claims outstanding provision is underestimated, then the first ratio will probably be below the second one.

11. Ratio of incurred claims to paid claims (gross and net)
Timing: Trend over several years and change in metric over past year for 10 most recent years {e.g. change in metric for years N-10 to N-1 to metric for years N-9 to N} and change in metric over past four years for 10 most recent years {e.g. change in metric for years N-13 to N-3 to metric for years N-1 to N})
Segmentation: Line of business and as Total

$$\frac{Claims\ Paid\ Curr\ Year + RBNS\ EoCurrYear - RBNS\ BoCurrYear}{Claims\ Paid\ Curr\ Year}$$

A swing in the ratio from above to below 1 may be for example a result of the undertaking changing its RBNS reserving methodology or assumptions. External reviewers need to be aware of the method being applied. The issues may be as a result of the 'auto-reserving', not putting a sufficient tail where the data is truncated.
Template: S.19.01.
(incurred gross)
Numerator: Sum{Rxxxx/C0170 + Rxxxx/Cyyyy - Rxxxx/Cyyxy}
Denominator: Sum{Rxxxx/C0170} (paid gross)
Where Rxxxx = R0110:R0240, Cyyyy = C0540:C0410 and Cyyxy = C0530:C0400
or (incurred net)
Numerator: Sum{Rxxxx/C1360 + Rxxxx/Cyyyy - Rxxxx/Cyyxy}
Denominator: Sum{Rxxxx/C1360} (paid net)
Where Rxxxx = R0510:R0640, Cyyyy = C1740:C1610 and Cyyxy = C1730:C1600

12. Adequacy of claims outstanding estimation in RBNS
Timing: AY/UY and Total previous years
Segmentation: Total and each LoB

$$\text{Gross RBNS}_{\text{Beginning of year}} - \text{Gross RBNS}_{\text{End of year}} - \text{Gross Payments}_{\text{during year}}$$

This indicator is calculated for claims that were open at the beginning of the year and that are still open at the end of the year.
If this indicator is negative, it shows that provisions for claims outstanding in RBNS were not sufficient in the beginning of the year accordingly with the current estimate.

Template: S.20.01
R0010:R0150/C0030 (relevant item for particular AY/UY) - R0010:R0150/C0050 (relevant item for particular AY/UY) - R0010:R0150/C0040 (relevant item for particular AY/UY)) or R0160/C0030 - R0160/C0050 - R0160/C0040 (for Total)

13. Adequacy of claims closed with payment estimation in RBNS
Timing: AY/UY and Total
Segmentation: Total and each LoB

$$\text{Gross RBNS}_{\text{Beginning of year}} - \text{Gross Payments}_{\text{during year}}$$

This indicator is calculated for claims that were open at the beginning of the year and that are closed at the end of the year.
If this indicator is negative, it shows that provisions for claims closed in RBNS were not sufficient in the beginning of the year accordingly with the current estimate.
Template: S.20.01
R0010:R0150/C0070 + R0010:R0150/C0100 – R0010:R0150/C0080 (relevant item for particular AY/UY) or R0160/C0070 + R0160/C0100 - R0160/C0080 (for Total)
One can also calculate a unique indicator by summing RI_14 and RI_15.

14. IBNR as percentage of claims incurred
Timing: Trend over several years and change in metric over past year for 10 most recent years {e.g. change in metric for years N-10 to N-1 to metric for years N-9 to N} and change in metric over past four years for 10 most recent years {e.g. change in metric for years N-13 to N-3 to metric for years N-1 to N})
Segmentation: Line of business and as Total

$$\frac{Gross\ BE\ Claims\ Provision\ EoY - Gross\ RBNS\ EoY}{Gross\ Claims\ Paid\ EoY + Gross\ RBNS\ EoY}$$

This indicator may be calculated on undiscounted or discounted basis.
The numerator represents the estimate of the IBNR provisions which is not directly reported in the quantitative reporting templates and is then estimated as difference between the Gross undiscounted Best Estimate of Claims provisions (which includes IBNR provisions) and the Gross RBNS provisions (which exclude IBNR provisions). External reviewers should bear in mind the difference stemming from the different calculation basis, i.e. the Best Estimate of Claims Provisions is estimated taking into consideration Solvency II valuation principles (i.e. probability-weighted average of future cash flows except for the discounting effects) while the Gross RBNS provisions is expected not to be (typical example is when RBNS is calculated on a case-by-case basis).
This indicator is to be calculated over several years and a downwards trend may be an indication of inadequate IBNR reserves if RBNS reserves are correct, upward trend might be an indication of inadequate RBNS reserves if IBNR is correct.
Template: S.19.01
Numerator:
(undiscounted basis)
Sum{Rxxxx/Cyyyy - Rxxxx/C0560} main diagonal of BE Claims Provision triangle
Or
(discounted basis)
Sum{Rxxxx/C0360 - Rxxxx/C0560}
Denominator: Sum{Rxxxx/C0170 + Rxxxx/C0560}
Where Rxxxx = R0100:R0250, Cyyyy = C0350:C0200

15. Paid claims as percentage of ultimate claims

Timing: Trend over several years and change in metric over past year for 10 most recent years {e.g. change in metric for years N-10 to N-1 to metric for years N-9 to N} and change in metric over past four years for 10 most recent years {e.g. change in metric for years N-13 to N-3 to metric for years N-1 to N})
Segmentation: Line of business and as Total

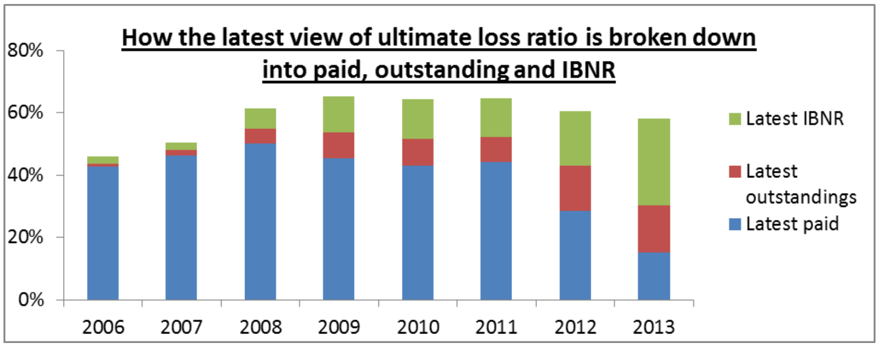
$$\frac{Gross\ Claims\ paid\ Cum}{Gross\ BE\ Claim\ Provision\ EoY + Gross\ Claims\ Paid\ Cum}$$

This indicator may be calculated on undiscounted or discounted basis i.e. Gross BE Claims Provision may be the sum of future undiscounted cash flows or discounted cash flows.
The denominator is equal to the sum of discounted (or undiscounted) future cash flows arising from IBNR and RBNS claims and expenses, increased by claims already paid.
This indicator is to be calculated over several years and an upward trend may be either an indication of inadequate RBNS or IBNR reserves or a change in the policy of the claims management unit, affecting how quick the undertaking is paying claims. The upward trend may be the consequence of the continuous increase of discounting rates (in the discounted version of the indicator).
Template: S.19.01
Numerator:
Sum{Rxxxx/C0180}
Denominator:
(undiscounted basis)
Sum{Rxxxx/Cyyyy + Rxxxx/C0180} main diagonal of BE Claims Provision triangle
Or
(discounted basis)
Sum{Rxxxx/C0360 + Rxxxx/C0180}
Where Rxxxx = R0100:R0250, Cyyyy = C0350:C0200 - relevant item for particular AY/UY

16. Incurred claims as percentage of ultimate claims
Timing: Trend over several years and change in metric over past year for 10 most recent years {e.g. change in metric for years N-10 to N-1 to metric for years N-9 to N} and change in metric over past four years for 10 most recent years {e.g. change in metric for years N-13 to N-3 to metric for years N-1 to N})
Segmentation: Line of business and as Total

$$\frac{Gross\ Claims\ Paid\ Cum + Gross\ RBNS\ EoY}{Gross\ BE\ Claim\ Provision\ EoY + Gross\ Claims\ Paid\ Cum}$$

This indicator may be calculated on undiscounted or discounted basis i.e. Gross BE Claims Provision may be the sum of future undiscounted cash flows or discounted cash flows.
This indicator is to be calculated over several years. Ultimates should remain constant. An upward trend (i.e. the gap between incurred and ultimate not closing despite incurred increasing) is an indication of previous underestimations of ultimate claims and under reserving. If the most recent ultimate claims is lower than any previous incurred claims this might indicate historical over reserving.
Template: S.19.01
Numerator:
Sum{Rxxxx/C0180 + Rxxxx/C0560}
Denominator:
(undiscounted basis)
Sum{Rxxxx/C0180 + Rxxxx/Cyyyy} main diagonal of BE Claims Provision triangle
Or
(discounted basis)
Sum{Rxxxx/C0180 + Rxxxx/C0360}
Where Rxxxx = R0100:R0250, Cyyyy = C0350:C0200



17. Total Best Estimate Provision for Claims Outstanding as percentage of Earned Premium(note: based on mixed SII and local GAAP information)
Timing: Over several years
Segmentation: Line of business and as Total

$$\frac{Gross\ Claim\ Provisions\ [Future\ Benefits\ and\ claims + Future\ Expenses\ and\ other\ outflows\ ]}{Gross\ Premiums\ Earned}$$

This indicator is to be calculated over several years. A downwards trend might be an indication of inadequate RBNS or inadequate IBNR reserves. Any trend may also inform the external reviewers about the existence of the undertaking cycle. This indicator is built only with cash out-flows. If significant, the amount of salvage and subrogation could influence the value of the indicator (if needed, they can be taken into account from S.17.01, row R0440).
Templates: S.17.01 and S.05.01
Numerator (S.17.01): R0410/C0020:C0170 (relevant item for particular LoB) + R0420/C0020:C0170 (relevant item for particular LoB) or R0410/C0180 + R0420/C0180 (for Total)
Denominator (S.05.01): R0210/C0010:C0120 (relevant item for particular LoB 1-12) + R0220/C0010:C0120 (relevant item for particular LoB 1-12) or R0210/C0010:C0120 (relevant item for particular LoB 13-16) + R0230/C0130:C0160 (relevant item for particular LoB 13-16) or (R0210/ + R0220 + R0230)/C0200 (for Total)

18. Paid loss ratio in accident year (note: based on mixed SII and local GAAP information)
Timing: Results over several years for each accident year
Segmentation: for LoBs and Total

$$\frac{Net\ \ Claims\ Paid\ Cum\ EoY\ (AY)}{Net\ Earned\ Premium(AY)}$$

This indicator helps in assessing the length of tail for each LoB.
Templates S.19.01 and S.05.01
Numerator (S.19.01): Rxxxx/C1370 for relevant AY, where Rxxxx = R0510:R0650
Denominator (S.05.01, reported in relation to reporting year which corresponds to relevant accident year): R0300/C0010:C0160 (for each LoBs) or R0300/C0200 (total) – for each historical AY (meaning taking values from historical reports e.g. if you need Net Earned Premium for 2011 AY you need to take it from QRT based on 2011)

1.1.4 Adequacy of Claim Provisions

This section provides analytics to support the assessment of the adequacy of the undertakings claim provisions. As Solvency II requires reserves to be set at best estimate analysis resulting from this section could indicate under or over reserving issues.

19. Reserve releases (broken down by line of business)

Timing: Over several years depending on the LoBs and available data
Segmentation: for LoBs and Total
It is the company's own assessment of how good its reserving was last year. Values less than 1 indicate release of reserves.
The indicator measures if claims provision settled at the end of the previous year for losses incurred up to the end of the previous year reflects the value of claims paid during the year from losses incurred up to the end of the previous year and the value of claims provisions settled at the end of the year for losses incurred up to the end of the previous year.
The brought forward reserves are the total claims outstanding plus IBNR and IBNER relating to all years.
The movement due to prior years is the balance of all adjustments for prior years (i.e. all years except the current year), after removing adjustments for discounting. Therefore this movement also includes changes to premiums, expenses and other income, but is mainly made up of changes to the ultimate claims.

$$\begin{aligned}\Big[BE_{of\ Claims\ Provisions}\ (N)_{related\ to\ opened\ claims\ (N-1)} \\ + (1+r)^{0.5} \cdot\ Claims\ paid\ (N)_{related\ to\ opened\ claims\ (N-1)} \\ + Expenses(N; risk\ covered\ prior\ to\ period) \cdot (1+r)^{0.5}\Big] \\ \times \frac{1}{BE_{of\ Claims\ Provisions}(N-1)}\end{aligned}$$

This indicator may be calculated on both: discounted and undiscounted basis.
In case of discounted AY basis:
Templates S.19.01 and S.29.04
Numerator: Sum(R0100:R0240/C0360 of S.19.01) +
(1+r)^0.5 x Sum(R0100:R0240/C0170 of S.19.01) +
(1+r)^0.5 x R0100/C0050 of S.29.04 (gross)
or Sum(R0500:R0640/C1560 of S.19.01) +
(1+r)^0.5 x Sum(R0500:R0640/C1360 of S.19.01) +
(1+r)^0.5 x R0100/C0050 of S.29.04 (net)
Denominator (S.19.01 of the previous reporting year): Sum(R0100:R0240/C0360 of S.19.01) (gross) or Sum(R0500:R0640/C1560 of S.19.01) (net)
In case of UY basis, the value of expenses in the numerator is taken from cell R0030/C0020 of S.29.04.
In case of undiscounted basis, there is Sum(R0100:R0240/C0340:C0200 of S.19.01) (or Sum(R0500:R0640/C1550:C1410 of S.19.01) in net case) instead of Sum(R0100:R0240/C0360 of S.19.01) (or Sum(R0500:R0640/C1560 of S.19.01)), i.e. the sum of value from main diagonal of the triangle of the BE claims provision.

20. BE of claims provisions movements
Timing: Over several years depending on the LoBs and available data
Segmentation: for LoBs and eventually split by different currencies (if material) and Total

$$\begin{aligned}(1+r) \times BE_{of\ Claims\ Provisions}(N-1) - BE_{of\ Claims\ Provisions}\ (N)_{related\ to\ opened\ claims\ (N-1)} \\ - (1+r)^{0.5} x\ Claims\ paid\ (N)_{related\ to\ opened\ claims\ (N-1)} \\ - Expenses(N; risk\ covered\ prior\ to\ period) \cdot (1+r)^{0.5}\end{aligned}$$

Where r is the one year risk free interest rate.
This indicator aims to give an indication on whether the claims have been estimated correctly. It takes into account the discounting effect, in an approximate but simple manner. If this indicator is regularly negative, it could mean that the undertaking is underestimating its claims and its best estimate.
This indicator may be calculated on both: discounted and undiscounted basis.
Templates: S.19.01 and S.29.04.

- *BE (N-1): the penultimate diagonal of the Gross/Net undiscounted BE CP triangle of S.19.01: Sum(R0100:R0240/C0350:C0200 of S.19.01) (or Sum(R0500:R0640/C1550:C1400 of S.19.01) in net case)* *(undiscounted basis) or Sum(R0100:R0240/C0360 of S.19.01) (or Sum(R0500:R0640/C1560 of S.19.01) in the net case) from the reporting template of previous reporting year (discounted basis);*

- *BE (N): the last diagonal of Gross/Net undiscounted BE CP triangle less the value related to year N of S.19.01: Sum(R0100:R0240/C0350:C0210 of S.19.01) (or Sum(R0500:R0640/C1550:C1410 of S.19.01) in net case) (undiscounted basis) or Sum(R0100:R0240/C0360 of S.19.01) (or Sum(R0500:R0640/C1560 of S.19.01) in the net case) (discounted basis);*
- *Claims Paid (N): the last diagonal of Gross/Net Claims Paid triangle less the value related to year N of S.19.01: Sum(R0110:R0240/C0170) (or Sum(R0510:R0640/C1360 in net case) ;*
- *Expenses : value from S.29.04: R0100/C0050 (AY basis) or R0030/C0020 (UY basis)*
-

21. Adequacy of claims provisions over m years

Timing: Over several years depending on the LoBs and available data

Segmentation: for LoBs and eventually split by different currencies (if material) and Total

$$\sum_{i=1}^{m}\left(\frac{BE_{Claims\ Provisions}(N-m+i)+Claims\ paid\ (N-m+i)_{opened\ claims\ (N-1-m+i)}\cdot(1+r_{N-m+i}(1))^{\frac{1}{2}}}{BE_{Claims\ Provisions}(N-1-m+i)\cdot(1+r_{N-1-m+i}(1))}+\frac{Expenses(N-m+i;risk\ covered\ prior\ to\ period)\cdot(1+r)^{0.5}}{BE_{Claims\ Provisions}(N-1-m+i)\cdot(1+r_{N-1-m+i}(1))}\right)\cdot\omega_i$$

where:

$r_{N-m+i}(1)$is the basic risk free rate for maturity 1 from the RFR curve given for reporting year $N-m+i$, $i=1,\dots,m$.

$BE_{Claims\ Provisions}(N-1-m+i)$: the diagonal of the Gross undiscounted BE CP triangle corresponding to the reporting year$N-1-m+i$(then the sum of accident/underwriting year and development year equals$N-1-m+i$);

$BE_{of\ Claims\ Provisions}(N-m+i)$*:* the diagonal of the Gross undiscounted BE CP triangle corresponding to the reporting year$N-m+i$(then the sum of accident/underwriting year and development year equals$N-m+i$);

$Claims\ paid\ (N-m+i)_{opened\ claims\ (N-1-m+i)}$:the diagonal of Gross Claims Paid triangle corresponding to the reporting year $N-m+i$ (then the sum of accident/underwriting year and development year equals$N-m+i$) less the value related to accident/underwriting year $N-m+i$;

$Expenses(N-m+i;risk\ covered\ prior\ to\ period)$ – expense cash-flows from year $N-m+i$

N – a given year, for which the ratio is calculated;

m – the number of years, over which the average is calculated.

$\omega_i=\frac{i}{\frac{m+1}{2}m}$is the weight corresponding to BE of claims provision settled at the end of the year $N-m+i$, $i=1,\dots,m$

The indicator is examination of the sufficiency of claims provisions over a few years (*m years*). It allows to assess if the value of claims outstanding provision is underestimated or overestimated.

The element of the average for reporting year $N-m+i$:

$$\frac{BE_{of\ Claims\ Provisions}(N-m+i)+Claims\ paid\ (N-m+i)_{opened\ claims\ (N-1-m+i)}\cdot(1+r_{N-m+i}(1))^{\frac{1}{2}}}{BE_{of\ Claims\ Provisions}(N-1-m+i)\cdot(1+r_{N-1-m+i}(1))}$$

and this is the same as indicator "reserve releases" reporting year $N-m+i$, which measures if claims provision settled at the end of the previous year for losses incurred up to the end of the previous year reflects the value of claims paid during the year from losses incurred up to the end of the previous year and the value of claims provisions settled at the end of the year for losses incurred up to the end of the previous year.

The indicator is a weighted average of the elements described above – more current year has higher weight (ω_i).

The number m of years can be adapted according to short-term or long-term lines of business. $m$should be at least equal to the number of years it takes for the cumulated claims to be stable (see triangle of claims

paid). The average over m exclude sensitivity of the ratio to the events specific to the one chosen year like cumulation of claims or unique events, which does not necessary mean the inadequacy of claims provision.
*Templates: S.19.01 and S.29.04 (*R0100/C0050 (AY basis) or R0030/C0020 (UY basis))

22. Correctness of the future benefits projection for claims provision
Timing: Over several years
Segmentation: Total

$$\frac{\sum_{k=1}^{14} Claims\ Paid\ in\ current\ year_{N-k}}{Future\ benefits_{N-1}(BE\ Claims\ Provision;\ Year\ 1)}$$

This indicator examines the ability of the insurance undertaking to forecast benefits from past exposure for one year ahead. External reviewers should be careful when applying this indicator to an undertaking having long-term lines of business.
Templates: S.19.01 and S.18.01
Numerator (S.19.01): Sum{Sum(R0100:R0240/C0170) for all LoBs}
Denominator (S.18.01 reported in relation to previous reporting year): R0010/C0050

1.1.5 Adequacy of Premium Provisions

This section provides analytics to support the assessment of the adequacy of the undertakings premium provisions. As Solvency II requires reserves to be set at best estimate analysis resulting from this section could indicate both under and over reserving issues.

23. Solvency II Loss Development Ratio (it works only for LoBs where for the whole LoB the same convention is used (meaning either AY or UY basis)
Timing: Results over few years
Segmentation: LoBs and Total

$$Numerator = Net\ BE\ Claims\ Prov(X = N; Y = 0) + \left(1 + r_N(1)\right)^{1/2} \times Net\ Claims\ paid\ (X = N; Y = 0) + Expenses(N; risk\ covered\ during\ period)$$

$$Denominator = \left(1 + r_N(1)\right) \times Net\ BE\ Prem\ Prov_{N-1} + \left(1 + r_N(1)\right)^{1/2} \times Net\ WP\ last\ 12\ mths_N - Net\ BE\ Prem\ Prov_N$$

$$SII\ loss\ development\ ratio = \frac{Numerator}{Denominator}$$

With:

- X = the accident/underwriting year (N-14, N-13, …, N)
- Y = the development year Y (0, 1, …, 15)
- N – a given year, for which the ratio is calculated
- $r_N(1)$ = risk free rate in year N

The indicator is similar to the Pure Net Combined Ratio, but it concerns future claims development. It is the ratio of two measures of exposure to losses incurred in the year N.
The denominator of the ratio is a measure of exposure of the claims (and expenses) to be paid (in the future) from losses incurred in the year N (including losses from the new business of the year N).
The numerator is the sum of all claims incurred and paid during the year N and of the provision for claims incurred in year N but not settled yet.
The numerator is equal to the sum of claims already paid and estimate of future claims corresponding to unearned part of premium already paid, adjusted by the difference between “a posteriori” estimation and “a priori” estimation of future risk corresponding to future unpaid premium from existing contracts (“a priori” measure is simply the premium and “a posteriori” measure is the estimate of future claims after some claims having already been paid). If it is smaller than the value of claims paid, it may mean the overestimation of the premium or incorrect earning pattern applied.

The denominator is equal to the estimate of the same value as the numerator, but the estimate in denominator is made earlier to the estimate from numerator. The trend in that ratio over time may mean incorrect estimation of claims within the premium tariffs and premium provision. It may also stem from inconsistency in methods used in tariffs, premium reserving and claims reserving but also it might be the result of the underwriting cycle.

Templates: S.17.01, S.28.01/02, S.19.01
Numerator:

- *Net BE CP: S.19.01: in case of undiscounted basis: R0650/C1400 or in case of discounted basis: R0650/C1560*
- *Net Claims Paid: S.19.01: R0650/C1360*
- *Expenses: S.29.04: R0030/C0010 (UY basis) or R0100/C0040 (AY basis)*

Denominator:

- *Net BE PP: S.17.01: R0150/C0020:C0180*
- *Net WP: S.28.01: R0020:R0170/C0030 (for relevant LoB) and sum of them (for total) or in case of composite: S.28.02: R0020:R0170/C0060 (for relevant LoB) and sum of them (for total)*

1.1.6 Adequacy of Risk Margin

24. Weight of the risk margin vs. TPs
Timing: one year
Segmentation: LoBs and total

$$\frac{Risk\ Margin}{Total\ net\ Best\ Estimate}$$

When comparing the result of this ratio with peers, it gives an idea of the adequacy of the risk margin calculation.
Template: S.17.01
Numerator: R0280/C0020:C0180 (for relevant LoB);
Denominator: R0270/C0020:C0180 (for relevant LoB);

25. Weight of the risk margin vs. SCR
Timing: One year
Segmentation: Total

$$\frac{Risk\ Margin}{SCR}$$

When comparing the result of this ratio with peers, it gives an idea of the adequacy of the risk margin calculation. The risk margin is 6% of the future SCRs so using the mean term of the liabilities (from below) it is possible approximate what the risk margin should be.
Disclaimer: The value of the indicator may be distorted by the fact that projected SCRs used in the RM calculation do not include SCRs for catastrophic risk and market risk. So for companies with large values of SCR for those risks the value of that ratio will be lower.
Templates: S.17.01 and S.25.01/S.25.02/S.25.03
Numerator (S.17.01): R0280/C0180
Denominator S.25.01 (SCR calculated with Standard Formula) or S.25.02 (SCR calculated with partial internal model) or S.25.03 (SCR calculated with internal model): R0220/C0100

26. Weight of the risk margin vs. underwriting risk SCR (note: only for standard formula users)
Timing: One year
Segmentation: Total

$$\frac{Risk\ Margin}{UW\ risk\ SCR}$$

When comparing the result of this ratio with peers, it gives an idea of the adequacy of the risk margin calculation. When the risk margin is calculated using a percentage of the Best Estimate, the comparison with the underwriting risk makes the most sense: it shows the technical risk.
Templates: S.17.01 and S.25.01/S.25.02/S.25.03
Numerator (S.17.01): R0280/C0180
Denominator (S.25.01): R0050/C0030 (net SCR, SF) or R0050/C0040 (gross SCR, SF).
In case of PIM or IM, supervisors need to understand first the components reported in S.25.02 and S.25.03 to understand if similar ratios could be performed.

1.1.7 Reinsurance

27. The extend of reinsurance cover

$$\frac{Reinsurance\ Recoverables + Reinsurance\ receivables - Reinsurance\ payables}{Gross\ Technical\ provisions{:}\ sum\ (life\ and\ non-life)}$$

The above ratio measures the exposure of the insurance undertaking to the reinsurance cover for both life and non-life business
Templates: S.02.01
Numerator: R0270/C0010 + R0370/C0010 – R0830/C0010
Denominator: R0510/C0010 + R0600/C0010 + R0690/C0010
In case of composite insurance undertakings, it is not possible to calculate the above ratio separately for life and non-life business as reporting templates don’t require reinsurance receivables/payables to be reported separately for life and for non-life business. Therefore, it is recommended to consider the following two ratios separately for life and non-life business which exclude reinsurance receivables/payables:

$$\frac{Reinsurance\ Recoverables\ (non-life\ and\ NSLT\ health)}{Gross\ Technical\ provisions\ (non-life\ and\ NSLT\ health)}$$

Templates:S.02.01
Numerator: R0280/C0010,
Denominator: R0510/C0010.

$$\frac{Reinsurance\ Recoverables\ (life\ and\ SLT\ health + life\ unit/index\ linked)}{Gross\ Technical\ provisions\ (life\ and\ SLT\ health + life\ unit/index\ linked)}$$

Templates:S.02.01
Numerator: R0310/C0010 + R0340/C0010
Denominator: R0600/C0010 + R0690/C0010.

28. Impact of reinsurance cover in the claims

Timing: one year
Segmentation: LoBs and Total

$$\begin{aligned} Numerator = {} & Total\ Reinsurance\ Recoveries\ received\ in\ current\ year_{LoB} \\ & + BE\ Claims\ Provision\ Reinsurance\ recoverable\ year\ end\ discounted_{LoB} \\ Denominator = {} & Gross\ Claims\ Paid\ in\ current\ year_{LoB} \\ & +\ Gross\ BE\ Claims\ Provision\ year\ end\ discounted_{LoB} \end{aligned}$$

$$KRI = \frac{Numerator}{Denominator}$$

The above ratio measures the impact of reinsurance cover in the current claims costs.
Templates:S.19.01
Numerator:.R0460/C0760 + R0460/C0960,
Denominator: R0260/C0170 + R0260/C0360

1.2 Other quantitative analysis

29. Additional analysis for RBNS

Speed of payment (numbers):
Timing: Over few years
Segmentation: LoBs 1 to 12

$$\frac{Number\ of\ claims\ ended\ with\ payments}{Number\ of\ claims\ ended\ with\ payments + Number\ of\ outstanding\ claims}$$

Template: S.20.01
Numerator: R0160/C0060 + R0160/C0200 + R0180/C0140
Denominator: R0160/C0060 + R0160/C0200 + R0180/C0140 + R0180/C0110 + R0160/C0170 + R0160/C0020
Speed of payment (amounts):
Segmentation: LoBs 1 to 12

$$\frac{Gross\ payments\ made\ during\ the\ current\ year}{Gross\ payments\ made\ during\ the\ current\ year + Gross\ RBNS\ at\ the\ end\ of\ the\ period}$$

Template: S.20.01
Numerator: R0160/C0040 + R0160/C0080 + R0180/C0120 + R0180/C0150 + R0160/C0180 + R0160/C0210
Denominator: (R0160/C0040 + R0160/C0080+ R0180/C0120 + R0180/C0150 + R0160/C0180 + R0160/C0210) + (R0160/C0050 + R0180/C0130 + R0160/C0190)
For a more in-depth analysis the two above indicators (that vary from 0 to 1) may be calculated also for each development year where data has been reported (i.e. for R0010, R0020, …, R0150)
The two ratios measure the portion of the claims that are in charge of the undertaking during the year “N” that the undertaking itself has paid in that year (both in terms of amounts and numbers). The ratio on the numbers of claims measures the portion of claims that the undertaking has been able to close with a definitive payment.
One can compare the speed for the same development year over different years to have a hint on whether the policy of payment has changed over years. The ratios can also be seen as a measure of the efficiency of the claims management units (assuming all the other factors that impact the speed of payment are stable: the type of claims, the specificity of the LoB, etc.). This can be seen through a comparison with peers.
Normally these indicators (calculated for the first development years) would be higher for short-term LoB and lower for the long-term ones. In addition, especially for row “N”, the ratio on numbers is higher than the ratio on amounts (since one pays a lot of claims of low amount in the first year of development (in year “N”)).
The stability of these indicators during different calendar years could also be a hint on the appropriateness of applying a chain-ladder technique (which is based on the assumption of a stable policy of payments during the years).
A (sharp) decrease in indicators could mean that the undertaking is facing some liquidity problems.
A (sharp) increase in indicators could mean that the undertaking has done a thorough revision of its claims (paying and closing without payment the claims that were entitled to).
A general change in indicators (increase/decrease) could mean that the undertaking has reviewed its management claim unit (it is often observed after a merger).
Percentage of reopened claims (numbers):
Segmentation: LoBs 1 to 12

$$\frac{Number\ of\ Reopen\ Claims\ during\ the\ year}{Total\ number\ of\ Open\ Claims\ at\ the\ end\ of\ the\ year}$$

Template: S.20.01
Numerator: R0160/C0170 + R0160/C0200 Denominator: R0160/C0060 + R0160/C0090 + R0180/C0140 + R0180/C0160 + R0160/C0020 + R0180/C0110 + R0160/C0170 + R0160/C0200
This indicator can signal an abnormal number of reopened claims compared with the market average. This is based on the assumption that in each market and for each LoB there will be a certain level of reopened claims that is unavoidable. If one observes a higher level than the market one it can signal that the undertaking is potentially managing its account with de-recognition of some claims and the related amount of claims provisions with a positive variation in the P&L. Comparison of this indicator with peers or with the historical data of the same company can help recognize this bad practice.

The indicator should be quite stable over time. A sharp increase could signal the possibility that the undertaking has hidden its claims during past years and that, for this reason, Claims Provisions could be underestimate.

Percentage of claims closed without any settlement (numbers):
Segmentation: LoBs 1 to 12

$$\frac{Number\ of\ claims\ ended\ without\ any\ payments}{Total\ number\ of\ claims\ open\ at\ the\ end\ of\ the\ year}$$

Template: S.20.01
Numerator: R0160/C0090 + R0180/C0160
Denominator: R0160/C0060 + R0160/C0090 + R0180/C0140 + R0180/C0160 + R0160/C0020 + R0180/C0110 + R0160/C0170 + R0160/C0200
The indicator should be quite stable over time. A sharp increase could signal the possibility that the undertaking is hiding claims and that, for this reason, Claims Provisions could be underestimate.